United States Department of the Interior

# Bureau of Land Management

## Environmental Assessment DOI-BLM-UT-G010-2014-0077-EA

**July 2015**

## ASHLEY VALLEY ENERGY ROUTE

***Location:*** Sections 35, 36, Township 5 South, Range 20 East;
Sections 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, Township 5 South, Range 21 East;
Sections 9, 10, 15, 16, 19, 20, 21, 22, 27, 28, 29, 30; Township 5 South, Range 22 East
Sections 1,2, Township 6 South, Range 20 East; and,
Section 6, Township 6 South, Range 21 East.

Salt Lake Base & Meridian,
Uintah County, Utah

***Applicant/Address:*** Uintah County
52 East 100 North
Vernal, Utah 84078

U.S. Department of the Interior
Bureau of Land Management
Vernal Field Office
170 South 500 East
Vernal, Utah 84078
Phone: (435) 781-4400
Fax: (435) 781-4410

BLM
Green River District – Vernal Field Office

*This page intentionally left blank.*

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AASHTO | American Association of State Highway and Transportation Officials |
| AADTV | Annual Average Daily Traffic Volume |
| ACEPM | Applicant-Committed Environmental Protection Measure |
| ACS | American Community Survey |
| AGRC | Automated Geographic Resource Center |
| Alternative A | Proposed Action |
| Alternative B | Dog Valley Route Alternative |
| Alternative C | No Action Alternative |
| AO | Authorized Officer |
| APE | Area of Potential Effect |
| AUM | Animal Unit Month |
| AVER | Ashley Valley Energy Route (Proposed Action) |
| Basin | Uinta Basin |
| BEA | U.S. Bureau of Economic Analysis |
| BIA | Bureau of Indian Affairs |
| BGEPA | Bald and Golden Eagle Protection Act of 1940 |
| BLM | Bureau of Land Management |
| BMP | Best Management Practice |
| C | Custodial (grazing allotment management category) |
| Canal | Highline Canal |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| CISA | Cumulative Impact Study Area |
| County | Uintah County |
| CR | County Road |
| CWCS | Comprehensive Wildlife Conservation Strategy |
| DEA | Demographic and Economic Analysis |
| DEM | Digital Elevation Model |
| DOI | Department of the Interior |
| DOT | Department of Transportation |
| DR | Decision Record |
| EA | Environmental Assessment |
| Effects | impacts |
| EIS | Environmental Impact Statement |
| EO | Executive Order |
| ERMA | Extensive Recreation Management Area |
| ESA | Endangered Species Act of 1973 |
| FEMA | Federal Emergency Management Agency |
| FLPMA | Federal Land Policy and Management Act of 1976 |
| FONSI | Finding of No Significant Impact |
| FPPA | Farmland Protection Policy Act of 1981 |
| $ft^2$/acre | Square feet per acre |
| General Plan | Uintah County 2005 General Plan |
| GIS | Geographic Information System |
| IM | Instruction Memorandum |
| Kleinfelder | Kleinfelder, Inc. |
| KOP | Key Observation Point |

| | |
|---|---|
| M | Maintain (grazing allotment management category) |
| MBTA | Migratory Bird Treaty Act of 1918 |
| mmhos/cm | millimhos per centimeter |
| MOAC | Montgomery Archaeological Consultants, Inc. |
| MOU | Memorandum of Understanding |
| mph | miles per hour |
| NEPA | National Environmental Policy Act of 1969 |
| NHPA | National Historic Preservation Act of 1966 |
| NRHP | National Register of Historic Places |
| OHV | Off-Highway Vehicle |
| OMB | Office of Management and Budget |
| OSHA | Occupational Safety and Health Administration |
| PCI | Per capita income |
| PFYC | Potential Fossil Yield Classification |
| PGMA | Preliminary General Management Area |
| PIF | Partners in Flight |
| PLPCO | (Utah Governor's) Public Lands Policy Coordination Office |
| POD | Plan of Development |
| PPMA | Preliminary Priority Management Area |
| Project Area | Ashley Valley Energy Route Project Area |
| Pronghorn | Pronghorn Antelope (*Antilocapra americana*) |
| Proposed AVER | Proposed Action |
| Proposed project | Proposed Action |
| RIPRAP | Recovery Implementation Program Recovery Action Plan |
| RMP | Resource Management Plan |
| RMP/ROD | Resource Management Plan and Record of Decision |
| ROD | Record of Decision |
| ROW | Right-of-way |
| SAR | Sodium adsorption ratio |
| SITLA | (State of Utah) School and Institutional Trust Lands Administration |
| SLB&M | Salt Lake Base & Meridian |
| SMA | Surface Management Agency |
| SOP | Standard Operating Procedure |
| SRMA | Special Recreation Management Area |
| STSA | Special Tar Sand Area |
| SUA | Surface Use Agreement |
| THPO | Ute Tribe's Historic Preservation Office |
| Trail rating | Difficulty level |
| U.S. | United States |
| U.S.C. | United States Code |
| UCR | Uniform Crime Reporting |
| UDEQ | Utah Department of Environmental Quality |
| UDOGM | Utah Division of Oil, Gas, and Mining |
| UDOT | Utah Department of Transportation |
| UDNR-DWaR | Utah Department of Natural Resources – Division of Water Resources |
| UDWR | Utah Division of Wildlife Resources |
| UDWS | Utah Department of Workforce Services |
| UGOPB | Utah Governor's Office of Planning and Budget |
| UGS | Utah Geological Survey |
| Uinta Paleo | Uinta Paleontological Associates, Inc. |
| USACE | U.S. Army Corps of Engineers |

| | |
|---|---|
| USDA-NRCS | U.S. Department of Agriculture's Natural Resources Conservation Service |
| USFS | U.S. Forest Service |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| USHPO | Utah State Historic Preservation Office |
| UTSSD | Uintah Transportation Special Service District |
| UWCA | Utah Weed Control Association |
| VFO | Vernal Field Office |
| VRM | Visual Resource Management |
| WMU | Wildlife Management Unit |
| WTPD | White-tailed Prairie Dog |

*This page intentionally left blank.*

# CONTENTS


1.0 INTRODUCTION AND NEED ..... 1-1

1.1 INTRODUCTION ..... 1-1
1.2 NEED FOR THE PROPOSED ACTION ..... 1-2
1.3 DECISION TO BE MADE ..... 1-2
1.4 CONFORMANCE WITH BLM LAND USE PLANS ..... 1-5
1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS ..... 1-5
1.5.1 Federal Laws and Statutes ..... 1-5
1.5.2 State and Local Laws and Statutes ..... 1-5
1.6 SCOPING AND IDENTIFICATION OF ISSUES ..... 1-5
1.6.1 Cultural, Including Archaeological Resources and Native American Religious Concerns ..... 1-6
1.6.2 Prime and Unique Farmlands ..... 1-6
1.6.3 Geology, Including Mineral Resources and Energy Production ..... 1-6
1.6.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species ..... 1-6
1.6.5 Lands and/or Access ..... 1-6
1.6.6 Livestock Grazing ..... 1-7
1.6.7 Paleontology ..... 1-7
1.6.8 Recreation ..... 1-7
1.6.9 Socioeconomics ..... 1-7
1.6.10 Visual Resources ..... 1-7
1.6.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters of the U.S. ..... 1-7
1.6.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species ..... 1-7
1.6.13 Airport ..... 1-8
1.6.14 Existing Road Improvements ..... 1-8
1.6.15 Zoning ..... 1-9

2.0 DESCRIPTION OF ALTERNATIVES ..... 2-1

2.1 INTRODUCTION ..... 2-1
2.2 ALTERNATIVE A – PROPOSED ACTION ..... 2-1
2.2.1 Road Design Features ..... 2-2
2.2.2 Road Construction ..... 2-9
2.2.3 Support Resources ..... 2-9
2.2.3.1 Material ..... 2-9
2.2.3.2 Equipment ..... 2-9
2.2.3.3 Work Force ..... 2-10
2.2.3.4 Access and Staging Areas ..... 2-10
2.2.4 Operation and Maintenance ..... 2-10
2.2.5 Road Termination ..... 2-10
2.2.6 Water Supply ..... 2-10
2.2.7 Reclamation ..... 2-10
2.2.8 Applicant-Committed Environmental Protection Measures ..... 2-10
2.2.8.1 All Resource Values ..... 2-11
2.2.8.2 Air Quality and Greenhouse Gases ..... 2-11

2.2.8.3 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns ..... 2-11
2.2.8.4 Fuels/Fire Management ..... 2-12
2.2.8.5 Soils & Vegetation, Including Invasive Plants/Noxious Weeds, and BLM Sensitive Plant Species ..... 2-12
2.2.8.6 Lands/Access ..... 2-13
2.2.8.7 Livestock Grazing & Rangeland Health Standards ..... 2-13
2.2.8.8 Paleontology ..... 2-13
2.2.8.9 Recreation ..... 2-14
2.2.8.10 Waste ..... 2-14
2.2.8.11 Water Resources, Including Floodplains, Surface Water Quality, and Waters of the U.S. ..... 2-14
2.2.8.12 Wildlife, Including Migratory Birds, Raptors; Non-USFWS Designated Species; Federally Listed, Threatened, Endangered, Proposed or Candidate Species ..... 2-15
2.2.8.13 Public Health and Safety ..... 2-15
2.3 ALTERNATIVE B – DOG VALLEY ROUTE ALTERNATIVE ..... 2-16
2.3.1 Additional Environmental Protection Measures for Greater Sage-grouse ..... 2-19
2.3.2 Additional Environmental Protection Measures for Mule Deer ..... 2-21
2.4 ALTERNATIVE C – SAGE-GROUSE MITIGATION ALTERNATIVE ..... 2-21
2.4.1 Additional Environmental Mitigation Measures for Greater Sage-grouse ..... 2-22
2.4.2 Additional Environmental Mitigation Measures for Recreation ..... 2-23
2.4.3 Additional Environmental Mitigation Measures for Pronghorn Antelope ..... 2-23
2.5 ALTERNATIVE D - NO ACTION ALTERNATIVE ..... 2-27
2.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FUTHER ASSESSMENT ..... 2-27

3.0 AFFECTED ENVIRONMENT ..... 3-1

3.1 INTRODUCTION ..... 3-1
3.2 CULTURAL, INCLUDING ARCHAEOLOGICAL RESOURCES AND NATIVE AMERICAN RELIGIOUS CONCERNS ..... 3-1
3.3 PRIME AND UNIQUE FARMLANDS ..... 3-3
3.4 GEOLOGY, INCLUDING MINERAL RESOURCES AND ENERGY PRODUCTION ..... 3-4
3.4.1 Geology ..... 3-4
3.4.2 Mineral Resources ..... 3-5
3.4.3 Energy Production ..... 3-5
3.5 SOILS AND VEGETATION, INCLUDING INVASIVE PLANTS AND NOXIOUS WEED SPECIES, AND BLM SENSITIVE PLANT SPECIES ..... 3-9
3.5.1 Soils ..... 3-9
3.5.2 Vegetation ..... 3-10
3.5.2.1 Noxious and Invasive Weed Species ..... 3-13
3.5.2.2 BLM Sensitive Plant Species ..... 3-14
3.6 LANDS AND/OR ACCESS ..... 3-14
3.6.1 Lands Actions ..... 3-14
3.6.2 Access ..... 3-15
3.7 LIVESTOCK GRAZING ..... 3-15
3.8 PALEONTOLOGY ..... 3-21
3.9 RECREATION ..... 3-23
3.10 SOCIOECONOMICS ..... 3-28
3.10.1 Population and Demographics ..... 3-28

3.10.2 Local Economy, Employment, and Income ..... 3-30
3.10.3 Taxes and Revenues ..... 3-35
3.10.3.1 Sales and Use Tax ..... 3-35
3.10.4 Quality of Living ..... 3-36
3.11 VISUAL RESOURCES ..... 3-40
3.12 WATER RESOURCES, INCLUDING FLOODPLAINS, HYDROLOGIC CONDITIONS (STORMWATER), AND WATERS OF THE U.S. ..... 3-42
3.13 WILDLIFE RESOURCES, INCLUDING MIGRATORY BIRDS AND RAPTORS, USFWS-DESIGNATED AND NON-DESIGNATED WILDLIFE AND FISHERY SPECIES ..... 3-48
3.13.1 Big Game ..... 3-48
3.13.1.1 Mule Deer ..... 3-49
3.13.1.2 Pronghorn Antelope ..... 3-49
3.13.2 Upland Game ..... 3-50
3.13.3 Raptors ..... 3-55
3.13.4 Migratory Birds ..... 3-56
3.13.4.1 High Desert Shrub ..... 3-56
3.13.4.2 Shrub-steppe ..... 3-56
3.13.5 USFWS-Designated and Non-Designated Wildlife and Fishery Species ..... 3-56
3.13.5.1 Special Status Mammal Species ..... 3-57
3.13.5.2 Special Status Bird Species ..... 3-58
3.13.5.3 Special Status Fish Species ..... 3-70
3.13.5.4 Utah State Sensitive Fish ..... 3-70

4.0 ENVIRONMENTAL IMPACTS ..... 4-1

4.1 INTRODUCTION ..... 4-1
4.2 DIRECT AND INDIRECT IMPACTS ..... 4-1
4.2.1 Alternative A – Proposed Action ..... 4-1
4.2.1.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns ..... 4-1
4.2.1.2 Prime and Unique Farmlands ..... 4-2
4.2.1.3 Geology, Including Mineral Resources and Energy Production ..... 4-3
4.2.1.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species ..... 4-4
4.2.1.5 Lands and/or Access ..... 4-6
4.2.1.6 Livestock Grazing ..... 4-7
4.2.1.7 Paleontology ..... 4-8
4.2.1.8 Recreation ..... 4-9
4.2.1.9 Socioeconomics ..... 4-11
4.2.1.10 Visual Resources ..... 4-14
4.2.1.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters Of The U.S. ..... 4-16
4.2.1.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated And Non-Designated Wildlife and Fishery Species ..... 4-31
4.2.2 Alternative B – Dog Valley Route Alternative ..... 4-41
4.2.2.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns ..... 4-41
4.2.2.2 Prime and Unique Farmlands ..... 4-42
4.2.2.3 Geology, Including Mineral Resources and Energy Production ..... 4-43

4.2.2.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species ..... 4-44
4.2.2.5 Lands and/or Access ..... 4-45
4.2.2.6 Livestock Grazing ..... 4-46
4.2.2.7 Paleontology ..... 4-46
4.2.2.8 Recreation ..... 4-48
4.2.2.9 Socioeconomics ..... 4-48
4.2.2.10 Visual Resources ..... 4-48
4.2.2.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), And Waters Of The U.S. ..... 4-49
4.2.2.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species ..... 4-50
4.2.3 Alternative C – Sage-grouse Mitigation Alternative ..... 4-55
4.2.3.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns ..... 4-55
4.2.3.2 Prime and Unique Farmlands ..... 4-56
4.2.3.3 Geology, Including Mineral Resources and Energy Production ..... 4-57
4.2.3.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species ..... 4-58
4.2.3.5 Lands and/or Access ..... 4-59
4.2.3.6 Livestock Grazing ..... 4-60
4.2.3.7 Paleontology ..... 4-60
4.2.3.8 Recreation ..... 4-62
4.2.3.9 Socioeconomics ..... 4-63
4.2.3.10 Visual Resources ..... 4-63
4.2.3.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters of The U.S. ..... 4-64
4.2.3.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species ..... 4-65
4.2.4 Alternative D – No Action Alternative ..... 4-69
4.2.4.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns ..... 4-69
4.2.4.2 Prime and Unique Farmlands ..... 4-70
4.2.4.3 Geology, Including Mineral Resources and Energy Production ..... 4-70
4.2.4.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species ..... 4-70
4.2.4.5 Lands and/or Access ..... 4-70
4.2.4.6 Livestock Grazing ..... 4-71
4.2.4.7 Paleontology ..... 4-71
4.2.4.8 Recreation ..... 4-71
4.2.4.9 Socioeconomics ..... 4-72
4.2.4.10 Visual Resources ..... 4-72
4.2.4.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters of The U.S. ..... 4-72
4.2.4.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species ..... 4-73

4.3 CUMULATIVE IMPACTS ..... 4-73
4.3.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns ..... 4-73
4.3.2 Prime and Unique Farmlands ..... 4-74
4.3.3 Geology, Including Mineral Resources and Energy Production ..... 4-75
4.3.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species ..... 4-75
4.3.5 Lands and/or Access ..... 4-77
4.3.6 Livestock Grazing ..... 4-77
4.3.7 Paleontology ..... 4-77
4.3.8 Recreation ..... 4-79
4.3.9 Socioeconomics ..... 4-79
4.3.10 Visual Resources ..... 4-81
4.3.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters of the U.S. ..... 4-82
4.3.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species ..... 4-83
4.3.12.1 Greater Sage-grouse ..... 4-84
4.3.12.2 Special Status Fish ..... 4-84
4.3.12.3 Bats ..... 4-85
4.3.12.4 Special Status Raptor Species ..... 4-86
4.3.12.5 Western Burrowing Owl and White-tailed Prairie Dog ..... 4-86

5.0 CONSULTATION AND COORDINATION ..... 5-1

5.1 INTRODUCTION ..... 5-1
5.2 PERSONS, GROUPS AND AGENCIES CONSULTED ..... 5-1
5.3 SUMMARY OF PUBLIC PARTICIPATION ..... 5-2
5.4 EA PREPARATION AND REVIEW ..... 5-2

6.0 REFERENCES ..... 6-1

## List of Tables


Table 2.2-1: Surface Ownership for the Proposed Action ..... 2-1
Table 2.3-1: Surface Ownership for the Dog Valley Route Alternative ..... 2-19
Table 2.4-1: Surface Ownership for the Sage-grouse Mitigation Alternative ..... 2-21
Table 3.2-1: Cultural Resource Sites within the AVER Project Area ..... 3-2
Table 3.2-2: Results of Cultural Resources Field Inventory for the Proposed AVER ROW ..... 3-2
Table 3.4-1: Geologic Units within the Project Area ..... 3-5
Table 3.4-2: Oil and Gas and Tar Sand Leased Acres within the Project Area ..... 3-6
Table 3.5-1: Dominant Ecological Sites within the Project Area ..... 3-13
Table 3.6-1: Existing BLM and SITLA ROWs Involved with the Project Area ..... 3-15
Table 3.7-1: Livestock Grazing Information for the AVER Project Area ..... 3-16
Table 3.8-1: PFYC Values within the Project Area ..... 3-22
Table 3.9 -1: Trails of the McCoy Flats Non-Motorized Trail Complex ..... 3-23
Table 3.10-1: Population Data for Jurisdictions in the Project Area Vicinity ..... 3-29
Table 3.10-2: Population by Race and by Hispanic or Latino Origin ..... 3-29
Table 3.10-3: Nonfarm Job Sources in Uintah County by Employment Sector (2011) ..... 3-30
Table 3.10-4: Nonfarm Payroll Wages in Uintah County by Employment Sector (2011) ..... 3-31
Table 3.10-5: Per Capita Personal Income (2009-2012) ..... 3-32
Table 3.10-6: Percentage of People and Families Below the Poverty Level ..... 3-32
Table 3.10-8: Sales and Use Tax Distributions ..... 3-35
Table 3.10-9: Housing and Household Characteristics ..... 3-36
Table 3.10-10: Home Sales and Median Prices ..... 3-39
Table 3.11-1: BLM Visual Resource Management (VRM) Class Objectives ..... 3-41
Table 3.11-2: VRM Classes within the AVER Project Area ..... 3-41
Table 3.11-3: Key Observation Points ..... 3-42
Table 3.13-1: UDWR Big Game Habitats within the AVER Project Area ..... 3-49
Table 3.13-2: Raptor Species with a Potential to Occur in the Project Area ..... 3-55
Table 3.13-3: Greater Sage-grouse Habitats and Management Areas in the Project Area ..... 3-67
Table 4.2.1.3-1: Surface Disturbance of Oil and Gas and Tar Sands Lease Areas Under the Proposed Action ..... 4-3
Table 4.2.1.4-1: Surface Disturbance of Ecological Site under the Proposed Action ..... 4-5
Table 4.2.1.6-1: Carrying Capacity Impacts by Allotment under the Proposed Action ..... 4-7
Table 4.2.1.7-1: Surface Disturbance to PFYCs under the Proposed Action ..... 4-9
Table 4.2.1.8 -1: Trails Potentially Affected in the McCoy Flats Non-Motorized Trail Complex ..... 4-10
Table 4.2.1.10-1: Acreage of VRM Classes Affected in the Project Area under the Proposed Action ..... 4-15
Table 4.2.1.10.1-2: Viewshed Analysis Results for the Proposed Action ..... 4-16
Table 4.2.1.12-1: Surface Disturbance in Greater Sage-grouse Habitat and Management Areas under the Proposed Action ..... 4-35
Table 4.2.2.3-1: Surface Disturbance of Oil and Gas and Tar Sands Lease Areas Under Alternative B ..... 4-43
Table 4.2.2.4-1: Surface Disturbance Acres by Ecological Site for Alternative B ..... 4-44
Table 4.2.2.7-1: Surface Disturbance to PFYCs under Alternative B ..... 4-46
Table 4.2.2.12-2: Surface Disturbance in Greater Sage-grouse Habitat and Management Areas within the Project Area under Alternative B ..... 4-52

Table 4.2.3.3-1: Surface Disturbance of Oil and Gas and Tar Sands Lease Areas Under Alternative C ..... 4-57
Table 4.2.3.4-1: Surface Disturbance Acres by Ecological Site for Alternative C ..... 4-58
Table 4.2.3.7-1: Surface Disturbance to PFYCs under Alternative C ..... 4-61
Table 4.2.3.8 -1: Trails Potentially Affected in the McCoy Flats Non-Motorized Trail Complex by Alternative c ..... 4-62
Table 4.2.1.10.1-2: Viewshed Analysis Results for Alternative C ..... 4-64
Table 4.2.3.12-2: Surface Disturbance in Greater Sage-grouse Habitat and Management Areas within the Project Area under Alternative C ..... 4-66
Table 5.2-1: Persons, Groups, and Agencies Consulted ..... 5-1
Table 5.4-1: Environmental Assessment Preparers and Reviewers ..... 5-3

## List of Figures

Figure 1.1-1 – Project Area ..... 1-3
Figure 2.1-1 – Alternative Comparison ..... 2-3
Figure 2.2-1 – Alternative A – Proposed Action ..... 2-5
Figure 2.2-2 – Typical Road Sections ..... 2-7
Figure 2.3-1 – Alternative B – Dog Valley Route Alternative ..... 2-17
Figure 2.4-1 – Alternative C – Sage-grouse Mitigation Alternative ..... 2-25
Figure 3.4-1 – Surface Geology ..... 3-7
Figure 3.5-1 – Soils ..... 3-11
Figure 3.6-1 – Land Access ..... 3-17
Figure 3.7-1 – Livestock Grazing ..... 3-19
Figure 3.9-1 – McCoy Flats Trail Complex ..... 3-25
Figure 3.10-1 – Average Annual Unemployment Rate (1990-2013) ..... 3-33
Figure 3.10-2 – Distribution of Property Taxes with the State of Utah (2013) ..... 3-37
Figure 3.11-1 – BLM Visual Resource Management ..... 3-43
Figure 3.12-1– Water Resources ..... 3-45
Figure 3.13-1– UDWR Mule Deer Habitat ..... 3-51
Figure 3.13-2 – UDWR Pronghorn Habitat ..... 3-53
Figure 3.13-3 – UDWR Prairie Dog Colonies ..... 3-59
Figure 3.13-4 – UDWR Greater Sage-grouse Habitat ..... 3-63
Figure 3.13-5 – BLM/USFS Greater Sage-grouse Habitat ..... 3-65
Figure 4.2.1.10-1 – Viewshed Analysis – Visibility of Commercial/Industrial Vehicles from KOP 1 ..... 4-17
Figure 4.2.1.10-2 – Viewshed Analysis – Visibility of Ground Level from KOP 1 ..... 4-19
Figure 4.2.1.10-3 – Viewshed Analysis – Visibility of Commercial/Industrial Vehicles from KOP 2 ..... 4-21
Figure 4.2.1.10-4 – Viewshed Analysis – Visibility of Ground Level from KOP 2 ..... 4-23
Figure 4.2.1.10-5– Viewshed Analysis – Visibility of Commercial/Industrial Vehicles from KOP 3 ..... 4-25
Figure 4.2.1.10-6– Viewshed Analysis – Visibility of Ground Level from KOP 3 ..... 4-27

## List of Appendixes

Appendix A - BLM Interdisciplinary Team Checklist
Appendix B - Reclamation Plan for the Ashley Valley Energy Route Project
Appendix C - Uintah County Stakeholders' Input Regarding Preliminary Project Routes for the Ashley Valley Energy Route Project
Appendix D - Soils Data
Appendix E - Summary of Potential for and/or Occurrence of Special Status Plant and Wildlife Species for the Ashley Valley Energy Route Project
Appendix F - BLM Visual Contrast Rating Worksheet

# Ashley Valley Energy Route

# DOI-BLM-UT-G010-2014-0077 EA

## 1.0 INTRODUCTION AND NEED

### 1.1 INTRODUCTION

This Environmental Assessment (EA) (DOI-BLM-UT-G010-2014-0077-EA) has been prepared to analyze Uintah County's proposal to construct, operate, and maintain the Ashley Valley Energy Route (AVER [Proposed Action]), a new proposed road in Uintah County, Utah. In support of this new road, on July 8, 2014, Uintah County (County) made application to the United States (U.S.) Bureau of Land Management (BLM) for a Title V right-of-way (ROW) for that portion of the new road on BLM-administered land. The AVER has been proposed as a new road designed to reduce traffic congestion and improve public safety throughout the downtown Vernal and Naples areas. Currently commercial and oil and gas industry vehicles, often carrying explosive and hazardous materials, use the existing roadways in and through downtown Vernal and Naples. This usage results in traffic congestion and poses potential threats to public health and safety. The AVER would provide an alternate route for heavy commercial/industrial vehicle traffic associated with oil and gas operations.

The County has identified an AVER Project Area (Project Area) that includes lands in Township 5 South, Ranges 20, 21 and 22 East, and Township 6 South, Ranges 20 and 21 East, Salt Lake Base & Meridian (SLB&M), all in Uintah County, in northeastern Utah (refer to **Figure 1.1-1**). The Project Area totals 13,129 acres. It should be noted acreage figures in this document have been rounded to the nearest whole number. Additionally, calculations in this EA are based on Geographic Information System (GIS) software and may not equal the total summation when using mathematic equations due to rounding, removal of overlapping development and minute boundary discrepancies. GIS-based calculations are considered more accurate than estimates calculated using simple addition, and therefore are used throughout this document.

**Table 1.1-1** provides a breakdown of surface land ownership for the Project Area.

**Table 1.1-1: Surface Land Ownership for the Project Area**

| Surface Ownership | Acres | Percent of Project Area |
|---|---|---|
| Bureau of Land Management | 3,302 | 25 |
| State of Utah – School and Institutional Trust Lands Administration (SITLA) | 5,131 | 39 |
| Private | 4,696 | 36 |
| **TOTAL** | **13,129** | **100** |

Source: Utah Automated Geographic Resource Center (AGRC) 2013.

The EA provides a site-specific analysis of potential impacts that could result with the implementation of the proposed project or an alternative to the proposed project. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act of 1969 (NEPA), and in making a determination as to whether any "significant" impacts could result from the assessed actions. "Significance" is defined by NEPA and is found in regulation 40 Code of Federal Regulations (CFR) 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). A FONSI statement is a document that briefly presents the reasons why implementation of the selected alternative would not result in "significant" impacts (effects) beyond those already addressed in the BLM (2008a) Vernal Field Office (VFO) Resource Management Plan/Record of Decision (RMP/ROD). Following evaluation of the analyses included in this EA, if the BLM determines that this project would result in "significant" impacts, then an EIS would be prepared for the project. If not, a Decision Record (DR) may be signed for the EA approving the alternative selected.

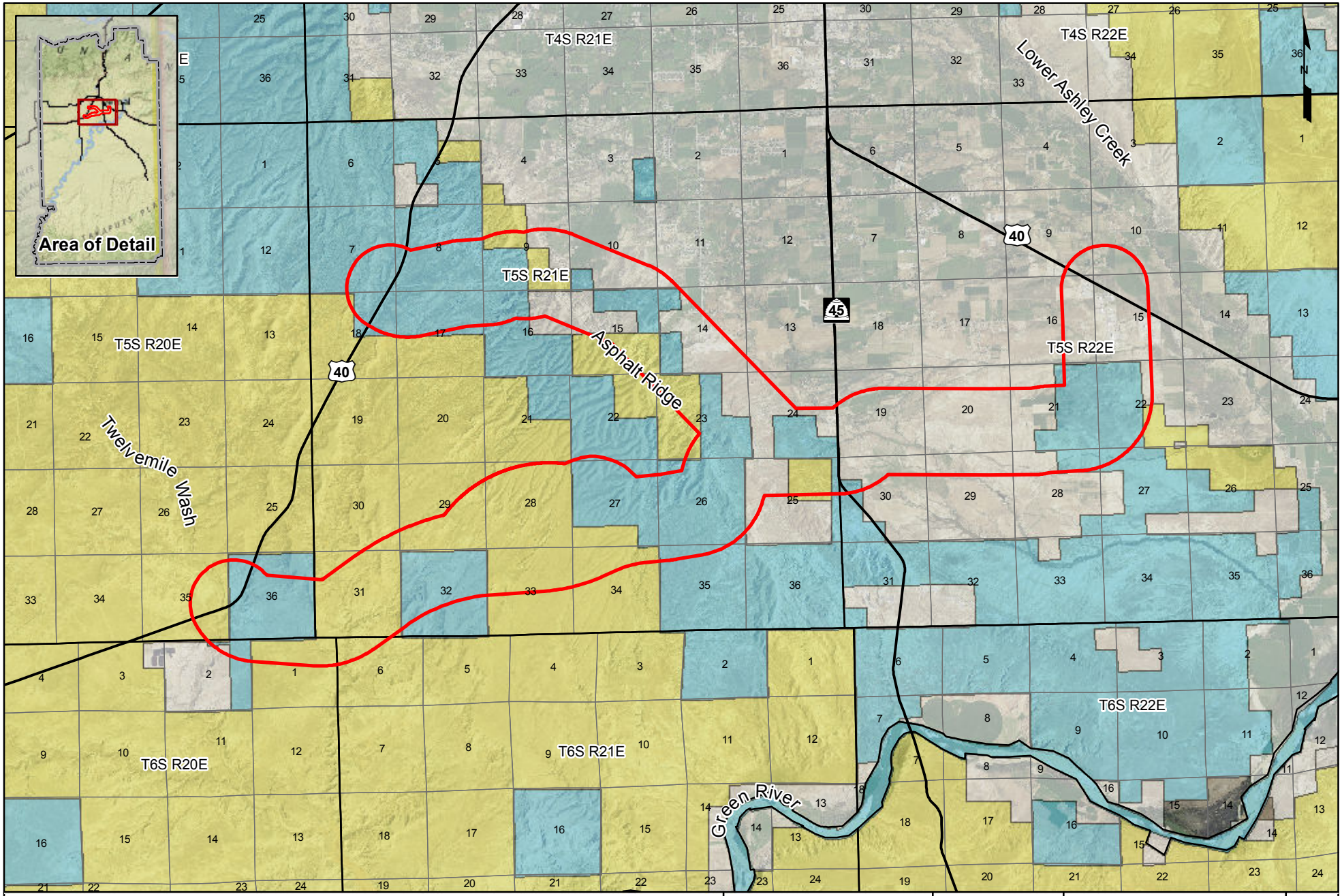
## 1.2 NEED FOR THE PROPOSED ACTION

The BLM's need for this EA is to consider approval of the County's Title V ROW application in accordance with the Federal Land Policy and Management Act of 1976 (FLPMA), as amended and 43 CFR 2800. The BLM's objectives in this project review are to avoid or reduce impacts to sensitive resource values associated with the Project Area, prevent unnecessary or undue degradation of public lands, and respond to identified public safety concerns. Regarding the last objective specifically, the BLM seeks to identify and consider alternatives that would improve public safety in the downtown and residential Vernal and Naples areas by minimizing the number of commercial/industrial vehicles carrying explosive and hazardous materials through those areas, while minimizing conflicts with other land use and users.

## 1.3 DECISION TO BE MADE

This EA contains a site-specific review of the Proposed Action and a conceptual review of its alternatives. Therefore, the BLM's decision to be made is whether or not BLM will grant the ROW and allow the County to build the AVER, whether the proposed route or some variation thereof, across BLM-administered land. The BLM's decision will not apply to SITLA-administered lands or privately owned lands.

Please note that some specific details about the proposed route are known because the County has voluntarily completed engineering surveys and resource surveys for its proposal. Similar surveys and engineering have not been completed for the alternative routes to date, though the best available BLM and the Cooperating Agencies data have been assembled to determine the impacts associated with that alternative. If the alternative route is carried forward into the DR, resource surveys and engineering would occur on that route prior to construction. Itis not anticipated at this time that any additional NEPA review would be required if an alternative route is carried forward into the DR.




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Roads
- Township/Range
- Section

**Land Ownership**

- Federal
- Private
- State

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 5/14/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_1.1-1_Project_Area.mxd |

***Uintah County***

Ashley Valley Energy Route
Project Area
Uintah County, Utah

FIGURE
**1.1-1**

*This page intentionally left blank.*

## 1.4 CONFORMANCE WITH BLM LAND USE PLANS

The proposed road would be in conformance with the BLM VFO RMP/ROD, approved October 31, 2008 (BLM 2008a). The BLM VFO RMP/ROD allows for processing applications, permits, and operating plans on public lands in accordance with policy and guidance and allows for management of public lands to support goals and objectives of other resource programs. The BLM VFO RMP/ROD also allows BLM to respond to public requests for land use authorizations and acquire administrative and public access where necessary. The Proposed Action would not conflict with other decisions in the BLM VFO RMP/ROD.

## 1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS

### 1.5.1 Federal Laws and Statutes

This EA was prepared in accordance with NEPA and is in compliance with all applicable regulations and laws passed subsequently, including the President's Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500 through 1508), and U.S. Department of Interior requirements and guidelines listed in the BLM (2008b) *NEPA Handbook H-1790-1*. This EA assesses the environmental effects of the Proposed Action, Dog Valley Route Alternative, and the No Action Alternative.

### 1.5.2 State and Local Laws and Statutes

There are no comprehensive State of Utah plans for the vicinity of the Proposed Action.

The Proposed Action is consistent with the Uintah County (2005) General Plan (General Plan), amended in 2012, which encompasses the location of the proposed project. The General Plan contains specific policy statements addressing public and multi-use resource use and development, access, and wildlife management. In general, the General Plan indicates support for development proposals through its emphasis on multiple-use public land management practices and responsible use and optimum utilization of public land resources.

The proposed project would involve lands currently administered by SITLA. The primary management objective for SITLA is to secure the highest and best use of state lands to generate funding for the state school system. The Proposed Action and Dog Valley Route Alternative would require state permits and could further stimulate development of state lands in or near the Project Area, thus the Proposed Action and Dog Valley Route Alternative would be consistent with the objectives of the state. As the No Action Alternative would not realize the proposed project or Dog Valley Route Alternative, it is assumed that the No Action Alternative would not be consistent with the objectives of the state.

## 1.6 SCOPING AND IDENTIFICATION OF ISSUES

Since the BLM was first notified of the proposed project, three internal reviews have been conducted to identify agency-generated environmental issues and concerns. Two of the preliminary reviews were conducted on/about April 18, 2008, and August 2, 2013, in response to the County's intention to apply for a Title V ROW grant and preliminary information on a tentative route for the ROW. Following submission of the ROW application to the BLM and a review of the Plan of Development (POD) by its resource specialists, BLM conducted an interdisciplinary team meeting with project proponents on June 5, 2014 to discuss the POD and to identify issues and concerns (see **Appendix A**).

On May 12, 2014, the BLM issued a press release announcing a 30-day public scoping period for the proposed project. The press release identified the scoping period as extending from May 12 to June 12, 2014. It also announced a public scoping open house for June 5, 2014 at the Vernal City Offices. The BLM encouraged the public to provide written comments on the proposed project via the following avenues: in person at the scoping meeting or at the BLM VFO; U.S. mail; or email. The BLM received scoping comments from 195 individuals who identified 686 individual issues and concerns, many of them similar in focus, nature, and extent. Copies of the complete BLM (2014a) public scoping report are available at the BLM VFO. Also in May 2014, BLM extended cooperating agency status to the Utah Governor's Public Lands Policy Coordination Office (PLPCO), SITLA, and the U.S. Fish and Wildlife Service (USFWS); both the PLPCO and SITLA accepted, and USFWS declined due to other priority workloads.

The following provides a summary of the issues and concerns identified as a result of the BLM's internal review and the public scoping activities. The following list identifies resources that are known or likely to occur within the Project Area and that may be potentially affected by the Proposed Action or Dog Valley Route Alternative. These issues and concerns are arranged below by resource and are more fully described in Chapter 3. The anticipated impacts to the affected resources are disclosed in Chapter 4.

### 1.6.1 Cultural, Including Archaeological Resources and Native American Religious Concerns

- Potential impacts on historic, pre-historic, and traditional cultural properties associated with surface-disturbing activities; and
- Potential impacts to Native American religious and cultural sites and/or artifacts within the Project Area.

### 1.6.2 Prime and Unique Farmlands

- Potential non-federal cumulative impacts to prime and unique farmlands.

### 1.6.3 Geology, Including Mineral Resources and Energy Production

- Potential impacts to known tar sands within and adjacent to the Project Area.

### 1.6.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species

- Potential impacts to soil resources from the removal of the existing vegetation and disturbance to underlying soils;
- Potential impacts from increased susceptibility of soils to wind and water erosion and loss;
- Potential impacts from disturbance to and/or removal of existing vegetation;
- Potential impacts to BLM sensitive plant species populations and their habitats; and
- Potential impacts from the introduction and/or proliferation of invasive and/or noxious weeds in the Project Area.

### 1.6.5 Lands and/or Access

- Potential impacts to existing ROWs or other BLM lands and/or access authorizations in and adjacent to the Project Area.

### 1.6.6 Livestock Grazing

- Potential impacts to existing livestock grazing allotments and grazing operations within the Project Area.
- Possible opportunity for improved grazing management on involved grazing allotments.

### 1.6.7 Paleontology

- Potential impacts to paleontological resources within the Project Area.

### 1.6.8 Recreation

- Potential impacts to the McCoy Flats Mountain Bike Trail System within and adjacent to the Project Area.

### 1.6.9 Socioeconomics

- Potential impacts to the quality of life in Vernal and/or Naples;
- Potential impacts from any accidents involving commercial/industrial vehicles hauling hazardous materials through Vernal or Naples;
- Potential impacts to the financial commitment already made to the McCoy Flats Mountain Bike Trail System; and
- Potential impacts to local businesses in Vernal and/or Naples.

### 1.6.10 Visual Resources

- Potential impacts to visual resources within the Project Area.

### 1.6.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters of the U.S.

- Potential impacts to identified 100-year floodplains within and adjacent to the Project Area from construction activities;
- Potential impacts to the existing hydrologic conditions from removal of the existing vegetation, disturbance to soils, increased susceptibility of soils to erosion, and disruption of existing drainage system within and adjacent to the Project Area; and
- Potential impacts to the quality of Waters of the U.S. within the Lower Green River Hydrologic Unit due to surface-disturbing activities from the proposed project.

### 1.6.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species

- Potential impacts to migratory and raptor bird species and their habitats within the Project Area;
- Potential impacts to USFWS-designated wildlife species, including the greater sage-grouse (GRSG) (*Centrocercus urophasianus*) and the four federally endangered fish species of the Upper Colorado River System (bonytail [*Gila elegans*], Colorado pikeminnow [*Ptychocheilus lucius*], humpback chub [*Gila cypha*], and razorback sucker [*Xyrauchen texanus*]), and their respective habitats within and downstream of the Project Area; and

- Potential impacts to USFWS non-designated wildlife species, including pronghorn antelope (*Antilocapra americana*) and obligate species associated with white-tailed prairie dog (WTPD) (*Cynomys leucurus*) colonies, and their habitats within the Project Area.

The following issues and concerns raised during the public scoping exercise have been determined to be outside the scope of the EA and thus were not carried forward for detailed discussion and assessment in this EA (refer to the BLM [2014a] public scoping report prepared for this project).

### 1.6.13 Airport

Public comments were received relative to an airport tentatively identified adjacent to the Project Area. The BLM determined the tentatively identified airport is not a connected or reasonably foreseeable action to the proposed project for the reasons described below. As a result it was determined that the airport is outside the scope of the EA and thus was not carried forward for detailed discussion and assessment in this EA.

Regarding connected actions, the BLM (2008b) NEPA Handbook H-1790-1 states:

> *Connected actions are those actions that are "closely related" and "should be discussed" in the same NEPA document (40 CFR 1508.25 (a)(1)). Actions are connected if they automatically trigger other actions that may require an EIS; cannot or will not proceed unless other actions are taken previously or simultaneously; or if the actions are interdependent parts of a larger action and depend upon the larger action for their justification (40 CFR 1508.25 (a)(I, ii, iii)). Connected actions are limited to actions that are currently proposed (ripe for decision).*

The airport identified adjacent to the Project Area does not meet this definition because: 1) construction of the AVER does not trigger construction of the airport, and vice versa; 2) each can be pursued independently, regardless of the approval, disapproval, or timing of the other; and 3) both actions are independent projects that do not depend on a larger action for their justification. Regarding reasonably foreseeable actions, the BLM (2008b) NEPA Handbook H-1790-1 states:

> *Reasonably foreseeable future actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends.*

As there are no existing decisions regarding the airport, the BLM is not aware of funding for the airport, the BLM has not been approached with a formal proposal for the airport, and the airport is not highly probable based on known opportunities or trends (to the contrary, recent funding decisions by the County have been to maintain the existing airport), it would be speculation to include the tentatively identified airport in this EA at this time. Should the BLM receive a proposal for the airport at some future date, a site-specific environmental analysis would be completed at that time.

### 1.6.14 Existing Road Improvements

Several comments were received regarding needed improvements to U.S. Highways 40 and 191. Improvements to U.S. Highways 40 and 191, beyond the previously identified intersections with U.S. Highway 40 and State Route 45, do not meet the connected action definition because: 1) construction of

the AVER does not trigger highway improvement projects, and vice versa; 2) each can be pursued independently, regardless of the approval, disapproval, or timing of the other; and 3) both actions are independent projects that do not depend on a larger action for their justification.

Improvements to U.S. Highways 40 and 191 do not meet the reasonably foreseeable actions definition because: there are no existing BLM decisions regarding any Highways 40 or 191 improvements, the BLM is not aware of funding for any specific highway improvements requiring a BLM decision, the BLM has not been approached with a formal proposal for any highway improvements, and BLM decisions regarding Highways 40 and 191 improvements are not highly probable based on known opportunities or trends (to the contrary, recent work on U.S. Highway 40 has been within the existing ROW and has fallen under the jurisdiction of the Department of Transportation [DOT]). Should the BLM receive such proposals, a site-specific environmental analysis would be completed at that time.

Regarding reasonable alternatives, the BLM (2008b) NEPA Handbook H-1790-1 states:

> *The range of alternatives explores alternative means of meeting the purpose and need for the action.*

Improvements to U.S. Highways 40 and 191 are not reasonable alternatives to the proposed project because they do not respond to the BLM's need for the action, which is in part to respond to identified public safety concerns in the downtown Vernal and Naples areas by minimizing commercial/industrial vehicles carrying explosive and hazardous materials through those areas.

### 1.6.15 Zoning

Several public comments expressed concerns about city and/or county zoning along the proposed ROW and along State Route 45 north of the proposed ROW. BLM has no authority to designate or change city and/or county zoning. As such, this comment is outside the scope of this EA.

*This page intentionally left blank.*

# 2.0 DESCRIPTION OF ALTERNATIVES

## 2.1 INTRODUCTION

This EA will focus on the Proposed Action (Alternative A), Dog Valley Route Alternative (Alternative B), Sage-grouse Mitigation Alternative (Alternative C), and No Action Alternative (Alternative D) (**Figure 2.1-1**). The No Action Alternative was considered and analyzed to provide a baseline for comparison of the impacts of the Proposed Action, Dog Valley Route Alternative, and Sage-grouse Mitigation Alternative. No additional reasonable alternatives were identified.

## 2.2 ALTERNATIVE A – PROPOSED ACTION

The County has determined a need for a new permanent road that would provide an alternative route for heavy truck traffic traveling on U.S. Highway 40 through downtown Vernal and Naples, Utah. The County is requesting a Title V ROW grant from the BLM, a ROW grant from SITLA, and is securing easements from private landowners for lands included in the Project Area. **Figure 2.2-1** depicts the alignment of Alternative A.

The County proposes to construct, operate and maintain a year-round, paved, five-lane-wide roadway corridor that involves lands in Township 5 South, Range 20 East, Sections 35, 36; Township 5 South, Range 21 East, Sections 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35; Township 5 South, Range 22 East, Sections 9, 10, 15, 16, 19, 20, 21, 22 ,27, 28, 29, 30, Township 6 South, Range 20 East, Sections 1, 2; and, Township 6 South, Range 21 East, Section 6, SLB&M, all in Uintah County (refer to **Figure 2.2-1)**. The proposed roadway would be approximately 12.4 miles in length, approximately 12.1 miles of which would be new construction and approximately 0.3 miles would involve needed upgrades to the existing County Road 4625 East. The proposed ROW width would accommodate a 250-foot-wide permanent ROW (for the roadway and 50-foot-wide temporary construction easements (25 feet on either side of the roadway). The proposed roadway would involve a total of 451 acres. **Table 2.2-1** summarizes the surface ownership for the Proposed Action.

**Table 2.2-1: Surface Ownership for the Proposed Action**

| Surface Ownership | Length (in miles) | Length (in feet) | Acres* | Percent |
|---|---|---|---|---|
| New Construction | | | | |
| BLM | 2.7 | 14,256 | 98 | 22 |
| SITLA | 6.1 | 32,208 | 222 | 49 |
| Private | 3.3 | 17,424 | 120 | 27 |
| *Subtotal* | *12.1* | *63,888* | *440* | *98* |
| Upgrade | | | | |
| BLM | --- | --- | --- | --- |
| SITLA | 0.2 | 1,056 | 7 | 1 |
| Private | 0.1 | 528 | 4 | 1 |
| *Subtotal* | *0.3* | *1,584* | *11* | *2* |
| **TOTAL** | **12.4** | **65,472** | **451** | **100** |

Source: GIS spatial analysis and calculations.
*Acreage calculated using a total ROW width of 300 feet. Length x width (in feet) / 43,560 square feet per acre ($ft^2$/ac).

### 2.2.1 Road Design Features

The proposed roadway would be built to engineering and construction standards set out by the American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets (AASHTO 2011) and Roadside Design Guide (AASHTO 2006), and the Utah Department of Transportation (UDOT) Standard Specifications and Standard Drawings for Road and Bridge Construction (UDOT 2012). Applicant-Committed Environmental Protection Measures (ACEPMs), which include Best Management Practices (BMPs) for construction and engineering, as set out by the Utah Department of Environmental Quality (UDEQ), would be applied as appropriate (refer to **Section 2.2.8**).

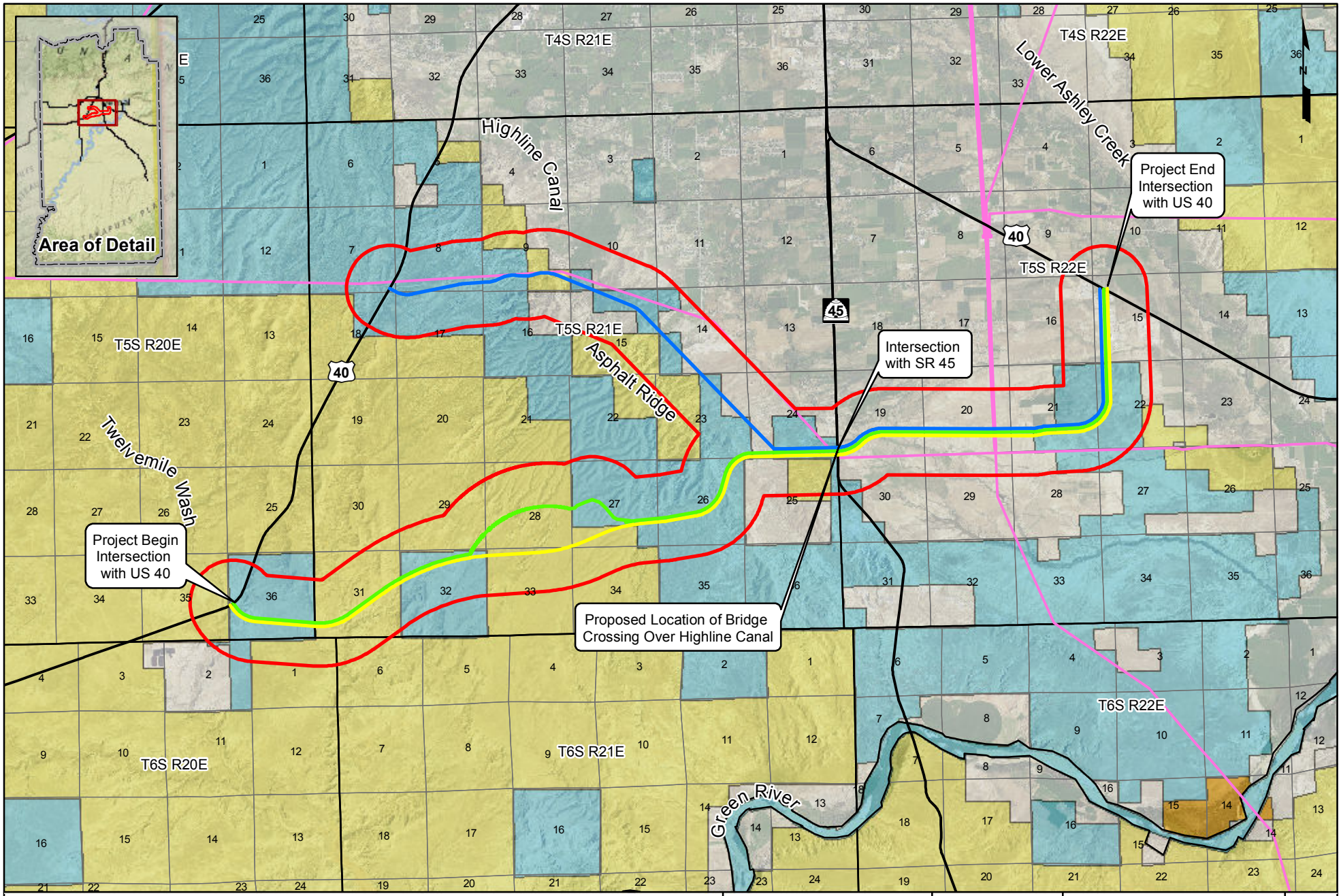
The ROW application's POD includes typical road section drawings and engineering sheets for the entire proposed roadway. A copy of a typical road section drawing is depicted in **Figure 2.2-2**.

The final road would accommodate a minimum anticipated Annual Average Daily Traffic Volume (AADTV) of 2,000 vehicles based on a traffic study conducted by Korve Engineering for Uintah County in 2007 (Korve Engineering 2007). This AADTV is based on the roadway being constructed within two years following receipt of the needed authorizations and ROW approvals. The traffic in the area has increased since the 2007 study was completed and is expected to increase each year by approximately three percent. It is anticipated that the traffic volume would continue to increase as the oil and gas industry in the region continues and expands. It is anticipated that oil and gas industry-related vehicles would be the primary users of the road.

The proposed road would have a 55 to 65 miles per hour (mph) design speed with a maximum grade of six percent. Side slopes ratios would vary from a 1:1 to a 6:1 ratio (i.e., foot of rise or slope, over a foot of linear distance or "run") depending on the depth of the cut or fill and the type of existing material encountered. The maximum grade for the road would be six percent and the maximum pitch of the road would be six percent. The final road would have a 78-foot-wide running surface.

The road would involve three major intersections located at the east and west termini of the proposed roadway, with the third intersection at the proposed crossing at the intersection of State Route 45 (the Bonanza Highway), as depicted in **Figure 2.2-1**. The plans for these intersections, including features such as advanced warning signals, would be finalized at the final design stage. The size and type of drainage structures, locations of retaining walls and guard rails, etc., would be evaluated for possible use as the final design progresses. In addition, informational signs would be installed at the termini of the route to discourage non-oil and gas related traffic from exiting U.S. Highway 40. The signs would be worded to encourage commercial vehicles to use the AVER, while encouraging private vehicles to stay on U.S. Highway 40, and drive through Vernal and Naples.

Prior to any surface disturbance affecting existing wetland areas or having the potential to alter the nature of existing water ways, the U.S. Army Corps of Engineers (USACE) and the Utah State Engineers would be notified and the needed permits and/or jurisdictional determinations would be obtained pursuant to existing federal and state regulations. A County road cut permit would be obtained from the County prior to any surface-disturbing work associated with the Proposed Action.




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Electrical Lines
- Township/Range
- Section

**Land Ownership**

- Federal
- Private
- State
- Tribal

*Electrical Lines: Utah Automated Geographic Reference Center (AGRC)*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_2.1-1_AlternativeComparision.mxd |

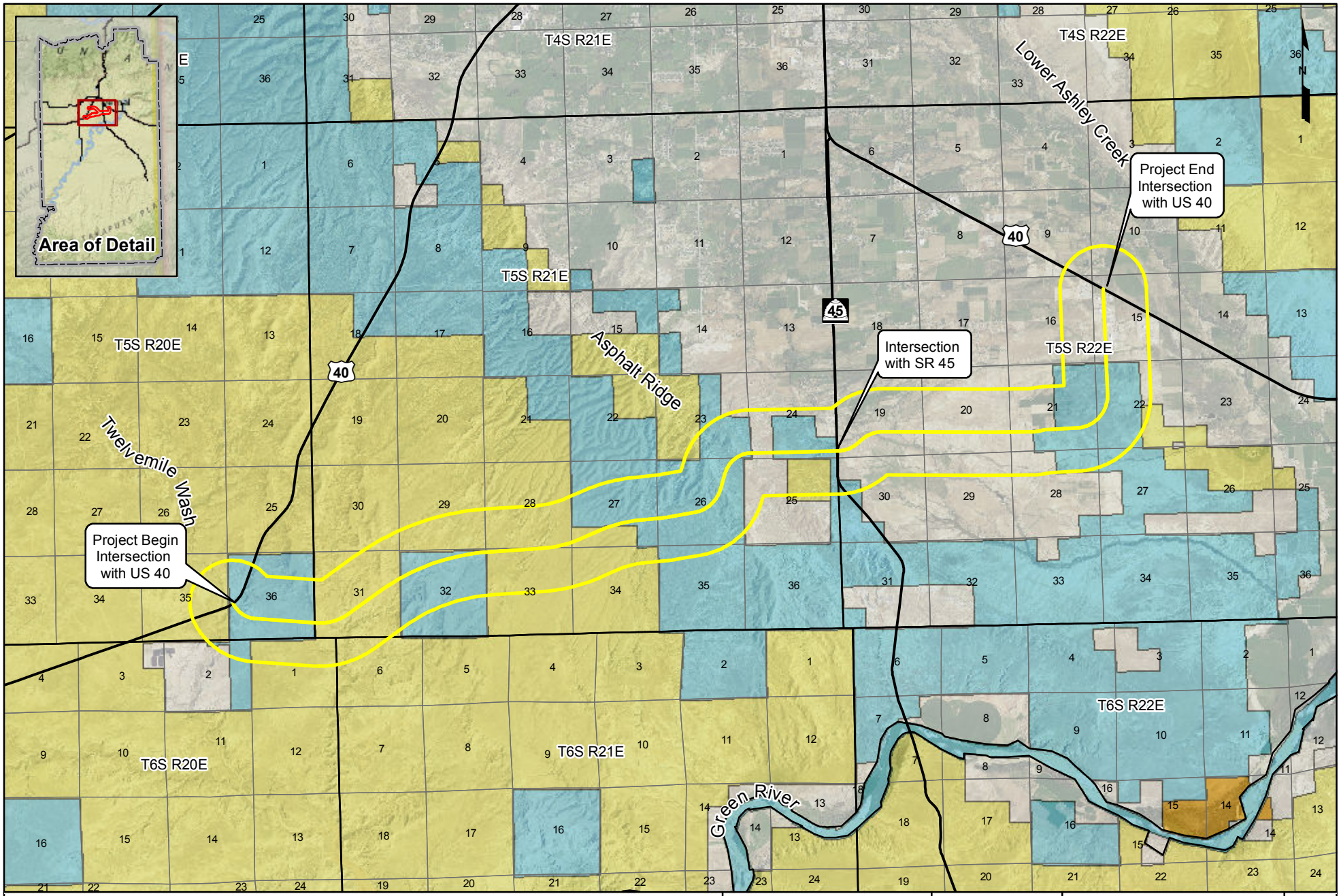
***Uintah County***

Ashley Valley Energy Route
Alternative Comparision
Uintah County, Utah

FIGURE

**2.1-1**

*This page intentionally left blank.*




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- 1/2-mile Buffer from Centerline
- Alternative A - Proposed Action Centerline
- Roads
- Township/Range
- Section

**Land Ownership**

- Federal
- Private
- State
- Tribal

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 5/14/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_2.2-1_ProposedAction.mxd |

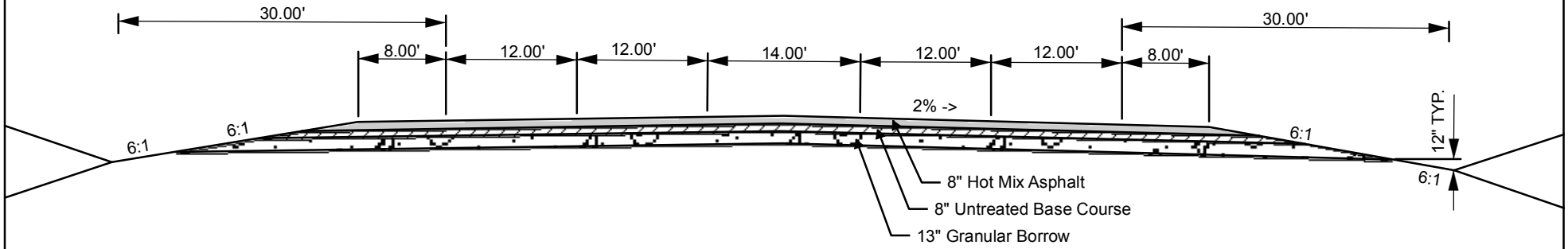
***Uintah County***

Ashley Valley Energy Route
Alternative A - Proposed Action
Uintah County, Utah

FIGURE

**2.2-1**

*This page intentionally left blank.*




# Typical Section No. 1

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 5/19/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_2.2-2_RoadSection.mxd |

***Uintah County***

Ashley Valley Energy Route
Typical Road Section
Uintah County, Utah

FIGURE
**2.2-2**

*This page intentionally left blank.*

### 2.2.2 Road Construction

Construction activities would begin upon receipt of all required permits and authorizations and would be dependent on onsite soil conditions. The proposed project is anticipated to be constructed in two construction seasons. However, the anticipated construction period may be extended depending on the length of winter shut downs (i.e., field conditions affecting temperature and/or soil conditions). There may also be additional timing constraints due to the presence of sensitive environmental resources, or other timing constraints imposed by the surface landowner.

Prior to beginning construction activities, the final road alignment and the construction easements would be staked or flagged. Portions of the corridor involved in construction activities would be cleared of existing vegetation. Vegetation removed as part of the construction would be disposed of off-site or per the direction of the appropriate surface landowner. Drainage crossings, cut and fill areas, and road shoulders would be constructed and/or installed as needed per the final designs. Surface material would then be moved and hauled to produce the designed roadway finished subgrade, including the correct grade and width. Once the subgrade is complete, the granular borrow and untreated base course would be put into place and compacted. The roadway asphalt surface would then be placed on the roadway.

Finishing work would include painting traffic lines on the asphalt surface, installing appropriate signage per AASHTO and UDOT standards, retaining walls, guard rails, and appropriate informational signs.

The contractor working on the proposed project would be required to be bonded. Inspection of the project would be done throughout the construction of the project. Surface landowner contacts would be established prior to starting construction and those contacts would be involved as agreed upon throughout the various phases of the project.

### 2.2.3 Support Resources

#### 2.2.3.1 Material

Approximately 469,000 tons of granular borrow, 278,000 tons of untreated coarse base, and 278,000 tons of hot mix asphalt would be transported into the Project Area using semi-trucks with trailers. The road base material would be obtained from local privately owned and operated gravel facilities, on-site rock-crushing facilities, or from rock-crushing facilities located on privately owned or SITLA-administered lands. Hot mix asphalt would be obtained from local sources. Approximately 800,000 cubic yards of excavation would be required to construct the roadway. Excess excavated material would be placed along the roadway to further compact the fill areas. Additional fill material, if needed would be obtained off-site or along the proposed roadway by flattening or widening cut slopes.

#### 2.2.3.2 Equipment

Excavation and fill work for the proposed roadway would be done with off-road earth moving equipment including rock trucks and scrapers. Roadway preparation and construction to subgrade would be completed using graders, dozers, track hoes and compacters. Road base and hot mix asphalt would be transported into the Project Area using semi-trucks with trailers. Hot mix asphalt would be applied using belly-dumps and hot mix spreaders and compacters.

#### 2.2.3.3 Work Force

It is anticipated that an average of 40 construction personnel could be present at the proposed project at any given time. This number would increase and decrease during various stages of construction. In addition to construction personnel, there would be full-time inspectors, survey crews, and material testers throughout the duration of the project. This EA assumes each person would have a vehicle.

#### 2.2.3.4 Access and Staging Areas

Existing dirt and paved roadways would provide access to the Project Area. Temporary staging areas would be limited to and located within the 300-foot-wide ROW corridor.

### 2.2.4 Operation and Maintenance

The proposed roadway would be open year-round with no seasonal closures. The County would control access to the road. The County would conduct regularly scheduled annual inspections of the proposed road and would maintain the roadway, including snow removal, as part of its annual maintenance program. Maintenance would include chip seal or hot mix asphalt overlays, restriping, side-slope grading, and culvert cleaning as required. Any needed maintenance would normally be conducted during daylight hours in the summer and winter months, unless conditions dictate otherwise.

### 2.2.5 Road Termination

The roadway would be used indefinitely. In the event the County determines the roadway is no longer needed, the roadway would be obliterated and re-graded to blend in with the surrounding area and all disturbed areas would be reclaimed as described in **Appendix B**. It is anticipated that no structures would be left in place.

### 2.2.6 Water Supply

Water would be needed for compaction of the road base material. During hot, dry and/or windy conditions, water or other approved dust suppressants would be used at construction sites and along the roadway (until final paving and sealing), as determined appropriate by the Authorized Officer (AO) or private landowner. It is estimated that 110,302,000 gallons (or 339 acre-feet) of water would be needed for this proposed project. All water needed for the proposed project would be supplied by the contractor and would be hauled by a licensed trucking firm. This EA assumes all water needed for the proposed project would be obtained from existing source(s) approved for commercial/industrial use.

### 2.2.7 Reclamation

Reclamation would be completed as set out in the Reclamation and Weed Control Plan (refer to **Appendix B**).

### 2.2.8 Applicant-Committed Environmental Protection Measures

In addition to the standard operating procedures (SOPs) set out in AASHTO and UDOT road construction specifications, the County, its employees, contractors and subcontractors would adhere to the following ACEPMs to further reduce the potential environmental impacts of the proposed roadway within the requested ROW. These ACEPMs would apply to BLM-administered lands within the Project Area, unless agreed to by the involved surface landowner or appropriate surface management agency (SMA).

#### 2.2.8.1 All Resource Values

The contractor working on the proposed project would be required to be bonded. Inspection of the project would be done throughout the construction of the project. BLM and resource contacts would be established prior to starting construction and those contacts would be involved as agreed upon throughout various phases of the project.

#### 2.2.8.2 Air Quality and Greenhouse Gases

There would be a temporary increase in fugitive dust during the construction and grading operations of the proposed roadway. Dust suppression during these activities would be performed, likely using water, during hot, windy and/or dry conditions and would depend on the moisture content of soils where such activities are taking place.

There would be a temporary increase in construction equipment exhaust during the construction and grading operations of the proposed roadway.

#### 2.2.8.3 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns

Following a data search of the entire Project Area, Class III cultural resources field inventories were conducted for the proposed alignment in 2013, 2014 and 2015 by Montgomery Archaeological Consultants Inc. (MOAC) (2015). The proposed route crosses the Highline Canal (Canal) east of Asphalt Ridge and a multi-component cultural site east of U.S. Highway 40. Both sites have been assessed as meeting the criteria for inclusion on the National Register of Historic Places (NRHP). At this time a bridge is planned for the canal crossing. However, final design of the canal crossing and construction near the multi-component site would avoid direct impacts to both sites. Final mitigation for this crossing would be determined during consultation with the involved surface landowner(s), the appropriate SMA, and the Utah State Historic Preservation Office (USHPO), as appropriate

It is acknowledged that portions of the final BLM ROW or any portion of the final alignment could be located outside the Class III survey area. As such, after construction designs are finalized and prior to initiating any surface-disturbing activities, a Class III cultural resource field inventory would be conducted for any portion of the final alignment not previously covered by a Class III cultural resources field inventory. If cultural resources eligible for listing to the NRHP are documented, appropriate avoidance measures and/or additional mitigation would be determined during consultation with the appropriate SMA, the involved private landowner(s) and the USHPO.

If cultural resources or human remains are uncovered during excavation activities, project activities would be suspended at the site and the appropriate SMA and the USHPO would be immediately contacted. Work at the site would cease until the findings can be evaluated and, if necessary, until a mitigation plan is approved by the SMA and the USHPO.

Prior to construction activity, employees, contractors and subcontactors would be informed about relevant federal regulations intended to protect historic and prehistoric archaeological sites. All personnel would be informed that collecting artifacts is a violation of federal law and that employees engaged in this activity would be subject to disciplinary action. If cultural resource law violations are discovered, the

offending employee would be subject to disciplinary action and the violations would be reported to the appropriate SMA and the USHPO for possible further action, including prosecution.

#### 2.2.8.4 Fuels/Fire Management

To protect and minimize the possibility of fires during construction, all equipment, including any welding trucks, would be equipped with fire extinguishers and spark arresters.

#### 2.2.8.5 Soils & Vegetation, Including Invasive Plants/Noxious Weeds, and BLM Sensitive Plant Species

- Road would be built to AASHTO 2006 and 2011 standards and UDOT 2012 Standard Specifications for Road and Bridge Construction.
- Side slopes would vary from 1:1 and 6:1 depending on the depth of the cut or fill and the type of existing material encountered.
- The maximum grade for the final road would be six percent and the maximum pitch of the final road would be six percent.
- Structures or pipes would be used as appropriate to address drainage issues. The size and type of drainage structures would be determined during final design. Retaining walls would be evaluated for use as the design progresses.
- It is anticipated there would be winter shut downs of construction activities due to the temperature or when muddy conditions exist outside the footprint or disturbance area of the project.
- Soil stabilization and rehabilitation would be addressed during the design phase and carried out during construction. Rehabilitation of disturbed areas would be done in accordance with SMA requirements, set out in the approved site-specific reclamation plan (refer to **Appendix B**), or as directed by the BLM, involved surface land owner, or appropriate SMA.
- In the event the roadway is abandoned, the roadway would be obliterated and re-graded to blend in with the surrounding area. The area would be seeded with a BLM-approved seed mixture.
- A pre-construction weed inventory was conducted by Kleinfelder, Inc. (Kleinfelder) (2014a) for the proposed alignment, and the report submitted to the BLM.
- In November 2014, the County moved a portion of the Proposed Action ROW approximately 1,300-feet north from its original location to accommodate private landowners and acquire SUAs. This changed the Project Area boundary, as well as several survey areas previously evaluated in site-specific research and field inventories. As such, after construction designs are finalized and prior to initiating any surface-disturbing activities, a pre-construction weed inventory would be conducted for any portion of the selected alternative not previously covered by site-specific research and field inventories. A supplemental weed inventory report would be submitted to the SMA.
- Identified noxious and invasive plant species within the Project Area would be treated and controlled during construction activities. Subsequent identification and treatment would be managed appropriately during maintenance of the ROW by the County, as part of its regular maintenance operations.

- As required, equipment and vehicles entering the Project Area from outside would be power washed to remove seeds and plant material.
- A special status plant species survey was conducted by Kleinfelder (2014b) for the proposed action, and the report submitted to the surface management agency.

In November 2014, the County moved a portion of the Proposed Action ROW approximately 1,300 feet north from its original location to accommodate private landowners and acquire SUAs. This changed the Project Area boundary, as well as several survey areas previously evaluated in site-specific research and field inventories. As such, after construction designs are finalized and prior to initiating any surface-disturbing activities, a pre-construction special status plant inventory would be conducted, per BLM inventory protocol, for any portion of the selected alternative not previously covered by site-specific research and field inventories. A supplemental inventory report would be submitted to the BLM. If special status plant species are documented, appropriate avoidance measures and/or additional mitigation would be determined during consultation with the BLM.

#### 2.2.8.6 Lands/Access

Appropriate easements, permits and authorizations would be secured from the County and SITLA for portions of the roadway crossing such properties.

#### 2.2.8.7 Livestock Grazing & Rangeland Health Standards

Any existing fences, cattle guards, gates, and drift fences that are damaged as a result of implementation of the proposed project would be repaired or replaced per direction of the involved surface landowner or appropriate SMA.

To protect and minimize the possibility of vehicle-livestock collisions on the roadway, the entire ROW would be fenced to the appropriate SMA specifications.

#### 2.2.8.8 Paleontology

A paleontological assessment was conducted by Uinta Paleontological Associates, Inc. (Uinta Paleo) (2014) for the proposed alignment, and the report submitted to the BLM.

In November 2014, the County moved a portion of the Proposed Action ROW approximately 1,300 feet north from its original location to accommodate private landowners and acquire SUAs. This changed the Project Area boundary, as well as several survey areas previously evaluated in site-specific research and field inventories. As such, after construction designs are finalized and prior to initiating any surface-disturbing activities, paleontological assessment would be conducted, per BLM protocol, for any portion of the selected alternative not previously covered by site-specific research and field inventories. If significant paleontological resources are documented, appropriate avoidance measures and/or additional mitigation would be determined during consultation with the SMA.

If paleontological resources are uncovered during excavation activities, such activities would be suspended at the site and the SMA would be immediately contacted. Work at the site would cease until a mitigation plan is approved by the BLM.

#### 2.2.8.9 Recreation

- The proposed roadway would bisect two existing mountain bike trails located on SITLA-administered lands. To minimize adverse impacts to these trails:
  - Final design of drainage crossings in close proximity to the existing trails would include the use of box culverts with an elevated ceiling that would accommodate the safe passage of mountain bikers and/or pedestrians under the Proposed Action ROW.
  - Funding not to exceed $87,000 would be committed to BLM's ongoing Little Mountain-LaPoint Mountain Bike Trail System.

#### 2.2.8.10 Waste

- All industrial wastes and toxic substances would be contained in a restricted area and disposed of at an off-site permitted disposal facility.
- Notice of any reportable spill or leakage would be immediately reported to the involved surface landowner or appropriate SMA. Verbal notice would be given as soon as possible, but within no more than 24 hours, and those verbal notices would be confirmed in writing within 72 hours of such occurrence.
- No oil, lubricant, or toxic substances would be intentionally drained onto the ground surface. Any contaminated soils would be collected and removed off location to a suitable location.

#### 2.2.8.11 Water Resources, Including Floodplains, Surface Water Quality, and Waters of the U.S.

- If springs are encountered they would be avoided if possible. If springs cannot be avoided during construction, the spring(s) would be protected, fenced, and repaired to pre-existing conditions at the direction of the SMA,.
- Construction activities would be in compliance with the terms and conditions of storm water permits required by the National and/or Utah Pollutant Discharge Elimination Systems, as appropriate.
- Surface disturbance and placement of staging areas, fueling and maintenance areas, would be avoided within 330 feet from the centerline of U.S. Geological Survey (USGS)-named drainages, unless no other practical alternative exists.
- No excess material (e.g., soil) would be stored within mapped 100-year floodplains of USGS-named drainages; all excess material would be relocated to appropriate locations outside of 100-year floodplains within the Project Area.
- Construction activities at perennial or USGS-named drainage crossings (e.g., installing culverts) would be timed to avoid high flow conditions. Construction that disturbs any flowing stream would utilize either a piped stream diversion or a cofferdam and pump to divert flow around the disturbed area.
- Culverts at drainage crossings would be designed and installed to pass a 100-year or greater storm event. On perennial and USGS-named intermittent streams, culverts would be designed to allow for passage of aquatic biota. Due to the likelihood for flash flooding in the Project Area, drainage crossings would be designed for the 100-year storm event.

- Natural drainage routes would be restored as part of interim reclamation, if appropriate. Erosion control devices (i.e., riprap, weed-free straw bales, plant woody vegetation, etc.) would be constructed at culvert outlets, or as directed by the involved surface landowner or appropriate SMA.
- Construction methods would provide for eliminating or minimizing discharges of turbidity, sediment, organic matter, or toxic chemicals. Settling basins or cofferdams may be utilized for this purpose.
- Should final design identify the need for stream alteration permits, per Section 404 of the Clean Water Act, such permits would be acquired from the USACE and Utah State Engineers prior to initiation of construction in those areas.

#### 2.2.8.12 Wildlife, Including Migratory Birds, Raptors; Non-USFWS Designated Species; Federally Listed, Threatened, Endangered, Proposed or Candidate Species

The BLM (2008a) Vernal Field Office *Best Management Practices for Raptors and Their Associated Habitats in Utah* and approved BLM protocols would be followed and surveys conducted prior to beginning any surface-disturbing activities. If occupied raptor nests are found, construction would not occur within species-specific buffer radii during the species-specific active nesting season as outlined in the guidelines, unless topographic or vegetative characteristics obscure visual and auditory impacts from the nest. Surveys conducted on private surface land would only occur at the discretion of the involved surface landowner.

In order to reduce the potential for adverse impact to big game populations, construction activity within mapped crucial habitat for big game species (i.e., pronghorn antelope and/or mule deer [*Odocoileus hemionus*]), as delineated by UDWR, would be determined by the appropriate SMA after coordination with the applicant and prior to commencement of construction.

A raptor nest inventory for the Proposed Action ROW was conducted by Kleinfelder (2014b), and the report submitted to the BLM.

In November 2014, the County moved a portion of the Proposed Action approximately 1,300-feet north from its original location to accommodate private landowners and acquire SUAs. This changed the Project Area boundary, as well as several survey areas previously evaluated in site-specific research and field inventories. As such, after construction designs are finalized and prior to initiating any surface-disturbing activities, a current raptor survey would be conducted for any portion of the selected alternative not previously covered by site-specific research and field inventories. If raptor nests are documented, appropriate avoidance measures and/or additional mitigation would be determined during consultation with the BLM.

To minimize direct and indirect impacts to GRSG habitat, funding, not to exceed $26,000, would be committed to enhance sage-grouse habitat in the County.

#### 2.2.8.13 Public Health and Safety

Occupational Safety and Health Administration (OSHA) and UDOT safety requirements for roadway construction would be followed. A safety officer would be on site at all times during construction. Weekly safety meetings would be held.

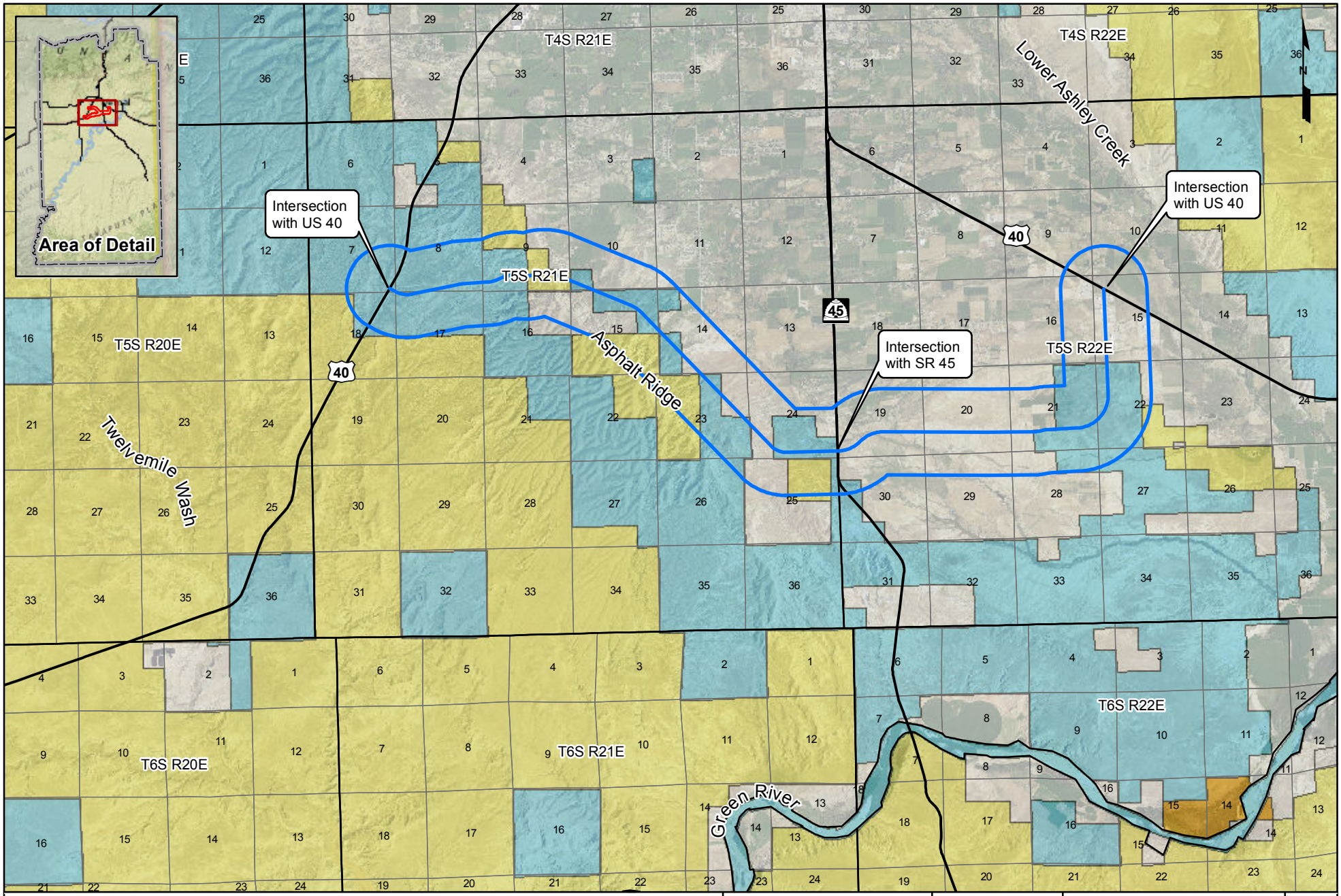
As determined during the final design of the roadway traffic control, warning and directional signs would be installed to alert and advise public traffic traveling in proximity to the Project Area.

## 2.3 ALTERNATIVE B – DOG VALLEY ROUTE ALTERNATIVE

In 2008, the Uintah Transportation Special Service District (UTSSD) originally identified the Dog Valley 11 route as a possibility for the project. However, the route did not meet the UTSSD's established planning criteria, and so the Dog Valley 11 route was dropped from further consideration. Specifically, the UTSSD determined the Dog Valley 11 route would be too costly and could result in unwanted changes to residents living along Vernal City Street 1500 West. As a result of BLM's 2014 scoping exercise for this EA, public commenters and BLM specialists identified the Dog Valley 11 route as being potentially responsive to the BLM's need despite its limitations. Although the BLM respects the County's findings regarding the Dog Valley 11 route, BLM has determined the Dog Valley Route Alternative (Dog Valley Route Alternative; previously known as the Dog Valley 11 route) should be carried forward for detailed analysis in this EA, as it avoids the McCoy Flats Non-Motorized Trail Complex bike trails and would minimize adverse impacts to GRSG.

It should be noted that in November 2014, the County moved a portion of the Proposed Action ROW approximately 1,300 feet north from its original location to accommodate private landowners and acquire SUAs. The BLM subsequently made the same change to the same portion of the Dog Valley Route Alternative ROW in order to make the alternative feasible.

The Dog Valley Route Alternative would involve the following lands: Township 5 South, Range 21 East, Sections 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 22, 23, 24, 25, 26; and, Township 5 South, Range 22 East, Sections 9, 10, 15, 16, 19, 20, 21, 22, 27, 28, 29, 30, SLB&M, all in Uintah County (refer to **Figure 2.3-1**). The alternative road would be approximately 10.7 miles in length, of which approximately 10.4 miles would involve new road construction, and approximately 0.3 miles would involve needed upgrades to the existing CR 4625 East. **Table 2.3-1** summarizes the surface ownership within the Dog Valley Route Alternative.




0 0.5 1 2 Miles

**Legend**

- 1/2-mile Buffer from Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Roads
- Township/Range
- Section

**Land Ownership**

- Federal
- Private
- State
- Tribal

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 6/9/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_2.3-1_AlternativeB.mxd |

***Uintah County***

Ashley Valley Energy Route
Alternative B - Dog Valley Route
Uintah County, Utah

FIGURE

**2.3-1**

*This page intentionally left blank.*

**Table 2.3-1: Surface Ownership for the Dog Valley Route Alternative**

| Surface Ownership | Length (in miles) | Length (in feet) | Acres* | Percent of Area |
|---|---|---|---|---|
| New Construction | | | | |
| BLM | 0.5 | 2,640 | 18 | 5 |
| SITLA | 5.7 | 30,096 | 207 | 54 |
| Private | 4.2 | 22,176 | 153 | 38 |
| *Subtotal* | *10.4* | *54,192* | *378* | *98* |
| Upgrade | | | | |
| BLM | --- | --- | --- | --- |
| SITLA | 0.2 | 1,056 | 7 | 1 |
| Private | 0.1 | 528 | 4 | 1 |
| *Subtotal* | *0.3* | *1,584* | *11* | *2* |
| **TOTAL** | **10.7** | **56,496** | **389** | **100** |

Source: GIS spatial analysis and calculations.
*Acreage calculated using a total ROW width of 300 feet. Length x width (in feet) / 43,560 $ft^2$/ac.

The road design features, road construction, support resources operation and maintenance, road termination, and water supply elements of the Dog Valley Route Alternative would be very similar to those stated for the Proposed Action (refer to **Sections 2.2.1 through 2.2.6**). Like the Proposed Action, after construction designs are finalized and prior to initiating any surface-disturbing activities, the required biological resource field inventories would be conducted, and reports properly filed. Should any protected and/or sensitive resources be documented, appropriate avoidance measures and/or additional mitigation would be determined during consultation with the BLM and the appropriate SMA. Reclamation of this alternative would be the same as set out in **Appendix B**. Minor variations would be made based on the final design for the alternative. With the exception of **Section 2.2.8.9** and **Section 2.2.8.12** (offsite mitigation for GRSG), ACEPMs set out in the Proposed Action (refer to **Section 2.2.8**) would be carried forward into the Dog Valley Route Alternative, as appropriate. Should the Dog Valley Route Alternative be selected, the mitigation actions set out in **Section 2.2.8.9** (Recreation) and **Section 2.2.8.12** (offsite mitigation for GSSG) would not be applied and thus would not be included in this Alternative.

### 2.3.1 Additional Environmental Protection Measures for Greater Sage-grouse

BLM-administered public lands are managed in accordance with approved land use plans. BLM lands involved with this project and all alternatives are managed in accordance with the BLM (2008a) VFO RMP/ROD. However, the BLM VFO is currently in the process of amending its RMP/ROD to provide additional and clarified management for the GRSG, a species currently being considered by the USFWS for listing under the Endangered Species Act of 1973 (ESA). To date, BLM has not approved the GRSG amendment for the RMP, but per interim guidance documented in Washington Office Instruction Memorandum 2012-048 BLM is reviewing interim projects to see if proposed projects involving GRSG habitat could include additional environmental protection measures to reduce impacts to the species.

The following additional environmental protection measures are consistent with the preferred alternative in BLM's ongoing process to amend its RMP, and if selected, would not result in likely conflicts with the final approved amendment. As such, the following additional environmental protection measures would be applied under Alternative B to further minimize impacts to the GRSG and its habitat:

- Except for those required for human safety (i.e., road signs), no permanent tall structures (any man-made structure that would persist through the breeding season and would have the potential to disrupt lekking or nesting birds by creating predator perching/nesting opportunities would be allowed along the roadway in occupied GRSG habitats.
- No construction would be allowed within occupied GRSG habitats during the corresponding seasonal use period:
    - In winter habitat from November 15 to March 15.

      Exceptions to this seasonal restriction could be granted by the Authorized Officer under the following conditions:

        - If the project plan and NEPA document demonstrate the project would not impair the function of seasonal habitat, life-history, or behavioral needs of GRSG;
        - If the potential short-term impacts from the action are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedlings, juniper reduction).

      Additionally, the Authorized Officer may modify this seasonal restriction under the following conditions:

        - If portions of the area do not include habitat (lacking the principle habitat components of GRSG habitat) or are outside the current defined area, as determined by the BLM in discussion with the State of Utah, and the indirect impacts would be mitigated;
        - If documented location variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect when GRSG use a given area, and the proposed activity will not take place beyond the season being excepted.

Application of the above restrictions and meeting objectives within Preliminary General Management Areas may be waived by the Authorized Officer if off-site mitigation is successfully completed in Preliminary Priority Management Areas, following discussion with BLM and the State of Utah. Even in situations where use restrictions are waived in Preliminary General Management Areas, to avoid direct disturbance and/or mortality of birds, disturbances would not be approved during the sensitive seasons.

As compensatory mitigation, the County or its agent would contribute $16,000 to the Utah Division of Wildlife Resources (UDWR) for disturbance to approximately 21 acres of occupied GRSG habitat. The provided funds would be useable only for mitigation projects to benefit GRSG. The mitigation projects would be carried out by UDWR who would account for use of the funds.

Because the Dog Valley Route is located outside of an avoidance area (i.e., in a Preliminary General Management Area, within one mile of an occupied lek), other seasonal restrictions during the breeding, nesting, and brood-rearing seasons, and noise restrictions during the breeding season were not included as additional environmental protection measures for Alternative B. Should a lek become established within 1

mile of the Dog Valley Route ROW, additional environmental protection measures discussed in **Section 2.4.1** would be carried forward as appropriate.

### 2.3.2 Additional Environmental Protection Measures for Mule Deer

BLM-administered public lands are managed in accordance with approved land use plans. BLM lands involved with this project and all alternatives are managed in accordance with the BLM (2008a) VFO RMP/ROD. As such, the following management decision would be applied under Alternative B to further minimize impacts to mule deer:

- In order to protect fawning mule deer, construction activities would not be allowed from May 15 through June 30 in UDWR-mapped crucial mule deer fawning habitat on BLM-administered lands, if mule deer are present.

## 2.4 ALTERNATIVE C – SAGE-GROUSE MITIGATION ALTERNATIVE

In March 2015, after a preliminary analysis of potential site-specific impacts to GRSG, the BLM re-routed a portion of the Proposed Action alignment roughly 0.5 mile north to minimize impacts to the sagebrush flat in Sections 27 and 28 in Township 5 South, Range 21 East.

The Sage-grouse Mitigation Alternative would involve the following lands: Township 5 South, Range 21 East, Sections 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 22, 23, 24, 25, 26; and, Township 5 South, Range 22 East, Sections 9, 10, 15, 16, 19, 20, 21, 22, 27, 28, 29, 30, SLB&M, all in Uintah County (refer to **Figure 2.4-1**). The alternative road would be approximately 12.6 miles in length, of which approximately 12.3 miles would involve new road construction, and approximately 0.3 miles would involve needed upgrades to the existing CR 4625 East. **Table 2.4-1** summarizes the surface ownership within the Sage-grouse Mitigation Alternative.

**Table 2.4-1: Surface Ownership for the Sage-grouse Mitigation Alternative**

| Surface Ownership | Length (in miles) | Length (in feet) | Acres* | Percent of Area |
|---|---|---|---|---|
| New Construction | | | | |
| BLM | 2.5 | 13,029 | 90 | 20 |
| SITLA | 6.5 | 34,524 | 238 | 52 |
| Private | 3.3 | 17,553 | 121 | 26 |
| *Subtotal* | *12.3* | *65,106* | *449* | *98* |
| Upgrade | | | | |
| BLM | --- | --- | --- | --- |
| SITLA | 0.2 | 1,056 | 7 | 1 |
| Private | 0.1 | 528 | 4 | 1 |
| *Subtotal* | *0.3* | *1,584* | *11* | *2* |
| **TOTAL** | **12.6** | **66,690** | **460** | **100** |

Source: GIS spatial analysis and calculations.
*Acreage calculated using a total ROW width of 300 feet. Length x width (in feet) / 43,560 $ft^2$/ac.

The road design features, road construction, support resources operation and maintenance, road termination, and water supply elements of the Sage-grouse Mitigation Alternative would be very similar to those stated for the Proposed Action (refer to **Sections 2.2.1 through 2.2.6**). Like the Proposed

Action, after construction designs are finalized and prior to initiating any surface-disturbing activities, the required biological resource field inventories would be conducted, and reports properly filed. Should any protected and/or sensitive resources be documented, appropriate avoidance measures and/or additional mitigation would be determined during consultation with the BLM and the appropriate SMA. Reclamation of this alternative would be the same as set out in **Appendix B**. Minor variations would be made based on the final design for the alternative. With the exception of **Section 2.2.8.9** (Recreation) and **Section 2.2.8.12** (offsite mitigation for GRSG), ACEPMs set out in the Proposed Action (refer to **Section 2.2.8**) would be carried forward into the Sage-grouse Mitigation Alternative, as appropriate. Should the Sage-grouse Mitigation Alternative be selected, the mitigation actions set out in **Section 2.2.8.9** and **Section 2.2.8.12** (offsite mitigation for GSSG) would not be applied and thus would not be included in this Alternative.

### 2.4.1 Additional Environmental Mitigation Measures for Greater Sage-grouse

BLM-administered public lands are managed in accordance with approved land use plans. BLM lands involved with this project and all alternatives are managed in accordance with the BLM (2008a) VFO RMP/ROD. However, the BLM VFO is currently in the process of amending its RMP/ROD to provide additional and clarified management for the GRSG, a species currently being considered by the USFWS for listing under the ESA. To date, BLM has not approved the GRSG amendment for the RMP, but per interim guidance documented in Washington Office Instruction Memorandum 2012-048 BLM is reviewing interim projects to see if proposed projects involving GRSG habitat could include additional environmental protection measures to reduce impacts to the species.

The following additional environmental mitigation measures would be applied under Alternative C to minimize impacts to the GRSG and its habitat:

- Noise from construction would not exceed 10 decibels above ambient sound levels at occupied leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season.
- Except for those required for human safety (i.e., road signs), no permanent tall structures (any man-made structure that would persist through the breeding season and would have the potential to disrupt lekking or nesting birds by creating predator perching/nesting opportunities) would be allowed along the roadway in occupied GRSG habitats.
- No construction will be allowed within occupied GRSG habitats during the corresponding seasonal use periods:
    - In brood-rearing habitat from April 15 to July 15.
    - In winter habitat from November 15 to March 15.

    Exceptions to the seasonal restrictions could be granted by the Authorized Officer under the following conditions:

        - If surveys determine that the lek is not active that year (based on UDWR lek survey protocol), and the proposed activity will not take place beyond the season being excepted;
        - If surveys determine that the lek is no longer occupied and the proposed activity will not take place beyond the season being excepted;

- If the project plan and NEPA document demonstrate the project would not impair the function of seasonal habitat, life-history, or behavioral needs of GRSG;
- If the potential short-term impacts from the action are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedlings, juniper reduction).

Additionally, the Authorized Officer may modify the seasonal restrictions under the following conditions:

- If portions of the area do not include habitat (lacking the principle habitat components of GRSG habitat) or are outside the current defined area, as determined by the BLM in discussion with the State of Utah, and the indirect impacts would be mitigated;
- If documented location variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect when GRSG use a given area, and the proposed activity will not take place beyond the season being excepted.

Application of the above restrictions and meeting objectives within Preliminary General Management Areas may be waived by the Authorized Officer if off-site mitigation is successfully completed in Preliminary Priority Management Areas, following discussion with BLM and the State of Utah. Even in situations where use restrictions are waived in Preliminary General Management Areas, to avoid direct disturbance and/or mortality of birds, disturbances would not be approved during the sensitive seasons.

As compensatory mitigation, the County or its agent would contribute $50,000 to the UDWR for disturbance to approximately 66 acres of occupied GRSG habitat. The provided funds would be useable only for mitigation projects to benefit GRSG. The mitigation projects would be carried out by UDWR who would account for use of the funds.

### 2.4.2 Additional Environmental Mitigation Measures for Recreation

Alternative C would bisect four existing mountain bike trails located on BLM-administered lands and SITLA-administered lands. To minimize adverse impacts to these trails:

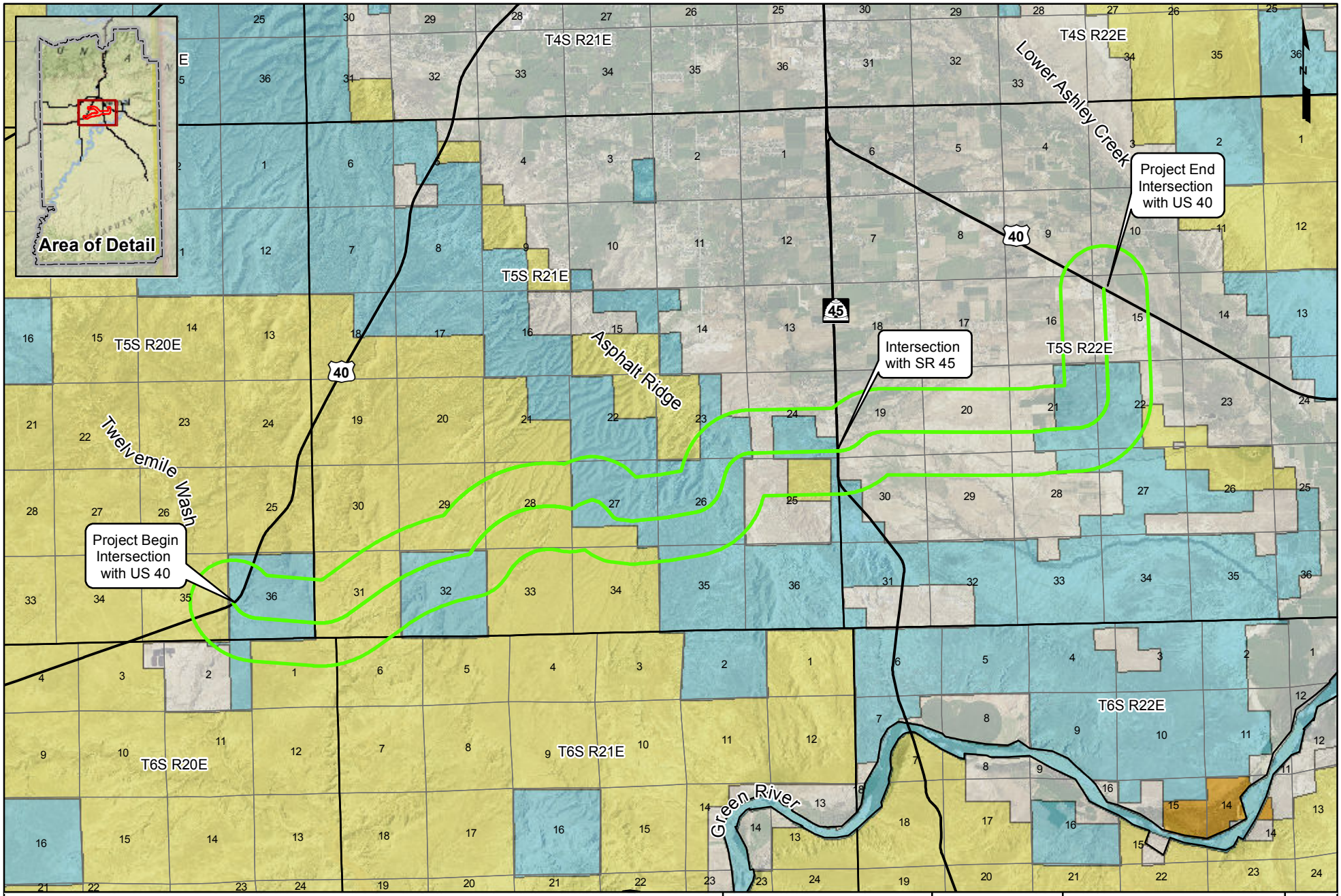
- Final design of drainage crossings in close proximity to the existing trails would include the use of box culverts with an elevated ceiling that would accommodate the safe passage of mountain bikers and/or pedestrians under the Alternative C ROW.

### 2.4.3 Additional Environmental Mitigation Measures for Pronghorn Antelope

The following protective measure would be applied under Alternative C to further minimize impacts to pronghorn antelope:

- In order to protect pronghorn antelope by deterring their presence near the roadway, the County or its agent would contribute $10,000 to relocate the wildlife guzzler away from the proposed centerline. The targeted relocation area (UTM location NAD 83 0622503 / 4463847) would likely

be near the McCoy Flats area and south of the Project Area. Site-specific NEPA and clearance surveys for this guzzler relocation project would be handled separately from this EA by the BLM.




0 0.5 1 2 Miles

**Legend**

- 1/2-mile Buffer from Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section

**Land Ownership**

- Federal
- Private
- State
- Tribal

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_2.4-1_AlternativeC.mxd |

***Uintah County***

Ashley Valley Energy Route
Alternative C - Sage-grouse Mitigation
Uintah County, Utah

FIGURE
**2.4-1**

*This page intentionally left blank.*

## 2.5 ALTERNATIVE D - NO ACTION ALTERNATIVE

The No Action Alternative would be to deny the ROW application as proposed, thus BLM would not approve the Title V ROW grant to the County for the Proposed Action or Dog Valley Route Alternative. Lacking BLM authorization, those portions of the Proposed Action, Dog Valley Route Alternative, or Alternative C involving BLM land would not be constructed. The current roadway system, U.S. Highway 40, would remain the only available route for heavy commercial/industrial vehicles associated with oil and gas operations.

## 2.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FUTHER ASSESSMENT

In November 2006, the UTSSD began the Alternate Truck Route Study to evaluate the need for a new alternate truck route for U.S. Highway 40 near Vernal, Utah. This initial study revealed strong community support for an alternate truck route. In May 2007, a traffic analysis was completed by Korve Engineering and in October 2007, 13 preliminary routes were identified (Korve Engineering 2007). These routes included existing County Roads 2500 South, 3500 South, 4000 South, 4500 South, 5000 South, 5500 South, 6500 South and 8500 South, with three different starting locations on U.S. Highway 40 southwest of Vernal, and multiple termination points on U.S. Highway 40 east of Vernal. From these preliminary routes, three alternative routes were presented to the public for review and comment. In May 2008, Uintah County determined that 12 of the 13 preliminary routes were unacceptable based on the following planning criteria: comments from the public, design limitations, and economic constraints. **Appendix C** presents these concerns and other issues identified for all 13 preliminary routes during the planning process.

BLM reviewed the above findings. BLM determinations regarding whether or not the routes should be carried forward in the EA for detailed analysis can be found in **Appendix C**. In general, the BLM has dismissed all routes from detailed analysis except: B11-Dog Valley (6500 South) which has been carried forward for detailed analysis in this EA as the Dog Valley Route Alternative; and Route C12-McCoy Flat (8500 South) which was carried forward in this EA as the county's proposed action.

*This page intentionally left blank.*

# 3.0 AFFECTED ENVIRONMENT

## 3.1 INTRODUCTION

This chapter describes the existing human, natural and physical environment in the Project Area that would be affected by the Proposed Action, the Dog Valley Route Alternative, the Sage-grouse Mitigation Alternative, and the No Action Alternative. For NEPA, the human environment is the relationship of people to the natural and physical environment. Only those resources identified as issues of concern during the scoping period are described below. Other resources were also considered, but dismissed from further assessment because they would have no measurable effect on the resource or they are not present in the Project Area (refer to **Section 1.6**). The information was compiled from published sources, unpublished data, communication with government agencies, and field studies conducted in the area.

## 3.2 CULTURAL, INCLUDING ARCHAEOLOGICAL RESOURCES AND NATIVE AMERICAN RELIGIOUS CONCERNS

Cultural resources are the products of human history in the form of material items produced by human workmanship or use, and elements of the natural environment that were altered by human activities. Cultural resources are sensitive, non-renewable resources that can be irreversibly damaged or destroyed by surface-disturbing activities such as road constructions. To preserve such resources, archaeological sites and artifacts are protected by numerous federal and state regulations. Specific to the Proposed Action, Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies consider the effects of their undertakings on significant historic properties and to mitigate those effects determined to be adverse (36 CFR 800). As defined in 36 CFR 800, adverse effects to significant historic properties include physical alteration, damage or destruction, alteration of the character of the setting of a property that contributes to its significance, or neglect that results in deterioration or destruction. Section 106 establishes a four-step review process through which cultural resources are given consideration during the evaluation of proposed undertakings. Per Section 106, BLM has initiated consultation with the USHPO on the proposed project.

The BLM's RMP of 2008 developed zones of high and low probability for cultural resource site locations within the VFO (BLM 2008c). The Project Area meets the BLM's matrix for low probability for cultural resource site locations. This conclusion is based on the specific physical characteristics of the Project Area that include being greater than one kilometer of permanent water, lacking in areas of sufficient juniper vegetation, and being outside of a historical mining district.

In 2013 and 2015, MOAC conducted a Class I literature review of the AVER study area. The literature search study area consisted of a one-half mile wide buffer from the centerline of the proposed route and the approximate centerlines for the two alternate routes considered in this EA. In addition to the USHPO data files, historic maps and historic aerial photographs were reviewed. This research revealed 32 previous cultural resources inventories have been completed since 1980 (MOAC 2015). Several historic sites, such as the McCoy Flat corral, were determined to be outside the study area and Area of Potential Effect of the project (MOAC 2015). The results of the literature search revealed a total of 24 sites in the study area for the proposed route; five sites associated with Alternative B (also associated with the proposed route); and 25 sites in the study area for Alternative C (24 sites associated with the proposed route and one additional historic site) (MOAC 2015).

**Table 3.2-1: Cultural Resource Sites within the AVER Project Area**

| Site Type | Proposed Route | Alternative B – Dog Valley Route | Alternative C – Sage Grouse Protection |
|---|---|---|---|
| Prehistoric | 4 | 1 | 4 |
| Historic | 19 | 4 | 20 |
| Single Multi-Component Site (includes a prehistoric lithic scatter and a single historic trash scatter) | 1 | --- | 1 |

Source: MOAC 2015

Subsequently MOAC conducted cultural resource field inventories of the proposed AVER route between November 2013 and May 2015. The surveyed area for the proposed route involved a 600-foot wide corridor that extended the length of the proposed route. An intensive pedestrian survey was conducted in this corridor by the archaeologist walking parallel transects spaced no more than 33 feet apart. Ground visibility was reported as being generally good. A total of approximately 1,319 acres was inventoried, 253 acres on BLM-administered and, 582 acres on SITLA land, and 484 acres on private land (MOAC 2015). The field inventory resulted in the location of four previously documented sites, of which a new segment of the Highline Canal was recorded, and 16 new sites all associated with the proposed route (MOAC 2015).

**Table 3.2-2: Results of Cultural Resources Field Inventory for the Proposed AVER ROW**

| Site Type | Number of Sites | Recommended NRHP Eligibility | Eligibility Criteria* |
|---|---|---|---|
| Old Highway 40, or the Victory Highway | 1 | Eligible | A, C and D |
| Highline Canal | 1 | Eligible | A |
| Canal | 1 | Not eligible | --- |
| Trash Scatter | 8 | Not eligible | --- |
| Multi-component Artifact Scatter (includes both a prehistoric and a historic scatter) | 1 | Eligible | D |
| Survey Marker. | 1 | Not eligible | --- |
| Utility Line | 2 | Not eligible | --- |
| Rock Wall | 1 | Not eligible | --- |
| Temporary/Sheep Herder Camp | 1 | Not eligible | --- |
| Lithic Scatter | 1 | Not eligible | --- |
| Cairn | 1 | Not eligible | --- |
| Inscription Site | 1 | Not eligible | --- |

Source: MOAC 2015
*Definitions of eligibility criteria for evaluation of significance and procedures for nominating cultural resources to the NRHP follow below.

Three recorded cultural resource sites meet the criteria for listing on the National Register of Historic Places (NRHP) and are assessed as eligible to the NRHP (Table 3.2-2). The national register criteria for

evaluation of significance and procedures for nominating cultural resources to the NRHP are outlined in 36 CFR 60.4 as follows:

- Eligibility Criteria A – That are associated with events that have made a significant contribution to the broad patterns of American history; or
- Eligibility Criteria B – That are associated with the lives of persons significant to American past; or
- Eligibility Criteria C – That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Eligibility Criteria D – That yielded, or may be likely to yield, information important in prehistory or history.

The BLM is required to consult with Native American Tribes concerning the identification of cultural values, religious beliefs, and traditional practices of Native American people that may be affected by actions on BLM-administered lands. Consultation includes the identification of places of traditional cultural importance to Native American Tribes or that may be considered sacred to particular Native American Tribes or individuals. The NHPA was amended in 1992 to explicitly allow that "…properties of traditional religious and cultural importance to an Indian Tribe…may be determined to be eligible for inclusion on the NRHP." Per existing laws, as amended, and subsequent regulations and agency direction BLM initiated government-to-government consultation for the Proposed Action by sending letters to the following Tribal groups: the Ute Indian Tribe, the Ute Mountain Ute, the Navajo Nation, the Hopi, the Zia Pueblo, the Laguna Pueblo, the Pueblo of Jemez, the Santa Clara Pueblo, the Goshute, the White Mesa Ute, the Northwest Band of Shoshone, the Southern Ute, and the Eastern Shoshone.

## 3.3 PRIME AND UNIQUE FARMLANDS

The Farmland Protection and Policy Act of 1981 (FPPA) (7 United States Code [U.S.C.] 1201) requires federal actions minimize the loss of prime and unique farmlands to non-agricultural uses. As defined by the FPPA, prime farmlands have the best combination of physical and chemical characteristics for producing high yields of food, feed, forage, fiber and oilseed crops, and are available for these uses. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply (e.g., irrigation) and a sufficiently long growing season are required (U.S. Department of Agriculture's Natural Resources Conservation Service [USDA-NRCS] 2003). A unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops (e.g., citrus, tree nuts, cranberries and vegetables, etc.), and has the special combination of soil quality, location, growing season and moisture needed to economically produce sustained high quality or high yields of specific crops (USDA-NRCS 2003). No unique farmlands are identified for Uintah County. The Project Area includes 1,572 acres of lands, meeting the criteria for prime farmlands, if irrigated (USDA-NRCS 2014). Currently, these lands are not irrigated.

Farmlands in Uintah County are used for growing field crops, primarily alfalfa or alfalfa-grass hay. Farmers/ranchers grow hay for personal use and sale to buyers in the Uinta Basin (basin) and for export

out of state. In 2012, 23,200 acres were harvested for hay in Uintah County (USDA-NASS 2014). The Project Area includes 3,920 acres of private land, approximately 35 percent (or 1,372 acres) of which are currently used to grow alfalfa or alfalfa-grass hay and as pasturage. This land has historically been irrigated by the Highline Canal via overland flow or overhead sprinkler systems. The Project Area also includes approximately 1,574 acres of prime farmlands, if irrigated.

## 3.4 GEOLOGY, INCLUDING MINERAL RESOURCES AND ENERGY PRODUCTION

### 3.4.1 Geology

As geology relates to numerous elements of the natural and physical environment of the Project Area, including soils, water, vegetation, paleontology and supports several elements of the human environment, including mineral and energy exploration and development, livestock grazing, etc., geology is briefly discussed in this EA to provide background information on the existing environment. Because no issues specifically relating to geology were identified on the IDT checklist (**Appendix A**) or during the scoping exercise for this EA, geology is not carried forward for further discussion or assessments in this EA.

The basin is located in the northern edge of the Colorado Plateau physiographic province (USDA-NRCS 2003). The basin consists of plateaus, mesas, canyons, gently sloping pediments, linear cliffs, and badlands that result from differential erosion of relatively soft, predominantly Tertiary age sedimentary rocks. The Project Area typifies the central basin's relatively flat terrain with strongly dissected badlands; gently southwest-sloping pediment surfaces or benches. Asphalt Ridge, an atypical northwest-southeast running ridge of layered sedimentary rocks, separates Ashley Valley, including the cities of Vernal and Naples, from the basin.

The Uinta Mountains section of the Middle Rocky Mountain province is formed almost entirely in layered sedimentary rocks ranging in age from Precambrian through Paleozoic and Mesozoic. Sediments within the Project Area are typical of the basin, consisting of alluvium, colluvium, terrace and bench deposits, talus, landslide deposits, glacial outwash and eolian or dune deposits derived from sandstone, limestone, shale and quartzite associated with the Browns Park, Duchesne River, Green River, Mancos Shale, Park City and Uinta Formations (USDA-NRCS 2003). The drainages contain alluvium and colluvium that generally consist of clay, silt, sand, gravel, and cobbles. The terrace and bench deposits are predominantly medium- to coarse-grained sediments (silt, sand, gravel, and boulders) occurring as remnant erosional terraces or pediment surfaces. The eolian or dune deposits generally are associated with sandstone bedrock outcrops, consisting of predominantly sand- to silt-sized particles. Basin sediments were deposits created from an inland sea (Cretaceous age) and a large lake (early Miocene-Oligocene age) (USDA-NRCS 2003).

Due to the general tectonic stability of the basin, the mountains are no longer actively contributing to fan or pediment development in the lower basin, including the Project Area. Trellis-patterned streams in the basin and the Project Area are generally incising the existing sediments and bedrock rather than depositing new sediment. The active geologic process in the Project Area is erosion characterized by alluvial stream action, colluvial slope erosion, mass-wasting, freeze and thaw, and eolian-dune erosion and deposition (USDA-NRCS 2003).

The specific geologic units included in the Project Area are listed, along with their associated acres, in **Table 3.4-1** and depicted on **Figure 3.4-1**.

**Table 3.4-1: Geologic Units within the Project Area**

| Geologic Unit and Map Symbol | Acres within Project Area |
|---|---|
| Brennan Basin Member of Duchesne River Formation – Tdb | 5,492 |
| Disturbed Ground – Qh | 14 |
| Eolian Deposits – Qe | 4 |
| Lower Unit of Mesaverde Group – Kmvl | 159 |
| Upper Unit of Mesaverde Group – Kmvu | 1,382 |
| Mancos Shale – Kms | 2,209 |
| Mixed alluvium and colluvium | 84 |
| Piedmont alluvium, undivided – Qa | 2,341 |
| **TOTAL** | **11,685** |

Source: Utah Geological Survey (UGS) 2014.

### 3.4.2 Mineral Resources

Approximately 30,000 feet of sediments have been deposited in the basin, with 11,000 feet of those being Tertiary continental and lacustrine sediments (BLM 2004). A comparison of the geologic units within the Project Area to the mineral geology shows that the Quaternary alluvium, piedmont alluvium and colluvium are important for their sand and gravel deposits. The Cretaceous Mesaverde Group contains organic rich shales, mudstone and coal beds as well as natural gas deposits. Geologic units associated with sufficient recoverable amounts of oil shale, coal, Gilsonite, phosphate and locatable minerals do not occur within the Project Area (BLM 2004). As such, these mineral resources are not carried forward for further discussion or assessment in this EA. However, oil and gas are major mineral resources in the basin, and therefore are carried forward for discussion and assessment in this EA under energy production.

### 3.4.3 Energy Production

BLM- and SITLA-administered lands across the Project Area have been designated as having medium to high occurrence potential for oil and gas and tar sands. **Table 3.4-2** summarizes the current BLM and SITLA leased acres within the Project Area. There is some overlap between oil and gas leases and tar sands leases on both BLM- and SITLA-administered lands. The acreages listed in **Table 3.4-2** do not account for the overlap and include some redundancies in acreage calculations.

**Table 3.4-2: Oil and Gas and Tar Sands Leased Acres within the Project Area**

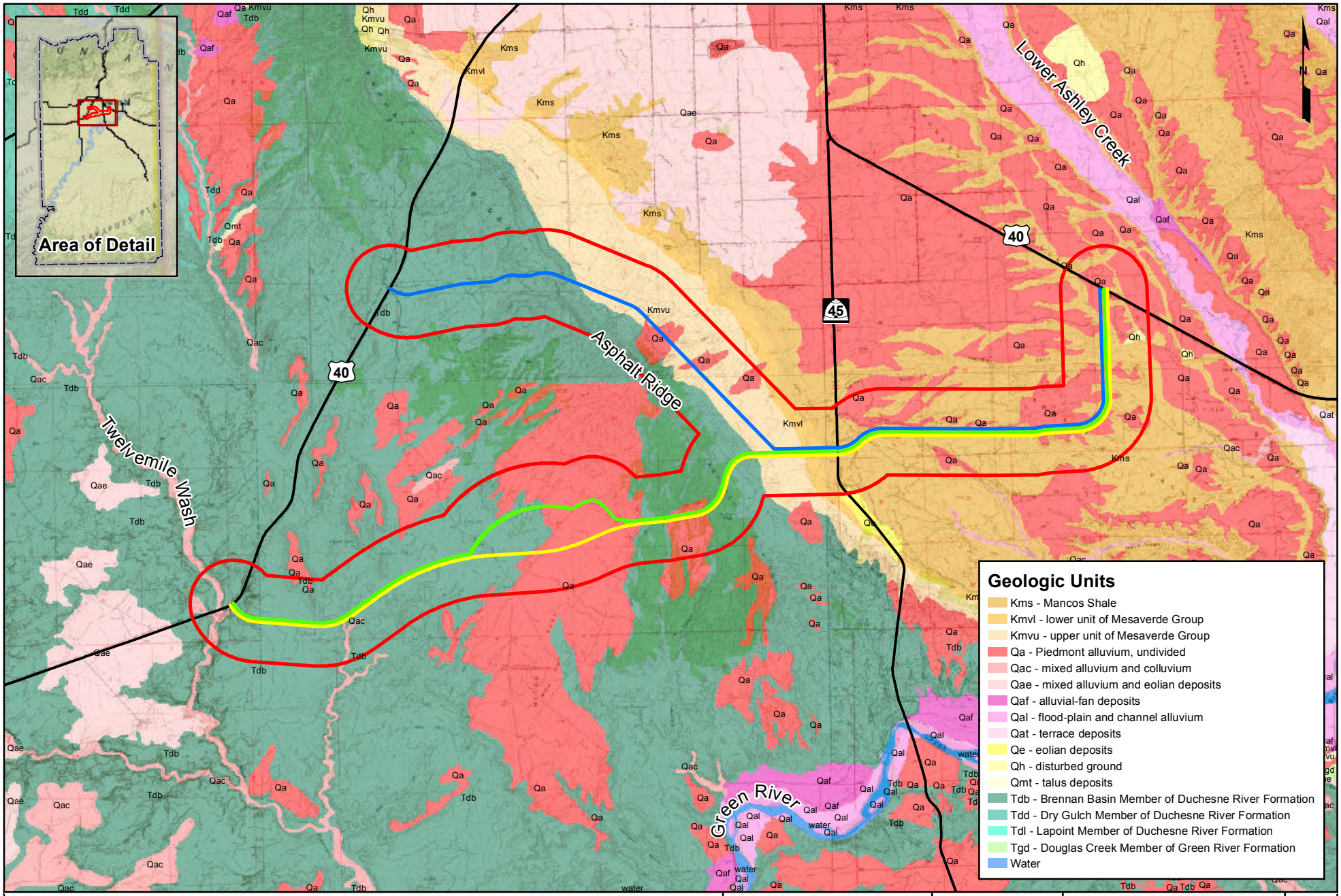
| Lease Type[a] | Acres within Project Area | Number of Tar Sands Leases or Oil and Gas Wells |
|---|---|---|
| BLM Oil and Gas Lease | 1,822 | 0 active wells<br>1 abandoned well |
| BLM Special Tar Sands Area (STSA) | 5,070 | 1 STSA |
| Nominated Tar Sands Lease[b] | 799 | 1 nominated leases |
| SITLA Oil & Gas Lease | 3,120 | 0 active wells<br>6 plugged and abandoned wells<br>1 new well (not approved/drilled) |
| SITLA Tar Sands Lease | 3,259 | 5 active leases |
| **TOTAL** | **14,070** | |

Sources: BLM 2014b; SITLA 2014a.
[a] There is some overlap between oil and gas leases and tar sands leases on both BLM and SITLA lands. The acreages listed above do not account for the overlap and include some redundancies in acreage calculations.
[b] Nominated tar sands leases represent areas nominated by the public and under review by the BLM in EA DOI-BLM-UT-G010-2010-0199-EA as being practical for tar sands extraction and eligible for tar sands leases.

Tar sand is a type of oil sand or sandstone from which the lighter fractions of crude oil have escaped, leaving a residual asphaltic material to fill the voids between sand grains (BLM 2012a). In 2013, BLM released its *Approved Land Use Plan Amendments/Record of Decision for Allocation of Oil Shale and Tar Sands Resources* (BLM 2013a). This document includes BLM-administered lands in Utah and subsequently the Project Area. The decision rendered in the ROD formalized BLM's determination that certain federal lands are practical for tar sands extraction and thus eligible for leasing. To date, the BLM has identified approximately 42 percent (or 5,070 acres) of the Project Area as an Asphalt Ridge STSA. Additionally, the public has nominated six percent (or 799 acres) of the Project Area for lease, which includes one nominated lease. This public nomination is under review by the BLM in EA DOI-BLM-UT-G010-2010-0199-EA.

The State of Utah, through SITLA, has also leased approximately 3,259 acres for tar sands development within the Project Area, which includes five active leases. Negotiations are currently underway between the County and any involved state tar sands leaseholders to determine mitigation, as needed, for the leased areas involved in the Proposed Action ROW and possible disruptions to ongoing mining activities.

Oil and natural gas are the major mineral resources in the basin. Federal lands within the Project Area are open for oil and natural gas leasing and subsequent development with standard stipulations, or timing and controlled surface use or no surface occupancy restrictions (BLM 2008c). Currently, approximately 1,822 acres of BLM-administered minerals and approximately 3,120 acres of SITLA-administered lands and/or minerals have been leased within the Project Area. No active exploration and/or development activities for oil and gas occur within the Project Area.




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads

*Geologic Units: Utah Geological Survey (UGS), GIS Geologic Map of the Vernal 30'x60' Quadrangle*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.4-1_Geology.mxd |

***Uintah County***

Ashley Valley Energy Route
Surficial Geology
Uintah County, Utah

FIGURE
**3.4-1**

*This page intentionally left blank.*

## 3.5 SOILS AND VEGETATION, INCLUDING INVASIVE PLANTS AND NOXIOUS WEED SPECIES, AND BLM SENSITIVE PLANT SPECIES

Soils and vegetation are very closely related and as such are presented together in this section as well as in **Chapter 4**.

### 3.5.1 Soils

The Project Area is classified as arid to semi-arid, and the landscape consists of hills, alluvial fans, fan remnants, structural benches, terraces, floodplains and drainages. Badland (areas of very low vegetation production) and rock outcrops are associated with cliffs, escarpments, ledges and erosional remnants. Soils developed from alluvium, colluvium, residuum and eolian deposits derived from sandstone, limestone, shale and quartzite. Due to the sediment deposits associated with an inland sea and lake, saline and calcium carbonates and associated evaporates are major constituents of most of the soils within the Project Area (USDA-NRCS 2003). Refer also to **Section 3.4.1** for a brief discussion of geology relating to the Project Area.

The USDA-NRCS, in cooperation with the Agricultural Experiment Station, BLM, and Bureau of Indian Affairs (BIA), USFWS, and the Uintah and the Daggett Soil Conservation Districts, completed and published a soil survey for the County, excluding Ute Indian tribal lands south of Ouray (USDA-NRCS 2003). The survey identifies 60 soil map units (consisting of a dominate soil and co-dominate soils) within the Project Area (refer to **Figure 3.5-1** and **Appendix D, Table 1**).

A soil's erosion potential is expressed in terms of its K factor (Kw is for the whole soil). The K factor indicates the susceptibility of a soil to be eroded by water through sheet and rill actions. Values of K range from 0.02 to 0.69, factoring in the percentage of silt, sand, and organic, as well as soil structure and permeability. Other factors being equal, the higher the value the more susceptible the soil is to water erosion. The Kw for soils within the Project Area ranges from 0.10 to 0.43, indicating a very low to moderately high water erosion potential. Approximately 90 percent of the soils within the Project Area are well drained. All of the soils within the Project Area have a low to very low potential for flooding. **Table 1** in **Appendix D** identifies the general data for soils within the Project Area.

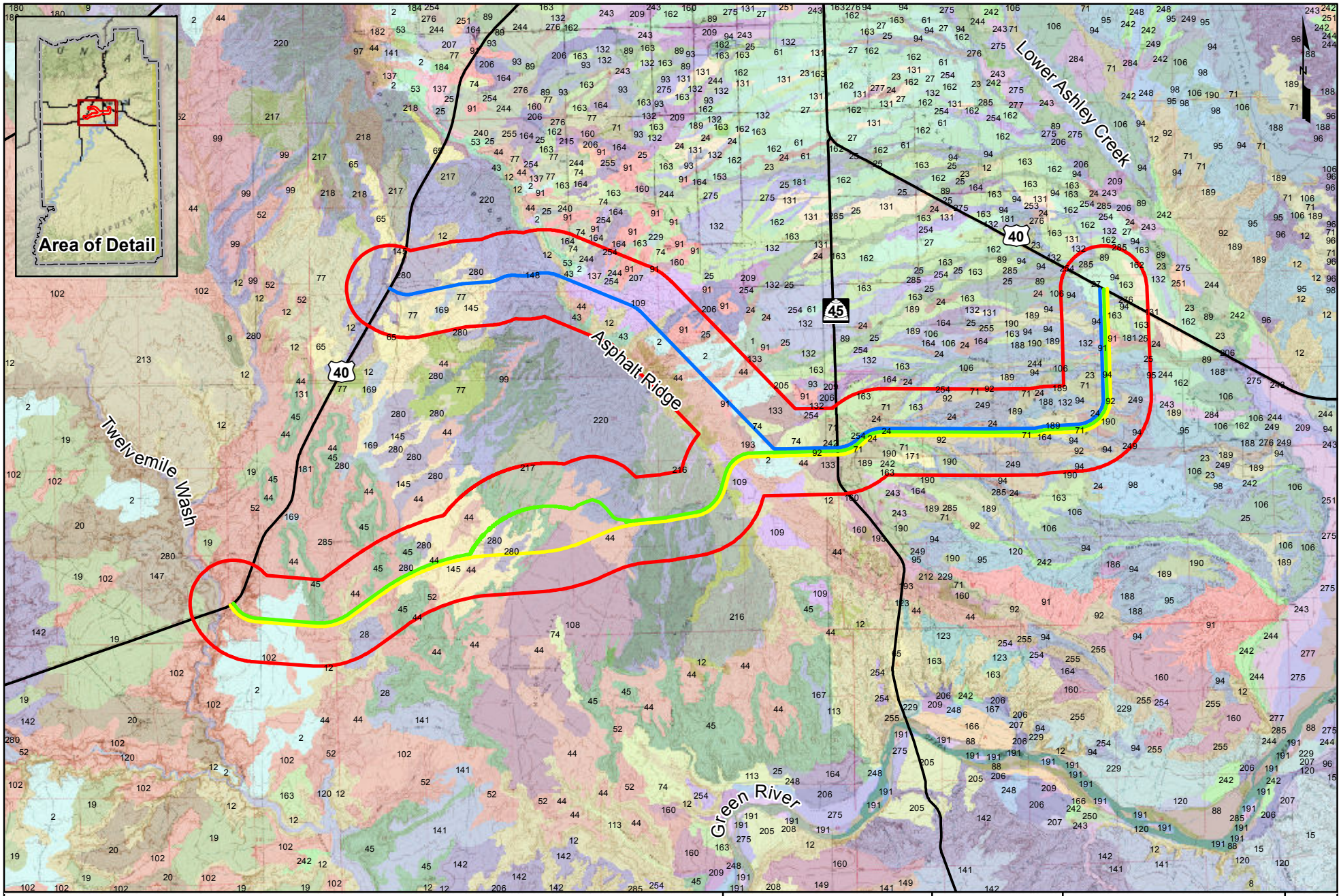
There are several reclamation-limiting factors in the Project Area that could limit or prevent soils from being fully reclaimed following surface disturbance, including: alkalinity, salinity, high sodium, and shallow topsoil depths. Alkalinity refers to the soil pH, and generally limits plants' ability to establish when alkalinity is higher than a pH rating of 7 (USDA-NRCS 2003). Optimal pH for nutrient availability is between 5.0 and 7.5. At low pH levels, mineralization of nitrogen is decreased; in alkaline soils (ph 8.0 and above) the availability of certain other nutrients is depressed (U.S. Forest Service [USFS] 2004). Salinity refers to the amount of soluble salts in a soil. Salinity is expressed as the electrical conductivity millimhos per centimeter (mmhos/cm) at 25 degrees Celsius, of the saturated soil. Salinity affects the suitability of a soil for vegetation production, by inhibiting plants ability to take up and use moisture and nutrients, as well as the potential of the soil to corrode metal and concrete. Sodium, measured as a ratio relative to calcium and magnesium in the soil (expressed as the sodium adsorption ratio [SAR]), influences the nutrient uptake capabilities of the soil. Soils having an SAR value of 13 or more have a reduced capacity to aid plants in taking up needed nutrients. Topsoil is the uppermost layer of a soil and includes the most organic matter directly contributing the most nutrients to vegetation, as well as having a

positive effect on available water holding capacity and infiltration rates, as well as soil organism abundance and overall health.

Soils in the Project Area have a fair to poor potential for successful reclamation. In general, the soils within the Project Area have pH values ranging between 7.9 and 9.0, thus soils tend to be basic; salinity values ranging between 0.0 and 8.0 mmhos/cm; and have a shallow topsoil depth (averaging from 0 to approximately 4 inches). **Table 2** in **Appendix D** provides information relating to the reclamation potential of soils within the Project Area. **Appendix B** provides the proposed Reclamation Plan for the Proposed Action.

### 3.5.2 Vegetation

Ecological sites are discrete areas where the microclimate, soil and topography are sufficiently uniform to produce a distinct natural plant community. Ecological sites are typified by an association of plant species that differs from those on other ecological sites in kind and/or portion of species or in total annual production (USDA-NRCS 2003). **Table 3** in **Appendix D** lists the dominant ecological sites, and the major native species for that ecological site, associated with the soils within the Project Area. **Table 3.5-1** offers a summary of the ecological sites within the Project Area.




0 0.5 1 2 Miles

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads

*Please See Appendix D for Map Unit Symbol Descriptions

Soil Map Units: NRCS Web Soil Survey - Soil Survey Geographic database (SSURGO)

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.5-1_Soils.mxd |

***Uintah County***

Ashley Valley Energy Route
Soils
Uintah County, Utah

FIGURE
**3.5-1**

*This page intentionally left blank.*

**Table 3.5-1: Dominant Ecological Sites within the Project Area**

| Dominant Ecological Site Name | Acres within the Project Area | Percent of the Project Area |
|---|---|---|
| Desert loam (shadscale) | 1,712 | 15 |
| Desert clay (shadscale) | 151 | 1 |
| Desert shallow clay (mat saltbush) | 128 | 1 |
| Desert shallow loam (shadscale) | 1,548 | 13 |
| Desert shallow loam (black sagebrush) | 222 | 5 |
| Desert very steep shallow loam (shadscale) | 302 | 3 |
| Desert sandy loam (Indian ricegrass) | 76 | <1 |
| Desert alkali bench (Castle Valley saltbush) | 363 | 3 |
| Desert shaley shallow loam (greasewood) | 5 | <1 |
| Semi-desert loam (Wyoming sage) | 1,381 | 12 |
| Semi-desert shallow loam (black sage) | 621 | 5 |
| Semi-desert gravelly loam (Wyoming sage) | 1,706 | 15 |
| Semi-desert sand (fourwing saltbush) | 199 | 2 |
| Semi-desert sandy loam (fourwing saltbush) | 527 | 4 |
| Semi-desert stony loam (juniper-pinyon) | 302 | 2 |
| Semi-desert shallow loam (juniper-pinyon) | 445 | 4 |
| Loamy bottom (big sagebrush) | 2 | <1 |
| Alkali bottom (alkali sacaton) | 33 | <1 |
| Alkali flat (greasewood) | 79 | <1 |
| Wet saline streambank (coyote willow) | 15 | <1 |
| Wet saline meadow (inland saltgrass) | 4 | <1 |
| Wet fresh streambank (willow) | 18 | <1 |
| River floodplain (Fremont cottonwood) | 1 | <1 |
| Bare ground & rock outcrop (unproductive) | 879 | 7 |
| Water | 8 | <1 |
| Total minor inclusions for all soils | 958 | 8 |
| **Total** | **11,685** | **100** |

Source: USDA-NRCS 2014.

#### 3.5.2.1 Noxious and Invasive Weed Species

The spread of noxious and invasive weeds is a concern in areas proposed for surface development. Noxious weeds are plants that are designated by a federal, state, Tribal or county government as injurious to public health, agriculture, recreation, wildlife, or property. A noxious weed is commonly defined as a plant that grows out of place and is competitive, persistent, and pernicious (James at al. 1991). Invasive weeds include plants that are not listed as noxious, but are not native to a particular region. As a result, many invasive plants do not have any natural enemies (i.e., insects or other plants) to limit their reproduction. Both invasive and noxious weeds can spread through native areas undeterred, producing significant changes to native vegetation communities. Roads may be the first point of entry for exotic species into a new landscape, and may serve as a corridor for plants moving farther into the landscape (Forman and Alexander 1998; Gelbard and Belnap 2003).

The Utah Weed Control Association (UWCA) has identified 27 noxious weed species for the state, and the County has designated Russian olive as a county-listed noxious weed. The State noxious weed list is divided into three categories: Class A, B or C. Class A species are "Early Detection Rapid Response" noxious weeds and should be considered a very high priority for control and management. Class B species are control species and should be considered a high priority for control. Weed management for Class C species should focus on stopping expansion (UWCA 2009).

In accordance with current BLM directives, a pre-construction weed inventory was conducted for the Proposed Action ROW (Kleinfelder 2014a). The results of inventory revealed no state-listed noxious weeds within the Project Area; however, numerous occurrences of noxious weed species, (e.g., Russian thistle [*Salsola kala*], and cheatgrass [*Bromus tectorum*]) were documented.

#### 3.5.2.2 BLM Sensitive Plant Species

Currently there are no plant species that are federally listed as threatened or endangered, proposed for federal listing as threatened or endangered, or considered to be a candidate for federal listing as threatened or endangered under the ESA in the Project Area. However, the BLM identified three BLM-sensitive plant species that have the potential to occur within the Project Area: Hamilton milkvetch (*Astragalus hamiltonii*), horseshoe milkvetch (*Astragalus equisolensis*), and sterile yucca (*Yucca sterilis*) (**Appendix A**). For more information on these species refer to the "*Summary of Potential for and/or Occurrence of Special Status Plant and Wildlife Species for the Proposed Ashley Valley Energy Route (AVER) Project*" in **Appendix E**.

In June 2014, Kleinfelder consulted with the BLM VFO on potential habitat for the three BLM-sensitive plant species. A literature search was conducted that identified potential habitat for the species based on soil type and vegetative community (Kleinfelder 2014b). This consultation identified approximately 150 acres of potential habitat for both the horseshoe and Hamilton's milkvetch and no potential habitat for the sterile yucca within the Project Area. Subsequently, a field inventory was conducted in June 2014 on nearly 100 percent of the Proposed Action ROW searching for potential habitat. A small portion of private surface lands on Asphalt Ridge was not inventoried due to denial of access by the landowner. When potential habitat was found a survey team conducted pedestrian transects spaced five to 10 feet apart, covering the entire identified habitat area searching for species' individuals. Approximately 50 acres of suitable habitat were identified for both milkvetch species; however no individual plants were identified during the surveys. No suitable sterile yucca habitat was identified during the field surveys (Kleinfelder 2014b).

## 3.6 LANDS AND/OR ACCESS

### 3.6.1 Lands Actions

FLPMA provides authority for the BLM to plan and manage public lands under its administration. The BLM's land and realty program objectives include the management of public lands to support goals and objectives of other resource programs and to respond to public requests or applications for land-use authorizations. All lands managed by the BLM are available for ROW designation, permits and leases, with the exception of defined exclusion and avoidance areas identified in the current RMP. ROWs are issued on a case-by-case basis. BLM is required to notify the involved ROW and easement holders of the proposed project so they can provide feedback as to how it might affect their authorizations.

Activities on state land generally are not substantially different from BLM-administered public lands. The state generates funds through issuing various authorizations including ROW easements and allows mineral and/or grazing leases and permits.

**Table 3.6-1** provides a list of existing BLM and SITLA ROWs involved with the Project Area. The electrical transmission lines and Highline Canal are depicted on **Figure 2.1-1**.

**Table 3.6-1: Existing BLM and SITLA ROWs Involved with the Project Area**

| ROW Type | BLM | | SITLA | |
|---|---|---|---|---|
| | Number in Project Area | Acres in Project Area | Number in Project Area | Acres in Project Area |
| Irrigation Canal | 1 | 5 | --- | --- |
| Materials Site | 1 | 20 | --- | --- |
| Non-motorized Trail Parking Complex | 1 | 2 | --- | --- |
| Oil & Gas Pipeline | 2 | 5 | 2 | 17 |
| Electric Transmission Line | 2 | 12 | 1 | <1 |
| Road | 3 | 73 | 2 | 49 |
| Telephone Line | 1 | <1 | 3 | 32 |
| Water Pipeline | 1 | <1 | 1 | 2 |

Source: BLM 2014c.

### 3.6.2 Access

The BLM's RMP also designates public access to lands under its administration. Access may be closed or restricted to the public where necessary to protect public health and safety and to protect significant resource values. Easements can be acquired to provide access to public lands.

Access to the Project Area is from U.S. Highway 40 on both the east and west sides. State Route 45 (the New Bonanza Highway) bisects the Project Area into the east and west. Two Uintah County roads (Dog Valley Road [County Road [[CR]] 2250] and McCoy Flats Road [CR 2260]) and several dirt roads and two-track vehicle trails provide access to and within the Project Area. Most of the vehicle traffic on the highways provides access for oil and gas operations, while most of the vehicle traffic on the existing county roads and two-track vehicle trails are used by recreationists, hunters, and livestock grazing operators (refer to **Figure 3.6-1**).

## 3.7 LIVESTOCK GRAZING

Section 3 of the Taylor Grazing Act of 1934 authorizes livestock grazing on BLM-administered public lands. The Project Area includes 7,236 acres associated with three grazing allotments that involve BLM, State of Utah, and private surface lands. Information on these grazing allotments is provided in **Table 3.7-1** and depicted in **Figure 3.7-1**.

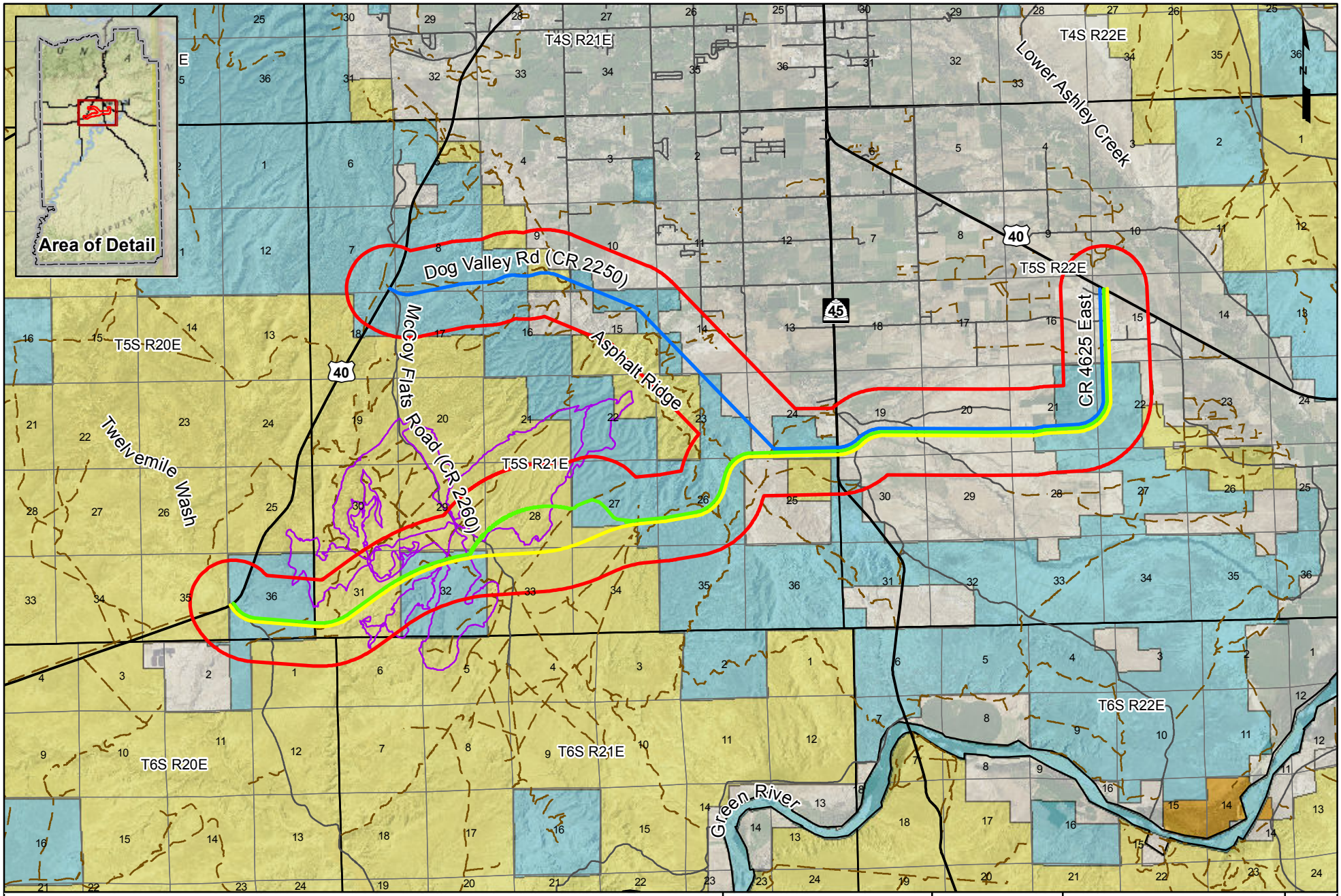
**Table 3.7-1: Livestock Grazing Information for the AVER Project Area**

| Grazing Allotment | BLM Mgmt Cat[1] | Livestock Class | Total BLM Allotment Acres | Acres in Project Area | Percent of Allotment | Total Active AUMs | Calculated AUMs in Project Area[2] |
|---|---|---|---|---|---|---|---|
| McCoy Flat | M | Cattle/ Sheep | 12,499 | 6,192 | 49 | 843 | 422 |
| Rich & Stetson | C | Sheep | 511 | 20 | 4 | 63 | 3 |
| Twelve Mile | M | Cattle | 4,861 | 1,024 | 21 | 316 | 66 |
| **TOTAL** | | | **17,871** | **7,236** | | **1,222** | **491** |

Source: BLM 2005; BLM 2014d.
[1]BLM Management Class: M= Maintain current uses, range conditions and productivity. C = Present management is satisfactory or the only logical management under existing conditions.
[2]Calculated Animal Unit Months (AUMs) determined as follows: Total AUMs x Percent of Allotment in Project Area.

Grazing on state and private lands within a grazing allotment, unless fenced out, generally is conducted in accordance with the BLM grazing permit. The U.S. Highway 40 ROW has been fenced out through the Twelve Mile allotment. Livestock grazing on the grazing allotments is authorized season-long, between November through March 31, depending on available forage and snow/water availability. Livestock water is usually provided by existing water facilities (i.e., reservoirs or guzzlers), available snow, or if insufficient snow is available, permittees may be allowed to truck water to pre-approved sites within the allotment. BLM has assigned the grazing allotments into either a Maintain (M) or Custodial (C) management category. In the M category, management objectives are to ensure that current uses, range conditions, and productivity are maintained. The C category means that present management is satisfactory or is the only logical management under existing conditions.

BLM administers grazing in the Project Area per the Guidelines for Grazing Management as developed by the Utah BLM in 1997 (BLM 1997). These guidelines were instituted for all Utah rangelands in order to meet the national standards for rangeland health based on basic ecological principles that underlie sustainable production of rangeland resources. BLM determined the proposed project would have no effect on Rangeland Health Standards and Guidelines (**Appendix A**). As such this facet of livestock grazing is not carried forward in this EA.




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- McCoy Flats Trail Complex

**Roads**

- State and Federal Roads
- Paved Roads
- Gravel Roads

**Land Ownership**

- Federal
- Private
- State
- Tribal

*Land Ownership: BLM Utah State Office and SITLA*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.6-1_LandAccess.mxd |

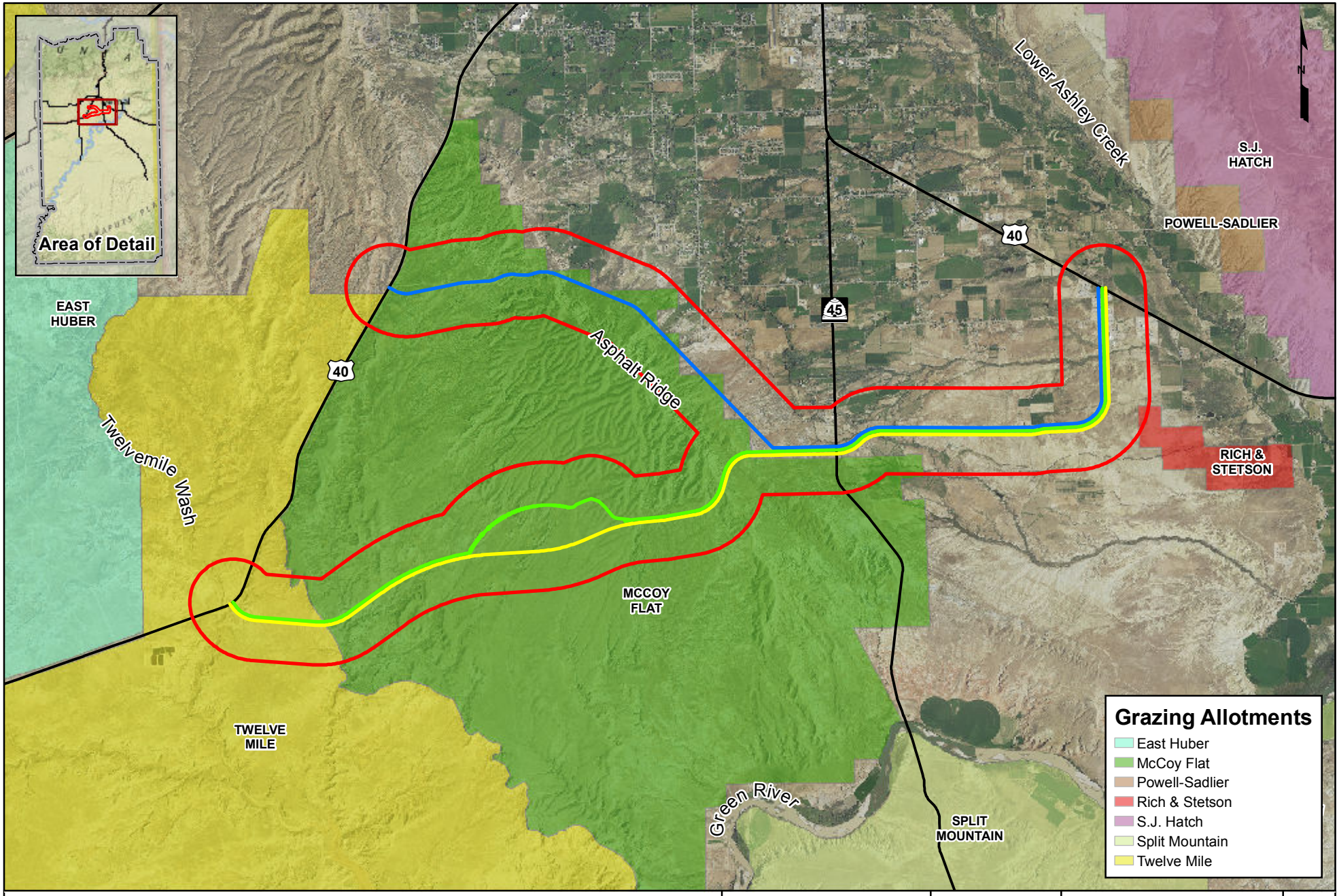
***Uintah County***

Ashley Valley Energy Route
Land Access
Uintah County, Utah

FIGURE

**3.6-1**

*This page intentionally left blank.*




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads

*Grazing Allotments: BLM Utah State Office*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.7-1_LivetockGrazing.mxd |

***Uintah County***

Ashley Valley Energy Route
Livestock Grazing
Uintah County, Utah

FIGURE

**3.7-1**

*This page intentionally left blank.*

## 3.8 PALEONTOLOGY

Paleontological resources are the fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth (Public Law 111-011, Title VI, Subtitle D). Petrified wood is also considered a paleontological resource and is defined as agatized, opalized, petrified, or silicified wood or any material formed by the replacement of wood by silica or other matter (30 U.S.C. 611). Paleontological resources are considered nonrenewable; as the organisms they represent no longer exist, once destroyed a fossil can never be replaced.

Paleontological resources on BLM-administered lands are managed under the BLM Paleontological Resource Management Program. This program is designed to provide a consistent and comprehensive approach to the identification, evaluation, protection and use of paleontological resources on federal lands. The BLM's authority to manage paleontological resources within the Project Area is derived from, but is not limited to, the following statutes and guidance documents:

- Omnibus Public Management Act of 2009;
- NEPA;
- FLPMA;
- BLM (1998) Paleontological Resource Management Manual H-8270; and
- Title 43 CFR, Subpart 8200.

A complete list of regulations and statutes related to the BLM's authority to identify, evaluate, and protect paleontological resources on public lands can be found in the BLM's *Paleontological Resource Management Manual H-8270* (BLM 1998).

Additionally, the BLM VFO RMP/ROD includes management objectives regarding the stewardship of paleontological resources within its administrative boundary. None of the management decisions within the RMP/ROD are specific to the construction and operation of roadways (BLM 2008a).

Paleontological resources on State of Utah lands are afforded protections under provisions of Title 79 of the Utah State Code.

The Project Area contains three geologic formations and quaternary informal units. The stratigraphic units present range from Middle cretaceous to Holocene in age, with some intervening tertiary epochs missing such as the Wasatch, Green River, and Uinta formations. The geologic units present include the Cretaceous Mancos Formation, Cretaceous upper and lower Mesaverde Group, and the Paleocene Brennan Basin Member of the Duchesne River Formation. Quaternary deposits of eolian debris, alluvium, colluvium and terrace gravels are dispersed throughout the Project Area (**Figure 3.4-1**).

The paleontological sensitivity of each geologic unit can be evaluated using the Potential Fossil Yield Classification (PFYC) System developed and instituted by the BLM in 2007 (BLM 2007a). This system classifies geologic units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts. It is designed not to identify specific paleontological localities but rather to classify geologic formations, members, and units as a whole. Units

are ranked on a scale of PFYC 1, those not likely to contain recognizable fossil remains, to PFYC 5, or highly fossiliferous geologic units that are at risk for adverse impacts. The identification of scattered, significant fossils within one unit does not necessarily correlate with a higher PFYC value, but rather an abundance of significant fossils would be more of a determinant in classifying units. The classes present within the Project Area include (BLM 2007a):

- Class 2: Low potential for fossils such as alluvial deposits.
- Class 3: Moderate or unknown potential for fossil content that varies in significance.
- Class 5: Very high potential for highly fossiliferous geologic units that consistently and predictably produce vertebrate or important invertebrate or plant fossils (BLM 2007a).

The geologic units present within the Project Area, along with their respective acreages, PFYC value, and geologic age are displayed in **Table 3.8-1** below.

**Table 3.8-1: PFYC Values within the Project Area**

| Geologic Unit | Map Symbol | Age (Period or Epoch) | PFYC | Typical Fossils | Entire Project Area (acres) |
|---|---|---|---|---|---|
| Brennan Basin Member of Duchesne River Formation | Tdb | Eocene to Oligocene | 5 | Uintan mammals, reptiles, fish, plants, invertebrates, traces and burrows | 5,492 |
| Total for PFYC 5 | | | | | 5,492 |
| Lower Unit of Mesaverde Group | Kmvl | Upper Cretaceous | 3 | vertebrates( crocodiles, turtles, primitive mammals, dinosaurs, fish), plants, invertebrates, traces | 159 |
| Upper Unit of Mesaverde Group | Kmvu | Upper Cretaceous | 3 | vertebrates( crocodiles, turtles, primitive mammals, dinosaurs, fish), plants, invertebrates, traces | 1,382 |
| Mancos Shale | Kms | Middle Cretaceous | 3 | Invertebrates, plant hash, marine vertebrates, dinosaurs. | 2,209 |
| Total PFYC 3 | | | | | 3,750 |
| Mixed Alluvium & Colluvium | -- | Holocene and Pleistocene | 2 | rare occurrences of Pleistocene vertebrates and invertebrates | 84 |
| Piedmont Alluvium, Undivided | Qa | Holocene and Pleistocene | 2 | rare occurrences of Pleistocene vertebrates and invertebrates | 2,341 |
| Eolian Deposits | Qe | Holocene and Pleistocene | 2 | rare occurrences of Pleistocene vertebrates and invertebrates | 4 |
| Total PFYC 2 | | | | | 2,429 |
| Disturbed Ground | Qh | -- | -- | -- | 14 |
| Total Unclassified | | | | | 14 |
| | | | | **TOTAL** | **11,685** |

Source: BLM 2014e.

Pedestrian paleontological surveys for the Proposed Action conducted by Uinta Paleo did not result in the discovery of fossils in the Area of Potential Effect, which was defined as the proposed ROW. Some exotic cobbles from the uplift of and erosion of the Uinta Mountains were identified within the Project Area; these were not preserved in the local bedrock. Only one known fossil locality is located within one

mile of the Proposed Action corridor. This fossil locality is part of the Wasatch Unit (Uinta Paleo 2014). To date, no pedestrian surveys have been conducted for Alternative B.

## 3.9 RECREATION

Opportunities for recreation exist within the Project Area. Public recreational uses are allowed on BLM- and SITLA-administered lands. The remaining portions of the Project Area traverse private property. Public recreational use of Private lands is prohibited unless permission is granted by the property owner.

Public lands within and adjacent to the Project Area provide opportunities for a variety of motorized and non-motorized recreational activities. Examples of these opportunities include:

Mountain Bicycling. The most prevalent recreational activity that occurs within the Project Area is mountain bicycling. The McCoy Flats Non-Motorized Trail Complex (hereinafter referred to as the McCoy Flats Trail System), developed jointly by BLM and SITLA with public input, is located in the western portion of the Project Area. A Memorandum of Understanding (MOU), completed between the BLM and SITLA, allows the BLM to manage trails that cross onto SITLA-administered lands (BLM 2012b). This designation also allows trail funds to be expended for trail maintenance (BML 2012b). **Figure 3.9-1** shows the McCoy Flats Trail System. It consists of ten trails of varying degrees of difficulty totaling approximately 37.6 miles. **Table 3.9-1** lists each trail by length and trail rating (difficulty level).

**Table 3.9 -1: Trails of the McCoy Flats Non-Motorized Trail Complex**

| Trail | Length (miles) | Trail Rating |
|---|---|---|
| And Cookies! | 2.3 | Easy |
| Combo | 1.5 | Easy |
| Fire Sale | 2.3 | Difficult |
| Got Milk? | 3.5 | Intermediate |
| High Rollas | 5.0 | Intermediate |
| Jackalope | 6.9 | Difficult |
| More Hoes | 4.0 | Difficult |
| Retail Sale | 6.1 | Intermediate/Difficult |
| Serpendipity | 1.0 | Difficult |
| Slippery When Wet | 5.0 | Difficult |
| **TOTAL** | **37.6** | |

Source: BLM 2014f.

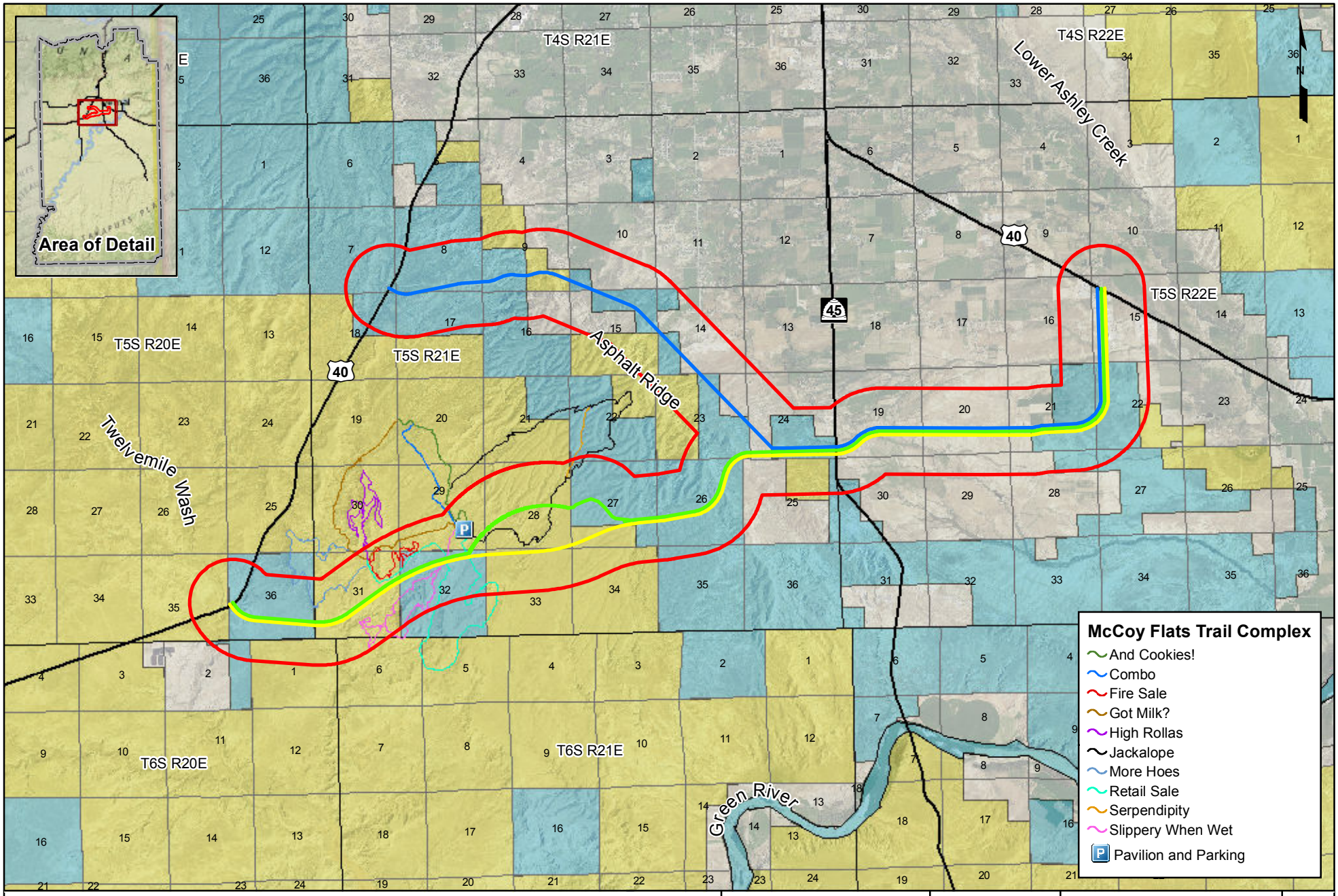
The McCoy Flats Trail System was developed to address the demand for year-round single-track trail opportunities for recreational non-motorized mountain bike use in close proximity to Vernal, Utah (BLM 2012b). The trails were designated as a means to manage and promote sustainable visitor use, protect natural resources, and provide for public health and visitor safety (BLM 2012b). The 10- trails are accessible from U.S. Highway 40 via McCoy Flats Road (CR 2260). A central trailhead, which has a

restroom and a covered pavilion, provides access to all trails. The trails were constructed for mountain bicycling, but they are also available for hiking. Trailhead counters installed in October 2013 indicated about 26,000 visits to the McCoy Flats area in a year's time (Wodraska 2014).

Camping. It is the general policy of the BLM that undeveloped federal lands under its administration are available to the public for camping and general recreation. The conditions under which camping is allowed varies by jurisdictional BLM office. In general, camping is allowed at no cost for a period of approximately two weeks, after which a special recreation permit would be required. Also, typical conditions include avoidance of camping within a specified distance of any water source. There are no camping facilities on BLM-administered lands in the vicinity of the Project Area. SITLA allows camping on most of its lands for up to 14 consecutive days. For any stay longer than 14 days, a right of entry permit is required. Camping is limited to existing campsites, and camping is not allowed in wet areas or meadows (SITLA 2014b). There are no camping facilities on SITLA-administered lands in the vicinity of the Project Area.

Hunting. Hunting is allowed on both BLM- and SITLA-administered lands. In 2007, SITLA entered into a hunter access agreement with the Utah Division of Wildlife Resources (UDWR). The agreement allows public hunting access on SITLA-administered lands in exchange for an annual payment to SITLA by UDWR (SITLA 2014b). Refer to **Section 3.13.1** for a discussion of big game ranges within the Project Area.

Hiking. Hiking is a generally allowed recreational activity on both BLM- and SITLA-administered lands. There are no established hiking trails on BLM- or SITLA-administered lands in the vicinity of the Project Area. However, as previously noted, the trails of the McCoy Flats Trail System are available to hikers as well as mountain bikers.




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section

**Land Ownership**

- Federal
- Private
- State
- Tribal

*Land Ownership: BLM Utah State Office and SITLA*
*McCoy Flats Bike Trails: BLM Vernal Field Office*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.9-1_McCoyFlatsTrails.mxd |

***Uintah County***

Ashley Valley Energy Route
McCoy Flats Trail System
Uintah County, Utah

FIGURE

**3.9-1**

*This page intentionally left blank.*

Off-Highway Vehicle (OHV) Recreation. The BLM developed the 2001 *National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands* (OHV Strategy) to assist field managers in the implementation of on-the-ground solutions for OHV recreation and access issues, to protect public land resources, and to make more efficient use of existing staff and funding (BLM 2001). The OHV Strategy, in part, requires the BLM to assign designations to areas and trails to establish control over OHV use and operation. These designations are:

- **Open:** The BLM designates areas as "open" for intensive OHV use where there are no compelling resources protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel.
- **Limited:** The BLM designates areas as "limited" where it must restrict OHV use to meet specific resource management objectives.
- **Closed:** The BLM designates areas as "closed" if closures to all vehicular use are necessary to protect resources, ensure visitor safety, or reduce use conflicts (BLM 2006a).

All BLM-administered lands in the vicinity of the Project Area are currently designated as Limited for OHV use.

OHV use on SITLA-administered lands is allowed only on routes designated as "open" by SITLA. In addition, OHV users must obey State laws pertaining to OHVs.

Based on its priorities for recreation and visitor services, the BLM has set forth three goals to which they are committed to following (BLM 2003). These goals include:

- Improve access to appropriate recreation opportunities on U.S. Department of the Interior (DOI) managed or partnered lands and waters.
- Ensure a quality experience and enjoyment of natural and cultural resources on DOI-managed or partnered lands and waters.
- Provide for and receive fair value in recreation.

The BLM manages recreational use of public lands through two different basic units of recreation management: the Special Recreation Management Area (SRMA) and the Extensive Recreation Management Area (ERMA). A SRMA is an area where recreation is emphasized – an area that requires a recreation investment, where more intensive recreation management is needed, and where recreation is a principal management objective (BLM 2005). No SRMAs exist within the Project Area.

An ERMA is defined as an area where dispersed recreation is encouraged and where visitors have recreational freedom-of-choice with minimal regulatory constraints. Recreation is generally unstructured and dispersed, requires minimal recreation-related investments, and has minimal regulatory constraints (BLM 2008a). All BLM areas that are not part of a SRMA are included within an ERMA. BLM-administered lands within the Project Area are managed as part of the Vernal ERMA for dispersed recreation uses that require minimal facility development. However, there are few roads to the BLM-administered lands near the Project Area; therefore, vehicle access is currently limited. There are no

developed recreational facilities on BLM-administered lands in the vicinity of the Project Area, other than the McCoy Flats Trail System, previously described.

SITLA does not have plans that specifically address recreation. However, Title R850 of the Utah Administrative Code set forth rules for administration of SITLA-administered lands, some of which are applicable to recreational activities.

Rule R850-41-200 authorizes SITLA to issue right of entry permits on SITLA-administered lands. A right of entry permit shall be required for any person to use, occupy, or travel upon SITLA-administered lands in conjunction with any commercial enterprise, including commercial outfitters and tour operators, and competitive/group events of a commercial nature such as races and festivals (SITLA 2014b). Non-commercial use of SITLA lands shall not require a permit, provided that the use shall not exceed 15 consecutive days and shall not conflict with an applicable land use or with a management plan (SITLA 2014b).

Rule R850-110-200 closes all SITLA-administered lands to motor vehicle use, unless specifically designated open by SITLA or authorized for a specific use through the issuance of a permit, easement, or lease. However, under specific conditions, over-snow vehicles are allowed to cross SITLA-administered lands.

Policies in the Uintah County General Plan encourage the development of recreation facilities, including trails (Uintah County 2005). The most recent County Land Use Plan also encouraged the expansion of recreation opportunities and the protection and enhancement of traditional areas/sites (Uintah County 2012).

## 3.10 SOCIOECONOMICS

The following sections characterize the socioeconomic conditions of jurisdictions in or near the Project Area, including minority and low-income populations; employment and income; local and state revenues; housing resources; and community infrastructure (public services). The primary geographic areas of analysis for potential socioeconomic effects of the proposed project are Uintah County, the cities of Naples and Vernal, and the State of Utah.

### 3.10.1 Population and Demographics

The primary sources of information for this section include the U.S. Census Bureau's 2000 and 2010 Census, the 2008-2012 American Community Survey (ACS), and reports published by the Demographic and Economic Analysis (DEA) section of the Utah Governor's Office of Planning and Budget (UGOPB) in Utah. The DEA is responsible for managing, analyzing, and disseminating economic, demographic, and fiscal data. This section of the UGOPB not only estimates population levels and characteristics but also projects long-term economic and demographic trends. The DEA supplied the population and demographic data for the UGOPB (2012) *2012 Economic Report to the Governor*.

**Table 3.10-1** shows population data for Uintah County, the cities of Naples and Vernal, and the State of Utah. The population of Uintah County increased from 25,244 persons in 2000 to 32,588 persons in 2010, which represents an increase of nearly 30 percent.

**Table 3.10-1: Population Data for Jurisdictions in the Project Area Vicinity**

| Location | Population[1] | | | Percent Change in Population 2000-2010 | Projected Population[2] | | |
|---|---|---|---|---|---|---|---|
| | 2000 | 2010 | 2013[3] | | 2020 | 2030 | 2040 |
| Uintah County | 25,224 | 32,588 | 35,555 | +29.2 | 38,982 | 41,099 | 42,690 |
| Naples | 1,300 | 1,755 | N/A | +35.0 | 2,099 | 2,213 | 2,299 |
| Vernal | 7,714 | 9,089 | 10,344 | +17.8 | 10,872 | 11,463 | 11,907 |
| State of Utah | 2,246,553 | 2,763,885 | 2,900,872 | +23.8 | 3,309,234 | 3,914,984 | 4,570,433 |

[1] Source: U.S. Census Bureau 2010a.
[2] Source: UGOPB 2014.
[3] Source: U.S. Census Bureau 2014.
N/A – not available

According to the Utah Population Estimates Committee, the population growth rate for the County from 2010 to 2011 was 2.1 percent – the fifth highest growth rate among Utah counties. Vernal was one of the fastest growing cities in that same time span, with a growth rate of 2.2 percent. By comparison, the population growth rate for the State of Utah from 2010 to 2011 was 1.4 percent (UGOPB 2012).

In terms of racial composition, approximately 86.6 percent of the County population is white and 7.7 percent is American Indian/Alaska Native. Approximately 7.1 percent of the population in the County is Hispanic, an ethnicity that covers several racial categories (U.S. Census Bureau 2013a). Compared to the State of Utah, the populations of the County and Vernal have a higher percentage of American Indians and a lower percentage of blacks, Asians, and Hispanics. Naples has a higher proportion of whites in its population than the State. **Table 3.10-2** presents population figures by race and Hispanic origin.

**Table 3.10-2: Population by Race and by Hispanic or Latino Origin**

| Race | Uintah County | | Naples | | Vernal | | State of Utah | |
|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| **TOTAL POPULATION** | **32,558** | **100** | **1,755** | **100** | **9,809** | **100** | **2,763,885** | **100** |
| **RACE** | | | | | | | | |
| White | 28,232 | 86.6 | 1,652 | 94.1 | 8,148 | 89.6 | 2,379,560 | 86.1 |
| Black/African American | 121 | 0.4 | 19 | 1.1 | 46 | 0.5 | 29,287 | 1.1 |
| American Indian/Alaska Native | 2,509 | 7.7 | 17 | 1.0 | 204 | 2.2 | 32,927 | 1.2 |
| Asian | 166 | 0.5 | 27 | 1.5 | 63 | 0.7 | 55,285 | 2.0 |
| Native Hawaiian and Other Pacific Islander | 74 | 0.2 | 0 | 0.0 | 27 | 0.3 | 24,554 | 0.9 |
| Other/Two or More Races | 1,486 | 4.5 | 40 | 2.3 | 601 | 6.6 | 242,272 | 8.7 |

| Race | Uintah County | | Naples | | Vernal | | State of Utah | |
|---|---|---|---|---|---|---|---|---|
| **HISPANIC OR LATINO ORIGIN AND RACE**[1] | | | | | | | | |
| Hispanic or Latino | 2,330 | 7.1 | 97 | 5.5 | 1,073 | 11.8 | 358,340 | 13.0 |
| Non-Hispanic or Latino | 30,258 | 92.9 | 1,658 | 94.5 | 8,016 | 88.2 | 2,405,545 | 87.0 |

[1] The U.S. Census Bureau collects race and Hispanic origin information following the guidance of the U.S. Office of Management and Budget's (OMB) 1997 *Revisions to the Standards for the Classification of Federal Data and Ethnicity*. The OMB requires federal agencies to use a minimum of two ethnicities: Hispanic or Latino and Not Hispanic or Latino. Hispanic origin can be viewed as a heritage, nationality group, lineage, or country of birth of a person's ancestors. People who identify their origin as Hispanic, Latino, or Spanish may be any race (U.S. Census Bureau 2010b).
Source: U.S. Census Bureau 2010a.

### 3.10.2 Local Economy, Employment, and Income

**Table 3.10-3** provides a breakdown of non-agricultural job sources in the County and the State of Utah by employment sector. Comparable data were not available for the cities of Naples and Vernal. The economy of the County is largely based on natural resources and mining[1]. Other industries that bring revenue into the County include trade, transportation, utilities, and government.

**Table 3.10-3: Nonfarm Job Sources in Uintah County by Employment Sector (2011)**

| Employment Sector | Uintah County | | State of Utah | |
|---|---|---|---|---|
| | Jobs | Percent | Jobs | Percent |
| Natural Resources and Mining | 3,089 | 21.8 | 11,659 | 1.0 |
| Construction | 912 | 6.4 | 65,166 | 5.4 |
| Manufacturing | 191 | 1.3 | 113,684 | 9.4 |
| Trade, Transportation, and Utilities | 3,192 | 22.5 | 233,251 | 19.3 |
| Information | 133 | 0.9 | 29,495 | 2.4 |
| Financial Activity | 593 | 4.2 | 68,391 | 5.7 |
| Professional and Business Services | 761 | 5.4 | 159,420 | 13.2 |
| Education and Health Services | 1,006 | 7.1 | 159,210 | 13.2 |
| Leisure and Hospitality | 1,060 | 7.5 | 113,512 | 9.4 |
| Other Services | 395 | 2.8 | 34,090 | 2.8 |
| Government | 2,858 | 20.1 | 220,772 | 18.5 |
| **Total** | **14,190** | **100** | **1,208,649** | **100** |

Percentages may not total 100 percent due to rounding.
Source: UGOPB 2012.

Mining employment in Utah (which includes oil and natural gas development) increased from 2010 to 2011 as energy prices rebounded (UGOPB 2012). The mining sector saw a growth rate of 11.6 percent, or 1,210 new jobs, in 2011, the largest industry gain in the state. Nearly all of the gains were in the oil

[1] It should be noted that the State of Utah does not include the agriculture industry in its employment figures. Therefore, the figures produced by the State of Utah Department of Workforce Services differ slightly from the 2008-2012 ACS 5-Year Estimates, Selected Economic Characteristics figures. The 2008-2012 ACS 5-Year Estimates indicate that agriculture, forestry, fishing and hunting and mining is the largest employment sector in the County with 3,246 employees, or 22.8 percent of the jobs in the County (U.S. Census Bureau 2013b).

and natural gas sector located in the basin and the County. The lowest average annual growth rate was in the construction industry, with a fourth straight year of employment loss (UGOPB 2012).

**Figure 3.10-1** shows the average annual unemployment rate for the County and the State of Utah from 1990 to 2013. Between 1990 and 2000, the County's average annual unemployment rate was considerably higher than the State of Utah as a whole. However, beginning in 2001, the County's unemployment rate has been tracking with or slightly below Utah's unemployment rate.

Data from the Utah Department of Workforce Services (UDWS) show that the 2013 non-seasonally adjusted unemployment rate in the County was 3.6 percent, down from 7.2 percent in 2010 (UDWS 2013). By comparison, Utah's non-seasonally adjusted unemployment rate was 4.4 percent in 2013, down from the recession's peak unemployment rate of 7.7 percent in 2010 (UDWS 2013). Employment levels in Utah were flat or fell between 2008 and 2010, but increased in 2011 (UDWS 2012). Employment in Utah is projected to grow 3.1 percent during 2014. (Utah Economic Council 2014).

**Table 3.10-4** provides a breakdown of non-agricultural payroll wages in the County and the State of Utah by employment sector. When comparing **Table 3.10-3** and **Table 3.10-4**, payroll from natural resources and mining comprises a high percentage of the total wages in the County relative to the total employment within the sector.

**Table 3.10-4: Nonfarm Payroll Wages in Uintah County by Employment Sector (2011)**

| Employment Sector | Uintah County | | State of Utah | |
|---|---|---|---|---|
| | Wages ($ million) | Percent | Wages ($ million) | Percent |
| Natural Resources and Mining | 226.1 | 35.2 | 853.7 | 1.8 |
| Construction | 43.2 | 6.7 | 2,797.7 | 5.8 |
| Manufacturing | 6.5 | 1.0 | 5,678.2 | 11.8 |
| Trade, Transportation, and Utilities | 142.0 | 22.1 | 8,527.7 | 17.8 |
| Information | 4.5 | 0.7 | 1,627.9 | 3.4 |
| Financial Activity | 31.2 | 4.9 | 3,554.8 | 7.4 |
| Professional and Business Services | 30.6 | 4.8 | 7,584.6 | 15.8 |
| Education and Health Services | 29.1 | 4.5 | 5,651.9 | 11.8 |
| Leisure and Hospitality | 13.2 | 2.1 | 1,830.2 | 3.8 |
| Other Services | 13.2 | 2.1 | 983.2 | 2.1 |
| Government | 102.3 | 15.9 | 8,847.6 | 18.5 |
| **TOTAL** | **641.8** | **100** | **47,937.5** | **100** |

Source: UGOPB 2012.

Per capita income (PCI) is reported quarterly by the U.S. Bureau of Economic Analysis (BEA) and is calculated by dividing a region's total personal income by its total population (BEA 2014a). **Table 3.10-5** shows per capita income in the County and the State of Utah from 2009 to 2012. Comparable data were not available for Naples or Vernal. In 2012, the PCI in the County was $33,170,

approximately 15.7 percent greater than the 2009 PCI of $28,661 (BEA 2014b). By comparison, the State of Utah's PCI in 2012 was $35,430, up approximately 9.3 percent from the 2009 PCI (BEA 2014a).

**Table 3.10-5: Per Capita Personal Income (2009-2012)**

| Per Capita Personal Income | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| Uintah County | $28,661 | $29,777 | $32,209 | $33,170 |
| State of Utah | $32,412 | $32,474 | $34,173 | $35,430 |

Source: BEA 2014b.

In 2011, Utah ranked forty-seventh among all the 50 states and Washington D.C. for PCI, due to its lower than national average wages and young population (UGOPB 2012). While Utah's PCI ranks low in the nation, the State's median household income ranks relatively high. The 2011 three-year average of median household income shows Utah ranks 11th in the nation[2] (UGOPB 2012). The discrepancy between median household income and PCI rankings is largely attributed to Utah's young population, in which per capita figures are diluted by the large number of children living in the state and larger household sizes. In 2011, Utah's three-year average median household income was $58,438, which represented 114.5 percent of the national average (UGOPB 2012). No median household income statistics are available for the County. In 2011, Utah's average annual pay of $40,300 per worker was ranked 36th in the nation. Utah's average annual nonfarm wage grew 2.2 percent between 2010 and 2011 to $39,686 (UGOPB 2012).

Each year, the U.S. Census Bureau issues a public report on the level of poverty, which includes poverty thresholds and guidelines. Poverty thresholds in the United States are determined by a combination of factors, such as age, income, and family size. The U.S. Census Bureau's most recent report was issued in September 2012, and covers 2011. For a family of three, the U.S. Census Bureau estimates the weighted average poverty threshold in 2011 at $17,916 (DeNavas-Walt, C. et al. 2012). **Table 3.10-6** shows the percentage of people and families with incomes below the poverty level. As indicated in **Table 3.10-6**, approximately 10.6 percent of all people in the County lived below the poverty level, compared with 12.1 percent in the State of Utah (U.S. Census Bureau 2013b). The poverty level in Naples was much less than the State level, while the poverty level in Vernal was greater.

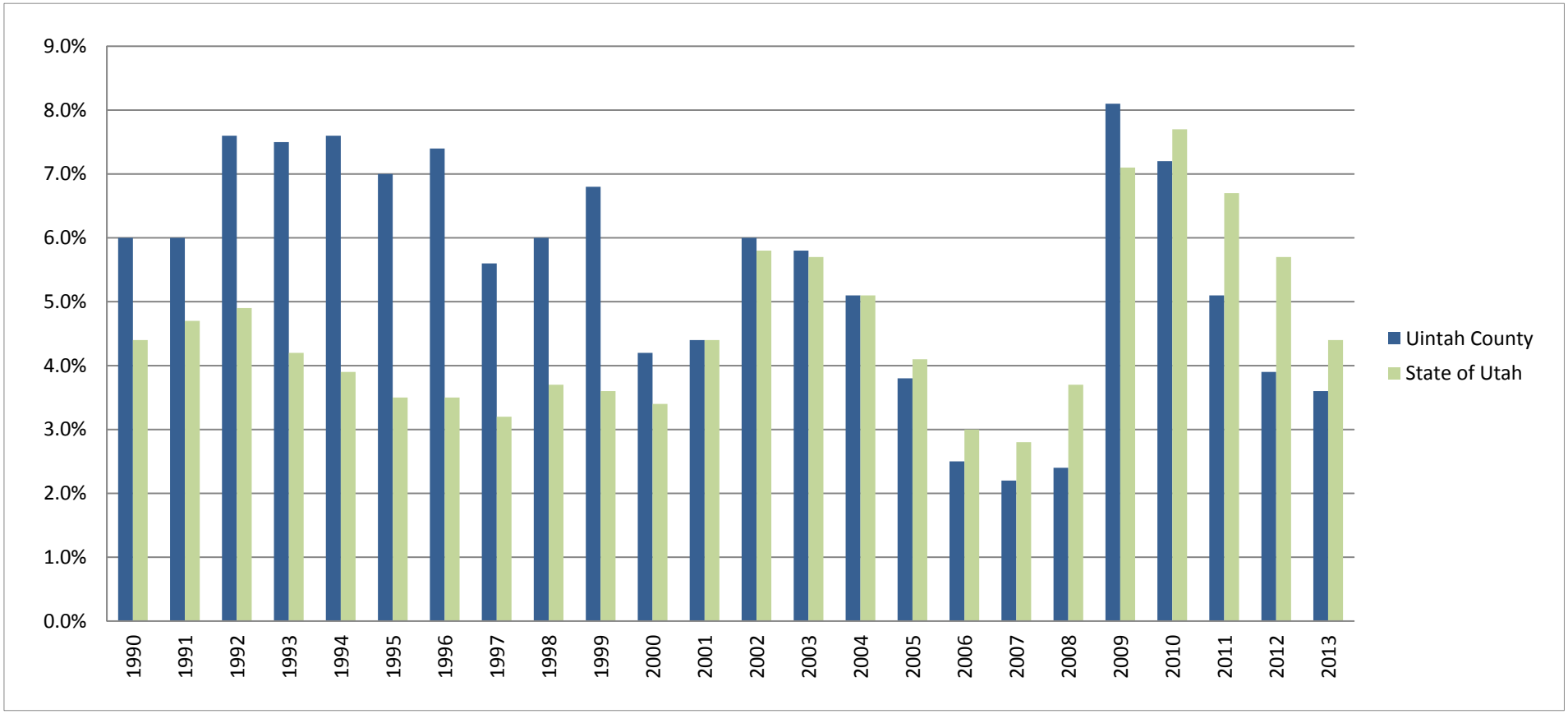
**Table 3.10-6: Percentage of People and Families Below the Poverty Level**

| Subject | Uintah County | Naples | Vernal | State of Utah |
|---|---|---|---|---|
| All People (percent) | 10.6 | 2.8 | 14.4 | 12.1 |
| All Families (percent) | 6.9 | 1.8 | 9.1 | 8.9 |
| With related children under 18 years (percent) | 9.4 | 1.3 | 10.7 | 12.3 |
| With related children under 5 years (percent) | 4.5 | 0.0 | 6.9 | 13.1 |

Source: U.S. Census Bureau 2013b.

[2]The U.S. Census Bureau recommends using three-year averages for ranking purposes to reduce the volatility that arises from small sample sizes.

# Average Annual Unemployment Rates (1990 - 2013)




Source: UDWS 2014

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 5/19/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.10-1_Unemployment.mxd |

***Uintah County***

Ashley Valley Energy Route
Average Annual Unemployment Rates (1990 - 2013)
Uintah County, Utah

FIGURE
**3.10-1**

*This page intentionally left blank.*

### 3.10.3 Taxes and Revenues

***Property Tax***

Among the most important sources of revenue for local governments are property taxes levied on locally and centrally assessed property. Within the State of Utah, the majority of property tax revenue goes toward education. **Figure 3.10-2** summarizes the distribution of property tax revenue in 2013.

**Table 3.10-7** provides a summary of property tax values and charge within the County for the most recent years that data were available.

**Table 3.10-7: Local and Centrally Assessed Property Tax Values and Charges**

| Jurisdiction | 2011 | | 2012 | | 2013 | |
|---|---|---|---|---|---|---|
| | Taxable Value ($million)[1] | Taxes Charged ($million) | Taxable Value ($million)[1] | Taxes Charged ($million) | Taxable Value ($million)[1] | Taxes Charged ($million) |
| Uintah County | $4,555.7 | $49.1 | $5,103.6 | $54.5 | $5,205.8 | $54.7 |

[1] Locally and centrally assessed values. Does not include motor vehicle properties.
Source: Utah State Tax Commission 2012, 2013a, and 2014a.

Due to the level of oil and gas development within the Basin, the County derives more benefit from property taxes associated with oil and gas activities than the State as a whole. Statewide, 3.8 percent of total property taxes that were levied on locally and centrally assessed property were derived from oil and gas extraction and pipeline and gas utilities in 2012. However, in the County, approximately 54.9 percent of such property taxes were derived from these activities during the same period (Utah State Tax Commission 2013b).

#### 3.10.3.1 Sales and Use Tax

Like property tax revenue, local cities and counties use sales and use tax revenues to fund a wide variety of important local services and community facilities. As of July 1st, 2013, the Utah sales and use tax rate was 4.70 percent. In addition to the State sales tax, all counties, cities, and towns are entitled to impose an additional one percent local sales and use tax. Counties may also impose an "option sales tax" of 0.25 percent. The County imposes the additional one percent and 0.25 "option sales tax," plus a "cultural, botanical, and zoo" sales tax of 0.1 percent, for a combined rate of 6.05 percent (Utah State Tax Commission 2013c).

**Table 3.10-8** provides a summary of sales and use tax distributions among the County, Naples and Vernal for the most recent fiscal years that data were available.

**Table 3.10-8: Sales and Use Tax Distributions**

| Jurisdiction | Sales and Use Tax Distributions | | |
|---|---|---|---|
| | FY 2011 | FY 2012 | FY 2013 |
| Uintah County (unincorporated) | $2,998,032 | $3,584,630 | $3,717,685 |
| Naples | $1,753,766 | $2,003,161 | $2,205,252 |
| Vernal | $3,331,951 | $4,074,210 | $4,115,614 |

Source: Utah State Tax Commission 2014b.

### 3.10.4 Quality of Living

***Housing***

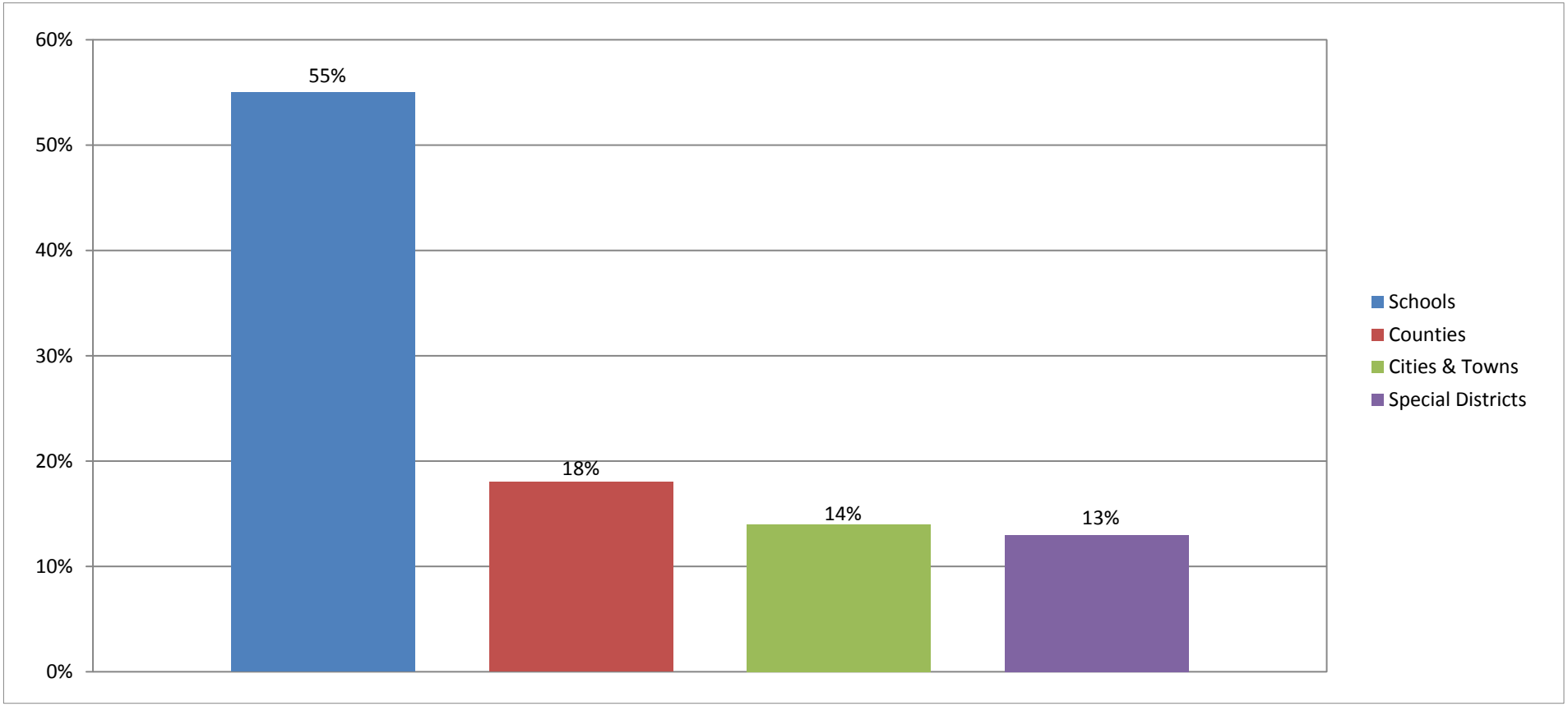
**Table 3.10-9** summarizes key housing characteristics. In 2012, an estimated 10,957 households were located in the County, of which 74.8 percent were family households, compared with 81.0 percent in Naples, 64.1 percent in Vernal, and 74.9 percent in the State of Utah. Conversely, there were a greater percentage of households in the County and Vernal that had a householder living alone, compared with 19.5 percent in Utah (U.S. Census Bureau, 2013a). Both the average household size and average family size were lower in the County and Vernal than in Utah, while both were higher in Naples.

**Table 3.10-9: Housing and Household Characteristics**

| Housing Subject | Uintah County | Naples | Vernal | State of Utah |
|---|---|---|---|---|
| Households[1] | 10,957 | 616 | 3,384 | 880,873 |
| Percent Family Households | 74.8 | 81.0 | 64.1 | 74.9 |
| Percent Living Alone | 20.4 | 10.1 | 27.0 | 19.5 |
| Average Household Size | 2.97 | 3.25 | 2.66 | 3.09 |
| Average Family Size | 3.44 | 3.57 | 3.21 | 3.58 |
| Housing Units | 11,868 | 635 | 3,661 | 979,848 |
| Single-unit, detached | 8,353 | 575 | 2,087 | 673,819 |
| Two to four units | 953 | 13 | 652 | 75,133 |
| Five units or more units | 528 | 0 | 436 | 133,570 |
| Mobile home | 1,607 | 45 | 205 | 38,592 |
| Percent Occupied | 92.3 | 97.0 | 92.4 | 89.9 |
| Percent owner-occupied | 74.6 | 88.5 | 59.3 | 70.4 |
| Percent renter-occupied | 25.4 | 11.5 | 40.7 | 29.6 |
| Percent Vacant | 7.7 | 3.0 | 7.6 | 10.1 |

[1] The ACS defines household as including all the people who occupy a housing unit.
[2] The ACS defines a housing unit as a house, an apartment, a mobile home, a group of rooms or a single rom that is occupied (or if vacant, is intended for occupancy) as separate living quarters.
Source: U.S. Census Bureau, 2013a, and 2013c.

# Distribution of Property Taxes with the State of Utah (2013)




Source: Utah State Tax Commission 2014

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 5/19/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.10-2_PropertyTax.mxd |

***Uintah County***

Ashley Valley Energy Route
Distribution of Property Taxes
within the State of Utah (2013)
Uintah County, Utah

FIGURE
**3.10-2**

*This page intentionally left blank.*

As indicated in **Table 3.10-9**, the County and Naples have a higher percentage of single-family houses than in the State of Utah (68.8 percent), while Vernal has a lower percentage. Vernal has a higher percentage of structures with two to four units (i.e., duplexes and fourplexes) than the State (7.7 percent), while the other jurisdictions have a lower percentage of such structures. All three jurisdictions have a lower percentage of housing units in structures of five units or more than in the State (13.6 percent), and Naples has no residential buildings with five or more units. All three jurisdictions have a higher percentage of mobile homes than the 3.9 percent in the State of Utah (U.S. Census Bureau 2013c).

Both the County and Naples had a higher housing occupancy rate and lower housing vacancy rate than the State of Utah, while Vernal had the opposite for both (U.S. Census Bureau 2013c). Vernal also had a higher percentage of renter-occupied units than the State, while the County and Naples had lower percentages (U.S. Census Bureau 2013c).

Historically, housing availability in the County has been low. As shown in **Table 3.10-10**, the median sales price of homes sold in the County decreased by 29 percent between 2009 and 2011, but has since increased (Utah Association of Realtors 2011-2013). Housing prices in the County during 2009-2011 fell more sharply than the overall Utah median sales price, but have since increased more rapidly (Utah Association of Realtors 2011, 2012, 2013).

**Table 3.10-10: Home Sales and Median Prices**

| Year | Sales in Uintah County* | Median Sales Price, Uintah County* | County Median as Percent of State Median |
|---|---|---|---|
| 2009 | 245 | $198,000 | 99.4 |
| 2010 | 380 | $156,150 | 82.1 |
| 2011 | 510 | $140,000 | 80.6 |
| 2012 | 468 | $179,700 | 99.8 |
| 2013 | 470 | $193,900 | 94.6 |

* Year to date as of December of the year.
Source: Utah Association of Realtors 2011, 2012, and 2013.

The strong local demand for house purchasing is reflected in the general increase in the number of sales, as displayed in **Table 3.10-10**. Housing sales climbed from 245 in 2009 to 510 in 2011, then fell in 2012 but held steady in 2013 (Utah Association of Realtors 2011, 2012, 2013). The median sales price of homes sold in the County in 2013 rose 7.4 percent from 2012. By comparison, the median sales price in the state of Utah increased by 13.9 percent in that same time period. Housing availability in the County has improved somewhat in the wake of the national economic slowdown. The slowdown reduced the pace of oil and gas development and increased unemployment, triggering some out-migration of workers and easing the demand for housing.

***Crime***

The Utah Bureau of Criminal Identification, a division of the Utah Department of Public Safety produces semiannual reports on crime statistics for the State of Utah. According to the *2012 Crime in Utah Report*, total index crimes in Utah increased 1.74 percent and the number of violent crimes increased

approximately 6.0 percent in the State from 2011 (Utah Department of Public Safety 2013). Total arrests in the County increased from 3,543 in 2011 to 3,722 in 2012 (Utah Department of Public Safety 2012, 2013). The 2012 arrests represent a 5.1 percent increase from the number of 2011 arrests.

***Public Facilities and Services***

The County Sheriff has one office that is located in Vernal. According to information from the Utah Department of Corrections, the County completed a new 384-bed jail in January 2011 (Utah Department of Corrections 2013). The County has five fire departments serving the community, four of which are city fire departments and one a combined city and county fire department. For those areas not covered by Indian lands, volunteer fire departments within the county provide fire protection and hazardous materials response (Uintah County Emergency Management 2013).

The Uintah County School District provides educational services to approximately 7,447 students in 12 schools, of which seven are elementary schools, one middle school, one junior high school, one high school, one alternative school, and one online school (Uintah County School District 2012). Higher educational opportunities that are available in the area include Utah State University's Bingham Research Center in Vernal (Bingham Research Center 2013) and the Uintah Basin Applied Technology College at its Roosevelt and Vernal Campuses (UBATC 2013).

Medical services within the County are provided by Ashley Regional Medical Center, a private facility. Located in Vernal, the Ashley Regional Medical Center operates a 39-bed acute care facility with an emergency room and trauma center, a day surgical center, and an urgent care facility (Ashley Regional Medical Center 2013, Uintah County Economic Development 2013). In addition, the Uintah Basin Medical Center, a 42-bed general hospital located in Roosevelt in Duchesne County, provides medical services in the area (Uintah Basin Healthcare 2012).

Other County services include a public library, a recreation and community center, a golf course, five public parks, and an animal shelter. All these facilities are located in Vernal (Uintah County 2013).

## 3.11 VISUAL RESOURCES

The Project Area contains BLM-administered lands that have been inventoried and are managed to preserve the existing scenic quality and character of the landscape. The BLM uses a Visual Resource Management (VRM) system to inventory and manage visual resources on BLM-administered lands. The primary objective of the VRM system is to manage visual resources so that the quality of scenic (visual) resources is protected (BLM 1984). The VRM system uses four classes (and their associated visual resource objectives) to describe the different degrees of surface disturbance or modification allowed on the landscape (**Table 3.11-1**). These classes are visual ratings that describe an area in terms of visual quality, viewer sensitivity to the landscape (i.e., the public's perception of the importance of scenery and scenic quality within an area), and the distance from which a viewer would be likely to observe an area (BLM 1986a). An area's BLM-designated VRM class and visual resource objectives can be used to analyze and determine the visual impacts of proposed activities on the land, and to gauge the amount of disturbance an area can tolerate before it exceeds the visual objectives of its VRM class (BLM 1986a).

**Table 3.11-1: BLM Visual Resource Management (VRM) Class Objectives**

| VRM Class | VRM Objective |
|---|---|
| Class I | The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and should not attract attention. |
| Class II | The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. |
| Class III | The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. |
| Class IV | The objective of this class is to provide for management activities, which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements. |

Source: BLM 1986a.

As depicted in **Figure 3.11-1**, the BLM VFO RMP/ROD manages BLM-administered public lands in the Project Area under VRM Class III and IV objectives (BLM 2008a). The designation of these management classes was based on resource use of the area, the area's visual quality and viewer sensitivity, the level of use by the public, and the type of visitor use that the area receives (BLM 1984). The total acreage of each VRM class within the Project Area is tabulated below in **Table 3.11-2**.

**Table 3.11-2: VRM Classes within the AVER Project Area**

| VRM Class | Acres of Project Area | Percent of BLM Land in Project Area |
|---|---|---|
| Class I | 0 | 0 |
| Class II | 0 | 0 |
| Class III | 2,910 | 99 |
| Class IV | 15 | <1 |
| **TOTAL** | **2,925** | **100** |

Source: BLM 2014g.

Currently, public visitation within the Project Area is highest in the vicinity of the McCoy Flats Trail Complex. Trailhead counters installed in October 2013 indicated about 26,000 visits to the McCoy Flats area in a year's time (Wodraska 2014). Based on the popularity of these single-track mountain bike trails, as well as landscape position, three key observation points (KOPs) were selected and approved by the BLM in this area to evaluate the visibility of the alternatives from the KOPs. The three KOP locations are described below in **Table 3.11-3** and depicted on **Figure 3.11-1**. KOP 1 and KOP 2 both fall on BLM-administered land within the VRM Class III. KOP3 is located on State-administered land and therefore

does not have a VRM classification. Due to the temporary nature of the proposed construction activities, visibility of project-related construction equipment was excluded as factors for selection of the KOPs. In addition, although cut and fill is typically the most visible part of road construction, these areas were excluded as factors for selection of the KOPs. Maximum cut and fill was dismissed because engineering designs have not been finalized.

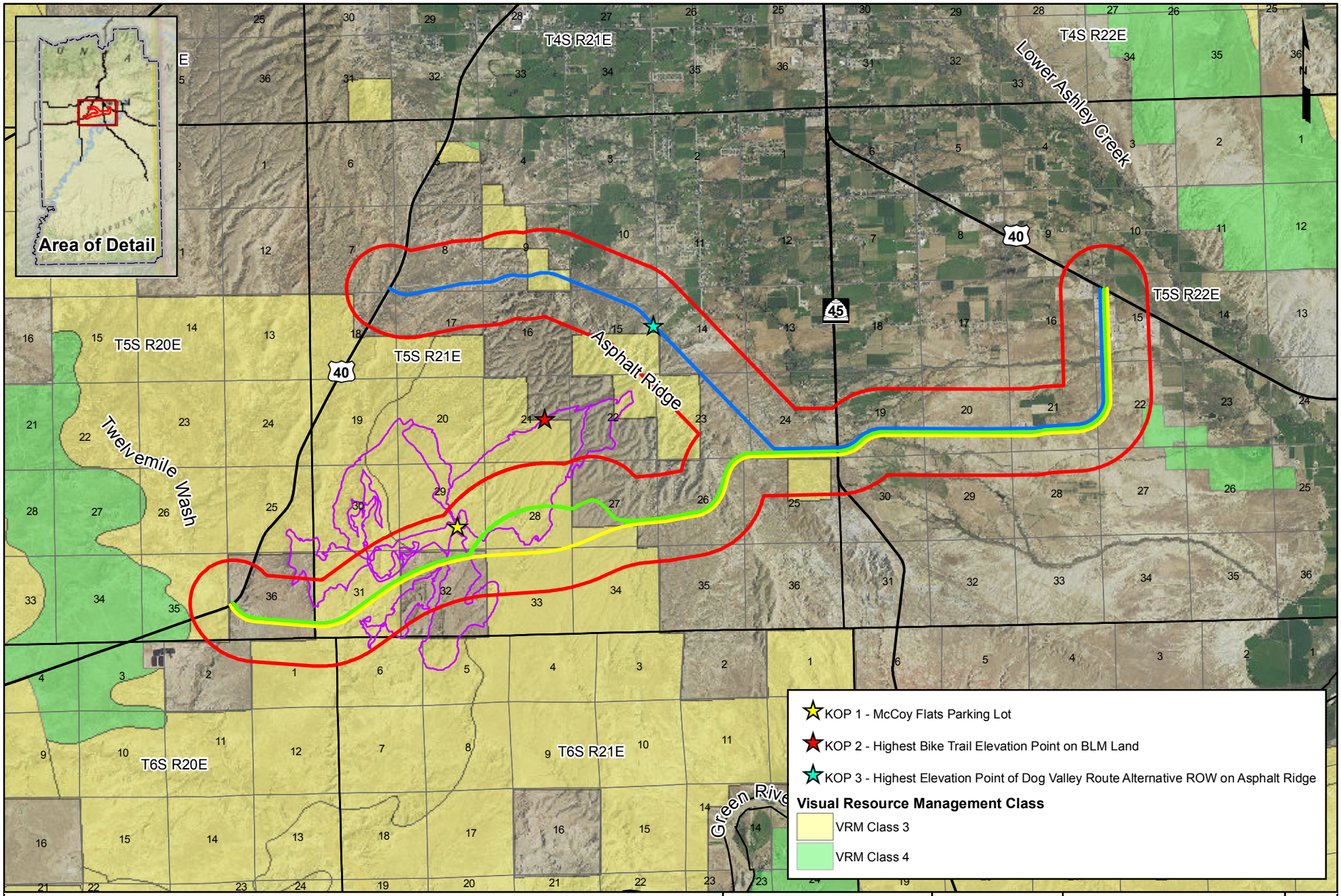
**Table 3.11-3: Key Observation Points**

| KOP | UTM Coordinates | Surface Ownership | Description |
|---|---|---|---|
| KOP 1 | 620428, 4467623 | BLM | View from McCoy Flats Trail Complex parking lot |
| KOP 2 | 622057, 4469618 | BLM | View from highest trail elevation point on BLM-administered land in the Project Area |
| KOP 3 | 624080, 4471371 | State | View from highest elevation point of Dog Valley Route Alternative ROW along Asphalt Ridge |

## 3.12 WATER RESOURCES, INCLUDING FLOODPLAINS, HYDROLOGIC CONDITIONS (STORMWATER), AND WATERS OF THE U.S.

The basin is divided into two physiographic provinces: the Uinta Mountain section of the Rocky Mountain Province and the Uinta Basin section of the Colorado Plateau. The basin also is divided into two main drainages: the north slope and the south slope. The Green River is the principal drainage for both the north and south slope. The north slope drainage does not directly affect the Project Area, and is not affected by the Project Area, and is not discussed further in this document. The south slope drainage does include the Project Area and is discussed below.

The basin's south slope drainage is defined on the north by the Uinta Mountains, on the south by the Tavaputs Plateau and the Book Cliffs, on the east by Diamond Mountain and the Douglas Creek arch, and on the west by the Wasatch Mountains. The Utah Department of Natural Resources-Division of Water Resources (UDNR-DWaR) has further subdivided the south slope drainage into four subunits (UDNR-DWaR 1999). Asphalt Ridge, running from northwest to southeast through the Project Area, forms a topographic barrier that effectively divides the Project Area into the Ashley/Brush and the Green (River) subunits (refer to **Figure 3.12-1**) (UDNR-DWaR 1999). The Ashley/Brush subunit drains the eastern portion of the Project Area into lower Ashley Creek, a perennial stream, which empties into the Green River downstream of Stewart's Lake. The Green subunit drains the western portion of the Project Area south and southwest to Twelvemile Wash, an intermittent/ephemeral drainage, which empties into the Stirrup segment of the Green River.




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- McCoy Flats Trail Complex
- Roads
- Township/Range
- Section

*VRM Classes: BLM Utah State Office*
*McCoy Flats Bike Trails: BLM Vernal Field Office*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

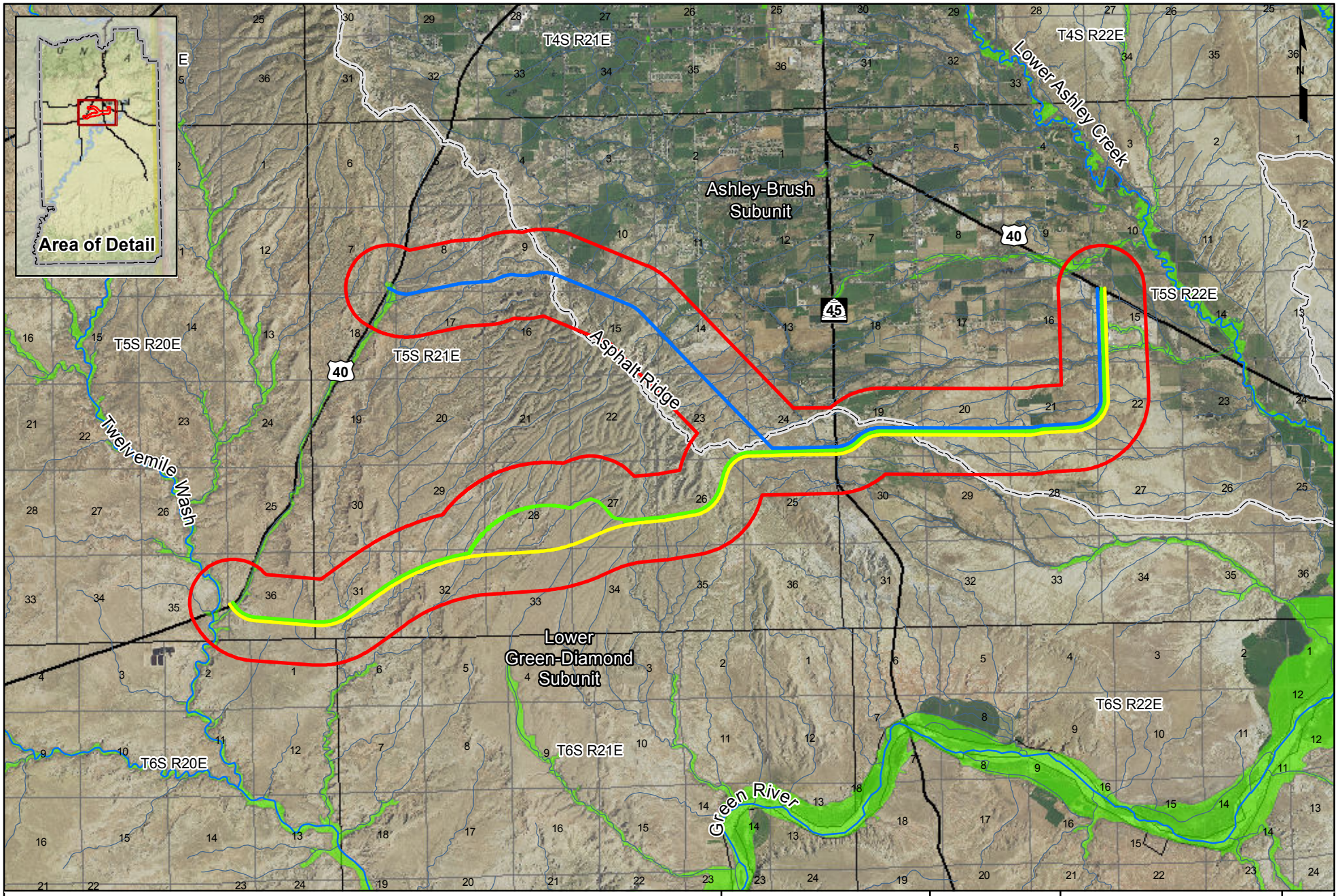
| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.11-1_VisualResources.mxd |

***Uintah County***

Ashley Valley Energy Route
BLM Visual Resource Management
Uintah County, Utah

FIGURE
**3.11-1**

*This page intentionally left blank.*




0 0.5 1 2 Miles

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Subunit Boundaries
- 100-year Floodplain Areas
- Major Streams and Rivers
- Minor Streams and Drainages
- Roads
- Township/Range
- Section

*HUC 8 Subunits: United States Geologic Survey (USGS)*
*Streams: National Hydrography Dataset (NHD)*
*Floodplains: FEMA National Flood Hazard Layer (NFHL)*

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.12-1_WaterResources.mxd |

***Uintah County***

Ashley Valley Energy Route
Water Resources
Uintah County, Utah

FIGURE
**3.12-1**

*This page intentionally left blank.*

Average annual flow in the Green River is approximately 4,064,290 acre-feet at Ouray, Utah, approximately 17 miles downstream of the Project Area (BLM 2006b). Flow patterns in the Green River show the classic pattern of a rising limb, peak, and falling limb for each water year. The consistent nature of the flows reflects the large drainage area of 44,850 square miles for this gauging station and partial control of the flow in the Green River by the Flaming Gorge Dam (BIA 2014).

As discussed in **Section 3.5.1** soils, and sediments, within the Project Area consist of alluvium, colluvium, terrace and bench deposits, landslide deposits, glacial outwash and eolian or dune deposits derived from sandstone, limestone, shale and quartzite (USDA-NRCS 2003). Surface water drains either into the Ashley/Brush or Green subunits via a series of intermittent or ephemeral trellis-pattern drainages. Drainages are generally incising the existing sediments and bedrock rather than depositing new sediment (USDA-NRCS 2003).

Groundwater occurs in underground aquifers of either unconsolidated (e.g., alluvium, colluvium materials) or consolidated (bedrock) materials. There may be several aquifers at different depths each having different chemical qualities and hydraulic potential (UDNR-DWaR 1999). Unconsolidated, valley-fill materials have traditionally been the best producers of groundwater in Utah; however in the basin, the occurrence of unconsolidated deposits is limited. Due to the lack of unconsolidated aquifers in much of the basin the only other groundwater source is from consolidated, or bedrock aquifers. The Duchesne River Formation, which comprises 45 percent of the Project Area (refer to **Table 3.4-1**, is one of the best consolidated groundwater sources (UDNR-DWaR 1999).

Between the period 1961 and 1990, the annual precipitation for the Project Area ranged between 7 to 10 inches (UDNR-DWaR 1999), coming mostly in the form of snow and runoff from brief, intense late summer storm events (BLM 2005). As discussed in **Section 3.5**, soils within the Project Area have a very low to moderately high water erosion potential, approximately 90 percent of the soils are well drained, and all of the soils have a low to very low potential for flooding (refer to **Table 1 in Appendix D).**

Areas of low, generally flat areas adjacent to perennial streams and rivers are considered floodplains. Federal agencies are required to take action to minimize the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains (Executive Order [EO] 11988). The Project Area includes 182 acres of floodplain, all on private surface lands east of State Route 45. The Federal Emergency Management Agency (FEMA) has classified these lands as Flood Zone A, meaning such areas are subject to inundation at least once in 100 years, although no detailed hydraulic analyses have been performed to verify such a classification (FEMA 2014).

Surface water quality problems are detailed in Utah's 303(d) list of impaired waters, required under the Clean Water Act of 1972, as amended. Lower Ashley Creek is listed due to high total dissolved solids and selenium concentrations, most likely the result of irrigation return flows (BLM 2005). Excess salinity, a major surface water quality problem in the basin comes from naturally occurring groundwater during low flow periods and from erosion of saline soils, which are prevalent throughout the Project Area (refer to **Table 2 in Appendix D).**

Naturally flowing water from the Project Area ultimately drains into the Green River. This includes irrigation water on private lands that may come from upstream and surplus irrigation water that re-enters drainages downstream within the Project Area. The Green River is determined to be a Water of the U.S. under the jurisdiction of the USACE. In addition, under Section 404 of the Clean Water Act of 1972, as amended, the USACE retains the authority to regulate the discharge of dredged and fill material into Waters of the U.S.

## 3.13 WILDLIFE RESOURCES, INCLUDING MIGRATORY BIRDS AND RAPTORS, USFWS-DESIGNATED AND NON-DESIGNATED WILDLIFE AND FISHERY SPECIES

The Project Area offers a variety of physical characteristics that comprise habitat for wildlife species within the basin. Wildlife species that may utilize these habitat associations include a wide variety of small mammals, such as bats and rodents, birds, invertebrates, and herptiles. Some common species known to inhabit the Vernal Planning Area include American crow (*Corvus brachyrhynchos*), American kestrel (*Falco sparverius*), black-capped chickadee (Poecile atricapillus), common raven (*Corvus corax*), green-tailed towhee (*Pipilo chlorurus*), horned lark (*Eremophila alpestris*), house finch (*Carpodacus mexicanus*), song sparrow (*Melospiza melodia*), vesper sparrow (*Pooecetes gramineus*), western kingbird (*Tyrannus verticalis*), western meadowlark (*Western meadowlark*), black-tailed and white-tailed jackrabbits (*Lepus spp.*), golden-mantled ground squirrel (*Callospermophilus lateralis*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), common sagebrush lizard (*Sceloporus graciosus*), common side-blotched lizard (*Uta stansburiana*), gopher snake (*Pituophis catenifer catenifer*), and greater short-horned lizard (*Phrynosoma hernandesi*) (BLM 2008a). The abundance of common wildlife species is dependent upon the amount of habitat available at a specific locality, the degree of existing disturbance, and the carrying capacity of that habitat.

While these more common species are valuable members of the ecosystems within the Project Area, they are relatively common within the basin. Therefore these species are not discussed in the same detail within this analysis as those species receiving federal or state level protections, or as those given consideration for their economic importance.

### 3.13.1 Big Game

Two primary species are known to inhabit the Project Area based on UDWR mapping: the pronghorn antelope and the mule deer. The Rocky Mountain elk (*Cervus candensis)*, bobcat (*Lynx rufus*), and mountain lion (*Felis concolor*) were identified as a potential concern during the public scoping process (BLM 2014a); however, as UDWR does not identify habitat for these species within the Project Area, they have been removed from detailed analysis within this EA. The Project Area is located entirely within the Vernal subunit (9b) of the South Slope Wildlife Management Unit (WMU). This subunit encompasses the northern-central Uintah County and portions of south-central Daggett County and northeastern Duchesne County.

The UDWR habitats mapped within the Project Area are ranked based on their relative biological value and seasonal significance. Based on the UDWR seasonal range classification system, substantial and crucial ranges were identified within the Project Area. They are defined by the UDWR as follows:

- *Crucial* habitat is defined as habitat which the local population of the particular species depends on for survival because no viable alternatives exist within its range. This habitat is essential for the persistence of the population and loss of this habitat would result in declines in population or carrying capacity of the connected species.
- *Substantial* habitat is habitat that is used by the species but is not essential for the continual survival of the population. Loss of substantial habitat is not likely to lead to significant declines in carrying capacity or population numbers.

**Table 3.13-1** lists the UDWR mapped habitats for big game species within the Project Area.

**Table 3.13-1: UDWR Big Game Habitats within the AVER Project Area**

| Species | Habitat Type | Acres in Project Area | Percent of Project Area |
|---|---|---|---|
| Mule Deer | Crucial year-long habitat | 5,081 | 43 |
| | Crucial fawning habitat | 5,081 | 43 |
| | Substantial winter habitat | 3,241 | 28 |
| Pronghorn Antelope | Crucial year-long habitat | 100 | <1 |
| | Substantial year-long habitat | 4,135 | 35 |

Source: UDWR 2014a.

#### 3.13.1.1 Mule Deer

Mule deer are common throughout Utah and occupy a variety of habitats such as open deserts, high mountains, and urbanized areas. The dietary components of mule deer are diverse and include browse, grasses, and forbs. Fawning typically occurs in June and is closely tied to the abundance of succulent, green forage during the spring and summer months (UDWR 2008).

The Project Area contains 5,081 acres of UDWR crucial year-long habitat, 5,081 acres of UDWR crucial fawning habitat, and 3,241 acres of UDWR substantial winter habitat for mule deer. The substantial winter habitat occurs in the center of the Project Area, while the crucial year-long habitat and crucial fawning habitat occurs east of Asphalt Ridge in the Project Area (**Figure 3.13-1**).

The current population objective for the combined Diamond Mountain and Vernal subunits of the South Slope WMU is 13,000. The 2013 population estimate for the Diamond Mountain and Vernal subunits is 11,100, or 85 percent of the current objective. The mule deer population estimate for the combined subunits has been in a downward trend since 2009 when it was exceeding the population objective (UDWR 2014b).

#### 3.13.1.2 Pronghorn Antelope

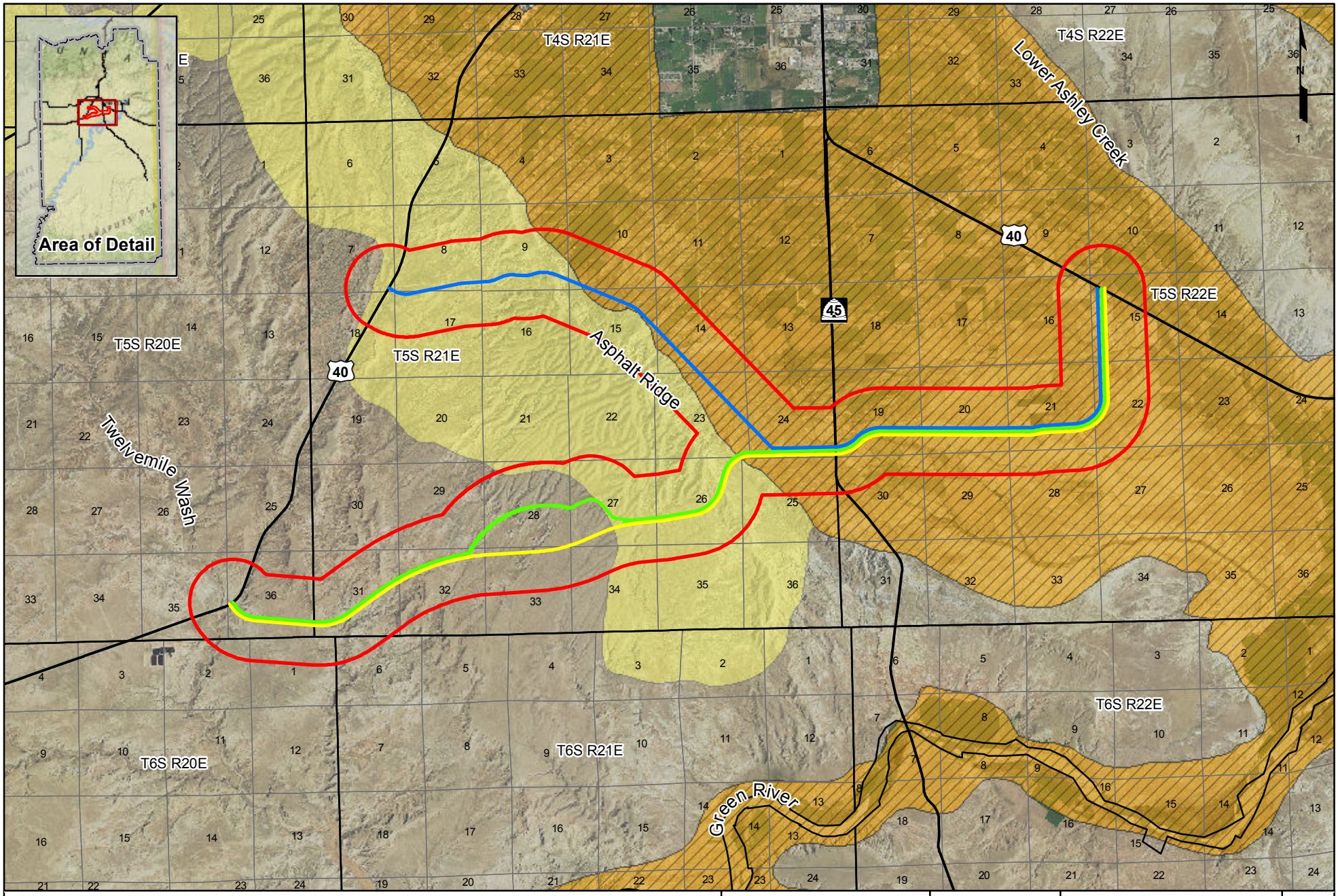
Pronghorn antelope (pronghorn) primarily occupy shrub-steppe habitats within Utah but may also utilize grassland habitats. Habitat is typically in low rolling, open, or flat terrain. Proximity to surface water sources is a significant habitat component for pronghorn as the abundance of water is an important factor in long-term population success. This is a limiting factor for populations in the basin due to the high, arid-west climate. The abundance of forb species is also an important habitat component (UDWR 2009).

The home range for an individual pronghorn could vary from 400 to 5,600 acres depending on season, local livestock abundance, habitat quality, and population characteristics. Some pronghorn may make seasonal migrations between winter and summer habitat ranges, though this migration is likely the result of habitat availability and not related local weather patterns (Fitzgerald et al. 1994). Pronghorn often associate in small groups and are most active during the day (UDWR 2014c).

The Project Area contains 100 acres and 4,135 acres of UDWR crucial year-long habitat and substantial year-long habitat, respectively. Crucial year-long habitat for pronghorn occurs on the southeasterly most segment of the Project Area on the western side of U.S. Highway 40. Substantial year-long pronghorn habitat occurs in the eastern half of the Project Area (**Figure 3.13-2**). The Project Area also contains one water development feature, which is an unfenced wildlife guzzler, for antelope. This guzzler is located within the Proposed Action and Alternative C ROWs. Because the development is a wildlife guzzler, it is not the responsibility of the permittees.

### 3.13.2 Upland Game

Upland game species have the potential to occur within the Project Area. Some of the more prevalent upland game species that occupy the basin include the chukar partridge (*Alectoris chukar*), ring-necked pheasant (*Phasianus colchicus*), California quail (*Callipepla californica*), wild turkey (*Meleagris gallopavo*), mourning dove (*Zenaida macroura*), mountain cottontail rabbit (*Sylvilagus nuttallii*), and desert cottontail (*Sylvilagus audubonii*). Greater sage-grouse is discussed further in **Section 3.13.5.** Habitat for upland game species can be found throughout the Project Area. Hunting seasons are species-specific and typically occur sometime between August and November (UDWR 2013). The UDWR has designated 4,509 acres of crucial, year-long habitat for ring-necked pheasant in the eastern half of the Project Area, east of Asphalt Ridge. Additionally, 358 acres of crucial, year-long wild turkey habitat occurs along U.S. Highway 40 in the northeastern most reach of the Project Area, closest to Lower Ashley Creek.




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section

**Mule Deer Habitat**

- Crucial Fawning Habitat
- Crucial Year-long Habitat
- Substantial Winter Habitat

*Mule Deer Habitat: Utah DWR*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | A/ER_EA_Figure_3.13-1_MuleDeer.mxd |

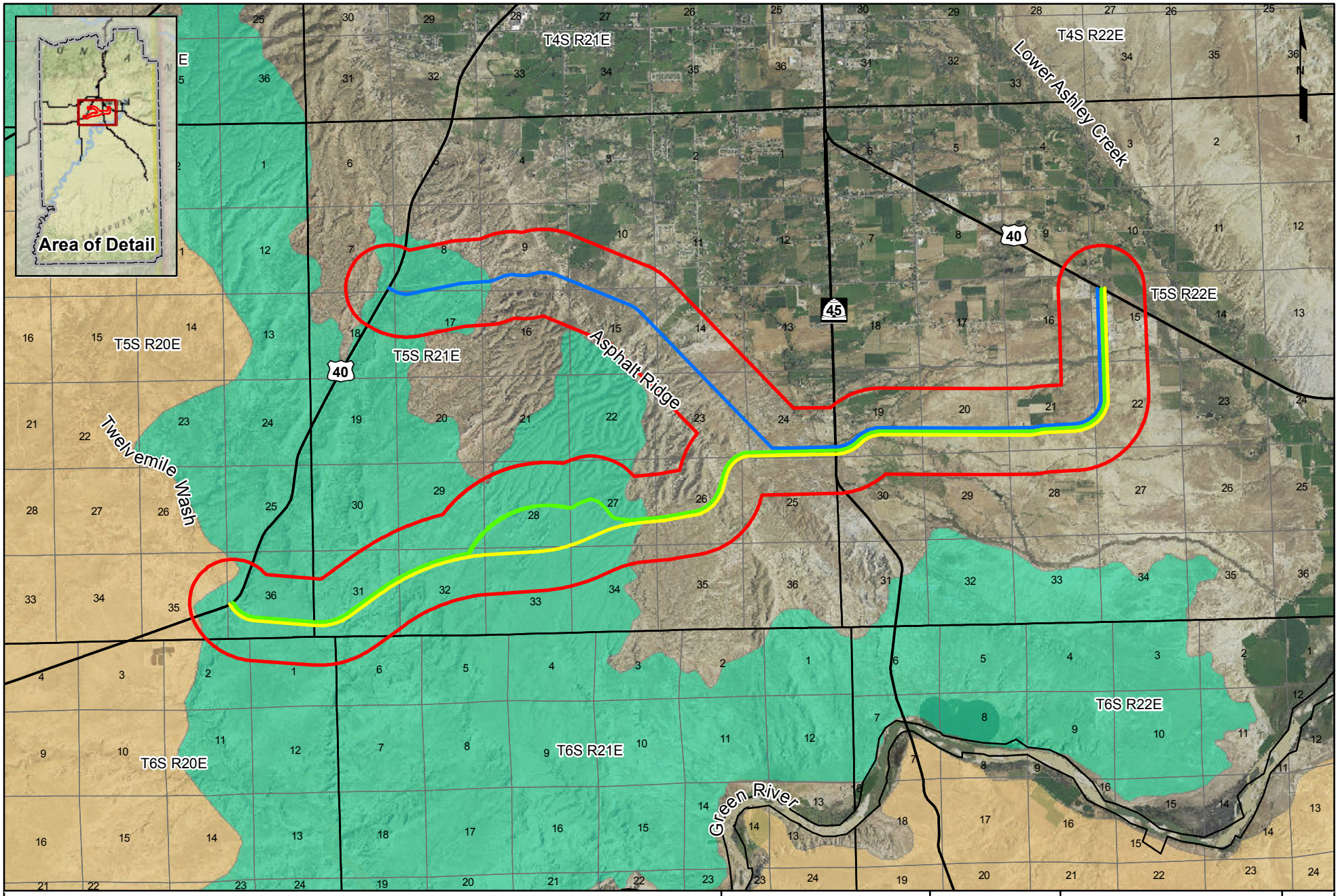
***Uintah County***

Ashley Valley Energy Route
UDWR Mule Deer Habitat
Uintah County, Utah

FIGURE

**3.13-1**

*This page intentionally left blank.*




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section

**Pronghorn Habitat**

- Crucial Year-long Habitat
- Substantial Year-long Habitat

*Pronghorn Habitat: Utah DWR*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.13-2_Pronghorn.mxd |

***Uintah County***

Ashley Valley Energy Route
UDWR Pronghorn Habitat
Uintah County, Utah

FIGURE

**3.13-2**

*This page intentionally left blank.*

### 3.13.3 Raptors

Raptors, or birds of prey, are avian species that hunt and feed on other animals. The Project Area provides a variety of vegetation types and topography such as pinyon-juniper woodlands, shrub-steppes, and badlands that serve as nesting and foraging habitat for raptor species. **Table 3.13-2** identifies raptor species with the potential to occur in the Project Area, and a description of nesting habitats.

**Table 3.13-2: Raptor Species with a Potential to Occur in the Project Area**

| Common Name | Scientific Name | Nesting Habitat |
|---|---|---|
| American Kestrel | *Falco sparverius* | Tree cavities, cliff crevices |
| Bald Eagle | *Haliaeetus leucocephalus* | Large trees near rivers, lakes, marshes, or other wetland areas |
| Burrowing Owl | *Athene cuniculara* | Prairie dog colonies |
| Cooper's Hawk | *Accipiter cooperii* | Woodland areas and riparian zones |
| Ferruginous Hawk | *Buteo regalis* | Ground, pinyon-juniper woodlands, balanced pinnacles |
| Golden Eagle | *Aquila chrysaetos* | Cliff ledges and rock outcrops |
| Great-horned Owl | *Bubo virginianus* | Cliff ledges or nests of other species |
| Long-eared Owl | *Asio otus* | Coniferous and deciduous forests, and shrublands |
| Northern Harrier | *Circus cyaneus* | Ground nester |
| Prairie Falcon | *Falco mexicanus* | Cliff ledges |
| Red-tailed Hawk | *Buteo jamaicensis* | Cliff ledges, rock outcrops, aspen, pinyon-juniper woodlands |
| Short-eared Owl | *Asio flammeus* | Ground nester |
| Swainson's Hawk | *Buteo swainsoni* | Solitary trees or bushes |
| Turkey Vulture | *Cathartes aura* | Rock outcrops, caves, and tree cavities |
| Western Screech Owl | *Megascops kennicottii* | Almost exclusively in tree cavities |

Source: UDWR 2014c.

All raptor species and their nests are protected from take or disturbance under the Migratory Bird Treaty Act of 1918 (MBTA) (16 U.S.C., § 703 et seq.). The golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*) are also afforded additional protection under the Bald and Golden Eagle Protection Act of 1940 (BGEPA), amended in 1973 (16 U.S.C., § 669 et seq.). Given the propensity for raptor species to occupy the habitat types within the Project Area, a pedestrian raptor survey and a burrowing owl (*Athene cuniculara*) call survey were completed for the Proposed Action ROW (Kleinfelder 2014b). No raptor nests were identified during the surveys (Kleinfelder 2014b). However, one inactive turkey vulture nest, located just outside of the Project Area, which was identified in a previous survey is within 0.5 mile of the Dog Valley Route Alternative ROW (BLM 2014h). This nest falls within the USFWS nesting buffer for the turkey vulture, outlined in Romin and Muck (2002). Further analysis for raptor species that are federally protected or special status species within Utah can be found in **Section 3.13.5**.

### 3.13.4 Migratory Birds

Migratory birds are protected under the MBTA (16 U.S.C. 703-711) and EO 13186 (66 Federal Register 3853). These regulations deem it illegal to pursue, hunt, kill, capture, possess, buy, sell, barter or purchase any migratory birds unless the act is permitted under other statutes. These protections are further extended to feathers, nests, eggs or migratory bird products. EO 13186 mandates that government agencies must implement bird conservation principles into agency activities and address potential impacts on migratory birds in its environmental review processes.

Numerous migratory birds occupy the Project Area throughout the year. This section addresses migratory bird species that may inhabit the Project Area, including those classified as Priority Species by Utah Partners in Flight (PIF). The Utah PIF Avian Conservation Strategy is used to identify which migratory bird species and/or their habitats are in need of protection and recommend conservation actions in accordance with strategies that are generated through the program (Parrish et al. 2002). The species identified by the Utah PIF are not subject to regulatory protection by the State of Utah; however, some of the species are listed by both the Utah PIF and the State of Utah, and therefore are afforded protection as wildlife species of concern or conservation agreement species (**Section 3.13.5**).

A number of bird species listed by the Utah PIF conservation program have the potential to occur within the vicinity of the Project Area. The following sections list several migratory birds that may inhabit the dominant habitats within the Project Area, including those species classified as High-Priority birds by Utah PIF (Parish et al. 2002). Utah PIF High- Priority species are denoted by an asterisk (*).

#### 3.13.4.1 High Desert Shrub

Migratory bird species commonly associated with mixed desert shrub/sagebrush habitat include: the black-throated sparrow (*Amphispiza bilineata*), black-chinned hummingbird* (*Archilochus alexandri*), burrowing owl*, chukar partridge, gray flycatcher* (*Empidonax wrightii*), greater roadrunner (*Geococcyx californianus*), horned lark (*Eremophila alpestris*), loggerhead shrike (*Lanius ludovicianus*), northern mockingbird (*Mimus polyglottos*), Say's phoebe (*Sayornis saya*), and prairie falcon (Parrish et al. 2002).

#### 3.13.4.2 Shrub-steppe

Although the following birds are often associated with these vegetation communities, they may also use other scrub/shrub vegetation communities as well: Brewer's sparrow* (*Spizella breweri*), ferruginous hawk (*Buteo regalis*)*, mountain bluebird (*Sialia currucoides*), sage sparrow* (*Amphispiza belli*), greater sage-grouse*, sage thrasher (*Oreoscoptes montanus*), and vesper sparrow (*Pooecetes gramineus*) (Parrish et al. 2002).

### 3.13.5 USFWS-Designated and Non-Designated Wildlife and Fishery Species

This section discusses special status wildlife and fishery species that have a special-status designation, which includes:

- Species federally-listed as threatened or endangered under the ESA, candidate species, and species proposed for federal listing as threatened or endangered under the ESA;

- Species listed as sensitive by the State of Utah, including both wildlife species of concern and species receiving special management under a conservation agreement in order to preclude the need for federal listing; and
- Species protected under certain specified regulations.

In accordance with Section 7(a)(2) of the ESA, the BLM must ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or adversely modify USFWS-designated critical habitat. The BLM has a commitment to ensure that actions requiring its authorization or approval are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, either under provisions of the ESA or other provisions of this policy (BLM 2008a).

Special status wildlife species that have the potential to occur within the Project Area or be affected by development activities within the Project Area are discussed below. For more information on these species refer to the "*Summary of Potential for and/or Occurrence of Special Status Plant and Wildlife Species for the Proposed Ashley Valley Energy Route (AVER) Project*" in **Appendix E**.

### 3.13.5.1 Special Status Mammal Species

#### *3.13.5.1.1 Bats*

Three bat species, identified as State of Utah wildlife species of concern in the County (Tier II species in the Utah Comprehensive Wildlife Conservation Strategy [CWCS]), may occur in the Project Area (UDWR 2005; UDWR 2011). These species include the big free-tailed bat (*Nyctinomops macrotis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and the spotted bat (*Euderma maculatum*).

Big free-tailed bats are long distance migrants that are only present in Utah during the summer months (Banfield 1974, Kumirai and Jones 1990). Male big free-tailed bats are rarely found north of Mexico, indicating only females and their pups are found in Utah (Easterla 1973, Higginbotham and Ammerman 2002, Ammerman et al. 2012). Big free-tailed bats forage over large areas; individuals have been documented to forage as far as 36 kilometers (22.4 miles) from their roosts (Corbett et al. 2008). Habitat in Utah is typically associated with rock outcroppings but may also include forests and desert scrubland (Findley et al. 1975, Milner et al. 1990, Mollhagen and Bogan 1997, Oliver 2000, Corbett et al. 2008, Ammerman et al. 2012). Roosts primarily consist of cliff crevices, but may also include buildings, caves, or tree cavities (Borell 1939, Easterla 1972, Milner et al. 1990, Navo and Gore 2001, Ammerman et al. 2012).

Townsend's big-eared bat occurs throughout Utah at elevations below 9,000 feet (UDWR 2011). Townsend's big-eared bats are typically found in or near forested areas consisting of uneven aged trees and snags, but have been observed to use caves, mines and buildings for day roosts and winter hibernaculum. This species is not known to migrate long distances, but may migrate locally as a result of seasons or disturbances.

The spotted bat is easily distinguished by three large white spots on the back and exceptionally large pink ears. Spotted bats range from southern British Columbia to Central Mexico at elevation below 3,200m and has the potential to occur throughout all of Utah (Cannings et al. 1999, Sechrest 2002 ). Migration habits of the spotted bats are poorly understood, but it is believed an elevational migration may occur

between summer and winter months (Berna 1990, Barbour and Davis 1969, Geluso 2000). Potential habitat includes desert, montane coniferous stands, canyon bottoms, riparian corridors, meadows, open pasture, and hayfields. Cliff crevices appear to be the preferred roosting habitat, but caves and buildings have also been observed to be utilized (Sherwin and Gannon 2005, Pierson and Rainey 1998).

All three species preferred diet consist mainly of moths, but will also feed opportunistically on grasshoppers, crickets, beetles and other aerial invertebrates. These species could occupy isolated, badland/rock outcrops as roosting sites, and forage throughout the Project Area.

##### *3.13.5.1.2 White-tailed Prairie Dog*

The WTPD is a State of Utah wildlife species of concern in Uintah County (Tier II species in the CWCS) (UDWR 2005; UDWR 2011). In June 2010, the USFWS responded to a petition to list the WTPD as threatened or endangered under the ESA, and announced listing the species was not warranted at that time (75 FR 30338).

Colonies of this species occur primarily in mountain valleys, semi-desert grasslands, and open shrublands (Fitzgerald et al. 1994). Colonies are distributed in relatively large, sparsely populated complexes and live in loosely knit family groups or "clans" (Tileston and Lechleitner 1966). Clan boundaries are ill-defined with most activity concentrated around feeding sites. The WTPD breeds in the spring and hibernates underground through the winter. WTPD population numbers are threatened by loss of habitat, poisoning, and the plague (UDWR 2014c).

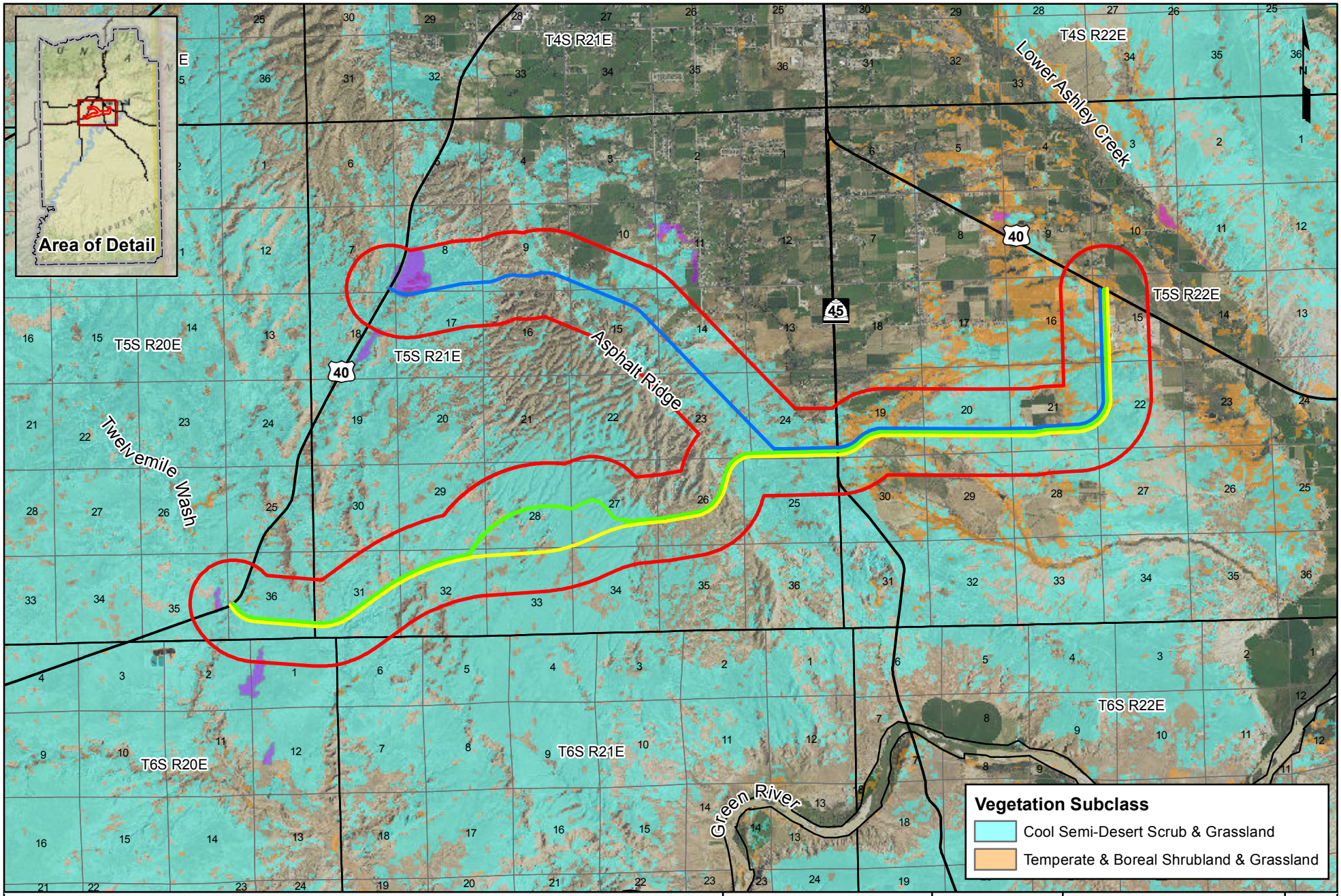
Management decisions in the BLM VFO Approved RMP/ROD specify that the BLM, in cooperation with the UDWR, will maintain and enhance WTPD and other foraging habitat as they are an obligate species to several other state sensitive species, such as the ferruginous hawk, mountain plover (*Charadrius montanus*), and burrowing owl, in that these species depend on them for food, shelter, and nesting habitat or habitat manipulation (BLM 2008a).

In northeastern Utah, WTPD colonies occur in areas around Flaming Gorge, Manila, Diamond Mountain, and the Uinta Basin. The Project Area contains 131 acres of UDWR-mapped WTPD colonies (UDWR 2014a). These colonies occur on BLM- and SITLA-administered lands in the western reach of the Project Area closest to U.S. Highway 40 (**Figure 3.13-3**).

### 3.13.5.2 Special Status Bird Species

##### *3.13.5.2.1 Greater Sage-grouse*

On March 23, 2010, the USFWS determined that listing the greater sage-grouse, hereinafter referred to as sage-grouse, as a threatened or endangered species under the ESA was "warranted, but precluded by higher priority listing actions" (75 FR 13910). The USFWS determined that current and potential threats to sage-grouse habitat and inadequacy of existing regulatory mechanisms pose "a significant threat to the sage-grouse now and in the foreseeable future" (75 FR 13910). As a compromise, the species was placed on the list of federal "candidate species" for future inclusion on the ESA list of threatened and endangered species, and its status is reviewed annually to determine whether it warrants more immediate attention.




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section
- White-tailed Prairie Dog Colonies

*Prairie Dog Colonies: Utah DWR*
*Vegetation: National Gap Analysis Program (GAP)*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.13-3_PrairieDog.mxd |

***Uintah County***

Ashley Valley Energy Route
UDWR White-tailed
Prairie Dog Colonies
Uintah County, Utah

FIGURE
**3.13-3**

*This page intentionally left blank.*

In Utah, the UDWR is the lead entity responsible for identifying and mapping sage-grouse habitat. As mapped by the UDWR, occupied habitat for sage-grouse is intentionally broad in an attempt to include all possible sagebrush communities, adjacent or nearby, that may be used by the birds as habitat or movement corridors. A broad classification scheme is necessary to include a variety of important seasonal habitats and movement corridors that are spread across Utah's geographically diverse and naturally fragmented landscape. Occupied habitat for sage-grouse currently includes known use areas and historic use areas, as well as areas of non-habitat. These areas are refined by the UDWR as additional information (e.g., habitat conditions, birds' habitat use patterns, population susceptibility to stochastic events, and impacts of vegetation treatment) becomes available (BLM and USFS 2013). The Project Area contains 8,574 acres of occupied habitat, west of Asphalt Ridge (**Figure 3.13-4**).

The Project Area also contains 8,574 acres of brooding habitat for sage-grouse. Within the Project Area, brooding habitat has the same boundary as mapped occupied habitat for sage-grouse (**Figure 3.13-4**). Early brood-rearing habitat generally is found relatively close to nest sites, but movements of individual broods may be highly variable. Early brood-rearing habitats include relatively open stands of sagebrush when compared to optimum nesting habitat. Areas with high plant species richness that have abundant forb and insect populations characterize brooding habitat. Insects, especially ants and beetles, are an important food component of early brood-rearing mesic sites. Sage-grouse broods occupy a variety of habitats during the summer, including sagebrush, relatively small burned areas within sagebrush, wet meadows, farmland, and other irrigated areas adjacent to sagebrush habitats (Connelly et al. 2004).

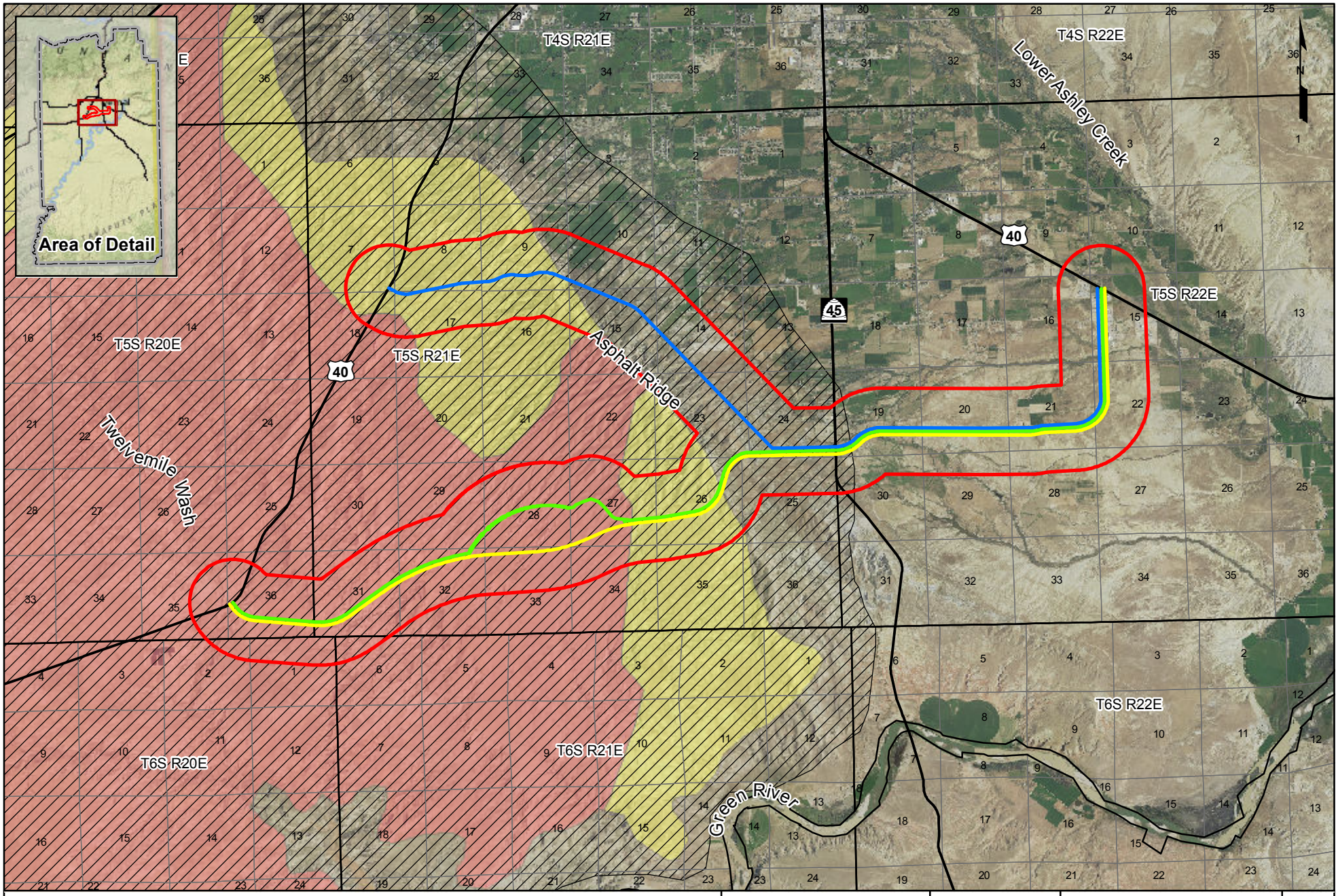
The Project Area also contains 3,505 acres of crucial winter habitat and 2,336 acres of substantial winter habitat for sage-grouse (**Figure 3.13-4**). These habitats are ranked using the UDWR seasonal range classification system discussed in **Section 3.13.1**, and overlap with portions of occupied and brooding habitat in the Project Area. Winter habitat is mostly dominated by Wyoming big and black sagebrush.

In Utah, sage-grouse are scattered across the state. The species is managed as part of the Wyoming Basins, Southern Great Basin, or Snake River Plain Management Zones. Most lands occupied by sage-grouse are public lands administered by the BLM and the USFS, although important habitats also occur on private land. Surface-disturbing activities on BLM-administered land in the Project Area would conform to the BLM Washington Office Instruction Memoranda (IM) No. 2012-043, No. 2012-044, and No. 2013-142 (BLM 2011a; BLM 2011b; BLM 2013b). IM No. 2012-043 provides BLM field officials with interim conservation policies and procedures to be applied to ongoing and proposed authorizations and activities that affect sage-grouse and its habitat. This direction ensures interim conservation measures are implemented when field offices authorize or carry out activities on public land, while the BLM concurrently develops and decides how to best incorporate long-term conservation measures for the species into applicable land use plans. IM No. 2012-044 provides direction to the BLM for considering conservation measures for sage-grouse during the land use planning process that is currently underway. IM No. 2013-142 outlines interim strategy for taking a regional (or landscape) approach to mitigating impacts, including opportunities on both BLM-managed public lands and non-BLM managed lands (other federal, Tribal, state, and private lands). It also outlines use of the BLM's land use planning process to identify potential mitigation sites and measures on BLM-administered lands at a regional level. Implementation of appropriate mitigation may be authorized within (onsite) or outside of an area of impact.

In 2010, the USFWS identified conservation measures in land use plans as the principal regulatory mechanisms for the BLM and USFS. In response, the BLM and USFS initiated a strategy in July 2011 to update nearly 100 BLM RMPs and USFS land use plans. Nationally, the BLM and USFS are currently preparing 15 joint land use plan amendments (with associated EISs) to incorporate specific conservation measures across the range for sage-grouse, consistent with national BLM and USFS policies. This regional (landscape) planning strategy seeks to evaluate the adequacy of existing land use plans and address, as necessary, amendments throughout the species' range. The BLM is the lead agency for this effort and the USFS is a cooperating agency. In Utah, the Final Utah Greater Sage-grouse Land Use Plan Amendment and EIS (Final EIS) has been prepared and was released in June 2015. Once a ROD on the Final EIS is issued, the BLM (2008a) VFO RMP/ROD will be amended to incorporate appropriate conservation measures (BLM and USFS 2013). A ROD on the Sage Grouse Final EIS will also amend 13 additional BLM RMPs and six USFS land use plans in Utah (BLM and USFS 2013). As such, for informational purposes, this EA includes a discussion of impacts to sage-grouse management areas that are identified in the Agency Preferred Alternative (Alternative D of the Final EIS).

Under Alternative D of the BLM and USFS (2015) Final EIS, Preliminary Priority Management Areas (PPMAs) would be open to most land uses, but well-defined stipulations would be applied to authorizations and actions. Land use restrictions would be stringent within four miles of occupied sage-grouse leks. PPMAs would be managed so that discrete human caused disturbances cover less than five percent of the total -sage-grouse habitat regardless of surface ownership. In areas where the five percent threshold has already been exceeded, no further anthropogenic disturbances would be permitted by the BLM or USFS until enough habitat has been restored to maintain the area under this threshold.

Under Alternative D of the BLM and USFS (2015) Final EIS, occupied sage-grouse habitat not identified as PPMAs would be categorized as Preliminary General Management Areas (PGMAs). PGMAs would be open to all land uses, but well-defined stipulations would be applied to most authorizations and actions within one mile of occupied leks.




0 0.5 1 2 Miles

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section
- Occupied & Brood-rearing Habitat
- Crucial Winter Habitat
- Substantial Winter Habitat

*Greater Sage Grouse Winter Habitat: Utah DWR*
*Greater Sage Grouse Occupied Habitat: Utah DWR*
*Greater Sage Grouse Brooding Habitat: Utah DWR*

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

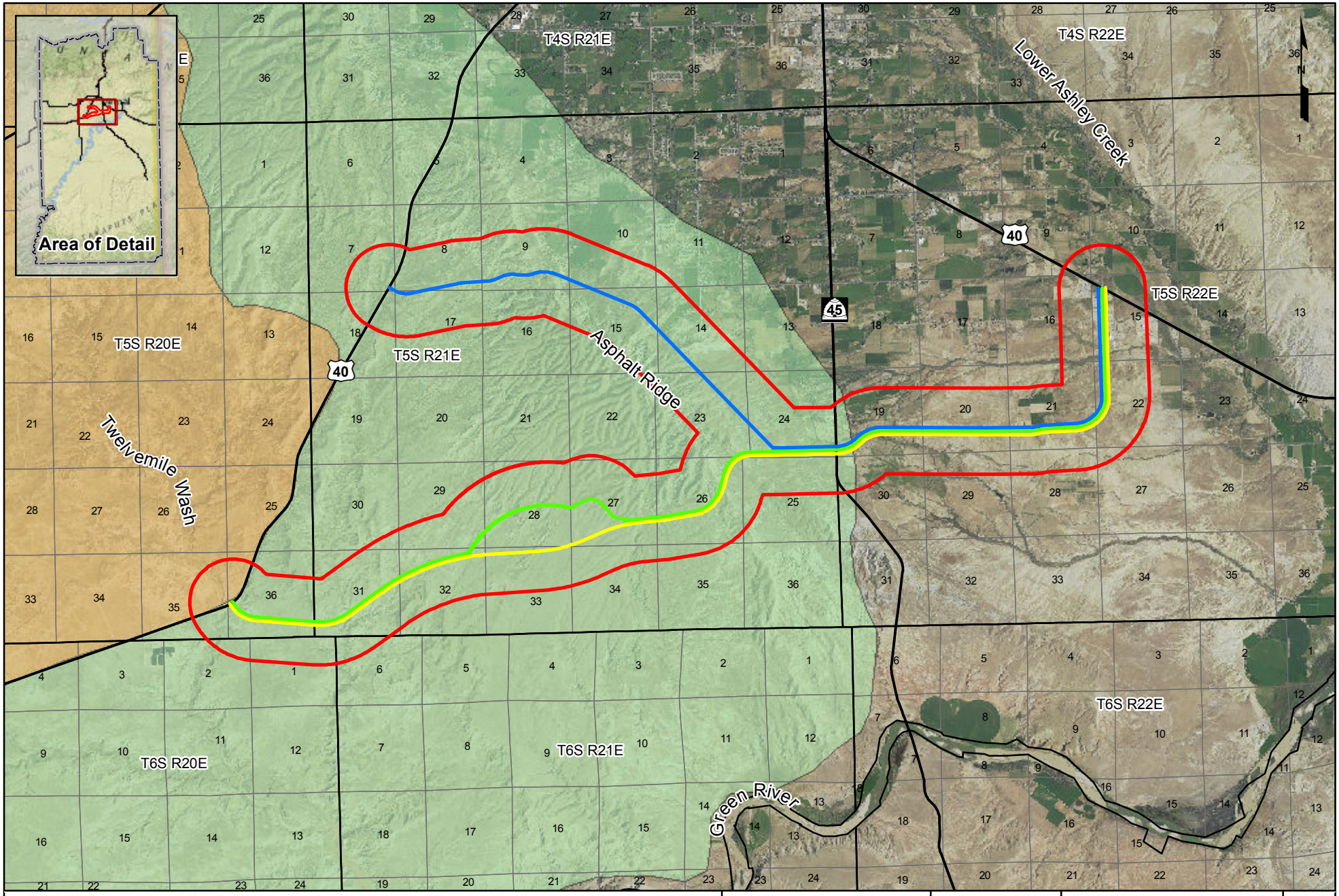
| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.13-4_SageGrouse.mxd |

***Uintah County***

Ashley Valley Energy Route
UDWR Greater Sage-grouse Habitat
Uintah County, Utah

FIGURE
**3.13-4**

*This page intentionally left blank.*




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section

**Greater Sage-grouse Habitat**

- Preliminary General Management Area
- Preliminary Priority Management Area

*Greater Sage Grouse Habitat: BLM/USFS FEIS*

KLEINFELDER
*Bright People. Right Solutions.*
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_3.13-5_SageGrouse.mxd |

***Uintah County***

Ashley Valley Energy Route
BLM/USFS Sage-grouse Habitat
Uintah County, Utah

FIGURE

**3.13-5**

*This page intentionally left blank.*

Within the Project Area, UDWR sage-grouse habitat and BLM/USFS management areas occur entirely west of Asphalt Ridge (refer to **Figure 3.13-4** and **Figure 3.13-5**). **Table 3.13-3** presents a summary of these areas within the Project Area.

**Table 3.13-3: Greater Sage-grouse Habitats and Management Areas in the Project Area**

| UDWR Habitat and BLM/USFS Management Areas | Acres in Project Area | Percent of Project Area |
|---|---|---|
| **UDWR Greater Sage-grouse Habitat** | | |
| Occupied habitat | 9,048 | 74 |
| Brooding habitat | 9,048 | 74 |
| Crucial winter habitat | 3,968 | 33 |
| Substantial winter habitat | 2,347 | 19 |
| **BLM/USFS Greater Sage-grouse Management Areas** | | |
| Preliminary Priority (PPMA) | 250 | 2 |
| Preliminary General (PGMA) | 8,797 | 72 |

Source: UDWR 2014a; BLM 2014i.

Leks are traditional courtship display and mating sites utilized by sage-grouse during the spring breeding season. Leks are typically found in relatively open areas, on landscapes with bare soil, short-grass steppe, windswept ridges, exposed knolls, or less herbaceous cover or shrub cover. Key factors influencing lek formation include the proximity, configuration, and abundance of nesting habitat. Leks can be formed opportunistically at any appropriate site within or adjacent to nesting habitat. Because lek habitat availability is not a limiting factor for sage-grouse, leks are considered indicative of nesting habitat (USFWS 2014a). Review of UDWR (2014a) GIS data identified one sage-grouse lek approximately 249 feet south of the Project Area (approximately 0.5 miles south of the Proposed Action and Alternative C centerline, and approximately 3.0 miles south of the Alternative B centerline). This lek has been inactive the past three years. This review also identified two additional lek sites, located 2.8 miles west and 2.5 miles southwest of the Project Area. Due to the presence of UDWR-mapped and BLM/USFS-mapped habitats in the Project Area, and lek activity in the past, it is possible that sage-grouse may occupy sagebrush stands in the Project Area, west of Asphalt Ridge (e.g., on the sagebrush bench in Sections 27-28 and 33-34 in T5S, R21E). The BLM and grazing permittee have observed sage-grouse grouse wintering in the Project Area, and the BLM plans to begin utilizing trail cameras to better assess activity in the area.

#### *3.13.5.2.2 Bald Eagle*

Effective August 8, 2007, the USFWS delisted the bald eagle in the lower 48 states from the federal list of endangered and threatened wildlife (72 FR 37346). However, the bald eagle is still protected under the BGEPA and the MBTA. It is also a State of Utah wildlife species of concern in the County (UDWR 2011).

In 2014, northeastern Utah had a total of seven active and one inactive bald eagle nests (B. Maxfield, personal communication, October 6, 2014). The closest active nest to the Project Area was located on the Green River in Bohemian Bottom, which is just upstream from the Ouray National Wildlife Refuge.

Other active nests were located on the White River near Cowboy Canyon, on the Green River in Island Park within Dinosaur National Monument, on the Duchesne River in Duchesne County, and in Daggett County. The inactive nest was located near Matt Warner Reservoir on Diamond Mountain.

Although no bald eagle nesting or winter roosting habitat exists within the Project Area, one active nesting site and winter roosting habitat are present along the Green River, south and outside of the Project Area. Bald eagle nests are almost always constructed in tall trees near bodies of water with abundant fish and waterfowl prey. Wintering areas are also commonly associated with open water, although other habitats may be utilized as long as abundant food sources, such as carrion, are readily available. Bald eagles are relatively social and communally roost in sheltered stands of trees for the purpose of feeding and sheltering in close proximity to sufficient food sources.

Due to the proximity of the Project Area to one active nesting site and winter roosting habitat on the Green River, bald eagles could periodically forage for carrion within the Project Area. Bald eagles are known to prey on a variety of small animals, usually fish or waterfowl, but they also feed on carrion. Breeding and nesting usually occurs in Utah from early January through late August, and bald eagles may use the Project Area as foraging habitat during this period. Winter roosting usually occurs in Utah from early November through late March, and bald eagles may use the Project Area as foraging habitat during this period.

##### *3.13.5.2.3 Golden Eagle*

The golden eagle is protected under the MBTA and BGEPA, based on the similarity of the juvenile bald eagle's physical appearance to that of the adult golden eagle. Populations of golden eagles in Utah are considered to be year-round residents.

Review of historical BLM raptor nest data found no golden eagle nests have been documented in the Project Area. However, five golden eagle nests were documented within 0.5 mile of the Project Area. Three of these nests were located on cliffs within 0.5 mile of the Project Area, towards the western end of the Proposed Action ROW. The other two nests were located on cliffs within 0.5 mile of the Project Area, towards the western end of the Dog Valley Route Alternative (BLM 2014h).

In June 2014, Kleinfelder conducted a raptor nest inventory in the Project Area. The survey area included the Proposed Action ROW plus a 0.5-mile buffer on either side of the alignment centerline. Kleinfelder biologists surveyed all potential raptor habitat within the survey area by traveling existing roads and walking in areas that were not visible from roads. Spotting scopes and binoculars were used to aid in the survey process, which was conducted during daylight hours ranging from mid-morning to early afternoon. No raptor nests were identified during this survey; however, biologists noted rock outcrops and cliffs (i.e., suitable golden eagle nesting habitat) were sparsely distributed in the survey area west of Asphalt Ridge (Kleinfelder 2014b).

Although the status of the aforementioned historic golden eagle nests have not been checked since 2001 and 2002, and no golden eagle nests were documented during the Kleinfelder (2014b) raptor nest inventory, suitable nesting and foraging habitat for golden eagles are present west of Asphalt Ridge in the Project Area, and therefore additional breeding golden eagles could establish territories/nests within the Project Area in the future.

#### *3.13.5.2.4 Burrowing Owl*

The burrowing owl is listed as a State of Utah wildlife species of concern (Tier II species in the Utah CWCS) in the County (UDWR 2005; UDWR 2011). Burrowing owls are summer residents on the plains over much of Utah and usually arrive on breeding grounds from late March to mid-April (Johnsgard 2002). In Utah, WTPD burrows are the most important source of burrowing owl nest sites. Active prairie dog towns are considered the primary nesting habitat for burrowing owls, as burrowing owls' use of abandoned prairie dog towns is considered less preferable.

In June 2014, Kleinfelder conducted field surveys for burrowing owls in the Project Area (Kleinfelder 2014b). These surveys included an initial habitat assessment of all potential burrowing owl habitat within the Proposed Action ROW and within 660 feet of the edge of disturbance for the Proposed Action ROW. Kleinfelder biologists subsequently conducted visual and call broadcast surveys for burrowing owls within all areas of suitable burrowing owl habitat (i.e., areas with WTPD burrows) identified during the initial habitat assessment. No burrowing owls or nests were identified during these surveys (Kleinfelder 2014b).

#### *3.13.5.2.5 Ferruginous Hawk*

The ferruginous hawk is listed as a State of Utah wildlife species of concern (Tier II species in the Utah CWCS) in Uintah County (UDWR 2005; UDWR 2011). It is also a Utah PIF species of concern for the Colorado Plateau (Parrish et al. 2002).

Review of historical BLM raptor nest data found no ferruginous hawk nests have been documented in or within 0.5 mile of the Project Area. The two closest ferruginous hawk nests were located approximately 0.8 miles north of the Project Area. One nest was observed on the ground in 2001 and the other was observed in a tree in 2002 (BLM 2014h). In addition, as discussed above for golden eagles, Kleinfelder conducted a raptor nest inventory in the Project Area in June 2014. No ferruginous hawk nests were identified during this survey (Kleinfelder 2014b).

Although the status of the aforementioned historic ferruginous hawk nests have not been checked since 2001 and 2002, and no ferruginous hawk nests were documented during the KLF (2014b) raptor nest inventory, suitable nesting and foraging habitat for ferruginous hawks is present throughout the Project Area, and therefore breeding ferruginous hawks could establish territories/nests within the Project Area in the future. The species could occupy promontory points and rocky outcrops in juniper and .desert shrubland areas.

#### *3.13.5.2.6 Short-eared Owl*

The short-eared owl (*Asio flammeus*) is listed as a State of Utah wildlife species of concern (Tier II species in the Utah CWCS) in Uintah County (UDWR 2005; UDWR 2011).

Review of historical BLM raptor nest data found no short-eared owl nests have been documented in or within 0.5 mile of the Project Area (BLM 2014h). In addition, as discussed above for golden eagles, Kleinfelder conducted a raptor nest inventory in the Project Area in June 2014. No short-eared owl nests were identified during this survey (Kleinfelder 2014b).

Although no short-eared owl nests were documented during the Kleinfelder (2014b) raptor nest inventory, suitable nesting and foraging habitat for short-eared owls is present throughout the Project Area, and therefore breeding short-eared owls could establish territories/nests in the future. The species could occupy desert shrubland and agricultural areas in the Project Area.

#### 3.13.5.3 Special Status Fish Species

##### *3.13.5.3.1 Endangered Colorado River Fish*

Four federally-endangered fish species are historically associated with the Upper Colorado River Basin: the Colorado pikeminnow, razorback sucker, bonytail, and humpback chub. The western edge of the Proposed Action ROW is located 4 river miles from USFWS-designated critical habitat for the Colorado pikeminnow and razorback sucker in the Green River, and 88 river miles from USFWS-designated critical habitat for the bonytail and humpback chub (USFWS 2014b) in the Green River. The western edge of the Dog Valley Route Alternative ROW is located 5 river miles from USFWS-designated critical habitat for the Colorado pikeminnow and razorback sucker in the Green River, and 92 river miles from USFWS-designated critical habitat for the bonytail and humpback chub in the Green River (USFWS 2014b).

#### 3.13.5.4 Utah State Sensitive Fish

Three fish species endemic to the Colorado River Basin have been affected by flow alterations, habitat loss or alteration, and the introduction of non-native fish: roundtail chub (*Gila robusta*), bluehead sucker (*Catostomus discobolus*), and the flannelmouth sucker (*Catostomus latipinnis*). These species are classified by the State of Utah as conservation agreement species due to their declining populations within the state. Habitat for these species occurs downstream of the Project Area in the Green River.

# 4.0 ENVIRONMENTAL IMPACTS

## 4.1 INTRODUCTION

This chapter provides an analysis of the environmental consequences from implementation of Alternative A (Proposed Action), Alternative B (Dog Valley Route Alternative), and Alternative C (No Action Alternative). This chapter also examines recommended mitigation measures and cumulative impacts.

## 4.2 DIRECT AND INDIRECT IMPACTS

### 4.2.1 Alternative A – Proposed Action

#### 4.2.1.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns

Cultural resources are non-renewable. Direct impacts to cultural resources include the alteration, damage or destruction of undetected cultural resources by surface-disturbing activities related to the proposed road construction. Cultural resources and sites or locations determined to be of sacred or traditional importance by Native American Tribes may be further subjected to indirect impacts including an increased risk of vandalism, surface artifact collection, dust accumulation, the alienation of place, setting and/or feeling from visual and/or noise intrusion, and unauthorized excavation. Direct and indirect impacts could result in the loss of research potential or enhancement through scientific study; the loss of recreational opportunities and interpretation; and the loss of management options for the landowner.

The Proposed Action would result in a total of 451 acres of new surface disturbance, of which 98 acres would occur on BLM-administered land; 226 acres would occur on state land; and 127 acres would occur on private land.

Adverse direct and indirect effects to cultural resources would be minimized through compliance with the NHPA, as amended, and specific design elements, and ACEPMs, set out in **Section 2.2.8.3**. Based on the Class III field inventories conducted on the proposed route, the assessed NRHP-eligible "Victory Highway" site is outside the current proposed ROW and thus would be avoided. However, the historic Highline Canal and a multi-component artifact scatter, both assessed as eligible to the NRHP, could be directly affected by the proposed action. As currently proposed, the AVER route would cross the Highline Canal on SITLA and privately owned lands east of Asphalt Ridge. The proposed route would also affect a multi-component site located on SITLA lands east of U.S. Highway 40. As stated in **Section 2.2.8.3**, a bridge is planned for the canal crossing. However, final design of the canal crossing and construction near the multi-component site would avoid direct impacts to both sites. Final mitigation would be determined during consultation with the involved private landowner(s), the appropriate SMA, and the USHPO. Implementation of these actions would avoid direct impacts to the Canal and the multicomponent site. The remaining sites are assessed as ineligible for listing to the NRHP and would be recorded to BLM and the USHPO standards and the information integrated into local and statewide databases. However, these sites ultimately could be damaged or destroyed during project construction.

Coordination between the BLM and the Tribes would determine additional mitigation, as needed, for the Proposed Action.

Although a literature search and subsequent field inventory were conducted for the proposed route, the results were for surficial finds. It is currently unknown if any buried or subsurface cultural resources could be directly affected by the Proposed Action. The specific ACEPM for cultural resources stating that any cultural resources uncovered during excavation activities would result in an immediate suspension of surface-disturbing activities and work at the site would not continue until the findings can be evaluated and, if necessary, until a mitigation plan is developed and approved (refer to **Section 2.2.8.3**). This action would minimize, but not avoid, direct effects to unknown or subsurface cultural resources.

##### *4.2.1.1.1 Mitigation Measures*

To further minimize adverse impacts to cultural resources on BLM-administered lands a BLM Archaeologist should be contacted within 24 hours of inadvertent discovery for further evaluation and guidance.

##### *4.2.1.1.2 Residual Impacts*

The Proposed Action could impact cultural resources within the Project Area that are not eligible for the NRHP. Although these sites would be recorded to BLM and the USHPO standards and the information integrated into local and statewide databases, these surface sites and any unknown excavated sites ultimately could be damaged or destroyed during project construction. Adherence to ACEPMs (**Section 2.2.8.3**), ongoing consultation with the USHPO and the affiliated Tribes would minimize, but not completely negate the anticipated adverse impacts to NRHP non-eligible cultural resources within the proposed ROW, as accidental disturbance, vandalism, and possibly a loss or degradation of a Tribal traditional site's setting, place and/or feeling could occur.

#### 4.2.1.2 Prime and Unique Farmlands

Direct and indirect impacts from implementation of the Proposed Action to lands classified as prime farmlands, if irrigated, include the direct conversion of such lands to the proposed roadway and the temporary additional areas within the proposed ROW needed during construction of the roadway. Indirect impacts include the fragmentation of these agricultural lands suitable for farming. Studies have shown that for every one acre converted to a non-agricultural use (e.g., subdivision development), another three to 10 acres may be lost due to fragmentation (McGinty 2009). Fragmentation, as it relates to farmlands, includes declining agricultural commodities, suppression of rural economies and rising land prices (McGinty 2009).

The Proposed Action would directly involve a total of 101 acres, 56 acres of prime farmlands, if irrigated, and 45 of private farmlands. Of the total acres involved, 91 acres would be converted to the final roadway. The remaining 10 acres would be involved in temporary construction activities and would be reclaimed per the reclamation plan (refer to **Appendix B**), at the completion of construction. Applying the estimated acres associated with fragmentation, indirect impacts to farmlands could increase to between 273 to 910 acres (91 acres x 3 and 91 acres x 10 acres).

Fragmentation could decrease the operating efficiency of ongoing farming practices, disrupt existing irrigation systems (overland or sprinkler), and reduce the potential of prime farmlands, if irrigated, from being put into cultivation. In the current real estate market in Ashley Valley, such fragmented lands could be sold or otherwise authorized for non-farming ventures. Factoring in the direct and indirect impacts to

farmlands, the Proposed Action could affect a maximum of 910 acres of farmlands, or an estimated four percent of the farmlands in Uintah County currently involved in hay production (910 acres/23,200 acres [*100] = 3.9 percent).

##### *4.2.1.2.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.1.2.2 Residual Impacts*

The planned life of the road is indefinite. The Proposed Action would result in the loss of prime farmlands, if irrigated, and private farmlands within the proposed ROW corridor for as long as the road is used. Should the road be determined to be no longer needed, the roadway would be obliterated, as set out in **Section 2.2.5**, and restored and reclaimed as set out in the reclamation plan (refer to **Appendix B**).

### 4.2.1.3 Geology, Including Mineral Resources and Energy Production

##### *4.2.1.3.1 Energy Production*

Direct and indirect impacts to energy production from implementation of the Proposed Action include, disrupting or limiting ongoing or future oil and gas and tar sand activities; and, restricting or limiting surface occupancy for oil and gas and tar sand activities within the Project Area. Currently, an estimated 74 percent of the BLM-administered and the SITLA-administered state lands within the Project Area are leased for oil and gas or have been leased or nominated for tar sands leasing. **Table 4.2.1.3-1** shows the short-term and long-term disturbances that could involve oil and gas and tar sands leases, including areas nominated for tar sands leasing, within the Project Area under the Proposed Action.

**Table 4.2.1.3-1: Surface Disturbance of Oil and Gas and Tar Sands Lease Areas Under the Proposed Action**

| Lease Type | Acres Within Project Area* | Short-term Disturbance (Acres)* | Long-Term Disturbance (Acres)* |
|---|---|---|---|
| BLM Oil & Gas Lease | 1,822 | 53 | 44 |
| BLM STSA | 5,070 | 127 | 106 |
| Nominated Tar Sands Lease | 799 | 20 | 16 |
| SITLA Oil & Gas Lease | 3,120 | 212 | 177 |
| SITLA Tar Sands Lease | 3,259 | 99 | 82 |
| **TOTAL** | **14,070** | **511** | **425** |

Source: BLM 2014b; SITLA 2014a.
*There is some overlap between oil and gas leases and tar sands leases on both BLM and SITLA lands. The figures above do not account for the overlap and include some redundancies in acreage calculations.

Currently there are no active oil and gas activities on BLM or SITLA leases within the Project Area. As such, there would be no direct impacts from implementation of the Proposed Action to ongoing oil and gas activities within the proposed route. However, should leaseholders determine to develop the leases, it is likely that avoidance of the road would be necessary.

Implementation of the Proposed Action would result in the loss of tar sands resources within the ROW, and could diminish the ability of current leaseholders to recover tar sands from the Project Area. These impacts would likely be greatest where surface expressions of tar sands are present, as surface mining is

considered the most economical recovery method. Construction and operation of the AVER could also affect the ability of the County to maintain the roadway if surface mining were to occur in close proximity to the proposed ROW. For SITLA-administered lands involved in existing state tar sands leases, negotiations are currently underway with the affected leaseholder(s) to determine mitigation, as appropriate, for any ongoing or planned tar sands development activities in the proposed disturbance area. Successful agreement would effectively minimize the adverse impacts to the tar sands leaseholder(s) from implementation of the Proposed Action. For BLM STSA and nominated tar sands lease areas, those lands directly involved in the proposed ROW could be dropped from potential leasing or leased with a no surface occupancy restriction should they ever be offered for lease. However, implementation of a no surface occupancy restriction on a BLM STSA or nominated tar sands lease is outside the scope of this EA.

##### *4.2.1.3.2 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.1.3.3 Residual Impacts*

Under the Proposed Action, portions of active or nominated leases within the ROW would not be available for future surface-disturbing activities for energy production. Successful negotiations with the existing BLM and SITLA tar sands leaseholder(s) could reduce adverse impacts due to implementation of the Proposed Action.

#### 4.2.1.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species

Direct and indirect impacts to soils and vegetation include the exposure of the soil to increased wind and water erosion, mixing of soil horizons, soil compaction, loss of topsoil productivity resulting in removal of existing vegetation, a change in composition and/or production of the involved vegetation communities, introduction or proliferation of noxious weeds, increased risk of human-caused wildfire.

##### *4.2.1.4.1 Impacts to Soils*

The Proposed Action would directly impact 451 acres. Approximately 80 percent of the disturbance would occur on soils rated fair by the NRCS for reclamation success, the remaining 20 percent of the soils are rated poor (refer to **Appendix D, Table 2**). Soil features that restrict the effectiveness of reclamation efforts could extend the likelihood for successful reclamation longer than 10 years, during which time the disturbed and/or unreclaimed sites would be more susceptible to soil loss thru erosion and continued undesired vegetation production from weed infestation (BLM 2012a).

Most of the soils in the Project Area have one or more soil features that would restrict the effectiveness of reclamation efforts. The lower potential of the soils in the Project Area for reclamation would have long-term negative impacts to soil productivity and soil erosion rates. Increased erosion rates and decreased soil-infiltration capacity, especially in areas of high salts, would potentially impact water quality downstream of the Project Area. Increased sediment yield from disturbed areas is a potential indirect effect resulting from vegetation removal, soil exposure and steepening of exposed soils following road construction (BLM 2012a). Cut and fill slopes would typically be bare of vegetation and steeper than the surrounding slope, thus adding to sediment yields. Mixing of soil horizons and compaction on areas

involved in surface disturbance affects the soil organisms in the soil, reduces infiltration, reduces available nutrients and thus affects the reclamation success.

#### *4.2.1.4.2 Impacts to Vegetation*

Changes in the existing soils and removal of the site-adapted vegetation that occurs on those soils would result in a long-term change in composition and/or production of the vegetation on the disturbed site, affecting livestock and wildlife use of the Project Area and surrounding area (refer to **Sections 4.2.1.6** and **4.2.1.12** respectively for a discussion of impacts to livestock and wildlife use from a change in vegetation composition and/or production). Initial, short-term losses of vegetation would increase potential for invasive and noxious weed establishment, which would decrease vegetative productivity. Many invasive plants are adapted to quickly spread through disturbed ecosystems, producing long-lasting, if not permanent, changes in native vegetation communities.

The Proposed Action would directly affect a total of 451 acres of vegetation through construction of the roadway and/or the temporary construction easements needed to support the construction activities. **Table 4.2.1.4-1** provides a breakdown of the proposed surface disturbance to the ecological sites within the Project Area.

**Table 4.2.1.4-1: Surface Disturbance of Ecological Site under the Proposed Action**

| Dominant Ecological Site Name | Acres within the Project Area | Percent of Surface Disturbance in the Project Area |
|---|---|---|
| Desert loam (shadscale) | 74 | 17 |
| Desert clay (shadscale) | 20 | 4 |
| Desert shallow clay (mat saltbush) | 3 | 1 |
| Desert shallow loam (shadscale) | 97 | 21 |
| Desert shallow loam (black sagebrush) | 13 | 3 |
| Desert very steep shallow loam (shadscale) | --- | --- |
| Desert sandy loam (Indian ricegrass) | --- | --- |
| Desert alkali bench (Castle Valley saltbush) | 5 | 1 |
| Desert shaley shallow loam (greasewood) | 1 | <1 |
| Semi-desert loam (Wyoming sage) | 43 | 9 |
| Semi-desert shallow loam (black sage) | 30 | 7 |
| Semi-desert gravelly loam (Wyoming sage) | 83 | 19 |
| Semi-desert sand (fourwing saltbush) | 6 | 1 |
| Semi-desert sandy loam (fourwing saltbush) | 15 | 3 |
| Semi-desert stony loam (juniper-pinyon) | 3 | 1 |
| Semi-desert shallow loam (juniper-pinyon) | 15 | 3 |
| Loamy bottom (big sagebrush) | --- | --- |
| Alkali bottom (alkali sacaton) | --- | --- |
| Alkali flat (greasewood) | 3 | 1 |
| Wet saline streambank (coyote willow) | --- | --- |
| Wet saline meadow (inland saltgrass) | --- | --- |

| Dominant Ecological Site Name | Acres within the Project Area | Percent of Surface Disturbance in the Project Area |
|---|---|---|
| Wet fresh streambank (willow) | 1 | <1 |
| River floodplain (Fremont cottonwood) | --- | --- |
| Bare ground & rock outcrop (unproductive) | 31 | 7 |
| Water | --- | --- |
| Total minor inclusions for all soils | 8 | 2 |
| **Total** | **451** | **100** |

Source: USDA-NRCS 2014.

Field surveys determined that approximately 50 acres of potential habitat for the Hamilton milkvetch and horseshoe milkvetch species, currently BLM sensitive plant species, are within the Project Area (Kleinfelder 2014b). Direct and indirect impacts to these plant species and their potential habitats would be the same as discussed for vegetation. Implementation of the design features, or ACEPMs, for soils and vegetation (refer to **Section 2.2.8.5**), the reclamation plan (refer to **Appendix B**) applied specifically to the potential habitat within the Project Area would minimize direct and indirect impacts to the potential habitat for these plant species, thus maintaining and/or enhancing the site characteristics that would support such species. Thus the Proposed Action would not result in a trend towards federal listing of the Hamilton milkvetch or horseshoe milkvetch.

Having knowledge of site-specific soils characteristics and features within the Project Area before disturbance, and applying the reclamation and weed control plan (refer to **Appendix B**) and the specific design elements for soils and vegetation (refer to **Section 2.2.8.5**), would minimize adverse impacts to soils and vegetation and increase the likelihood of successful reclamation following surface disturbance. The design feature, or ACEPM, provided for livestock grazing that would fence the proposed ROW from the surrounding Project Area (refer to **Section 2.2.8.7**) would remove livestock grazing pressure on the reseeded areas thus further increasing the likelihood for sustained reclamation success.

##### *4.2.1.4.3 Mitigation Measures*

- No mitigation has been identified beyond the ACEPMs to reclaim surface disturbance (**Section 2.2.8.5**).

##### *4.2.1.4.4 Residual Impacts*

Because of the fair to poor reclamation potential and the high potential for invasion and/or proliferation of noxious and invasive weed species in the Project Area, the loss of existing vegetation during and following construction would be lost until it is restored through reclamation. The proposed design features, or ACEPMs, the offered reclamation plan (refer to **Appendix B**) and application of the mitigation measures offered above would effectively minimize impacts to the soils and vegetation resources in the Project Area.

#### 4.2.1.5 Lands and/or Access

The Proposed Action would affect two of the 12 existing BLM ROWs or easements and three of the nine existing SITLA ROWs or easements. The two affected BLM ROWs/easements are both power transmission lines and the three affected SITLA ROWs/easements include two roads and one telephone

line. Collectively, the surface disturbance associated with this construction would be approximately 2.9 acres. Impacts to these existing ROWs and easements could include disruption to ongoing operation and/or maintenance of the facilities within the ROWs or easements. It is important to note that disruptions to US Highway 40 and State Route 45 would be temporary and mutually compatible with the goal of improving public safety in the downtown Vernal and Naples areas by minimizing the number of commercial/industrial vehicles carrying explosive and hazardous materials through those areas. At these intersections, traffic controls would be used to ensure public safety during construction. Impacts to users of these ROWs would be minimized by ACEPMs to adhere to OSHA and UDOT safety requirements for roaday construction. A safety officer would be on site at all times during construction and, as determined during the final design of the roadway traffic control, warning and directional signs would be installed to alert and advise public traveling in proximity to the Project Area (**Section 2.2.8.13**).

Per existing BLM requirements, the involved ROW holders would be notified and coordination would be implemented that would allow the existing ROW to continue with minor disruption of services. Coordination involving existing SITLA ROWs and/or easements would also be developed. These site-specific coordinations would effectively minimize adverse impacts to the existing ROWs and easements.

##### *4.2.1.5.1 Mitigation Measures*

No mitigation is recommended.

##### *4.2.1.5.2 Residual Impacts*

Disruption of existing operations from construction of the road would be short-term in duration. Stipulations and site-specific mitigation negotiated with the land authorization holders would reduce impacts. No other residual impacts from implementation of the Proposed Action would occur.

#### 4.2.1.6 Livestock Grazing

Direct impacts from construction and operation of the proposed road includes the loss of forage, potential disruption of livestock grazing operations, disruption of normal livestock grazing patterns/use on the allotment, loss of range improvements (including water sources), and increased mortality and injuries to livestock resulting from increased vehicle traffic.

The Proposed Action would result in 451 acres of surface disturbance within the Project Area, which would directly affect the three grazing allotments partially contained within the Project Area. **Table 4.2.1.6-1** provides carrying capacity information for the three allotments affected by the Proposed Action. In summary, the Proposed Action would directly affect a total of 17 AUMs on the McCoy Flat and Twelve Mile grazing allotments.

**Table 4.2.1.6-1: Carrying Capacity Impacts by Allotment under the Proposed Action**

| Grazing Allotment | Total BLM Allotment Acres | Total Active AUMs | Calculated AUMs in Project Area | Acres of Disturbance in Project Area | Projected Active AUMs Affected | Percent Loss of Total Active AUMs |
|---|---|---|---|---|---|---|
| McCoy Flat | 12,499 | 843 | 422 | 203 | 14 | 2 |
| Rich & Stetson | 511 | 63 | 3 | --- | --- | --- |
| Twelve Mile | 4,681 | 316 | 66 | 42 | 3 | 1 |

| Grazing Allotment | Total BLM Allotment Acres | Total Active AUMs | Calculated AUMs in Project Area | Acres of Disturbance in Project Area | Projected Active AUMs Affected | Percent Loss of Total Active AUMs |
|---|---|---|---|---|---|---|
| **TOTAL** | **17,871** | **1,222** | **491** | **245** | **17** | **3** |

Source: (BLM 2014d).

The Proposed Action would include the construction of a ROW boundary fence, thus excluding the ROW from use by livestock (refer to **Section 2.2.8.7**). Thus the estimated 17 AUMs would be not be available for grazing use and would be considered a long-term or permanent loss. However, fencing the proposed ROW boundary could offer an opportunity to implement a grazing management system for the McCoy Flat allotment. Such decisions would be made by the BLM and the involved grazing permittee during BLM's grazing allotment permit renewal process or any allotment evaluation determined necessary by the BLM.

The proposed ROW boundary fence would reduce or eliminate the risk of vehicle:livestock collisions on the road, would reduce livestock's movement and thus proper utilization of the allotment, and prevent livestock's use of an existing water source (**Appendix A**). The Proposed Action would include the installation of box culverts that would allow the free movement of cattle under the ROW, thus minimizing adverse impacts to livestock utilization of the allotments. The existing water facility within the ROW would not be available for use by livestock resulting in a reduction of the area available for grazing.

##### *4.2.1.6.1 Mitigation Measures*

To further reduce/minimize adverse impacts to livestock movement and thus proper utilization of the allotment, the County or its agent would contribute funding to relocate the existing water facility (a wildlife guzzler) located within the proposed ROW with a suitably-designed water reservoir in an area near to the original water facility site. Refer to **Section 4.2.1.12.6** for details regarding relocation of this existing water facility.

##### *4.2.1.6.2 Residual Impacts*

Installation of drainage culverts to accommodate mountain bike trail uses would enable livestock to cross under the proposed ROW and utilize the remainder of the grazing allotment. However, some cattle may not choose to use the drainage culverts, over-utilizing portions of the allotments. The Proposed Action could also increase the spread of noxious and invasive weeds outside the ROW thus further affecting the grazing capacity on the allotment. The loss of forage contained within the ROW would be a commitment of resources during the lifetime of the project.

### 4.2.1.7 Paleontology

The Proposed Action would result in 451 acres of surface disturbance. As no significant fossils were found within the APE during the AVER pedestrian paleontological field survey or through a review of known fossil localities, the Proposed Action would not be expected to have any direct impacts on known scientifically important paleontological sites. Several geologic units would be impacted by excavation, construction, and operation of the proposed roadway, which could result in a direct impact to unknown fossil localities within the Project Area. Surface disturbance to each geologic unit and PFYC is listed in **Table 4.2.1.7-1** below.

**Table 4.2.1.7-1: Surface Disturbance to PFYCs under the Proposed Action**

| Geologic Unit | PFYC | Acres in Project Area | Surface Disturbance (acres) |
|---|---|---|---|
| Brennan Basin Member of Duchesne River Formation | 5 | 5,614 | 184 |
| **Total for PFYC 5** | | **5,614** | **184** |
| Lower Unit of Mesaverde Group | 3 | 159 | 7 |
| Upper Unit of Mesaverde Group | 3 | 1,382 | 21 |
| Mancos Shale | 3 | 2,210 | 129 |
| **Total PFYC 3** | | **3,751** | **157** |
| Mixed Alluvium & Colluvium | 2 | 85 | 0 |
| Piedmont Alluvium, Undivided | 2 | 2,695 | 110 |
| Eolian Deposits | 2 | 4 | 0 |
| **Total PFYC 2** | | **2,784** | **110** |
| Disturbed Ground | -- | 14 | 0 |
| **Total Unclassified** | | **14** | **0** |
| **GRAND TOTAL** | | **12,163** | **451** |

Source: BLM 2014e.

Excavation and construction activities occurring within the Duchesne River Formation (PFYC 5) or PFYC 3 units could potentially result in the crushing or destruction of fossils not found during pedestrian surveys. Conversely, construction activities within the Proposed Action ROW could disturb these formations and result in the discovery of new fossils, which would result in a beneficial contribution to the fossil record. Increased access throughout the Project Area and surrounding region from the new roadway would increase the potential for the illegal collection or vandalism of known and unknown exposed fossil localities.

Should any paleontological resources be uncovered during excavation, construction would be suspended and the BLM would be contacted. Work would not continue until a mitigation plan has been approved (**Section 2.2.8.8**).

##### *4.2.1.7.1 Mitigation Measures*

No mitigation is recommended.

##### *4.2.1.7.2 Residual Impacts*

No known paleontological resources would be impacted under the Proposed Action. Following all relevant paleontological resource regulations, ACEPMs, and mitigation measures would provide opportunities to minimize the impacts and gather additional information regarding these resources. However, any physical impact to a paleontological resource is essentially impossible to restore. Accordingly, there would be some risk of adverse impacts to paleontological resources if unknown resources are not detected during project implementation.

#### 4.2.1.8 Recreation

The Proposed Action would directly impact a portion of the McCoy Flats Trail System. The Proposed Action ROW would bisect two of the mountain bike trails: Retail Sale and Slippery When Wet. It is

estimated that the Proposed Action would disturb 3.4 acres (0.2 miles) of the McCoy Flats Trail System in the short-term, and would have a long-term disturbance of approximately 2.7 acres (0.17 miles) (BLM 2014f). The parking area, with the kiosk and pavilion, would not be affected.

**Table 4.2.1.8-1** presents the potential for each trail to be affected by the Proposed Action.

**Table 4.2.1.8 -1: Trails Potentially Affected in the McCoy Flats Non-Motorized Trail Complex**

| Trail | Affected by Proposed Action |
|---|---|
| And Cookies! | No |
| Combo | No |
| Fire Sale | No |
| Got Milk? | No |
| High Rollas | No |
| Jackalope | No |
| More Hoes | No |
| Retail Sale | Yes |
| Serpendipity | No |
| Slippery When Wet | Yes |

Source: BLM 2014f.

Indirectly, the presence of the AVER near the trail system would diminish the recreational experience for bikers seeking solitude in a relatively undisturbed landscape. Noise from vehicle traffic would disrupt the quiet character of the trail landscape, visual contrast associated with the roadway would attract the visual attention of riders away from the natural landscape, and exhaust emissions generated by large trucks could be detected by users on the trails.

Two ACEPMs, described in **Section 2.2.8.9**, would minimize adverse impacts to cyclists using the McCoy Flats Trail System. One ACEPM states that the final design of drainage crossings in close proximity to the existing trails would include the use of box culverts with an elevated ceiling that would accommodate the safe passage of mountain bikers and pedestrians under the proposed ROW. This would separate vehicle and mountain bike/hiker traffic at the crossings, thereby eliminating the potential for accidents between vehicles and cyclists/hikers. It also would allow bikers and hikers to use the trails without having to stop for vehicle traffic, and would keep the trails accessible to bikes and hikers.

The other ACEPM would require a commitment of no greater than $87,000 to BLM's development of the Little Mountain-LaPoint Mountain Bike Trail System. The location of this proposed trail system is nine miles west of Vernal. Development of this trail system would compensate for some of the diminished recreational value at the McCoy Flats Trail System by creating new and additional recreation opportunities elsewhere in the region.

One potential benefit of the Proposed Action would be to make public lands along the alignment more accessible for recreational activities. However, traffic noise would make the area along the proposed road less appealing for activities such as camping and hunting. Access to these lands would improve for

hiking activities; however, as previously noted, there are no developed trails on these lands other than the McCoy Flats Trail System. Access would also improve for potential OHV vehicle use, where limited use is permitted, as discussed in **Section 3.1.8**.

##### *4.2.1.8.1 Mitigation Measures*

No mitigation is recommended.

##### *4.2.1.8.2 Residual Impacts*

The planned life of the road is indefinite. The Proposed Action would change the recreational value of the McCoy Flats Trail System for the operational life of the roadway. However, adherence to ACEPMs (refer to **Section 2.2.8.9**) would effectively allow continued use of the two trails in the Project Area, as well as create new and additional recreation opportunities elsewhere in the region.

#### 4.2.1.9 Socioeconomics

This section considers the socioeconomic impacts of implementing the Proposed Action in terms of population, employment, revenues, and quality of life in the Project Area vicinity.

##### *4.2.1.9.1 Population and Demographics*

Implementation of the Proposed Action may lead to an increase in the transient population within the County. As mentioned in **Section 2.2.3.3** of this EA, it is anticipated that up to 40 construction personnel could be present on the project at any given time. Construction of the project may be accomplished by contractors from the local area, should a contracting firm from the local area be selected. Under this circumstance, the demographics of the Project Area vicinity would be relatively unaffected due to the anticipated low number of in-house and supervisory personnel that would be brought in by the construction contracts. Should a contractor be selected that is not in the local area, the demographics of the area may change with the temporary residence of personnel associated with the contractor. Such change would only last for two construction seasons, as noted in **Section 2.2.2**, and demographic conditions would likely revert to original conditions upon completion of construction work.

##### *4.2.1.9.2 Employment and Income*

The local economy would be positively affected by cash flow generated by employment resulting from project construction. As noted above, the anticipated construction force for the Proposed Action would be up to 40 persons at any given time. Construction workers are expected to include residents of the County, who would likely spend employment income in the vicinity of the Project Area. Projected multiplier effects due to employment associated with the Proposed Action have not been quantified in this analysis due to the lack of available data. It is expected that multiplier effects would occur. However, the Proposed Action would employ relatively small number of workers and have a relatively short timeframe. In addition, once construction of the Proposed Action is completed, no workers would be employed other than workers to perform occasional maintenance of the road. Therefore, the multiplier effects of the Proposed Action on the local economy would be expected to be small and not long-lasting. Employment impacts would be expected to last no more than the two construction seasons the Proposed Action would require for completion.

Conversely, some local businesses have expressed concern that the AVER may encourage private and commercial travelers to avoid downtown Vernal and Naples, which would reduce business opportunities and revenue in these communities. Currently, private travelers, including recreationists and tourists, passing through the basin, drive through downtown Vernal and Naples and conduct personal business and/or shopping, stop for a brief visit, or stay for an extended visit. U.S. Highway 40 is currently the main public access to and through Vernal, Naples, and the farming community of Jensen. Local businesses along U.S. Highway 40 provide lodging, eateries, retail shops, and numerous service stations that support private travelers, as well the oil and gas industry. If the AVER is constructed, informational signs would be installed at the termini of the route to discourage non-oil and gas related traffic from exiting U.S. Highway 40. The signs would be worded to encourage commercial vehicles to use the AVER, while encouraging private vehicles to stay on U.S. Highway 40, and drive through Vernal and Naples.

##### *4.2.1.9.3 Taxes and Revenues*

Under the Proposed Action, the majority of the road alignment would be on public lands administered by BLM and SITLA, which are not subject to property taxes. The alignment would cross some private lands, which would mean those lands within the alignment would be removed from property tax assessment. However, most of the private lands that would be affected are relatively undeveloped and therefore have a low assessment value. Impacts on property tax revenues for local jurisdictions and the State would not be expected to be substantial.

Project construction would be expected to generate local purchases of goods and services. Sales and use taxes on purchases of taxable goods in the region would be collected by the County or its municipalities, depending on where the purchases are made. Sales taxes are an important revenue source for Utah local governments. As discussed in Chapter 3.0, the State sales tax is currently 4.70 percent, and a local option sales tax of at least 1.0 percent is assessed by all county and municipal jurisdictions in the local study area.

One issue about the Proposed Action is that traffic would use the AVER instead of going through the cities of Naples and Vernal. Towns around which alternative routes are built are typically concerned that the alternative will divert traffic away from businesses in their towns, with the results being less economic activity and less sales tax revenues. Several studies have been conducted to determine the impacts of a bypass on local economic activity. A 2006 study by the California DOT concluded that highway-oriented towns have a difficult time transitioning their economies after bypasses are constructed. However the study also found that towns serving as residential communities or as tourist destinations, serving regional markets, and having other economic bases such as government employment, mining, agriculture, and manufacture are not likely to be significantly impacted economically by bypasses, and may even experience benefits from reduced traffic and improved safety (California DOT 2006). A summary of bypass studies conducted in five states found net economic impacts on the broader community are usually relatively small, either positively or negatively. Communities and business districts that have a strong identity as a destination for visitors or for local shoppers are the ones that are most likely to be strengthened due to the reduction in traffic delays through their centers (Leong and Weisbrod 2000).

The City of Vernal is the county seat of the County. It is also the largest city in the County and a major retail, educational and medical center in the area. Moreover, Vernal is considered the gateway to major

scenic and recreational attractions in the area, among them Dinosaur National Monument and Flaming Gorge National Recreation Area. As such, Vernal would be expected to continue to attract traffic, and impacts of the Proposed Action would not be expected to significantly affect the Vernal economy. The diversion of trucks from downtown Vernal may make the downtown area more appealing to local residents and visitors, due to less traffic, noise from heavy trucks, and faster travel times within the city, though this cannot be stated with certainty.

Naples, with its more limited retail base and greater highway orientation, could potentially experience more of an adverse impact from diverted traffic resulting from the Proposed Action. However, given its proximity to Vernal, any adverse economic impacts on Naples would not be expected to be significant.

##### *4.2.1.9.4 Quality of Living*

The Proposed Action would not likely generate much demand for housing in the County, because local residents are anticipated to fill much of the construction jobs. If out-of-area construction contractors are used, some workers may need housing on a temporary basis. When oil and gas development was increasing in the basin in the early 2000s, housing availability was very low. Following the national economic slowdown in the late 2000s, housing availability in Uintah and Duchesne Counties increased somewhat. Because the slowdown reduced both the pace of oil and gas development and increased unemployment, thereby generating an out-migration of workers, the demand for housing in the Uinta Basin has eased (BLM 2013c). Therefore, it is expected that housing would be available for out-of-area workers. In addition, there is a large stock of motel rooms and RV campgrounds available as temporary residences (BLM 2013c).

As previously noted, the Proposed Action is anticipated to employ up to 40 workers at any given time. It is anticipated that some, and possibly most, of the workers would come from the County. Because of this, an influx of workers substantial enough to cause social impacts is not expected. Even if all of the workers came from outside the County, the size of the workforce is not anticipated to cause substantial social impacts, when compared to the County population. Because of this, the Proposed Action would also have little impact on crime rates in the area.

Since the Proposed Action would not significantly affect the local population in the Project Area vicinity, it would not lead to substantially increased demand for public services. Businesses would still require police and fire protection; however, existing services would likely accommodate any service calls. Demand for medical, educational, and other public services would not substantially change as a result of Proposed Action.

Although the demand for housing and public services would not be expected to increase, implementation of the Proposed Action would serve to improve the quality of living for residents in Vernal and Naples because it would re-route commercial vehicles carrying heavy, hazardous and explosive materials away from residential and downtown areas. Such a commitment to public safety would make these communities a safer place to live, work, and do business.

##### *4.2.1.9.5 Mitigation*

No mitigation is recommended.

#### *4.2.1.9.6 Residual Impacts*

Since the planned life of the road is indefinite, construction of the AVER would result in an economic benefit to Vernal, Naples, the County, and the State because the roadway would be used to support ongoing and future oil and gas activities in the basin. Construction of the AVER would also minimize the number of commercial/industrial vehicles carrying explosive and hazardous materials through downtown Vernal and Naples, thus improving public safety. However, these beneficial impacts may be somewhat tempered by adverse impacts to local businesses if traffic uses the AVER instead of driving through the cities of Vernal and Naples. Loss of revenue could disrupt social well-being and feelings of community satisfaction in these communities. However, studies in natural resource communities have found that disruptive social effects do not last once stability is re-established (Smith et al. 2001).

### 4.2.1.10 Visual Resources

The contrast rating system is a process used by the BLM to analyze and quantify the potential impact of proposed projects and activities on visual resources. This process is described in BLM Manual 8431 – Visual Resource Contrast Rating (BLM 1986b), and is based on the theory that the degree to which a management activity affects the visual quality of a landscape depends on the visual contrast created between a project and the existing landscape. To effectively measure this contrast, project features are compared with the dominant features of the existing landscape. The basic design elements of form, line, color, and texture are used to make this comparison and to describe the visual contrast created by the project. In addition to determining the potential visual impacts of a project, this contrast rating process allows for the identification of mitigation measures.

The first step in the contrast rating process is to develop a detailed project description that is appropriate to the type of project proposed. The VRM objectives for the Project Area are then identified from the RMP. KOPs, defined as the most critical viewpoints usually located along commonly traveled routes or other likely observation points, are then selected in cooperation with the BLM. Factors that should be considered in selecting KOPs include angle of observation, number of viewers, length of time the project is in view, relative project size, season of use, and light conditions. Visual simulations may be prepared to portray the relative scale and extent of a project, and to assist with the contrast rating process. Finally, the contrasts between the existing environment and the proposed project are recorded using BLM Form 8400-4 Visual Contrast Rating Worksheet (**Appendix G**).

Several steps of the contrast rating process are addressed in other sections of this EA. Specifically, a detailed project description is included in **Section 2.2**, and the identification of VRM objectives and KOP selection are discussed in **Section 3.11**. The remainder of this section focuses on potential impacts associated with the Proposed Action.

The potential direct impacts to visual resources would include visual contrast created by construction of the AVER. In general, the dark color of the asphalt and linear shape of the AVER would create visual contrast on the existing landscape. This contrast would adversely affect the Project Area's scenic quality and appearance of naturalness. Visual contrast would also be visible in the night sky from headlights on commercial/industrial vehicles.

Visual contrast associated with the AVER would attract the attention of viewers in the area, but would not dominate the view of the casual observer. **Table 4.2.1.10-1** shows the acres of potential direct surface-

disturbing impacts within each VRM class under the Proposed Action. Implementation of the Proposed Action would result in the short-term disturbance of 98 acres of Class III area. Following reclamation, long-term disturbance would be 81 acres of Class III area. This disturbance within designated VRM Class III areas would be consistent with management objectives because the VRM objective for this visual class permits moderate changes to the characteristic landscape that would accommodate the level of surface disturbances and visual contrasts created by proposed project activities.

**Table 4.2.1.10-1: Acreage of VRM Classes Affected in the Project Area under the Proposed Action**

| VRM Class | Short-term | | Long-term | |
|---|---|---|---|---|
| | Acres Affected | Percent of Total Proposed Disturbance | Acres Affected | Percent of Total Proposed Disturbance |
| Class I | 0 | 0 | 0 | 0 |
| Class II | 0 | 0 | 0 | 0 |
| Class III | 98 | 22 | 81 | 18 |
| Class IV | 0 | 0 | 0 | 0 |

Source: BLM 2014g.

Surface-disturbing activities associated with construction and maintenance of the AVER would result in temporary visual intrusions on the landscape and could diminish scenic quality. Short-term fugitive dust generation associated with these activities could adversely impact long-distance scenic quality. However, the use of dust suppression at construction sites and along the roadway (until final paving and sealing) would limit the potentially adverse effects of short-term, dust related haze to long-distance scenic quality.

#### *4.2.1.10.1 Viewshed Analysis*

A viewshed analysis was conducted for the Proposed Action, utilizing a 10-meter Digital Elevation Model (DEM), to determine visibility from the KOPs. A DEM, or three-dimensional representation of a terrain's surface, takes into account the elevation of the ground surface and allows a user to determine whether a clear line of sight exists between two points on the ground surface. These GIS models are based entirely on ground surface and do not take into account potential obstructions such as trees, shrubs, and other vegetation. Model inputs used in this analysis included the height of the observer (i.e., two meters), as well as the height of commercial/industrial vehicles (i.e., five meters) and ground surface (i.e., zero meters). Results of the viewshed analysis are presented in **Table 4.2.1.10.1-1** and are depicted on **Figure 4.2.1.10-1** through **Figure 4.2.1.10-6**. The six viewshed figures indicate commercial/industrial vehicles and proposed ground disturbance would be more visible to an observer standing at KOP 1 (the parking lot), which is located closer to the proposed route centerline, than to an observer standing at KOP2 (the highest trail elevation point on BLM-administered land) or KOP 3 (the highest elevation point of the Dog Valley Route Alternative ROW on Asphalt Ridge). It is important to note, due to landscape position, the approximately two-mile distance from KOP 2 to the AVER (as the crow flies) would somewhat diminish the visibility of the proposed ground disturbance (and visibility of commercial/industrial vehicles) from this KOP. Also, the AVER would be entirely obscured from KOP 3.

**Table 4.2.1.10.1-2: Viewshed Analysis Results for the Proposed Action**

| KOP | Number of Acres of AVER Visible to an Observer Standing at KOP (Able to see Commercial/Industrial Vehicles Driving on AVER) | Number of Acres of AVER Visible to an Observer Standing at KOP (Able to See Ground) |
|---|---|---|
| KOP 1 | 66 | 22 |
| KOP 2 | 35 | 19 |
| KOP 3 | 0 | 0 |

#### *4.2.1.10.2 Contrast Ratings*

On May 27, 2015, KLF visited each KOP and completed the BLM Visual Contrast Rating Worksheet (**Appendix F**). During this field effort, the observer found the strong line and color contrast created by the AVER would draw the attention of observers at KOP 1, and have little visible draw to observers at KOP 2. The AVER would have no effect on observers at KOP 3.

#### *4.2.1.10.3 Mitigation Measures*

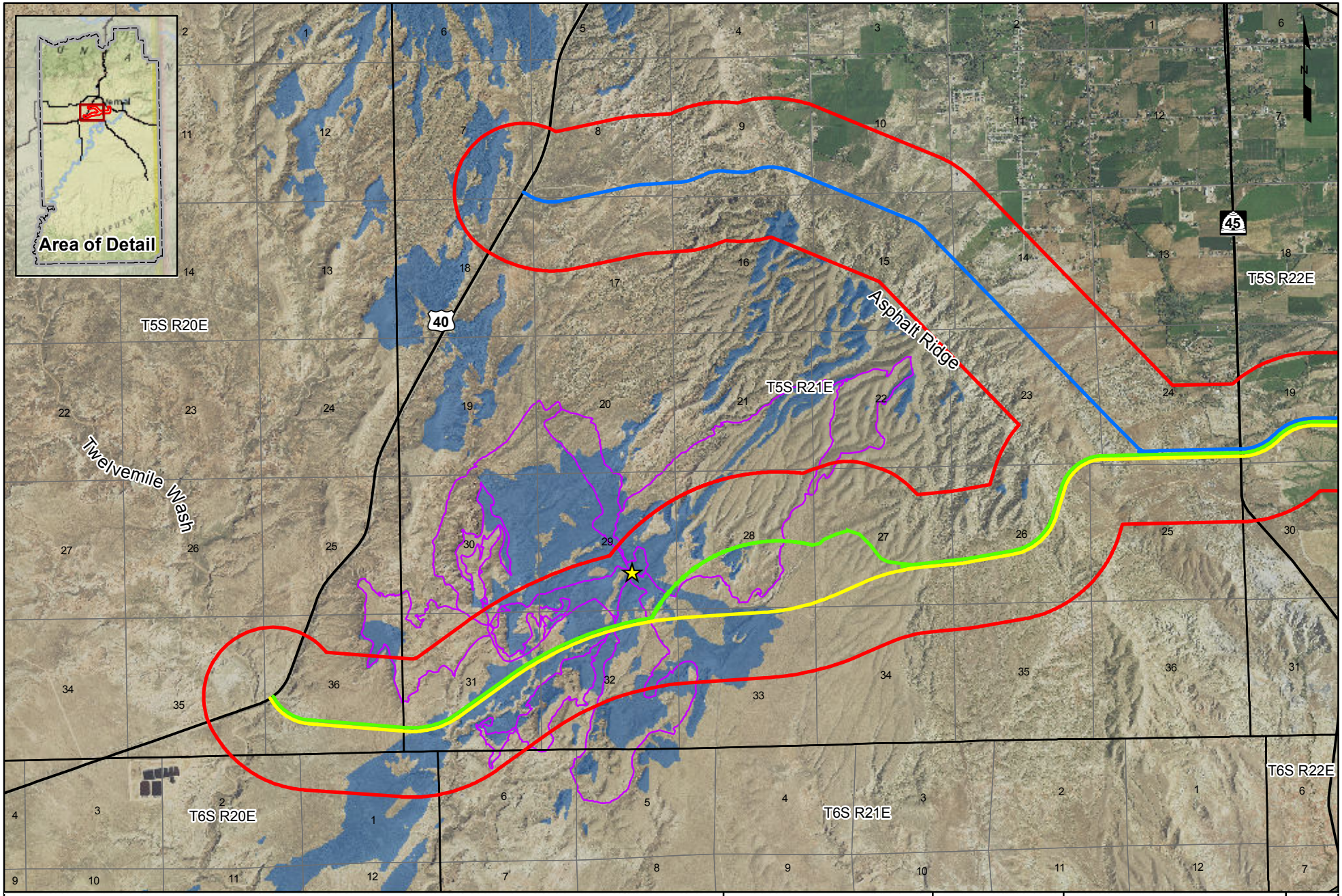
No mitigation is recommended.

#### *4.2.1.10.4 Residual Impacts*

Because the planned life of the road is indefinite, the Proposed Action would affect Class III areas within the ROW corridor for the operational life of the roadway. This would also adversely affect mountain bikers using the McCoy Flats Trail Complex, because the AVER would be visible from bike trails. Should the road be determined to be no longer needed, the roadway would be obliterated, as set out in **Section 2.2.5**, and restored and reclaimed as set out in the Reclamation Plan (refer to **Appendix B**).

### 4.2.1.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters Of The U.S.

Direct and indirect effects to water resources include: surface water depletions; degradation of surface water from sedimentation and turbidity, salinity, and selenium. Impacts to quality and/or quantity of groundwater are not discussed because no impacts are expected under the Proposed Action.




0 0.5 1 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section
- McCoy Flats Trail Complex
- KOP 1 - McCoy Flats Parking Lot
- Visible from KOP 1

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

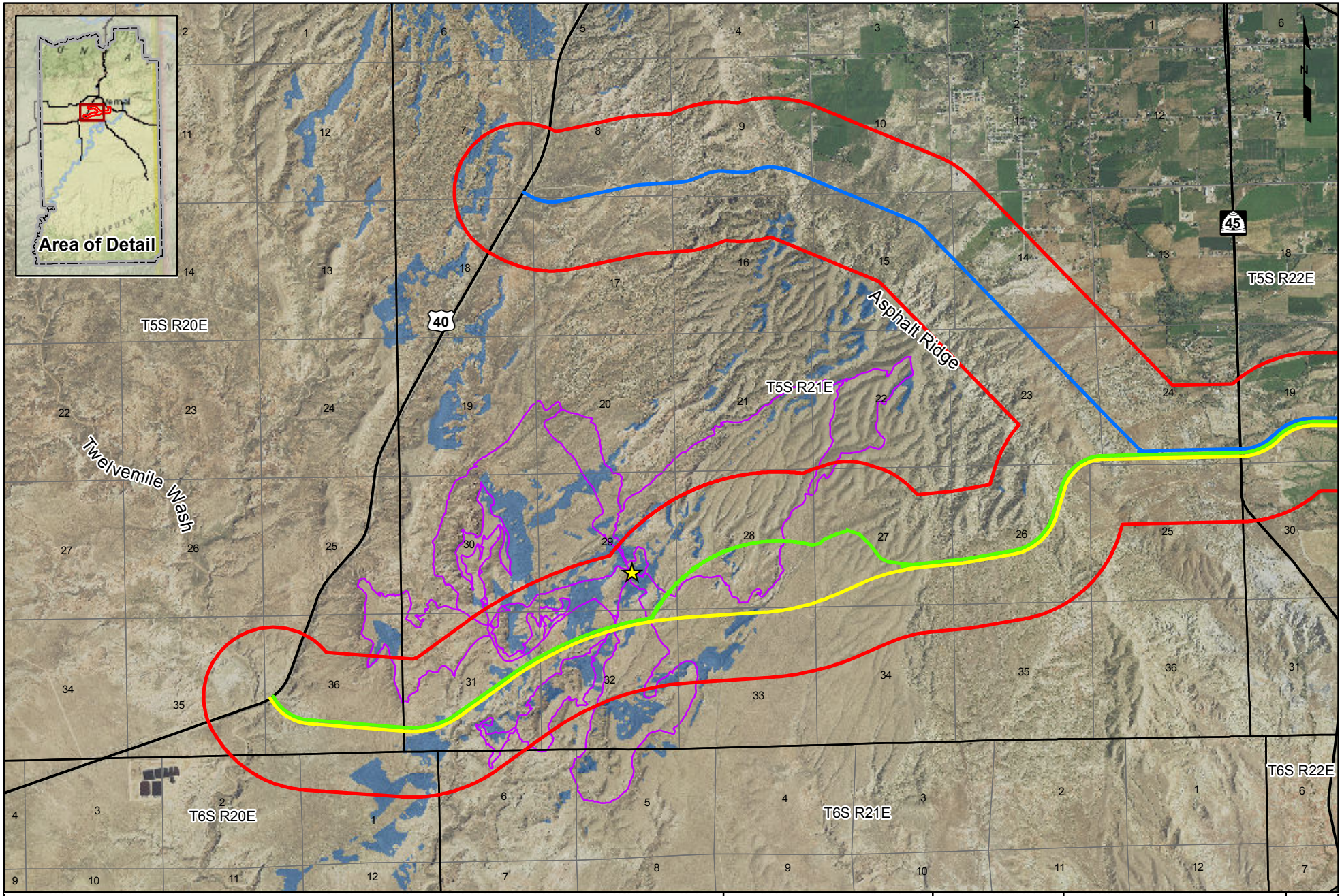
| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_4.2.1.10-1_Viewshed.mxd |

***Uintah County***

Ashley Valley Energy Route
Viewshed Analysis
Visibility of Commercial/Industrial
Vehicles from KOP 1
Uintah County, Utah

FIGURE
**4.2.1.10-1**

*This page intentionally left blank.*




0 0.5 1 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section
- McCoy Flats Trail Complex
- KOP 1 - McCoy Flats Parking Lot
- Visible from KOP 1

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

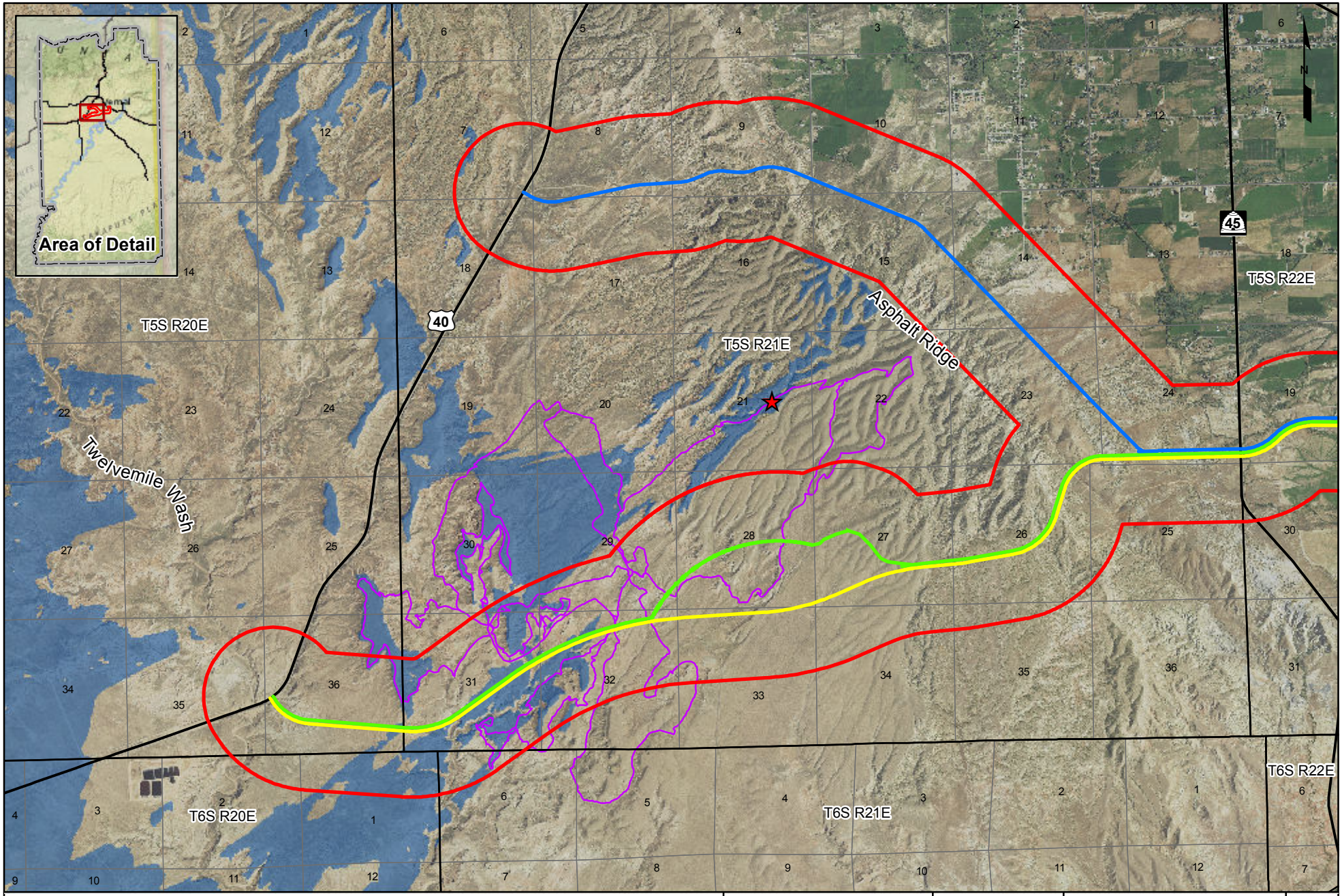
| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_4.2.1.10-2_Viewshed.mxd |

***Uintah County***

Ashley Valley Energy Route
Viewshed Analysis
Visibility of Ground Level from KOP 1
Uintah County, Utah

FIGURE
**4.2.1.10-2**

*This page intentionally left blank.*




0 0.5 1 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section
- McCoy Flats Trail Complex
- KOP 2 - Highest Bike Trail Elevation Point on BLM Land
- Visible from KOP 2

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

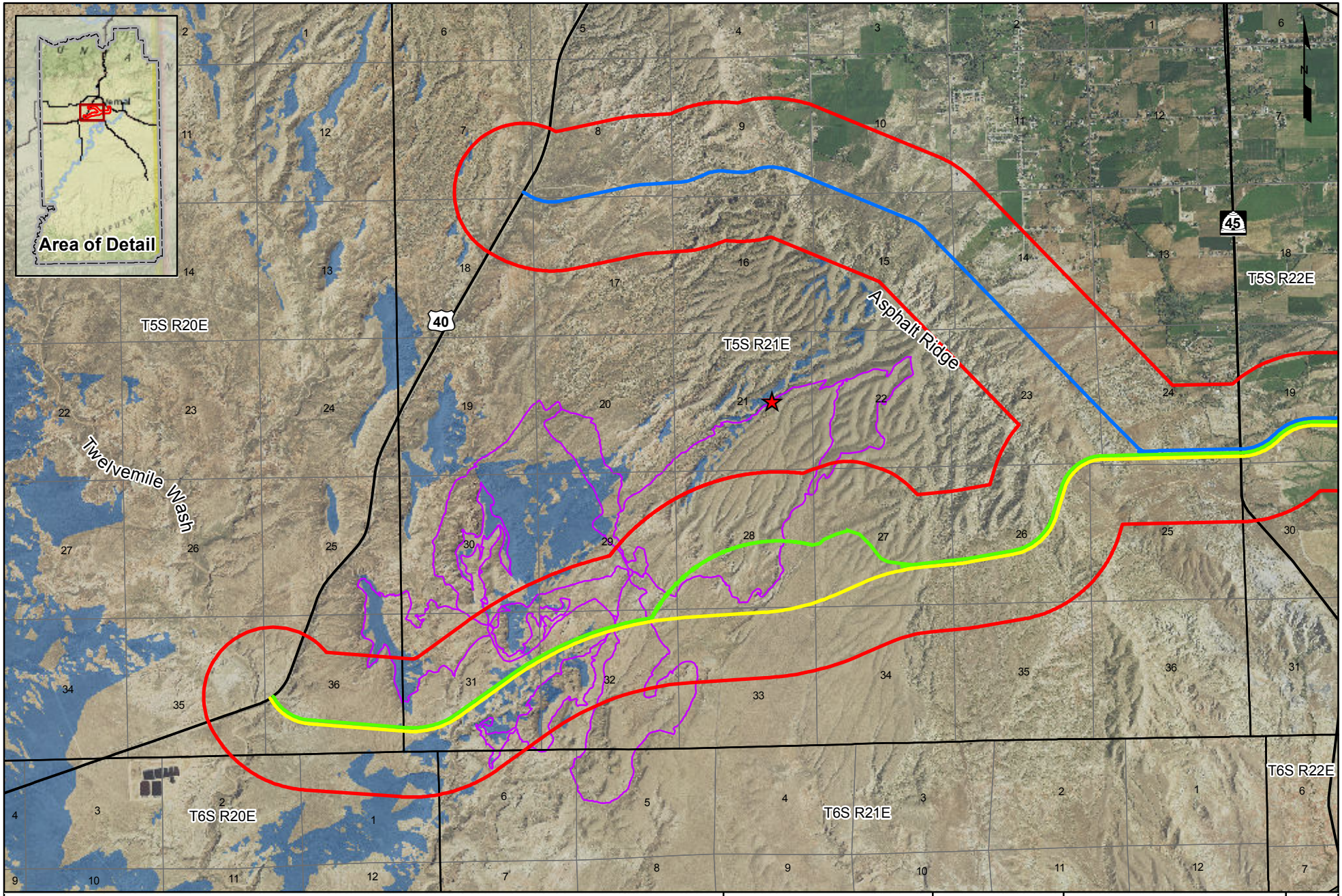
| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_4.2.1.10-3_Viewshed.mxd |

***Uintah County***

Ashley Valley Energy Route
Viewshed Analysis
Visibility of Commercial/Industrial Vehicles from KOP 2
Uintah County, Utah

FIGURE
**4.2.1.10-3**

*This page intentionally left blank.*




0 0.5 1 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section
- McCoy Flats Trail Complex
- KOP 2 - Highest Bike Trail Elevation Point on BLM Land
- Visible from KOP 2

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

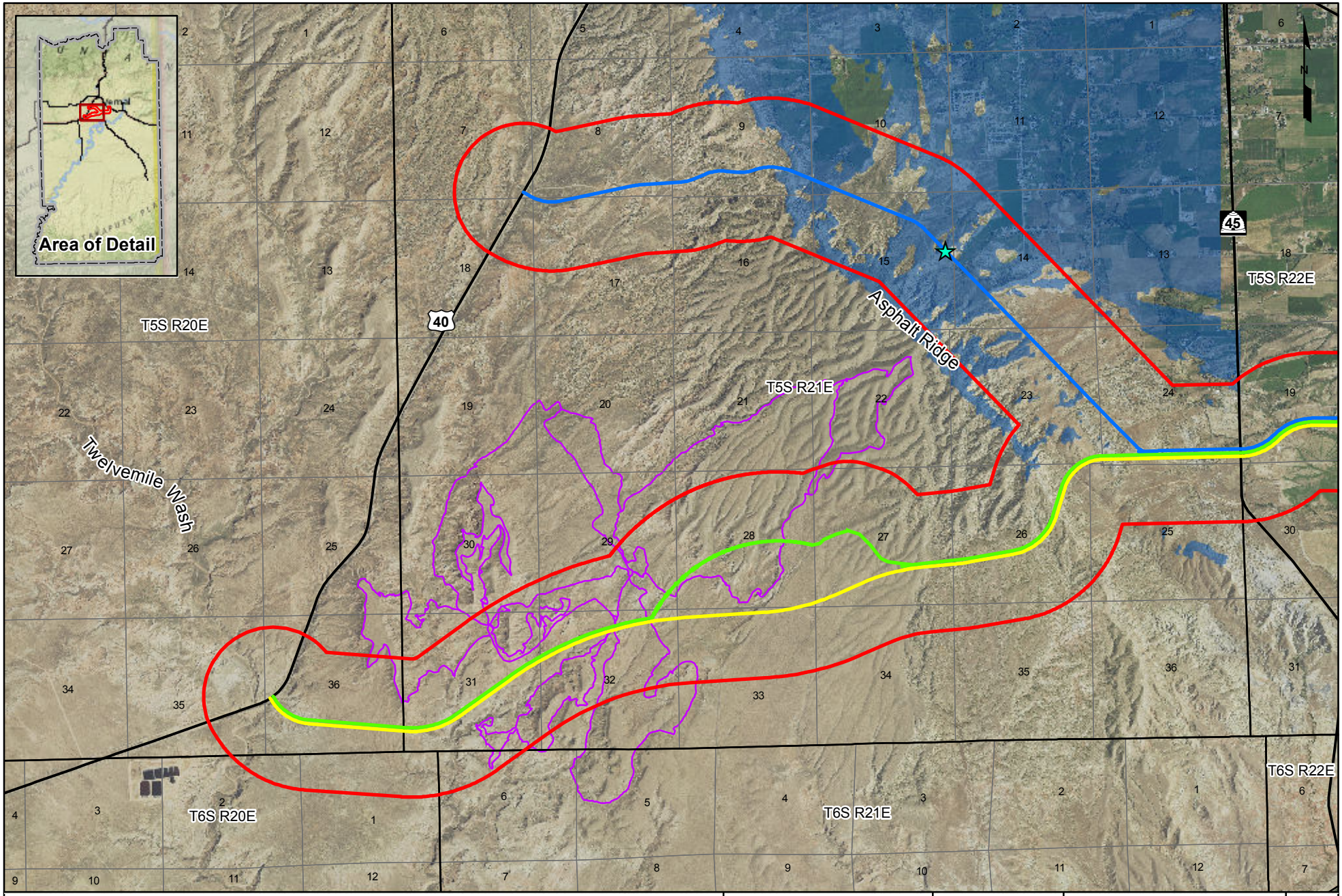
| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_4.2.1.10-4_Viewshed.mxd |

***Uintah County***

Ashley Valley Energy Route
Viewshed Analysis
Visibility of Ground Level from KOP 2
Uintah County, Utah

FIGURE
**4.2.1.10-4**

*This page intentionally left blank.*




0 0.5 1 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section
- McCoy Flats Trail Complex
- KOP 3 - Highest Elevation Point of Dog Valley Route Alternative ROW on Asphalt Ridge
- Visible from KOP 3

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

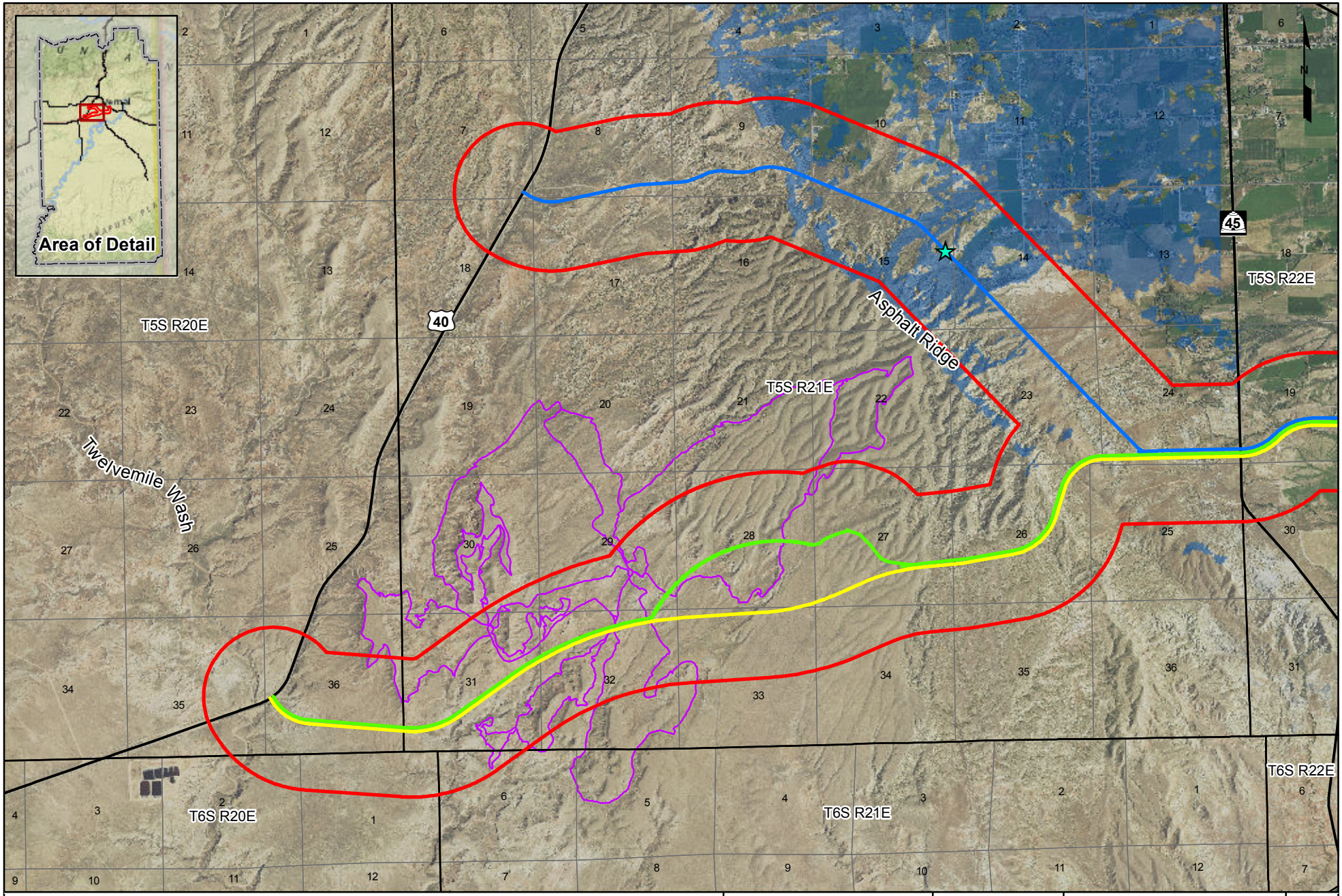
| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_4.2.1.10-5_Viewshed.mxd |

***Uintah County***

Ashley Valley Energy Route
Viewshed Analysis
Visibility of Commercial/Industrial
Vehicles from KOP 3
Uintah County, Utah

FIGURE
**4.2.1.10-5**

*This page intentionally left blank.*




0 0.5 1 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- Project Area
- Alternative A - Proposed Action Centerline
- Alternative B - Dog Valley Route Alternative Centerline
- Alternative C - Sage-grouse Mitigation Centerline
- Roads
- Township/Range
- Section
- McCoy Flats Trail System
- KOP 3 - Highest Elevation Point of Dog Valley Route Alternative ROW on Asphalt Ridge
- Visible from KOP 3

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | A.Leonard |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_4.2.1.10-6_Viewshed.mxd |

***Uintah County***

Ashley Valley Energy Route
Viewshed Analysis
Visibility of Ground Level from KOP 3
Uintah County, Utah

FIGURE
**4.2.1.10-6**

*This page intentionally left blank.*

#### *4.2.1.11.1 Floodplains and Waters of the U.S.*

The Proposed Action would disturb 3.3 acres of 100-year floodplain in the short-term, of which 2.8 acres would be long-term impacts. Disturbance to the natural contours and existing vegetation of floodplains with contoured roads would result in altered floodplain conditions that would inhibit function. In accordance with EO 11988, development and/or modification in floodplains are only allowed if there are no feasible alternatives. Final road designs and ACEPMs, or design features, set out in **Section 2.2.8.11** would ensure compliance with the requirements of EO 11988 for the 100-year floodplain identified on private lands in the Project Area.

The Proposed Action identifies 339 acre-feet of water would be needed during construction of the road. All such water would come from sources tributary to the Green River, and would therefore be considered Green River depletions. Under the Proposed Action, the withdrawal of 339 acre-feet would reduce the annual average flows in the Green River by less than one percent (339 acre-feet needed with the Proposed Action/4,064,290 acre-feet average annual flows in the Green River = 0.00834 percent).

#### *4.2.1.11.2 Hydrologic Conditions (Stormwater)*

Erosion and sediment delivery to intermittent/ephemeral drainages in the Project Area would result in short-term impacts due to project-related construction activities. An increased sediment yield is a potential indirect effect of enhanced erosion rates following vegetation removal, soil exposures, and steepening of exposed soils during road construction. Cut slopes would typically be bare of vegetation and steeper than surrounding slopes. Fill slopes would also increase sediment yields because they are typically steeper, less consolidated and devoid of vegetation, until successfully reclaimed.

Current erosion-modeling techniques require detailed site-specific data. As the final design of the proposed roadway has not yet been completed, it is impractical to use current erosion-modeling techniques. Therefore, using a strategy outlined in BLM's Uinta Basin Natural Gas Development Project (BLM 2012a), the following assumptions were made to calculate soil losses from the Proposed Action:

- Sediment yields were calculated assuming an average background value of 2.2 tons/acre/year. Erosion rates were estimated to be three times the average background rate for the first year following disturbance (for a net increase of 4.4 tons/acre/year). They would be doubled the background rate thereafter until reclamation of the remaining disturbed areas is determined successful. These figures are based on BLM professional judgment and experience with soil erosion in the basin.
- Based on previous reclamation efforts in similar areas of the basin, it is assumed that stabilization of disturbed areas usually take an average of four years following reclamation, with the longer time spans on the rockier, shallower soils, and the shorter on the deeper, finer textured soils. Therefore, a four-year time span following reclamation/reseeding was used in the sediment yield calculations.
- Total new disturbance for the Proposed Action is estimated to be 451 acres. The actual roadway would involve approximately 376 acres. The Proposed Action states the road would be used indefinitely (refer to **Section 2.2.5**). In the event the roadway was determined no longer needed, the roadway would be obliterated and reclaimed and reseeded to blend in with its surroundings. Thus, 75 acres (451 acres of disturbance – 376 acres directly involved with the roadway = 75

acres involved with interim reclamation and reseeding) would be involved in reclamation activities at the conclusion of construction activities.

On completion of road construction, cut and fill areas, road shoulders, barrow ditches, and other disturbed areas within the ROW would be reclaimed, and an additional 165 tons/year of sediment would continue to be produced for four years after reclamation or until the disturbed sites are determined stabilized (75 acres x 2.2 tons/acre = 165 tons/year).

Sediment produced from roadways is much more efficiently delivered to drainages, due to application of standard design practices that would direct surface runoff and sediments to ditches and then drainages in the Project Area. Factoring in the standard design practices, an estimated 60 percent of the increased sediments resulting from the Proposed Action, or 99 tons (165 x .60 percent) could be delivered to the Project Area's existing network of ephemeral drainages. Once in an ephemeral drainage, the sediment would accumulate, clogging drainages until it is transported to the Green River, via either the lower Ashley Creek or Twelvemile Wash. Existing drainages in the Project Area generally carry high sediment loads during infrequent high flow events. The current annual sediment load in the Green River is 2.2 million tons (BLM 2007b), thus the 99 tons of sediment likely delivered annually to the Green River for four years after construction, or until the disturbed sites are determined stabilized and successfully reclaimed, would increase the river's total annual sediment load by less than one percent (99/2,200,000 = 0.0045 percent). Soils in the Project Area having excess salt could result in increased salinity of the sediments and ultimately the Green River, a Water of the U.S. Selenium is mostly concentrated in soils derived from Mancos shale that have experienced irrigation in the past. Private lands in the Project Area east of State Route 45 have been or are irrigated and thus are likely currently contributing an unknown amount of selenium to the lower Ashley Creek and ultimately the Green River. Although surface disturbance associated with the Proposed Action has the potential to increase erosion and sediment transport to the Green River, the proposed project would not be expected to contribute measurably to existing impairments of surface waters in the Green River .

The proposed project would comply with storm water regulatory requirements that mandate use of BMPs to minimize impacts to water quality. The Utah and EPA stormwater permitting processes for construction activities would ensure consistency with the approved total maximum daily load for lower Ashley Creek and compliance with Utah Water Quality Standards (UDEQ 2008).

##### *4.2.1.11.3 Mitigation Measures*

No mitigation is recommended.

##### *4.2.1.11.4 Residual Impacts*

Increased sedimentation of ephemeral and intermittent drainages in the Project Area and ultimately the turbidity of the Green River from implementation of the Proposed Action would last until reclamation and reseeding practices are determined successful. No other residual impacts from implementation of the Proposed Action would occur.

#### 4.2.1.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated And Non-Designated Wildlife and Fishery Species

Under the Proposed Action, 451 acres of surface disturbance would occur within the Project Area. This would reduce the amount of available wildlife habitat within the Project Area until 75 acres of ROW are reclaimed and returned to their natural vegetated state. The loss of these habitats would be expected to have a minor to moderate impact on general wildlife species as many of these species are regionally abundant and generalist species, meaning they are not restricted to very specific habitat requirements. These species would be expected to move into adjacent habitats. The road would fragment previously contiguous swaths of habitat within the Project Area.

The roadway would be constructed in segments and would not result in an immediate disturbance of 451 acres, but rather a gradual increase in total disturbance until the roadway is constructed. Once a segment of road is completed, the disturbed areas used for construction would be reclaimed and revegetated in accordance with the Reclamation and Weed Control Plan (**Appendix B**). The level of impact from construction and operation of the roadway would be dependent upon habitat availability and quality in and around the Project Area, the species-specific sensitivity to anthropogenic disturbance, and the seasonal timing of project activities. Visual obstructions from vegetation or topography may influence how wildlife use adjacent habitats and may mitigate impacts on wildlife. The direct loss of wildlife habitat could displace wildlife into adjacent habitats where interspecific and intraspecific competition for resources may occur, or habitat quality is reduced. Displacement and increased competition for resources may result in increased stress, deteriorated physical condition and reduced fecundity. While reclamation would return 75 acres of surface disturbance to usable habitat for general wildlife, the roadway would represent 376 acres of long-term disturbance that would fragment the Project Area until the roadway is removed from operation and fully reclaimed.

##### *4.2.1.12.1 Big Game*

Impacts to big game would be similar for both the pronghorn and mule deer and therefore are discussed in the same analysis. Under the Proposed Action, construction of the AVER would result in the short-term loss of 211 acres of crucial year-long/fawning habitat and 67 acres of substantial winter habitat for mule deer. No short-term disturbance in crucial year-long/fawning habitat would occur on BLM-administered lands. Reclamation would reduce the long-term disturbance to 176 acres of crucial year-long and 56 acres of substantial winter habitats for mule deer. Construction of the AVER would also disturb 187 acres of substantial year-long pronghorn habitat in the short-term, which would be reduced to approximately 155 acres for the operational life of the roadway. No crucial year-long habitat for pronghorn would be disturbed under the Proposed Action. Areas along the proposed roadway that would not be needed for the operational life of the roadway would be reclaimed in accordance with the Reclamation and Weed Control Plan cited as **Appendix B**.

While direct surface disturbance is a strong indicator of the amount of habitat lost for big game species, indirect habitat loss would likely result in the habitats adjacent to the surface disturbance footprint. Indirect impacts to big game species would result from the increased human disturbance during construction and operation of the roadway. Mule deer generally avoid human-related activities, such as construction, and therefore would likely avoid habitats in close proximity to the roadway corridor which would effectively increase the total amount of habitat loss related to the Proposed Action (D'Eon and Serrouya 2005; Sawyer et al. 2006). The construction and operation of the AVER would fragment

previously contiguous sections of habitat for big game. The reapportioning of larger patches of habitat into smaller patches of habitat within the Project Area could isolate wildlife populations, convert interior habitat to edge habitat, and increase the risk of local extirpations and extinctions (Noss and Cooperrider 1994; Watson 2005). Indirect impacts related to habitat fragmentation would be greatest within UDWR-designated crucial and substantial habitats for big game species.

The operation of the AVER roadway would increase the potential for mule deer and pronghorn collisions with vehicles. The potential for vehicle related mortality would be greatest in the sections of roadway located within UDWR-designated crucial and substantial habitats for big game species or near the existing water development (i.e., the wildlife guzzler for antelope). A study conducted on animal vehicle collisions conducted in Yellowstone National park identified roads with higher posted speed limits as having heightened frequencies of large mammal deaths. The frequency of animal vehicle collisions was greatest on roads with posted speeds of 55 mph, which was the highest posted speed within the study area. While this study identified a correlation between higher posted speed limits and animal-vehicle collision frequencies, it also identified a correlation between population size and collision frequency. Species with large regional populations had a much higher vehicle collision frequency than those with regionally smaller populations. Additionally, vehicle collisions represented a relatively insignificant cause for mortality for species of large mammals within the study period, averaging less than one percent of the total population killed per year by vehicles and one and two percent for pronghorn and mule deer, respectively (Gunther et al. 1998). Therefore, while operation of the Proposed Action would increase the potential for vehicle collisions with big game species that may occupy the Project Area, it would not likely result in a significant reduction in population within the Vernal subunit 9b of the South Slope WMU or prevent these populations from reaching their goal.

Impacts related to implementation of the Proposed Action would be reduced through the implementation of ACEPMs. Specifically, construction activity within mapped crucial habitat for big game species (e.g., crucial year-long habitat and crucial fawning habitat) would be determined by the appropriate SMA after coordination with the applicant and prior to commencement of construction (**Section 2.2.8.12**). Impacts to big game could also be minimized by adherence to mitigation measures outlined in **Section 4.2.1.12.6** to relocate the wildlife guzzler away from the Proposed Action ROW.

##### *4.2.1.12.2 Upland Game*

Implementation of the Proposed Action would result in the loss of 451 acres of suitable habitat for upland game species. Approximately 176 and 10 acres of surface disturbance would occur within crucial year-long habitat for ring-necked pheasant and wild turkey, respectively. Upland game species within the Project Area would be forced to use adjacent habitats, which may increase inter- and intra-specific competition as a result of increased animal density. Proximity to development and human activity may deter upland bird species from using the surrounding habitat resulting in tracts of underutilized habitat. Increased access and human presence within the Project Area have the potential to increase poaching and harassment of upland game, as well as increase hunter access and success. While the Proposed Action has the potential to impact individual upland species within the Project Area, it would not be likely to affect populations as a whole or prevent species from reaching their population goals.

#### *4.2.1.12.3 Raptors*

Implementation of the Proposed Action could impact raptors that utilize the Project Area for foraging habitat. As no existing active or inactive nests are within a 0.5 miles of the proposed ROW, direct and indirect impacts to known nesting sites are not anticipated under the Proposed Action. Construction of the AVER roadway would result in the loss of 451 acres of habitats that could be utilized by raptor species for foraging and nesting. Interim reclamation would reduce the total disturbance to 376 acres, which would remain for the operational life of the roadway and until final reclamation has restored the disturbance footprint to usable habitat for raptor and prey species. Increased noise levels, human presence, and light sources in the Project Area from road use and operation could reduce the use of the habitats adjacent to the roadway and result in decreased breeding density and forage use within the Project Area (Reijnen et al. 1995; Stone 2000; Jacobson 2002). While the presence of human activity has been shown to adversely impact breeding raptors, some evidence of raptor habituation to human induced disturbances has also been documented (Anderson et al. 1989; Steidl and Anthony 2000; Rodriguez-Estrella et al. 1998). Operation of the proposed roadway would increase the potential for collisions with carrion-feeding raptor species (USFS 2005).

Should any raptor nests be observed within the Project Area prior to commencing construction, adherence to site-specific buffers as outlined in the BLM (2008a) Vernal Field Office *Best Management Practices for Raptors and Their Associated Habitats in Utah* would be followed and any season-specific nesting buffer would be applied (**Section 2.2.8.12**).

#### *4.2.1.12.4 Migratory Birds*

Impacts to migratory birds under the Proposed Action would be similar for all migratory bird species, but would vary depending on loss of habitat types and species' sensitivities to disturbance. For purposes of analysis within this EA, all impacts to migratory species are discussed together. The Proposed Action would result in the loss of 451 acres of habitat that could serve as nesting and foraging habitats for migratory bird species. Reclamation of 75 acres of lands not needed for the operation of the Proposed Action would be reclaimed, resulting in 376 acres of habitat loss for the operational life of the roadway.

Indirect impacts to migratory birds would be dependent on the seasonal timing of a construction activity and the habitat in which the construction is performed. Construction activities, including their visual and auditory intrusions, during the spring and early summer would have the greatest impact on migratory birds as this is the peak nesting period for most species. These impacts could displace migratory birds from nesting in nearby habitats or result in the abandonment of existing nests, if present, occupying adjacent habitats, which would reduce overall species productivity (Renfrew et al. 2005). ACEPMs aimed at minimizing potential impacts to migratory bird species, including raptors, are outlined in **Section 2.2.8.12** of this EA.

#### *4.2.1.12.5 Special Status Fish and Wildlife*

##### *4.2.1.12.5.1 Bats*

Implementation of the Proposed Action could disturb potential foraging and roosting habitats for bats that may utilize portions of the Project Area. As traffic within the Project Area is expected to continue to increase, roosting sites associated with cliff areas adjacent to the AVER, such as those along Asphalt Ridge, could be adversely affected and potentially abandoned especially during pup rearing periods of

late spring through late summer. In addition, the loss of potential prey species and decreased availability and use of certain habitats through displacement, habitat fragmentation, and habitat modification could occur. However, most bat species are forage generalist and would likely shift their diet to the most available prey source. Increased traffic in the area could also result in a greater number of bat strikes with vehicles, especially in mid to late summer when pups begin to fly.

#### *4.2.1.12.5.2 White-tailed Prairie Dog*

Implementation of the Proposed Action could result in direct adverse impacts to WTPD colonies located within and adjacent to the Project Area. Direct impacts could include the increased potential for direct mortalities of individuals, as a result of crushing from construction activities, vehicles, and equipment. Behavioral changes, including avoidance or displacement from colonies, could also result from increased habitat modification/fragmentation due to loss of vegetation, as well as increased human presence and noise. Behavioral changes related to construction activities and increased human presence would be expected to be most pronounced during the period of April – July 15, when females and pups are most vulnerable (Seglund 2004).

Potential indirect impacts to WTPDs could include potential increased hunting pressure from increased human visitation to the habitat areas resulting from paving the AVER. Gordon et al. (2003) found that shooting pressure was greatest at prairie dog colonies within easy road access as compared to more remote colonies. Construction of the proposed AVER would increase human visitation to the Project Area.

Based on the information above, the Proposed Action may adversely affect mapped and unmapped WTPD colonies. In addition, implementation of recommended mitigation measures that include provisions to complete WTPD surveys for any areas not yet surveyed (i.e., changes made to the alignment in November 2014) and avoid active WTPD colonies during construction could reduce impacts related to the potential loss of WTPD habitat in the Project Area.

#### *4.2.1.12.5.3 Greater Sage-grouse*

Implementation of the Proposed Action would result in the following potential impacts to sage-grouse inhabiting the Project Area: direct habitat loss due to vegetation removal within sagebrush communities, avoidance and displacement due to increased human activity and habitat fragmentation, and potential for poaching due to increased access and human presence along the highway.

Direct habitat losses are presented below **Table 4.2.1.12-1** and shown on **Figure 3.13-4**.

**Table 4.2.1.12-1: Surface Disturbance in Greater Sage-grouse Habitat and Management Areas under the Proposed Action**

| UDWR Habitat and BLM/USFS Management Areas | Short-term Disturbance (acres) | Long-term Disturbance (acres) |
|---|---|---|
| UDWR Greater Sage-grouse Habitat | | |
| Occupied habitat | 288 | 240 |
| Brooding habitat | 288 | 240 |
| Crucial winter habitat | 181 | 151 |
| Substantial winter habitat | 43 | 35 |
| BLM/USFS Greater Sage-grouse Management Areas | | |
| Preliminary Priority (PPMA) | 0 | 0 |
| Preliminary General (PGMA) | 288 | 240 |

Source: UDWR 2014a; BLM 2014i.

Numerous studies have determined that greater sage-grouse are affected by human activity (Braun 1986; Lyon and Anderson 2003; Remington and Braun 1991). These studies determined that hens nest farther away from leks in areas where human disturbance occurred, and that nesting initiation rates were also lower. In addition, it was also determined that male attendance at leks was lower when human activity occurred within two miles of a lek. The one lek has been documented approximately 249 feet south of the Project Area (or 0.5 mile from the Proposed Action ROW) and could potentially be affected by project-related activities during the strutting season. However, given that this lek has been inactive the past three years, realized impacts would be expected to be minimal. Should the lek become active again, impacts to sage-grouse during the strutting season would be minimized on BLM-administered lands by stipulations in the BLM (2008) VFO Approved RMP/ROD. These stipulations specify no surface-disturbing activities would be allowed within two miles of active sage-grouse leks from March 1 through June 15 (BLM 2008a). If the lek remains inactive for 10 consecutive strutting seasons, its status will be re-classified as historic.

Another potential impact to sage-grouse associated with implementation of the Proposed Action would include displacement from or abandonment of brooding habitat and wintering habitats due to increased noise associated with construction and vehicle traffic. Lyon and Anderson (2003) determined that traffic disturbance of one to 12 vehicles per day during the breeding season may reduce nest-initiation rates and increase distances from leks during lek-site selection. In addition, Ingelfinger (2001) determined that sagebrush obligate bird densities were reduced within 100 meters (328 feet) of roads, regardless of traffic volumes. Project-related noise (e.g., increased volumes or types of noise from construction, including changes in ambient tones or tonal noises) would affect sage-grouse during the period those activities take place. Sage-grouse could be temporarily displaced by noise and other human activities until activities are completed.

The relationship between sagebrush and sage-grouse is closest during the winter when birds switch from a diet of insects, forbs, and sagebrush to one composed of more than 96 percent sagebrush (Connelly et al. 2004). Thus, impacts to winter habitats could have a disproportionate effect on regional population size and persistence (Naugle et al. 2006). During winters with heavy snowfall and cold temperatures, birds could move onto more rugged land as they search for sagebrush above the snow and for protection from

high winds (Connelly et al. 2004). Habitat loss and fragmentation in winter habitats could affect sage-grouse wintering in the Project Area, which could result in avoidance and displacement of sage-grouse into sub-optimal habitats, thus potentially causing a decline in their winter survival.

Under the Proposed Action, ACEPMs include provisions to commit funding, but not exceed $26,000, for enhancement of sage-grouse habitat in the County (refer to **Section 2.2.8.12**). This commitment is consistent with the sage-grouse Final EIS, Alternative D goal to maintain and/or increase abundance and distribution of sage-grouse habitat by conserving, enhancing, and restoring the sagebrush ecosystem upon which populations depend, in collaboration with other conservation partners (BLM and USFS 2015). This commitment also complies with BLM Washington Office IM No. 2012-043, which outlines the BLM's current regional (i.e., landscape-level) approach to mitigating impacts to resources and values managed by the BLM. It is the BLM's policy to consider mitigation outside of an area of impact (i.e., offsite) when it is not feasible or practical to mitigate impacts to an acceptable level in the same area as the use-authorization (i.e., onsite). In these cases, offsite mitigation may be more appropriate to achieve and sustain BLM resource and value objectives. However, it should also be noted, it is BLM's policy to place a priority on mitigating impacts to an acceptable level onsite, to the extent practical, through avoidance, minimization, rectification, or reduction of impacts over time.

Although the ACEPM to enhance GRSG habitat would somewhat achieve BLM resource and value objectives offsite, the Proposed Action could adversely affect and result in the loss of GRSG populations in the Project Area, and particularly individual sage-grouse utilizing the bench in Section 27-28 and 33-34 in T5S, R21E. As such, implementation of recommended mitigation measures could reduce impacts related to the potential loss of sagebrush habitat in the Project Area.

#### *4.2.1.12.5.4 Bald Eagle*

Direct and indirect impacts to bald eagles would be similar in nature to those discussed for other, common raptor species. However, given their ongoing habitat losses, sensitivity to disturbance, and declining population numbers, bald eagles would likely be more sensitive to surface-disturbing activities than other, more common raptor species. Under the Proposed Action, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.11**), would reduce or minimize the potential for displacement from potential foraging habitat in the Project Area.

#### *4.2.1.12.5.5 Golden Eagle*

Direct and indirect impacts to golden eagles would be similar in nature to those discussed for other, common raptor species. However, given their ongoing habitat losses, sensitivity to disturbance, and declining population numbers, golden eagles would likely be more sensitive to surface-disturbing activities than other, more common raptor species. Under the Proposed Action, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**), would reduce or minimize the potential for displacement (from potential nesting and/or foraging habitats) or nest abandonment during construction.

#### *4.2.1.12.5.6 Burrowing Owl*

The primary impact to burrowing owls under the Proposed Action would be the loss and increased fragmentation of potential nesting and foraging habitat within the Project Area. Habitat loss and fragmentation, along with surface-disturbing activities or areas with concentrated human activity in proximity of an active burrowing owl nest, could lead to nest abandonment, thereby affecting the breeding pair and their annual productivity. Since burrowing owls alternate between nest sites within a breeding territory, any surface disturbance where ongoing traffic or human presence occurs in or near active WTPD colonies could prevent burrows from being used as nest sites in the future.

Construction of the proposed AVER would also result in visual disturbance on the landscape, increased noise from equipment use, and increased vehicle traffic, all of which could cause burrowing owls to avoid disturbed areas. Such displacement and avoidance could lead to an increased use of adjacent habitats, which could lead to increased inter-specific and intra-specific competition for resources in these areas.

Under the Proposed Action, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities and according to BLM-approved protocol, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12)**, would reduce or minimize the potential for displacement or nest abandonment. In addition, implementation of recommended mitigation measures that include provisions to complete WTPD surveys for any areas not yet surveyed (i.e., changes made to the alignment in November 2014) and avoid active WTPD colonies during construction could further reduce impacts related to the potential loss of burrowing owl nesting habitat in the Project Area.

#### *4.2.1.12.5.7 Ferruginous Hawk*

Direct and indirect impacts to ferruginous hawks would be similar in nature to those discussed for other, common raptor species. However, given their ongoing habitat losses, sensitivity to disturbance, and declining population numbers, ferruginous hawks would likely be more sensitive to surface-disturbing activities than other, more common raptor species. Under the Proposed Action, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.11**), would reduce or minimize the potential for displacement or nest abandonment.

#### *4.2.1.12.5.8 Short-eared Owl*

Direct and indirect impacts to short-eared owls would be similar in nature to those discussed for other, common raptor species. However, given their ongoing habitat losses, sensitivity to disturbance, and declining population numbers, short-eared owls would likely be more sensitive to surface-disturbing activities than other, more common raptor species. Under the Proposed Action, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**), would reduce or minimize the potential for displacement or nest abandonment.

#### *4.2.1.12.5.9 Special Status Fish*

Direct and indirect impacts to the four endangered Colorado fish species (the bonytail, Colorado pikeminnow, humpback chub, and razorback sucker) and three State conservation agreement fish species

(the bluehead sucker, flannelmouth sucker, and roundtail chub) are discussed collectively in this section. Although no ground-disturbing activities would occur in aquatic habitat under the Proposed Action, these fish could be impacted by water depletion activities and increased siltation due to increased soil erosion.

Implementation of the Proposed Action would increase soil erosion in the Project Area due to the removal of vegetation, increased soil exposure, and steepening of exposed soils in areas with cut and fill. Loose soil could be transported to intermittent/ephemeral drainages (including Twelvemile Wash) along the AVER during storm events, which eventually could increase siltation approximately 4.4 river miles downstream of the Project Area in the Green River. Increased siltation in the Green River would be expected to degrade aquatic habitats for special status fish by increasing turbidity and salinity in the Green River. However, design features to suppress dust (refer to **Sections 2.2.2.6**) and complete reclamation (refer to **Appendix B**), as well as ACEPMs to utilize appropriate erosion control measures, avoid construction at drainage crossings during high flow conditions, and install culverts at drainage crossings (refer to **Section 2.2.8.11**), would reduce the potential for the Proposed Action to adversely affect or degrade aquatic habitats downstream of the Project Area.

Implementation of the Proposed Action would also utilize water from the Upper Colorado River Basin for compaction of the road base material and dust suppression along the roadway (until final paving and sealing). It is estimated the Proposed Action would consume 339 acre-feet of water. Depletions can reduce the ability of the Upper Colorado River Basin, which includes the Green River, to create and maintain the physical habitat (areas inhabited or potentially habitable to special status fish for the use of spawning, development of fish larvae, feeding, or serving as corridors between these areas) and the biological environment required by the fish. Water depletions can also contribute to alterations in flow regimes that favor non-native fish.

In order to address depletion (and other impacts) to the endangered Colorado River fish, a Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) was initiated on January 22, 1988. Under the 1988 Recovery Program, any water depletions from tributary waters within the Colorado River drainage are considered to "jeopardize the continued existence" of these fish. In order to further define and clarify the recovery process in the Recovery Program, a Section 7 agreement was implemented on October 15, 1993, by Recovery Program participants. Incorporated into this agreement is a Recovery Implementation Program Recovery Action Plan (RIPRAP). The RIPRAP identifies actions currently required to recover the endangered fish species in the most expeditious manner. Included in the RIPRAP was the requirement that a one-time depletion fee would be paid to help support the Recovery Program for all non-historic water depletions (i.e., occurring after January 1988) from the Upper Colorado River Basin. The depletion fees, as amended, were intended to be the reasonable and prudent alternative to avoid jeopardy to the endangered fishes by depletion of the Upper Colorado River Basin (USFWS 2009).

The estimated 339 acre-feet of water need for construction activities would result in a depletion of surface and groundwater within the Upper Colorado River Basin, thus directly affecting the endangered Colorado River fish and their USFWS-designated habitats. Therefore, the Proposed Action "***may affect, is likely to adversely affect***" the bonytail, Colorado pikeminnow, humpback chub, and razorback sucker, and their USFWS-designated critical habitat. To date, the water source for this project has not been determined. If water is obtained from a source permitted as a historic depletion (i.e., permitted prior to January 1988),

consultation on the depletion was included in the 1993 agreement, and no further consultation with the USFWS would be needed in terms of water depletion for this project. However, if water is obtained from a source permitted as a non-historic depletion (i.e., permitted after January 1988), further consultation with the USFWS would be required to address project-related depletion impacts. This EA assumes depletions would be non-historic (i.e., new), and therefore the County would be required to pay a fee to the Recovery Program.

Similar to the Colorado River fish, project-related water depletion and increased siltation could also adversely affect the bluehead sucker, flannelmouth sucker, roundtail chub, and their aquatic habitats, but would not likely result in a loss of viability, nor cause a trend towards Federal listing of these species.

#### *4.2.1.12.6 Mitigation Measures*

In order to protect pronghorn antelope by deterring their presence near the roadway, the County or its agent would contribute $10,000 to relocate the wildlife guzzler away from the proposed centerline. The targeted relocation area (UTM location NAD 83 0622503 / 4463847) would likely be near the McCoy Flats area and south of the Project Area. Site-specific NEPA and clearance surveys for this project would be handled separately from this EA by the BLM.

Complete WTPD and burrowing owl surveys for any areas not yet surveyed (i.e., changes made to the alignment in November 2014) and avoid active WTPD colonies during construction to minimize potential adverse impacts to WTPDs and nesting burrowing owls.

The following mitigation measures are consistent with the preferred alternative in BLM's ongoing process to amend its RMP, and if selected, would not result in likely conflicts with the final approved amendment.

- Noise from construction would not exceed 10 decibels above ambient sound levels at occupied leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season.
- Except for those required for human safety (i.e., road signs), no permanent tall structures (any man-made structure that would persist through the breeding season and would have the potential to disrupt lekking or nesting birds by creating predator perching/nesting opportunities) would be allowed along the roadway in occupied GRSG habitats.
- No construction will be allowed within occupied GRSG habitats during the corresponding seasonal use periods:
    - In brood-rearing habitat from April 15 to July 15.
    - In winter habitat from November 15 to March 15.

    Exceptions to the seasonal restrictions could be granted by the Authorized Officer under the following conditions:

        - If surveys determine that the lek is not active that year (based on UDWR lek survey protocol), and the proposed activity will not take place beyond the season being excepted;

- If surveys determine that the lek is no longer occupied and the proposed activity will not take place beyond the season being excepted;
- If the project plan and NEPA document demonstrate the project would not impair the function of seasonal habitat, life-history, or behavioral needs of GRSG;
- If the potential short-term impacts from the action are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedlings, juniper reduction).

Additionally, the Authorized Officer may modify the seasonal restrictions under the following conditions:

- If portions of the area do not include habitat (lacking the principle habitat components of GRSG habitat) or are outside the current defined area, as determined by the BLM in discussion with the State of Utah, and the indirect impacts would be mitigated;
- If documented location variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect when GRSG use a given area, and the proposed activity will not take place beyond the season being excepted.

Application of the above restrictions and meeting objectives within Preliminary General Management Areas may be waived by the Authorized Officer if off-site mitigation is successfully completed in Preliminary Priority Management Areas, following discussion with BLM and the State of Utah. Even in situations where use restrictions are waived in Preliminary General Management Areas, to avoid direct disturbance and/or mortality of birds, disturbances would not be approved during the sensitive seasons.

As compensatory mitigation, the County or its agent would contribute $60,000 total (i.e., $34,000 more than the $26,000 voluntarily committed in **Section 2.2.8.12**) to the UDWR for disturbance to approximately 79 acres of occupied GRSG habitat. The provided funds would be useable only for mitigation projects to benefit GRSG. The mitigation projects would be carried out by UDWR who would account for use of the funds.

If water needed for the Proposed Action is supplied from the Green River, Uintah County's contractor would implement additional mitigation measures to reduce/minimize adverse impacts to special status fish. These measures may include, but would not be limited to the following:

- Pump from an off-channel location (i.e., one that does not connect to the river during high spring flows) to avoid entrainment. An infiltration gallery constructed in a USFWS-approved location would be preferable.
- If the pump head is located in the river channel, the following measures would apply:
  - Do not situate the pump in a low-flow area as these habitats tend to concentrate larval fishes;

- Limit the amount of pumping, to the greatest extent possible, during the midnight hours (10p.m. – 2a.m.), as larval drift studies indicate that this is a period of greatest daily activity. Dusk would be the preferred pumping time, as larval drift abundance is lowest during this time.

- Limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (April 1 to as late as August 31).

- Screen all pump intakes with 3/32" mesh material.

- Approach velocities for intake structures will follow the National Marine Fisheries Service's document "Fish Screening Criteria for Anadromus Salmonids". For project with an in-stream intake that operates in stream reaches where larval fish may be present, the approach velocity would not exceed 0.33 feet per second (ft/s).

- Report any fish impinged on intake screen or entrained into irrigation canals to the USFWS (801-975-3330) or the Utah Division of Wildlife Resources:

Northeastern Region
152 East 100 North
Vernal, UT 84078
Phone: 435-781-9453

##### *4.2.1.12.7 Residual Impacts*

Because of the fair to poor reclamation potential and the high potential for invasion and/or proliferation of noxious and invasive weed species in the Project Area, the loss of wildlife habitats during and following construction would remain until restored through reclamation. The proposed design features, ACEPMs, reclamation plan (refer to **Appendix B**), and application of the mitigation measures offered above would effectively minimize impacts to most wildlife populations and their habitats in the Project Area (or downstream of the Project Area, as in the case of special status fish).

### 4.2.2 Alternative B – Dog Valley Route Alternative

#### 4.2.2.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns

Direct and indirect impacts to cultural resources from construction of the Dog Valley Route Alternative would be similar to those set out in **Section 4.1.1.1**. A Class I literature search involving lands associated with Alternative B reveal the alternate route would cross the Highline Canal at the same site currently identified in the Proposed Action. The Highline Canal is assessed as meeting the eligibility criteria for listing on the NRHP. The application of the specific design elements, and ACEPMs, outlined in **Section 2.2.8.3** for cultural resources would be incorporated into Alternative B as design features. Specifically, a bridge is planned for the canal crossing; and, final design of the canal crossing would avoid direct impacts to the Canal. Final mitigation would be determined during consultation with the involved private landowner(s), the appropriate SMA, and the USHPO. Also, after construction designs are finalized and prior to initiating any surface-disturbing activities, a Class III cultural resource field inventory would be conducted for any portion of the final alignment not previously covered by a Class III cultural resources

field inventory. If cultural resources eligible for listing to the NRHP are documented, appropriate avoidance measures and/or additional mitigation would be determined during consultation with the appropriate SMA, the involved private landowner(s) and the USHPO. These actions would minimize direct and indirect impacts to cultural resources from the implementation of Alternative B. As with the Proposed Action, coordination between the BLM and the Tribes would determine additional mitigation, as needed, for Alternative B.

Although a literature search was conducted and a Class III field inventory would be conducted prior to initiation of construction activities associated with the final route determined for this Alternative, the known data is for surficial finds. As with the Proposed Action, it is currently unknown if any buried or subsurface cultural resources could be directly affected by implementation of Alternative B. Incorporating the Proposed Action's ACEPM relative to any cultural resources uncovered during excavation activities as a design feature for Alternative B would minimize, but not avoid, direct effects to unknown or subsurface cultural resources (refer to **Section 2.2.8.3**).

##### *4.2.2.1.1 Mitigation Measures*

To further minimize adverse impacts to cultural resources on BLM-administered lands a BLM Archaeologist should be contacted within 24 hours of inadvertent discovery for further evaluation and guidance.

##### *4.2.2.1.2 Residual Impacts*

If additional sites eligible for NRHP listing are identified during the Class III field inventory for the Dog Valley Route Alternative, residual impacts to cultural resources would be similar to those described for the Proposed Action.

#### 4.2.2.2 Prime and Unique Farmlands

Direct and indirect impacts to private farmlands and prime farmlands, if irrigated, from construction of the Dog Valley Route Alternative would be similar in nature, but greater in extent to those set out in **Section 4.2.1.2**. The Dog Valley Route Alternative would directly involve a total of 119 acres of farmland, 56 acres of private farmlands and 63 acres of prime farmlands, if irrigated. Of this total, 91 acres (47 prime + 45 private) would be converted to the Dog Valley Route roadway. The remaining 28 acres would be reclaimed upon completion of construction. Indirect impacts to farmlands could increase the affected area from 91 acres to 273 to 910 acres (91 x 3 and 91 x 10) due to fragmentation. Factoring in the direct and indirect impacts to farmlands, the Dog Valley Route Alternative could affect a maximum of 910 acres of farmlands, or four percent of the farmlands in the County currently involved in hay production (910 acres/23,200 acres [*100] = 3.9 percent).

##### *4.2.2.2.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.2.2.2 Residual Impacts*

Residual impacts to prime farmlands, if irrigated, and private farmlands would be essentially the same as described for the Proposed Action, but to a somewhat greater extent as the Dog Valley Route Alternative would involve slightly more surface disturbance on private farmlands and private farmlands than the Proposed Action.

Because lands in the Project Area that meet the criteria for prime farmlands, if irrigated, are not currently irrigated and the County has been working to accommodate private landowners and acquire SUAs, the Dog Valley Route Alternative is not anticipated to significantly impact prime farmlands, if irrigated, or private farmlands in the Project Area.

### 4.2.2.3 Geology, Including Mineral Resources and Energy Production

#### *4.2.2.3.1 Energy Production*

Direct and indirect impacts to energy production from implementation of the Dog Valley Route Alternative would be similar to but greater in extent than those identified and discussed for the Proposed Action. The Dog Valley Route Alternative would result in a six percent increase in total surface disturbance in leased areas from the Proposed Action. The greatest change would be the nearly twofold increase in surface disturbance on SITLA-administered tar sands lease areas. **Table 4.2.2.3-1** outlines the short-term and long-term acres for Alternative B.

**Table 4.2.2.3-1: Surface Disturbance of Oil and Gas and Tar Sands Lease Areas Under Alternative B**

| Lease Type | Acres within Project Area | Short-term Disturbance (Acres)* | Long-term Disturbance (acres)* |
|---|---|---|---|
| BLM Oil & Gas Lease | 1,822 | 38 | 32 |
| BLM STSA | 5,070 | 151 | 125 |
| Nominated Tar Sands Lease | 799 | 19 | 16 |
| SITLA Oil & Gas Lease | 3,120 | 136 | 114 |
| SITLA Tar Sands Lease | 3,259 | 197 | 165 |
| **TOTAL** | **14,070** | **541** | **452** |

Source: BLM 2014b; SITLA 2014a.
*There is some overlap between oil and gas leases and tar sands leases on both BLM and SITLA lands. The figures above do not account for the overlap and include some redundancies in acreage calculations.

As with the Proposed Action, for SITLA-administered lands involved in existing state tar sands leases, negotiations would be conducted with the affected leaseholder(s) to determine mitigation, as appropriate, for any ongoing or planned tar sands development activities in the disturbance area for the Dog Valley Route Alternative. Successful agreement would effectively minimize the adverse impacts to the tar sands leaseholder(s) from implementation of Alternative B. For BLM STSA and nominated tar sand lease areas, those lands directly involved in the ROW could be dropped from potential leasing or leased with a no surface occupancy restriction should they ever be offered for lease. However, implementation of a no surface occupancy restriction on a BLM STSA or nominated tar sands lease is outside the scope of this EA.

#### *4.2.2.3.2 Mitigation Measures*

No additional mitigation is recommended.

#### *4.2.2.3.3 Residual Impacts*

Residual impacts for energy production would be essentially the same as described for the Proposed Action, but to a somewhat greater extent as the Dog Valley Route Alternative would involve slightly more surface disturbance on SITLA-administered tar sands lease areas than for the Proposed Action. As with the Proposed Action, successful negotiations with the existing SITLA tar sands leaseholder(s) could

reduce adverse impacts or increase beneficial effects from implementation of the Dog Valley Road Alternative.

#### 4.2.2.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species

Direct and indirect impacts to the soils and vegetation resources, including invasive plants and noxious weed species and BLM sensitive plant species associated with the Dog Valley Route Alternative would be similar to those outlined and discussed for the Proposed Action, however, the surface disturbance would be 389 acres, or a reduction of approximately 14 percent, from the Proposed Action. A weed inventory and survey for BLM-listed sensitive plant species would be required before any new surface disturbance associated with this alternative.

**Table 4.2.2.4-1: Surface Disturbance Acres by Ecological Site for Alternative B**

| Dominant Ecological Site Name | Acres within the Project Area | Percent of Surface Disturbance in the Project Area |
|---|---|---|
| Desert loam (shadscale) | 73 | 19 |
| Desert clay (shadscale) | 2 | <1 |
| Desert shallow clay (mat saltbush) | 1 | <1 |
| Desert shallow loam (shadscale) | 91 | 24 |
| Desert shallow loam (black sagebrush) | 21 | 6 |
| Desert very steep shallow loam (shadscale) | 24 | 6 |
| Desert sandy loam (Indian ricegrass) | --- | --- |
| Desert alkali bench (Castle Valley saltbush) | 6 | 1 |
| Desert shaley shallow loam (greasewood) | 1 | <1 |
| Semi-desert loam (Wyoming sage) | 23 | 6 |
| Semi-desert shallow loam (black sage) | 21 | 6 |
| Semi-desert gravelly loam (Wyoming sage) | 51 | 13 |
| Semi-desert sand (fourwing saltbush) | 15 | 4 |
| Semi-desert sandy loam (fourwing saltbush) | 17 | 4 |
| Semi-desert stony loam (juniper-pinyon) | 11 | 3 |
| Semi-desert shallow loam (juniper-pinyon) | 4 | 1 |
| Loamy bottom (big sagebrush) | --- | --- |
| Alkali bottom (alkali sacaton) | --- | --- |
| Alkali flat (greasewood) | 1 | <1 |
| Wet saline streambank (coyote willow) | --- | --- |
| Wet saline meadow (inland saltgrass) | --- | --- |
| Wet fresh streambank (willow) | 1 | <1 |
| River floodplain (Fremont cottonwood) | --- | --- |
| Bare ground & rock outcrop (unproductive) | 21 | 6 |
| Water | --- | --- |

| Dominant Ecological Site Name | Acres within the Project Area | Percent of Surface Disturbance in the Project Area |
|---|---|---|
| Total minor inclusions for all soils | 5 | 1 |
| **Total** | **389** | **100** |

Source: USDA-NRCS 2014.

Application of the ACEPMs incorporated as design feature (refer to **Sections 2.2.8.5** and **2.2.8.7**) and implementation of the reclamation plan (refer to **Appendix B**) would reduce impacts to these resources and increase the likelihood for successful reclamation.

##### *4.2.2.4.1 Mitigation Measures*

Application of the offered mitigation measures offered for the Proposed Action should be applied to the Dog Valley Route Alternative, as they would enhance reclamation success and likely reduce the time to achieve successful reclamation.

##### *4.2.2.4.2 Residual Impacts*

Residual impacts for soils and vegetation would be similar to those discussed for the Proposed Action, but would be approximately 14 percent less than those discussed for the Proposed Action.

#### 4.2.2.5 Lands and/or Access

The Dog Valley Route Alternative would affect four of the 12 existing BLM ROWs or easements and six of the nine existing SITLA ROWs or easements. The four affected BLM ROWs/easements include an oil and gas pipeline, two power transmission lines, and one road. The six affected SITLA ROWs/easements include two oil and gas pipelines, two roads, one telephone line, and one water pipeline. Collectively, the surface disturbance associated with this construction would be approximately 22.2 acres, which is approximately 19.3 acres greater than under the Proposed Action. Similar to the Proposed Action, disruptions to US Highway 40 and State Route 45 would be temporary and mutually compatible with the goal of improving public safety in the downtown Vernal and Naples areas by minimizing the number of commercial/industrial vehicles carrying explosirve and hazardous materials through those areas. At these intersections, traffic controls may be used to ensure public safety during construction. Impacts to users of these ROWs would be minimized by design features carried from the Proposed Action (**Section 2.2.8.13**).

Per existing BLM requirements, the involved ROW holders would be notified and coordination would be implemented that would allow the existing ROW to continue with minor disruption of services. Coordination involving existing SITLA ROWs and/or easements would also be developed. These site-specific coordinations would effectively minimize adverse impacts to the existing ROWs and easements.

##### *4.2.2.5.1 Mitigation Measures*

No mitigation is recommended.

##### *4.2.2.5.2 Residual Impacts*

Disruption of existing operations from construction of the road would be short-term in duration. Stipulations and site-specific mitigation negotiated with the land authorization holders would reduce

impacts. No other residual impacts from implementation of the Dog Valley Route Alternative would occur.

#### 4.2.2.6 Livestock Grazing

Impacts to livestock grazing would be similar in nature, but reduced in extent from the Proposed Action. **Table 4.2.2.6-1** provides carrying capacity information for the three allotments affected by the Dog Valley Route Alternative. In summary, the Dog Valley Route Alternative would directly affect a total of 10 AUMs on the McCoy Flat grazing allotment.

**Table 4.2.2.6-1: Carrying Capacity Impacts by Allotment under the Dog Valley Route Alternative**

| Grazing Allotment | Total BLM Allotment Acres | Total Active AUMs | Calculated AUMs in Project Area | Acres of Disturbance in Project Area | Projected Active AUMs Affected | Percent Loss of Total Active AUMs |
|---|---|---|---|---|---|---|
| McCoy Flat | 12,499 | 843 | 422 | 149 | 10 | 1 |
| Rich & Stetson | 511 | 63 | 3 | --- | --- | --- |
| Twelve Mile | 4,681 | 316 | 66 | --- | --- | --- |
| **TOTAL** | **17,871** | **1,222** | **491** | **149** | **10** | **1** |

Source: (BLM 2014d).

##### *4.2.2.6.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.2.6.2 Residual Impacts*

Residual impacts would be similar in nature, but reduced in extent from the Proposed Action, and would only affect the McCoy Flat grazing allotment. In addition, installation of drainage culverts would not occur under the Dog Valley Route Alternative because the proposed alignment would not cross the McCoy Flats Trail System.

#### 4.2.2.7 Paleontology

Construction of the Dog Valley Route Alternative would result in the disturbance of 389 acres within the Project Area. No pedestrian paleontological survey was completed for the Dog Valley Route Alternative, and therefore the potential for the project to directly impact known or exposed paleontological resources is unknown. Several geologic units would be impacted by excavation of the Dog Valley Route Alternative, which could result in the loss of unknown or currently unexposed fossil localities within the Project Area. Surface disturbance to each geologic unit and PFYC under the Dog Valley Route Alternative is provided below.

**Table 4.2.2.7-1: Surface Disturbance to PFYCs under Alternative B**

| Geologic Unit | PFYC | Acres in Project Area | Surface Disturbance (acres) |
|---|---|---|---|
| Brennan Basin Member of Duchesne River Formation | 5 | 5,614 | 83 |

| Geologic Unit | PFYC | Acres in Project Area | Surface Disturbance (acres) |
|---|---|---|---|
| **Total for PFYC 5** | | **5,614** | **83** |
| Lower Unit of Mesaverde Group | 3 | 159 | 7 |
| Upper Unit of Mesaverde Group | 3 | 1,382 | 106 |
| Mancos Shale | 3 | 2,210 | 129 |
| **Total PFYC 3** | | **3,751** | **242** |
| Mixed Alluvium & Colluvium | 2 | 84 | --- |
| Piedmont Alluvium, Undivided | 2 | 2,695 | 64 |
| Eolian Deposits | 2 | 4 | --- |
| **Total PFYC 2** | | **2,784** | **64** |
| Disturbed Ground | -- | 14 | --- |
| **Total Unclassified** | | **14** | **---** |
| | **TOTAL** | **12,163** | **389** |

Source: BLM 2014e.

While both action alternatives have the potential to harm unknown paleontological resources within the Project Area, the potential would be less under the Dog Valley Route Alternative. This is due to 100 fewer acres of surface disturbance to PFYC 5 areas proposed under the Dog Valley Route Alternative. However, as the Dog Valley Route Alternative proposes less surface disturbance, especially in geologic units with a higher potential of fossils, it has a lower probability of uncovering new fossil localities when compared to the Proposed Action. Increased access throughout the Project Area as a result of the new roadway would increase the possibility of illegal collection or vandalism of known and unknown exposed fossil localities.

Should the Dog Valley Route Alternative be selected, a paleontological survey of the Dog Valley Route ROW would be completed and a mitigation plan would be approved for any known fossil localities prior to completing any construction activities. Should any paleontological resources be uncovered during excavation of the Dog Valley Route Alternative, construction would be suspended and the BLM would be contacted. Work would not continue until a mitigation plan has been approved (**Section 2.2.8.8**)

##### *4.2.2.7.1 Mitigation Measures*

No mitigation is recommended.

##### *4.2.2.7.2 Residual Impacts*

A survey for paleontological resources would be conducted along the Dog Valley Route Alternative prior to any construction activities. Should any paleontological resources be found, proper mitigation would be applied to avoid the destruction and permanent removal of fossil resources from the fossil record. Following all relevant paleontological resource regulations, ACEPMs incorporated as design features, and mitigation measures would provide opportunities to minimize the impacts and gather additional information regarding these resources. However, any physical impact to a paleontological resource would be essentially impossible to restore. Accordingly, there would be some risk of adverse impacts to paleontological resources if these resources are unknown and not detected during project implementation.

#### 4.2.2.8 Recreation

The Dog Valley Route Alternative would have no direct or indirect impact on recreation opportunities at the McCoy Flats Trail Complex because the alignment for Alternative B would avoid these developed trails. As such, all trails at the McCoy Flats Trail Complex would remain intact under the Dog Valley Route Alternative, including the two trails that would be affected by the Proposed Action. The Dog Valley Route Alternative would also make public lands (BLM, SITLA) along the alignment more accessible for some recreational activities, including camping, hiking, hunting, and limited OHV use

##### *4.2.2.8.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.2.8.2 Residual Impacts*

As no new surface disturbance would occur at the McCoy Flats Trail System under the Dog Valley Route Alternative, there would be no residual impacts to recreation opportunities on BLM- or SITLA-administered lands from its implementation.

#### 4.2.2.9 Socioeconomics

Socioeconomic impacts under the Dog Valley Route Alternative would be similar in nature, and comparable in extent to those described under the Proposed Action. However, impacts on property tax revenues would be marginally greater in extent under the Dog Valley Route Alternative because the alignment would cross 32 more acres of private lands, which would be removed from property tax assessment. Because most of the affected private lands in the alignment are relatively undeveloped and therefore have a low assessment value, impacts on property tax revenues for local jurisdictions and the State would not be expected to be substantial. The majority of the roadway alignment would still occur on public lands administered by BLM and SITLA, which are not subject to property tax.

Under the Dog Valley Route Alternative, the improved quality of living for residents in Vernal and Naples would be the same as the Proposed Action because it would re-route commercial vehicles carrying heavy, hazardous and explosive materials away from residential and downtown areas. Such a commitment to public safety would make these communities a safer place to live, work, and do business.

##### *4.2.2.9.1 Mitigation Measures*

No mitigation is recommended.

##### *4.2.2.9.2 Residual Impacts*

Socioeconomic residual impacts would be comparable to those discussed for the Proposed Action.

#### 4.2.2.10 Visual Resources

Impacts to visual resources under the Dog Valley Route Alternative would be similar in nature, but less in extent, than those described under the Proposed Action. The Dog Valley Route Alternative would result in a short-term disturbance of 19 acres of Class III area, which is 79 less acres than would be impacted under the Proposed Action. Following reclamation, long-term disturbance would be approximately 16 acres of Class III area, which is 65 acres less than would be impacted under the Proposed Action.

#### *4.2.2.10.1 Viewshed Analysis*

Although the Dog Valley Route Alternative was designed to avoid the McCoy Flats Trail Complex, a viewshed analysis was conducted for the Dog Valley Route Alternative to evaluate potential impacts to visual resources from this recreation area. This analysis used the same assumptions discussed in **Section 4.2.1.10.1**. Results of the viewshed analysis are presented in **Table 4.2.2.10.1-1** and are depicted on **Figures 4.2.1.10-1 through 4.2.1.10-6**).

**Table 4.2.2.10.1-1: Viewshed Analysis Results for Alternative C**

| KOP | Number of Acres of AVER Visible to an Observer Standing at KOP (Able to see Commercial/Industrial Vehicles Driving on AVER) | Number of Acres of AVER Visible to an Observer Standing at KOP (Able to See Ground) |
|---|---|---|
| KOP 1 | 0 | 0 |
| KOP 2 | 0 | 0 |
| KOP 3 | 46 | 26 |

#### *4.2.2.10.2 Contrast Ratings*

On May 27, 2015, KLF visited each KOP and completed the BLM Visual Contrast Rating Worksheet (**Appendix F**). During this field effort, the observer found the strong line and color contrast created by Alternative B would draw attention observers at KOP 3, and have no effect on observers at KOP 1 and KOP 2.

#### *4.2.2.10.3 Mitigation Measures*

No mitigation is recommended.

#### *4.2.2.10.4 Residual Impacts*

Residual impacts would be similar in nature, but reduced in extent from the Proposed Action. Because the planned life of the road is indefinite, the Dog Valley Route Alternative would result in the loss of Class III area within the ROW corridor for the operational life of the roadway. Should the road be determined to be no longer needed, the roadway would be obliterated, as set out in **Section 2.2.5**, and restored and reclaimed as set out in the reclamation plan (refer to **Appendix B**). It should also be noted, there would be no residual impacts to mountain bikers using the McCoy Flats Trail System, as the Dog Valley Route alignment would not be visible from KOP 1 or KOP 2.

### 4.2.2.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), And Waters Of The U.S.

No detailed engineering designs have been developed for the Dog Valley Route Alternative, however, as set out in **Section 2.3** the road design factors, road construction, support resources operation and maintenance, road termination, and water supply element would be the same as those set out for the Proposed Action. Minor variations would be made based on the final design and application of appropriate design features, or ACEPMs incorporated as design feature, applicable to soils, vegetation and water resources would be applied. Implementation of the Dog Valley Route Alternative would result in disturbance to a total of 389 acres, or 87 percent of the Proposed Action. As such impacts discussed in **Section 4.1.1.11** above would be the same, but 14 percent less than those for the Proposed Action.

#### *4.2.2.11.1 Mitigation Measures*

No mitigation is recommended.

#### *4.2.2.11.2 Residual Impacts*

Increased sedimentation of ephemeral and intermittent drainages in the Project Area and ultimately the turbidity of the Green River from implementation of the Dog Valley Route Alternative would be similar to, but less than the Proposed Action. These residual impacts, like the Proposed Action, would last until reclamation and reseeding practices are determined successful. No other residual impacts from implementation of the Dog Valley Route Alternative would occur.

### 4.2.2.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species

Direct and indirect impacts to wildlife resources associated with the Dog Valley Route Alternative would be similar in nature to those outlined and discussed for the Proposed Action; however, the habitat loss would be 389 acres, or a reduction of approximately 14 percent, from the Proposed Action.

#### *4.2.2.12.1 Big Game*

Implementation of the Dog Valley Route Alternative would result in the short-term loss of 304 acres of crucial year-long/fawning habitat and 85 acres of substantial winter habitat for mule deer. Approximately 0.2 acres of the disturbance in crucial year-long/fawning habitat would occur on BLM-administered lands. Reclamation would reduce the long-term disturbance to 254 and 70 acres of crucial year-long and substantial winter habitats for mule deer, respectively. The Dog Route Alternative would also disturb 45 acres of substantial year-long pronghorn habitat in the short-term, which would be reduced to 37 acres for the operational life of the roadway. No crucial year-long habitat for pronghorn would be disturbed under Alternative B. The reclamation of areas along the proposed roadway that would not be needed for the operational life of the roadway would be reclaimed in accordance with the Reclamation and Weed Control Plan cited as **Appendix B**.

Impacts related to implementation of the Dog Valley Route Alternative would be reduced through the implementation of design features and additional environmental protection measures for mule deer. Specifically, construction activity within mapped crucial habitat for big game species (e.g., crucial year-long habitat and crucial fawning habitat) would be determined by the appropriate SMA after coordination with the applicant and prior to commencement of construction (**Section 2.2.8.12**) and timing stipulations would be required for construction in crucial fawning habitat on BLM-administered lands (**Section 2.3.2**).

#### *4.2.2.12.2 Upland Game*

Implementation of the Dog Valley Route Alternative would result in the short-term loss of 389 acres of suitable habitat for upland game species. Approximately 241 and 10 acres of short-term loss would occur within crucial year-long habitat for ring-necked pheasant and wild turkey, respectively. While the Dog Valley Route Alternative has the potential to impact individual upland species within the Project Area, it is not likely to affect populations as a whole or prevent species from reaching their population goals.

#### *4.2.2.12.3 Raptors*

Implementation of the Dog Valley Route Alternative could impact raptors that utilize the Project Area for foraging habitat. No raptor surveys have been completed for the Dog Valley Route Alternative; therefore,

the Dog Valley Route Alternative would have the potential to impact unknown raptor nesting locations within the Project Area. Additionally, surface disturbance under the Dog Valley Route Alternative would occur within 0.5 miles of a historic turkey vulture nest identified in a previous raptor survey (BLM 2014h). While surface disturbance under the Dog Valley Route Alternative would occur within 0.5 mile of this nest, it currently is listed as inactive and occurs within 0.1 mile of the U.S. Highway 40 corridor. If turkey vultures choose to utilize this nesting location in future years they would likely be already habituated to the presence of a nearby transportation corridor and would not likely receive greater indirect impacts from the construction and operation of the Dog Valley Route Alternative.

Construction under the Dog Valley Route Alternative would result in the loss of 389 acres of habitats that could be utilized by raptor species for foraging and nesting. Interim reclamation would reduce the total disturbance to 324 acres, which would remain for the operational life of the roadway and until final reclamation has restored the disturbance footprint to usable habitat for raptor and prey species.

Prior to initiating any surface-disturbing activities, the Project Area would be surveyed for the presence of nesting raptors. Should any raptor nests be observed within the Project Area, adherence to site-specific buffers as outlined in the BLM (2008a) Vernal Field Office *Best Management Practices for Raptors and Their Associated Habitats in Utah* would be followed and any season-specific nesting buffer would be applied (**Section 2.2.8.12**).

##### *4.2.2.12.4 Migratory Birds*

Impacts to migratory birds under the Dog Valley Route Alternative would be similar for all migratory bird species, but would vary depending on loss of habitat types and species' sensitivities to disturbance. Implementation of the Dog Valley Route Alternative would result in the loss of 389 acres of habitat that could serve as nesting and foraging habitats for migratory bird species. Approximately 65 acres of lands not needed for the operation of the Dog Valley Route ROW would be reclaimed, resulting in 324 acres of habitat loss for the operational life of the roadway. ACEPMs aimed at minimizing potential impacts to migratory bird species, including raptors, are outlined in **Section 2.2.8.12** of this EA, and are design features under the Dog Valley Route Alternative.

##### *4.2.2.12.5 USFWS-Designated and Non-Designated Wildlife and Fishery Species*

###### *4.2.2.12.5.1 Bats*

Direct and indirect impacts to bats from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**. The Dog Valley Route Alternative would involve slightly less surface disturbance than the Proposed Action, but encroaches upon a greater extent of suitable crevice roosting habitat along Asphalt Ridge. Increased activity near potential roosting habitat along Asphalt Ridge may result in roost abandonment or decreased pup survival.

###### *4.2.2.12.5.2 White-tailed Prairie Dog*

Direct and indirect impacts to WTPDs from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**, but to a somewhat greater extent as the Dog Valley Route Alternative would result in the direct loss of approximately 7 acres of mapped WTPD colonies in the far western reach of the alignment, in addition to the potential loss of unmapped colonies in cool semi-desert scrub and grassland vegetation (refer to **Figure 3.13-3**). Such habitat loss could result in a loss of local WTPD populations and/or affect density within the Project Area. In addition,

implementation of recommended mitigation measures that include provisions to complete WTPD surveys for any areas not yet surveyed (i.e., changes made to the alignment in November 2014) and avoid active WTPD colonies during construction could further reduce impacts related to the potential loss of WTPD habitat in the Project Area (refer to **Section 4.2.2.1.2.6**).

#### *4.2.2.12.5.3 Greater Sage-grouse*

Direct and indirect impacts to sage-grouse from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**, and lesser in extent as the Dog Valley Route Alternative would completely avoid the documented lek in Sections 27-28 and 33-34 in T5S, R21E, and involve less surface disturbance than the Proposed Action. Specifically, habitat loss in UDWR substantial winter habitat would be 35 acres greater under the Dog Valley Route Alternative, and habitat loss in other UDWR habitat and BLM/USFS Management Areas would be less than under the Proposed Action (refer to **Figure 3.13-4** and **Table 4.2.2.12-1**).

**Table 4.2.2.12-2: Surface Disturbance in Greater Sage-grouse Habitat and Management Areas within the Project Area under Alternative B**

| UDWR Habitat and BLM/USFS Management Areas | Short-term Disturbance (acres) | Long-term Disturbance (acres) |
|---|---|---|
| UDWR Greater Sage-grouse Habitat | | |
| Occupied habitat | 227 | 188 |
| Brooding habitat | 227 | 188 |
| Crucial winter habitat | 0 | 0 |
| Substantial winter habitat | 78 | 65 |
| BLM/USFS Greater Sage-grouse Management Areas | | |
| Preliminary Priority (PPMA) | 0 | 0 |
| Preliminary General (PGMA) | 226 | 188 |

Source: UDWR 2014a; BLM 2014i

Under Alternative B, additional environmental protection measures (**Section 4.2.3**) would help mitigate direct and indirect impacts to sage-grouse habitat and the documented lek located approximately 3.1 miles south of the Dog Valley Route Alternative ROW.

#### *4.2.2.12.5.4 Bald Eagle*

Direct and indirect impacts to bald eagles from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**, but to a somewhat lesser extent as the Dog Valley Route Alternative would involve slightly less surface disturbance than the Proposed Action. In addition, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**) would be incorporated as design features. These design features would reduce or minimize the potential for displacement from potential foraging habitat in the Project Area.

#### *4.2.2.12.5.5 Golden Eagle*

Direct and indirect impacts to golden eagles from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**, but to a somewhat lesser extent as the Dog

Valley Route Alternative would involve slightly less surface disturbance than the Proposed Action. In addition, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**) would be incorporated as design features. These design features would reduce or minimize the potential for displacement (from potential nesting and/or foraging habitats) or nest abandonment in the Project Area.

#### *4.2.2.12.5.6 Burrowing Owl*

Direct and indirect impacts to burrowing owls from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**, but to a somewhat greater extent as the Dog Valley Route Alternative would result in the direct loss of seven acres of mapped WTPD colonies in the far western reach of the alignment. In addition, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**) would be incorporated as design features. These design features would reduce or minimize the potential for displacement or nest abandonment. In addition, implementation of recommended mitigation measures that include provisions to complete WTPD surveys for any areas not yet surveyed (i.e., changes made to the alignment in November 2014) and avoid active WTPD colonies to the extent possible during construction could further reduce impacts related to the potential loss of burrowing owl nesting habitat in the Project Area.

#### *4.2.2.12.5.7 Ferruginous Hawk*

Direct and indirect impacts to ferruginous hawks from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**, but to a somewhat lesser extent as the Dog Valley Route Alternative would involve slightly less surface disturbance than the Proposed Action. In addition, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**) would be incorporated as design features. The first two of these three design features would reduce or minimize the potential for displacement or nest abandonment, and the last one would minimize impacts related to habitat loss and fragmentation. .

#### *4.2.2.12.5.8 Short-eared Owl*

Direct and indirect impacts to short-eared owls from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**, but to a somewhat lesser extent as the Dog Valley Route Alternative would involve slightly less surface disturbance than the Proposed Action. In addition, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**) would be incorporated as design features. These design features would reduce or minimize the potential for displacement or nest abandonment due to loss of habitat.

#### *4.2.2.12.5.9 Special Status Fish*

Direct and indirect impacts to special status fish from construction of the Dog Valley Route Alternative would be similar in nature to those set out in **Section 4.2.1.12**, but less in extent because the surface disturbance would be 389 acres, or a reduction of approximately 14 percent, from the Proposed Action. Adverse impacts would also be less in extent because less water would be required for dust suppression

and compaction of the road based material. Because the source and acre-feet of water needed for construction of Alternative B is unknown, this EA assumes all project depletions would be non-historic. The County or its contractor would be required to secure the necessary water from a permitted source.

It should be noted, under Alternative B, construction of the western end of the Dog Valley Route Alternative would not affect Twelvemile Wash. However, implementation of the Dog Valley Route Alternative would still increase sediment yield to other intermittent/ephemeral drainages in the Project Area, which eventually could increase siltation approximately 4.9 river miles downstream of the Project Area in the Green River.

As such, because implementation of the Dog Valley Route Alternative would deplete the Upper Colorado River Basin and could degrade aquatic habitats in the Green River, the Dog Valley Route Alternative "***may affect, is likely to adversely affect***" the bonytail, Colorado pikeminnow, humpback chub, and razorback sucker, and their USFWS-designated critical habitats. Similarly, project-related water depletion and increased siltation could also affect the bluehead sucker, flannelmouth sucker, roundtail chub, and their aquatic habitats, but would not likely result in a loss of viability, nor cause a trend towards federal listing of these species.

##### *4.2.2.12.6 Mitigation Measures*

Complete WTPD and burrowing owl surveys for any areas not yet surveyed (i.e., changes made to the alignment in November 2014) and avoid active WTPD colonies during construction to minimize potential adverse impacts to WTPDs and nesting burrowing owls.

If water needed for the Dog Valley Route Alternative is supplied from the Green River, Uintah County's contractor would implement additional mitigation measures to reduce/minimize adverse impacts to special status fish. These measures may include, but would not be limited to the following:

- Pump from an off-channel location (i.e., one that does not connect to the river during high spring flows) to avoid entrainment. An infiltration gallery constructed in a USFWS-approved location would be preferable.
- If the pump head is located in the river channel, the following measures would apply:
    - Do not situate the pump in a low-flow area as these habitats tend to concentrate larval fishes;
    - Limit the amount of pumping, to the greatest extent possible, during the midnight hours (10p.m. – 2a.m.), as larval drift studies indicate that this is a period of greatest daily activity. Dusk would be the preferred pumping time, as larval drift abundance is lowest during this time.
    - Limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (April 1 to as late as August 31).
- Screen all pump intakes with 3/32" mesh material.

- Approach velocities for intake structures will follow the National Marine Fisheries Service's document "Fish Screening Criteria for Anadromus Salmonids". For project with an in-stream intake that operates in stream reaches where larval fish may be present, the approach velocity would not exceed 0.33 feet per second (ft/s).

- Report any fish impinged on intake screen or entrained into irrigation canals to the USFWS (801-975-3330) or the Utah Division of Wildlife Resources:

Northeastern Region
152 East 100 North
Vernal, UT 84078
Phone: 435-781-9453

##### *4.2.2.12.7 Residual Impacts*

Residual impacts to wildlife, including special status animal species, would be similar in nature to those described for the Proposed Action, but to a somewhat lesser extent as the Dog Valley Route Alternative would involve slightly less surface disturbance than the Proposed Action.

### 4.2.3 Alternative C – Sage-grouse Mitigation Alternative

#### 4.2.3.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns

Direct and indirect impacts to cultural resources from construction of the Alternative C would be similar to those set out in **Section 4.1.1.1** for the Proposed Action. A Class I literature search covering Alternative C has been completed. A Class III field inventory has been conducted for that portion of Alternative C that is identical to the Proposed Action.

Alternative C would result in a total of 461 acres of new surface disturbance, comprised of 90 acres of BLM-administered land; 244 acres of state land; and, 127 acres of private land. As Alternative C proposes approximately 10 more acres of surface disturbance than the Proposed Action and approximately 70 more acres of surface disturbance than Alternative B, this EA assumes the potential direct adverse risk to buried or subsurface cultural resources would be greatest under Alternative C.

Adverse direct and indirect effects to cultural resources from Alternative C would be minimized through compliance with the NHPA, as amended, and adherence to ACEPMs adopted as design features (**Section 2.2.8.3**). Based on the Class III field inventories conducted on the proposed route and applicable to Alternative C, the assessed NRHP-eligible "Victory Highway" site is outside the Alternative C alignment and thus would be avoided. However, the historic Highline Canal and a multi-component artifact scatter, both assessed as eligible to the NRHP, could be directly affected by Alternative C. As currently planned, Alternative C would involve crossing the Highline Canal and would affect a multi-component site the same as the Proposed Action. As stated in **Section 2.2.8.3** of the Proposed Action, a bridge is planned for the canal crossing. However, final design of the canal crossing and construction near the multi-component site would avoid direct impacts to both sites. Final mitigation would be determined during consultation with the involved private landowner(s), the appropriate SMA, and the USHPO. Also, after construction designs are finalized and prior to initiating any surface-disturbing activities, a Class III cultural resource field inventory would be conducted for any portion of the final alignment not previously

covered by a Class III cultural resources field inventory. If cultural resources eligible for listing to the NRHP are documented, appropriate avoidance measures and/or additional mitigation would be determined during consultation with the appropriate SMA, the involved private landowner(s) and the USHPO. Implementation of these actions would avoid direct impacts to the Highline Canal and the multicomponent site. The remaining sites are assessed as ineligible for listing to the NRHP and would be recorded to BLM and the USHPO standards and the information integrated into local and statewide databases. However, these sites ultimately could be damaged or destroyed during project construction.

Coordination between the BLM and the Tribes would determine additional mitigation, as needed, for Alternative C.

Although a literature search was conducted covering Alternative C and a subsequent field inventory was completed on a portion of the alternate route identical to the Proposed Action, the results were for surficial finds. It is currently unknown if any buried or subsurface cultural resources could be directly affected by Alternative C. The design feature for cultural resources stating that any cultural resources uncovered during excavation activities would result in an immediate suspension of surface-disturbing activities and work at the site would not continue until the findings can be evaluated and, if necessary, until a mitigation plan is developed and approved (refer to **Section 2.2.8.3**). This action would minimize, but not avoid, direct effects to unknown or subsurface cultural resources.

##### *4.2.3.1.1 Mitigation Measures*

To further minimize adverse impacts to cultural resources on BLM-administered lands a BLM Archaeologist should be contacted within 24 hours of inadvertent discovery for further evaluation and guidance.

##### *4.2.3.1.2 Residual Impacts*

Alternative C could impact cultural resources designated as non-eligible for the NRHP. These sites would be recorded to BLM and the USHPO standards and the information integrated into local and statewide databases. These sites could then be ultimately damaged or destroyed during construction. Adherence to ACEPMs (**Section 2.2.8.3**) adopted as design features, ongoing consultation with the USHPO and the affiliated Tribes would minimize, would reduce but not completely negate the anticipated adverse impacts to NRHP non-eligible cultural resources within the proposed ROW, as accidental disturbance, vandalism, and possibly a loss or degradation of a Tribal traditional site's setting, place and/or feeling could occur.

#### 4.2.3.2 Prime and Unique Farmlands

Direct and indirect impacts to private farmlands and prime farmlands, if irrigated, from construction of Alternative C would be similar to those set out in **Section 4.2.1.2**, but slightly less in extent. Construction under Alternative C would directly involve a total of 94 acres of farmland, of which 45 acres is private farmlands and 49 acres is prime farmlands, if irrigated. Of this total, 85 acres would be converted to the Alternative C roadway. The remaining nine acres would be reclaimed upon completion of construction. Indirect impacts to farmlands could increase the affected area from 85 acres to 255 to 850 acres (85 x 3 and 85 x 10) due to fragmentation. Factoring in the direct and indirect impacts to farmlands, Alternative C could affect a maximum of 850 acres of farmlands, or 3.7 percent of the farmlands in the County currently involved in hay production (850 acres/23,200 acres [*100] = 3.7 percent). Under Alternative C,

direct and indirect impacts to prime farmlands in Uintah County would be 0.2 percent less than those associated with the Proposed Action or Alternative B.

#### *4.2.3.2.1 Mitigation Measures*

No additional mitigation is recommended.

#### *4.2.3.2.2 Residual Impacts*

Residual impacts to prime farmlands, if irrigated, and private farmlands would be similar in nature to those described for the Proposed Action and Alternative B, but greater in extent as Alternative C would involve more surface disturbance on prime farmlands, if irrigated.

### 4.2.3.3 Geology, Including Mineral Resources and Energy Production

Direct and indirect impacts to energy production from implementation of the Alternative C would be similar in scope, but less in extent than those identified and discussed for the Proposed Action and Alternative B. Alternative C would result in a one percent decrease in total surface disturbance from the Proposed Action and a six percent decrease from the Dog Valley Route Alternative. **Table 4.2.2.3-1** outlines the short-term and long-term surface disturbance estimates for mineral leasing areas under Alternative C.

**Table 4.2.3.3-1: Surface Disturbance of Oil and Gas and Tar Sands Lease Areas Under Alternative C**

| Lease Type | Acres within Project Area | Short-term Disturbance (Acres)* | Long-term Disturbance (Acres)* |
|---|---|---|---|
| BLM Oil & Gas Lease | 1,822 | 68 | 57 |
| BLM STSA | 5,070 | 132 | 110 |
| Nominated Tar Sands Lease | 799 | - | - |
| SITLA Oil & Gas Lease | 3,120 | 207 | 173 |
| SITLA Tar Sands Lease | 3,259 | 99 | 82 |
| **TOTAL** | **14,070** | **506** | **422** |

Source: BLM 2014b; SITLA 2014a.
*There is some overlap between oil and gas leases and tar sands leases on both BLM and SITLA lands. The figures above do not account for the overlap and include some redundancies in acreage calculations.

As with the Proposed Action and Dog Valley Route Alternative, for SITLA-administered lands involved in existing state tar sands leases, negotiations would be conducted with the affected leaseholder(s) to determine mitigation, as appropriate, for any ongoing or planned tar sands development activities in the disturbance area for Alternative C. Successful agreement would effectively minimize the adverse impacts to the tar sands leaseholder(s) from implementation of Alternative C. Unlike the Proposed Action and Alternative B, there would be no surface disturbance on lands nominated for tar sands leases. However, similar to the Proposed Action and Alternative B, for BLM STSA, those lands directly involved in the ROW could be dropped from potential leasing or leased with a no surface occupancy restriction should they ever be offered for lease. Implementation of a no surface occupancy restriction on a BLM STSA is outside the scope of this EA.

#### *4.2.3.3.1 Mitigation Measures*

No additional mitigation is recommended.

#### *4.2.3.3.2 Residual Impacts*

Residual impacts for energy production would be similar in nature to those described for the Proposed Action and Dog Valley Route Alternative. As with the other action alternatives, successful negotiations with the existing SITLA tar sands leaseholder(s) could reduce adverse impacts or increase beneficial effects from the development of Alternative C.

### 4.2.3.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species

Direct and indirect impacts to the soils and vegetation resources, including invasive plants and noxious weed species and BLM sensitive plant species associated with Alternative C would be similar to those outlined and discussed for the Proposed Action. However, the Alternative C would disturb more soils and native vegetation compared to the other action alternatives as it is the longest of the proposed routes. A weed inventory and survey for BLM-listed sensitive plant species would be required before any new surface disturbance associated with this alternative.

**Table 4.2.3.4-1: Surface Disturbance Acres by Ecological Site for Alternative C**

| Dominant Ecological Site Name | Acres within the Project Area | Percent of Surface Disturbance in the Project Area |
|---|---|---|
| Desert loam (shadscale) | 76 | 16 |
| Desert clay (shadscale) | 20 | 4 |
| Desert shallow clay (mat saltbush) | 1 | <1 |
| Desert shallow loam (shadscale) | 102 | 22 |
| Desert shallow loam (black sagebrush) | 13 | 3 |
| Desert very steep shallow loam (shadscale) | --- | --- |
| Desert sandy loam (Indian ricegrass) | --- | --- |
| Desert alkali bench (Castle Valley saltbush) | 5 | 1 |
| Desert shaley shallow loam (greasewood) | 1 | <1 |
| Semi-desert loam (Wyoming sage) | 44 | 10 |
| Semi-desert shallow loam (black sage) | 30 | 7 |
| Semi-desert gravelly loam (Wyoming sage) | 86 | 19 |
| Semi-desert sand (fourwing saltbush) | 6 | 1 |
| Semi-desert sandy loam (fourwing saltbush) | 15 | 3 |
| Semi-desert stony loam (juniper-pinyon) | 3 | <1 |
| Semi-desert shallow loam (juniper-pinyon) | 15 | 5 |
| Loamy bottom (big sagebrush) | --- | --- |
| Alkali bottom (alkali sacaton) | --- | --- |
| Alkali flat (greasewood) | 3 | <1 |

| Dominant Ecological Site Name | Acres within the Project Area | Percent of Surface Disturbance in the Project Area |
|---|---|---|
| Wet saline streambank (coyote willow) | --- | --- |
| Wet saline meadow (inland saltgrass) | --- | --- |
| Wet fresh streambank (willow) | 1 | <1 |
| River floodplain (Fremont cottonwood) | --- | --- |
| Bare ground & rock outcrop (unproductive) | 32 | 7 |
| Water | --- | --- |
| Total minor inclusions for all soils | 8 | 2 |
| **Total** | **461** | **100** |

Source: USDA-NRCS 2014.

Application of the ACEPMs incorporated as design features (refer to **Sections 2.2.8.5** and **2.2.8.7**) and implementation of the reclamation plan (refer to **Appendix B**) would reduce impacts to these resources and increase the likelihood for successful reclamation.

##### *4.2.3.4.1 Mitigation Measures*

##### *4.2.3.4.2 No mitigation has been identified beyond the ACEPMs to reclaim surface disturbance (Section 2.2.8.5). Residual Impacts*

Residual impacts for soils and vegetation would be similar to those discussed for the Proposed Action, but the amount of disturbed soil and the long-term loss of vegetation would be greater as Alternative C proposes the largest amount of surface disturbance.

#### 4.2.3.5 Lands and/or Access

While a large portion of Alternative C would be identical to the road alignment proposed under the Proposed Action, final engineering designs have yet to be finalized for the entire length of the roadway. As such, it is unknown exactly how many existing lands and/or access authorizations may be affected. However, based on publicly available data, impacts to existing ROWs and easements from Alternative C would likely be identical to those discussed and assessed for the Proposed Action. Similar to the Proposed Action, disruptions to US Highway 40 and State Route 45 would be temporary and mutually compatible with the goal of improving public safety in the downtown Vernal and Naples areas by minimizing the number of commercial/industrial vehicles carrying explosive and hazardous materials through those areas. Impacts to users of these ROWs would be minimized by design features carried from the Proposed Action (**Section 2.2.8.13**).

Per existing BLM requirements, the involved ROW holders would be notified and coordination would be implemented that would allow the existing ROW to continue with minor disruption of services. Coordination involving existing SITLA ROWs and/or easements would also be developed. These site-specific coordinations would effectively minimize adverse impacts to the existing ROWs and easements.

##### *4.2.3.5.1 Mitigation Measures*

No additional mitigation is recommended.

#### *4.2.3.5.2 Residual Impacts*

Disruption of existing operations from construction of Alternative C would be short-term in duration. Coordination with the land authorization holders would reduce impacts. No other residual impacts from implementation of Alternative C would occur.

### 4.2.3.6 Livestock Grazing

Impacts to livestock grazing would be similar in nature, but greater in extent than the Proposed Action. **Table 4.2.3.6-1** provides carrying capacity information for the two allotments affected by Alternative C. In summary, Alternative C would directly affect a total of 17 AUMs on the McCoy Flat and Twelve Mile grazing allotments.

**Table 4.2.3.6-1: Carrying Capacity Impacts by Allotment under Alternative C**

| Grazing Allotment | Total BLM Allotment Acres | Total Active AUMs | Calculated AUMs in Project Area | Acres of Disturbance in Project Area | Projected Active AUMs Affected | Percent Loss of Total Active AUMs |
|---|---|---|---|---|---|---|
| McCoy Flat | 12,499 | 843 | 422 | 213 | 14 | 2 |
| Rich & Stetson | 511 | 63 | 3 | --- | --- | --- |
| Twelve Mile | 4,681 | 316 | 66 | 42 | 3 | 1 |
| **TOTAL** | **17,871** | **1,222** | **491** | **254** | **17** | **2** |

Source: (BLM 2014d).

#### *4.2.3.6.1 Mitigation Measures*

No additional mitigation is recommended.

#### *4.2.3.6.2 Residual Impacts*

Residual impacts would be similar to the Proposed Action. Installation of drainage culverts to accommodate mountain bike trail uses would enable livestock to cross under the proposed ROW and utilize the remainder of the grazing allotment. However, some cattle may not choose to use the drainage culverts, over-utilizing portions of the allotments. Alternative C would have the potential to increase the spread of noxious and invasive weeds species within grazing allotments along the proposed ROW. The loss of AUMs in the disturbance area of the ROW would be removed form use for the life of the roadway.

### 4.2.3.7 Paleontology

Alternative C would disturb approximately 461 acres within the Project Area. Pedestrian paleontological resource surveys have been completed for the portions of Alternative C located within the Proposed Action ROW. No significant paleontological resources would be disturbed within these overlapping areas. For areas not overlapping the Proposed Action, pedestrian paleontological resource surveys have not been completed, therefore the potential for the project to directly impact known or exposed paleontological resources in these areas is unknown. Several geologic units would be impacted by excavation under Alternative C, which could result in the loss of unknown or currently unexposed fossil localities within the Project Area. Surface disturbance to each geologic unit and PFYC under Alternative C is provided below.

**Table 4.2.3.7-1: Surface Disturbance to PFYCs under Alternative C**

| Geologic Unit | PFYC | Acres in Project Area | Surface Disturbance (acres) |
|---|---|---|---|
| Brennan Basin Member of Duchesne River Formation | 5 | 5,614 | 194 |
| **Total for PFYC 5** | | **5,614** | **194** |
| Lower Unit of Mesaverde Group | 3 | 159 | 7 |
| Upper Unit of Mesaverde Group | 3 | 1,382 | 21 |
| Mancos Shale | 3 | 2,210 | 128 |
| **Total PFYC 3** | | **3,751** | **156** |
| Mixed Alluvium & Colluvium | 2 | 85 | --- |
| Piedmont Alluvium, Undivided | 2 | 2,695 | 110 |
| Eolian Deposits | 2 | 4 | --- |
| **Total PFYC 2** | | **2,784** | **110** |
| Disturbed Ground | -- | 14 | --- |
| **Total Unclassified** | | **14** | **---** |
| | **TOTAL** | **12,163** | **461** |

Source: BLM 2014e.

Impacts to paleontological resources would likely be greatest under Alternative C as it proposes the largest amount of surface disturbance when compared to the other action alternatives. Of the 461 acres of surface disturbance under this alternative, 194 would be in PFYC 5 areas, which have a high potential for the occurrence of fossil resources. Therefore, based on total surface disturbance and total disturbance to PFYC 5 formations Alternative C has the highest probability of uncovering new fossil localities when compared to the other Action alternatives. Increased access throughout the Project Area as a result of the new roadway would increase the possibility of illegal collection or vandalism of known and unknown exposed fossil localities.

Should the Alternative C be selected, a paleontological survey for areas not previously surveyed under the Proposed Action would be completed and a mitigation plan would be approved for any known fossil localities prior to completing any construction activities. Should any paleontological resources be uncovered during excavation of Alternative C, construction would be suspended and the BLM would be contacted and work would not continue until a mitigation plan has been approved.

#### *4.2.3.7.1 Mitigation Measures*

No mitigation is recommended.

#### *4.2.3.7.2 Residual Impacts*

A survey for paleontological resources would be conducted along in areas not currently covered by a survey prior to any construction activities. Should any paleontological resources be found, proper mitigation would be applied to avoid the destruction and permanent removal of fossil resources from the fossil record. For areas covered by existing paleontological surveys, no surficial paleontological resources would be impacted. Following all relevant paleontological resource regulations, ACEPMs incorporated as design features, and mitigation measures would provide opportunities to minimize the impacts and gather additional information regarding these resources. However, any physical impact to a

paleontological resource would be essentially impossible to restore. Accordingly, there would be some risk of adverse impacts to paleontological resources if these resources are unknown and not detected during project implementation.

#### 4.2.3.8 Recreation

Impacts to recreation opportunities under Alternative C would be similar in nature, but greater in extent, than those described under the Proposed Action. Alternative C would result in four crossings along three different trails within the McCoy Flats Trail Complex. The affected trails are identified in **Table 4.2.3.8-1**. Approximately 7.6 acres (0.3 miles) of the McCoy Flats Trail System would be disturbed by Alternative C in the short-term, and would have a long-term disturbance of approximately 6.0 acres (0.3 miles) (BLM 2014f). Although the parking area, with the kiosk and pavilion, would not be affected, the roadway would be much closer to these areas than under the Proposed Action. As such, indirect impacts to recreational resources under Alternative C would be similar in scope to those described under the Proposed Action, but would be greater in magnitude as a larger number of trails would be crossed, fragmented, and in proximity to the proposed roadway.

**Table 4.2.3.8 -1: Trails Potentially Affected in the McCoy Flats Non-Motorized Trail Complex by Alternative C**

| Trail | Affected by Alternative C |
|---|---|
| And Cookies! | No |
| Combo | No |
| Fire Sale | No |
| Got Milk? | No |
| High Rollas | No |
| Jackalope | Yes |
| More Hoes | No |
| Retail Sale | Yes |
| Serpendipity | No |
| Slippery When Wet | Yes |

Source: BLM 2014f.

Design of trail crossings in close proximity to the existing trails would include the use of box culverts with an elevated ceiling that would accommodate the safe passage of mountain bikers and pedestrians under the proposed ROW. This would separate vehicle and mountain bike/hiker traffic at the crossings, thereby eliminating the potential for accidents between vehicles and cyclists/hikers. It also would allow bikers and hikers to use the trails without having to stop for vehicle traffic, and would keep the trails accessible to bikers and hikers.

##### *4.2.3.8.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.3.8.2 Residual Impacts*

The planned life of the road is indefinite. This alternative would change the recreational value of the McCoy Flats Trail System for the operational life of the roadway. However, the use of box culverts for

crossings would effectively allow continued use of the two trails in the Project Area, as well as create new and additional recreation opportunities elsewhere in the region.

#### 4.2.3.9 Socioeconomics

Socioeconomic impacts under Alternative C would be similar in nature, and comparable in extent to those described under the Proposed Action. Impacts on property tax revenues would be identical to the Proposed Action's, because the same amount of private land would be removed from property tax assessment. Because most of the affected private lands in the alignment are relatively undeveloped and therefore have a low assessment value, impacts on property tax revenues for local jurisdictions and the State would not be expected to be substantial. The majority of the roadway alignment would still occur on public lands administered by BLM and SITLA, which are not subject to property tax.

Positive economic impacts associated with employment, sales tax, and income taxes would likely be greatest under Alternative C as the longer roadway would require additional materials and work hours to complete. This would likely increase local and regional purchases of construction materials and increase the total taxable wages associated with this project.

Under Alternative C, the improved quality of living for residents in Vernal and Naples would be the same as the Proposed Action because it would re-route commercial vehicles carrying heavy, hazardous and explosive materials away from residential and downtown areas. Such a commitment to public safety would make these communities a safer place to live, work, and do business.

##### *4.2.3.9.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.3.9.2 Residual Impacts*

Socioeconomic residual impacts would be comparable to those discussed for the Proposed Action.

#### 4.2.3.10 Visual Resources

Impacts to visual resources under the Alternative C would be similar in scope to those described under the Proposed Action. Alternative C would result in a short-term disturbance of 90 acres of Class III area, which represents a smaller loss of Class III areas than under the Proposed Action. This is attributable to the ROW for Alternative C containing more SITLA land. Reclamation would restore approximately 75 acres of Class III area, which would remain for the life of the roadway.

##### *4.2.3.10.1 Viewshed Analysis*

A viewshed analysis was conducted for Alternative C to evaluate potential impacts to visual resources from this recreation area. This analysis used the same assumptions discussed in **Section 4.2.1.10.1**. Results of the viewshed analysis are presented in **Table 4.2.3.10.1-1** and are depicted on **Figures 4.2.1.10-1 through 4.2.1.10-6**.

**Table 4.2.3.10.1-2: Viewshed Analysis Results for Alternative C**

| KOP | Number of Acres of AVER Visible to an Observer Standing at KOP (Able to see Commercial/Industrial Vehicles Driving on AVER) | Number of Acres of AVER Visible to an Observer Standing at KOP (Able to See Ground) |
|---|---|---|
| KOP 1 | 56 | 35 |
| KOP 2 | 21 | 19 |
| KOP 3 | 0 | 0 |

#### *4.2.3.10.2 Contrast Ratings*

On May 27, 2015, KLF visited each KOP and completed the BLM Visual Contrast Rating Worksheet (**Appendix F**). During this field effort, the observer found the strong line and color contrast created by the Alternative C would draw attention observers at KOP 1, and have little visible draw to observers at KOP 2. Alternative C would have no effect on observers at KOP 3.

##### *4.2.3.10.2.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.3.10.2.2 Residual Impacts*

Because the planned life of the road is indefinite, the Alternative C would result in the loss of Class III areas within the ROW corridor for the operational life of the roadway. There would be residual impacts to mountain bikers using the McCoy Flats Trail System, as Alternative C would be visible from both KOP 1 and KOP 2. Should the road be no longer needed, the roadway would be obliterated, as set out in **Section 2.2.5**, and restored and reclaimed as set out in the reclamation plan (refer to **Appendix B**).

### 4.2.3.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters of The U.S.

Detailed engineering designs have not been developed for the entirety of the Alternative C route, however, as set out in **Section 2.3** the road design factors, road construction, support resources operation and maintenance, road termination, and water supply element would be the same as those set out for the Proposed Action. Minor variations would be made based on the final design and application of appropriate design features, or ACEPMs incorporated as design feature, applicable to soils, vegetation and water resources would be applied. Implementation of Alternative C would result in disturbance to a total of 461 acres. As such impacts discussed in **Section 4.1.1.11** above would be the same, but two percent greater in magnitude than those for the Proposed Action.

#### *4.2.3.11.1 Mitigation Measures*

No additional mitigation is recommended.

#### *4.2.3.11.2 Residual Impacts*

Increased sedimentation of ephemeral and intermittent drainages in the Project Area and ultimately the turbidity of the Green River from implementation of Alternative C would be similar to, but greater than the Proposed Action. These residual impacts, like the Proposed Action, would last until reclamation and

reseeding practices are determined successful. No other residual impacts from implementation of Alternative C would occur.

#### 4.2.3.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species

Direct and indirect impacts to wildlife resources under Alternative C would be similar in nature to those outlined and discussed for the Proposed Action; however, the habitat loss would be 461 acres, impacts are expected to be two percent larger.

##### *4.2.3.12.1 Big Game*

Alternative C would result in the short-term loss of 211 acres of crucial year-long/fawning habitat and 67 acres of substantial winter habitat for mule deer. No short-term disturbance in crucial year-long/fawning habitat would occur on BLM-administered lands. Reclamation would reduce the long-term disturbance to 176 and 64 acres of crucial year-long/fawning and substantial winter habitats for mule deer, respectively. Alternative C would also result in the short-term loss of 196 acres of substantial year-long pronghorn habitat, which would be reduced to 163 acres of long-term surface disturbance. No crucial year-long habitat for pronghorn would be disturbed under Alternative C. The reclamation of areas along the proposed roadway that would not be needed for the operational life of the roadway would be reclaimed in accordance with the Reclamation and Weed Control Plan cited as **Appendix B**.

Impacts related to implementation of Alternative C would be reduced through the implementation of design features. Specifically, construction activity within mapped crucial habitat for big game species (e.g., crucial year-long habitat and crucial fawning habitat) would be determined by the appropriate SMA after coordination with the applicant and prior to commencement of construction (**Section 2.2.8.12**). In addition, relocation of the existing wildlife guzzler would deter the presence of pronghorn near the roadway, thereby reducing the potential for vehicle collisions with pronghorn (**Section 2.4.3**).

##### *4.2.3.12.2 Upland Game*

Alternative C would result in the short-term loss of 461 acres of suitable habitat for upland game species. Approximately 176 and 10 acres of surface disturbance would occur within crucial year-long habitat for ring-necked pheasant and wild turkey, respectively. These habitat losses are the same as under the Proposed Action.

##### *4.2.3.12.3 Raptors*

Direct and indirect impacts to raptors under Alternative would be similar to those described under the Proposed Action. Alternative C could impact raptors that utilize the Project Area for foraging habitat. Burrowing owl surveys have been competed for the portions of Alternative C that are identical to the Proposed Action route. No burrowing owl nests were identified. As no known active or inactive nests occur within 0.5 miles of the Alternative C route, direct and indirect impacts to known nesting sites are not anticipated under Alternative C. Construction under Alternative C would result in the loss of 461 acres of habitats that could be utilized by raptor species for foraging and nesting. Interim reclamation would reduce the total disturbance to 384 acres, which would remain for the operational life of the roadway and until final reclamation has restored the disturbance footprint to usable habitat for raptor and prey species.

Prior to initiating any surface-disturbing activities, the Project Area would be surveyed for the presence of nesting raptors. Should any raptor nests be observed within the Project Area, adherence to site-specific buffers as outlined in the BLM (2008a) Vernal Field Office *Best Management Practices for Raptors and Their Associated Habitats in Utah* would be followed and any season-specific nesting buffer would be applied (**Section 2.2.8.12**).

#### *4.2.3.12.4 Migratory Birds*

Impacts to migratory birds under Alternative C would be similar for all migratory bird species, but would vary depending on loss of habitat types and species' sensitivities to disturbance. Implementation of the Alternative C would result in the loss of 461 acres of habitat that could serve as nesting and foraging habitats for migratory bird species. Approximately 77 acres of lands not needed for the operational life of the roadway would be reclaimed, resulting in 384 acres of long-term habitat loss. Potential impacts resulting from Alternative C would be reduced through the implementation of design features and adherence to the BLM VFO RMP/ROD.

#### *4.2.3.12.5 USFWS-Designated and Non-Designated Wildlife and Fishery Species*

##### *4.2.3.12.5.1 Bats*

Direct and indirect impacts to bats from construction of Alternative C would be similar in nature to those set out in **Section 4.2.1.12**, but are expected to be larger in magnitude as Alternative C proposes 10 more acres of surface disturbance than the Proposed Action.

##### *4.2.3.12.5.2 White-tailed Prairie Dog*

Direct and indirect impacts to WTPDs from construction of Alternative C would be identical in nature to those set out in **Section 4.2.1.12**, as no known WTPD colonies would be disturbed. Although indirect impacts under Alternative C would be similar to the Proposed Action but may be greater as 10 additional acres of surface disturbance would occur. In addition, implementation of recommended mitigation measures that include provisions to complete WTPD surveys for any areas not yet surveyed (i.e., changes made to the alignment in November 2014) and avoid active WTPD colonies during construction could further reduce impacts related to the potential loss of WTPD habitat in the Project Area.

##### *4.2.3.12.5.3 Greater Sage-grouse*

Direct and indirect impacts to sage-grouse from construction of Alternative C would be similar in nature to those set out in **Section 4.2.1.12**. However, the extent of impacts to the documented lek would be less under Alternative C because the ROW would be further from the lek and would not fragment the middle of the lek in Sections 27-23 and 23-33 in T5S, R12E. In addition, the extent of habitat loss would be greater due to increased surface disturbance under Alternative C as compared to the Proposed Action. Specifically, habitat loss to UDWR crucial winter habitat for greater sage-grouse would be 191 acres greater under Alternative C. Additionally, habitat loss in occupied and brood rearing habitat would be 298 greater (refer to **Figure 3.13-4** and **3.13-5** and **Table 4.2.3.12-2**).

**Table 4.2.3.12-2: Surface Disturbance in Greater Sage-grouse Habitat and Management Areas within the Project Area under Alternative C**

| UDWR Habitat and BLM/USFS Management Areas | Short-term Disturbance (acres) | Long-term Disturbance (acres) |
|---|---|---|
| UDWR Greater Sage-grouse Habitat | | |

| | | |
|---|---|---|
| Occupied habitat | 298 | 248 |
| Brooding habitat | 298 | 248 |
| Crucial winter habitat | 191 | 159 |
| Substantial winter habitat | 43 | 36 |
| BLM/USFS Greater Sage-grouse Management Areas | | |
| Preliminary Priority (PPMA) | -- | -- |
| Preliminary General (PGMA) | 298 | 298 |

Source: UDWR 2014a; BLM 2014i

Under Alternative C, additional environmental protection measures (**Section 4.2.3**) would help mitigate and minimize direct and indirect impacts to sage-grouse habitat and the documented lek located approximately 0.5 mile from the ROW for Alternative C.

#### *4.2.3.12.5.4 Bald Eagle*

Direct and indirect impacts to bald eagles from construction of Alternative C would be similar in nature to those set out in **Section 4.2.1.12**, but to a somewhat greater extent as Alternative C would involve additional surface disturbance when compared to the Proposed Action. In addition, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, would be incorporated as design features. These design features would reduce or minimize the potential for displacement from potential foraging habitat in the Project Area.

#### *4.2.3.12.5.5 Golden Eagle*

Direct and indirect impacts to golden eagles from Alternative C would be similar in nature to those set out in **Section 4.2.1.12**, but to a somewhat greater extent as Alternative C would involve additional surface disturbance when compared to the Proposed Action. In addition, ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, would be incorporated as design features. These design features would reduce or minimize the potential for displacement (from potential nesting and/or foraging habitats) or nest abandonment in the Project Area.

#### *4.2.3.12.5.6 Burrowing Owl*

Direct and indirect impacts to burrowing owls under Alternative C would be similar in scope to those set out in **Section 4.2.1.12**, as there would be 10 acres more surface disturbance under this alternative. No mapped WTPD colonies would be disturbed under Alternative C. ACEPMs that include provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**) would be incorporated as design features. These design features would reduce or minimize the potential for displacement or nest abandonment.

#### *4.2.3.12.5.7 Ferruginous Hawk*

Direct and indirect impacts to ferruginous hawks under Alternative C would be similar in nature to those set out in **Section 4.2.1.12**, but are expected to be greater in magnitude as 10 more acres of surface

disturbance would occur. ACEPMs including provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**) would be incorporated as design features. These design features would reduce or minimize the potential for displacement or nest abandonment.

#### *4.2.3.12.5.8 Short-eared Owl*

Direct and indirect impacts to short-eared owls from Alternative C would be similar in nature to those set out in **Section 4.2.1.12**, but are expected to be greater in magnitude as 10 more acres of surface disturbance would occur. ACEPMs including provisions to conduct nest inventories prior to initiating surface-disturbing activities, implement spatial/temporal buffers around active nests, and conduct interim reclamation, (refer to **Section 2.2.8.12**) would be incorporated as design features. These design features would reduce or minimize the potential for displacement or nest abandonment.

#### *4.2.3.12.5.9 Special Status Fish*

Direct and indirect impacts to special status fish from Alternative C would be similar in nature to those set out in **Section 4.2.1.12**, but greater in extent as Alternative C proposes 10 more acres of surface disturbance and would require a larger quantity of water for construction for dust suppression and compaction of the road based material. Because the source and acre-feet of water needed for construction of Alternative C is unknown, this EA assumes all project depletions would be non-historic. The County or its contractor would be required to secure the necessary water from a permitted source.

Alternative C would represent the largest increase soil erosion in the Project Area from the removal of vegetation, increased soil exposure, and steepening of exposed soils in areas with cut and fill, as it proposes the largest level of short-term and long-term surface disturbance. Loose soil could be transported to intermittent/ephemeral drainages (including Twelvemile Wash) in the Project Area during storm events, which eventually could increase siltation approximately 4.4 river miles downstream of the Project Area in the Green River.

As such, because Alternative C would deplete the Upper Colorado River Basin and could degrade aquatic habitats in the Green River, the Alternative C "***may affect, is likely to adversely affect***" the bonytail, Colorado pikeminnow, humpback chub, and razorback sucker, and their USFWS-designated critical habitats. Similarly, project-related water depletion and increased siltation could also affect the bluehead sucker, flannelmouth sucker, roundtail chub, and their aquatic habitats, but would not likely result in a loss of viability, nor cause a trend towards federal listing of these species.

#### *4.2.3.12.6 Mitigation Measures*

Complete WTPD and burrowing owl surveys for any areas not yet surveyed (i.e., changes made to the alignment in November 2014) and avoid active WTPD colonies during construction to minimize potential adverse impacts to WTPDs and nesting burrowing owls.

If water needed for Alternative C is supplied from the Green River, Uintah County's contractor would implement additional mitigation measures to reduce/minimize adverse impacts to special status fish. These measures may include, but would not be limited to the following:

- Pump from an off-channel location (i.e., one that does not connect to the river during high spring flows) to avoid entrainment. An infiltration gallery constructed in a USFWS-approved location would be preferable.

- If the pump head is located in the river channel, the following measures would apply:

    - Do not situate the pump in a low-flow area as these habitats tend to concentrate larval fishes;

    - Limit the amount of pumping, to the greatest extent possible, during the midnight hours (10p.m. – 2a.m.), as larval drift studies indicate that this is a period of greatest daily activity. Dusk would be the preferred pumping time, as larval drift abundance is lowest during this time.

    - Limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (April 1 to as late as August 31).

- Screen all pump intakes with 3/32" mesh material.

- Approach velocities for intake structures will follow the National Marine Fisheries Service's document "Fish Screening Criteria for Anadromus Salmonids". For project with an in-stream intake that operates in stream reaches where larval fish may be present, the approach velocity would not exceed 0.33 feet per second (ft/s).

- Report any fish impinged on intake screen or entrained into irrigation canals to the USFWS (801-975-3330) or the Utah Division of Wildlife Resources:

    Northeastern Region
    152 East 100 North
    Vernal, UT 84078
    Phone: 435-781-9453

### 4.2.4 Alternative D – No Action Alternative

#### 4.2.4.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse or beneficial impacts to cultural resources would result from the implementation of Alternative D.

##### *4.2.4.1.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.1.2 Residual Impacts*

As no new surface disturbance would occur under the No Action Alternative, there would be no residual direct or indirect adverse or beneficial impacts to energy production activities from its implementation.

#### 4.2.4.2 Prime and Unique Farmlands

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts to prime farmlands, if irrigated, on public lands would result from the implementation of Alternative D.

##### *4.2.4.2.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.2.2 Residual Impacts*

As no new surface disturbance on BLM-administered land would occur under the No Action Alternative, there would be no residual impacts to prime farmlands, if irrigated, from its implementation.

#### 4.2.4.3 Geology, Including Mineral Resources and Energy Production

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts to energy production on BLM-administered lands would result from the implementation of Alternative D.

##### *4.2.4.3.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.3.2 Residual Impacts*

As no new surface disturbance would occur under the No Action Alternative, there would be no residual direct or indirect adverse or beneficial impacts on energy production on BLM- or SITLA-administered lands from its implementation.

#### 4.2.4.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts would occur to soils and vegetation resources from the implementation of Alternative D.

##### *4.2.4.4.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.4.2 Residual Impacts*

As no new surface disturbance would occur under the No Action Alternative, there would be no residual impacts to soils and vegetation resources on BLM-administered lands from its implementation.

#### 4.2.4.5 Lands and/or Access

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts would occur to existing lands and/or access authorizations on BLM-administered lands from the implementation of Alternative C.

##### *4.2.4.5.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.5.2 Residual Impacts*

As no new surface disturbance would occur under the No Action Alternative, there would be no residual impacts to existing lands and/or access authorizations on BLM-administered lands from its implementation.

#### 4.2.4.6 Livestock Grazing

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts would occur to livestock grazing on BLM-administered lands from the implementation of Alternative D.

##### *4.2.4.6.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.6.2 Residual Impacts*

As no new surface disturbance would occur under the No Action Alternative, there would be no residual impacts to livestock grazing from its implementation.

#### 4.2.4.7 Paleontology

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts would occur to paleontological resources on BLM-administered lands from the implementation of Alternative D. Conversely, the potential for discovering new localities would remain at background levels.

##### *4.2.4.7.1 Mitigation Measures*

No mitigation is recommended.

##### *4.2.4.7.2 Residual Impacts*

As no surface disturbance would occur under the No Action Alternative, there would be no residual impacts to paleontological resources from its implementation.

#### 4.2.4.8 Recreation

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts would occur to recreation opportunities on BLM-administered lands from the implementation of Alternative D. As such, the No Action Alternative would have no impact on the existing McCoy Flats Trail System. All trails would remain intact, including the two trails that would be affected by the Proposed Action and three trails that would be affected affected by Alternative C. Existing recreational opportunities in the vicinity of the Project Area would not change under Alternative D.

##### *4.2.4.8.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.8.2 Residual Impacts*

As no new surface disturbance would occur under the No Action Alternative, there would be no residual impacts to recreation opportunities on BLM-administered lands from its implementation.

#### 4.2.4.9 Socioeconomics

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Because the project would not be constructed, no benefits from increased cash flow resulting from project construction would accrue to the local economy. Employment opportunities would not be available. Economic activity and tax revenues from existing activities would continue at present rates. Demand for housing in the County would not change. Demand for public services also would not change; however, demand for services oriented to unemployed residents may be greater than under the Proposed Action, Dog Valley Route Alternative, or Alternative C, since there would be no decrease in unemployment. Social conditions, including crime rates, would not change.

##### *4.2.4.9.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.9.2 Residual Impacts*

As no new roadway would be constructed under the No Action Alternative, there would be no residual impacts to socioeconomics from its implementation.

#### 4.2.4.10 Visual Resources

Under Alternative D, the BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts would occur to visual resources on BLM-administered lands from the implementation of Alternative D. The visual quality of the landscape would remain unchanged from the existing condition. As such, a viewshed analysis, visual simulation, and contrast ratings were not conducted for this alternative.

##### *4.2.4.10.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.10.2 Residual Impacts*

As no new roadway would be constructed under the No Action Alternative, there would be no residual impacts to visual resources on BLM-administered lands from its implementation.

#### 4.2.4.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters of The U.S.

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts would occur to water resources on BLM-administered lands from the implementation of Alternative D.

##### *4.2.4.11.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.11.2 Residual Impacts*

As no new surface disturbance would occur under the No Action Alternative, there would be no residual impacts to water resources on BLM-administered lands from its implementation.

#### 4.2.4.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species

Under Alternative D, BLM would not approve any of the three aforementioned routes, resulting in no new surface disturbance on BLM-administered lands. Thus no direct or indirect adverse impacts would occur to wildlife, including migratory birds, raptors, USFWS-designated, and non-designated wildlife and fishery species from the implementation of Alternative D. Existing management of wildlife resources within the Project Area would continue.

##### *4.2.4.12.1 Mitigation Measures*

No additional mitigation is recommended.

##### *4.2.4.12.2 Residual Impacts*

As no new surface disturbance would occur under the No Action Alternative, there would be no residual impacts to wildlife, including migratory birds, raptors, USFWS-designated, and non-designated wildlife and fishery species from its implementation.

## 4.3 CUMULATIVE IMPACTS

Based on the anticipated permanent assignment of a Title V ROW grant for the proposed road, the timeframe for the cumulative effects is permanent. The timeframe for vegetation and wildlife habitat recovery for the effects of cumulative surface-disturbing activities is approximately 50years.

**Past, Present and Reasonably Foreseeable Future Projects**

Cumulative impacts are defined in the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.7) as "*...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.*" For this analysis, foreseeable actions are considered to be limited to those for which some formal notice or permit application has been made and does not include potential developments which are speculative. Because differentiating between past and present (ongoing) effects can be problematic, they have been considered together as existing effects in this analysis.

### 4.3.1 Cultural Resources, Including Archaeological Resources and Native American Religious Concerns

Impacts to cultural resources from construction activities are not additive across a landscape; therefore, the cumulative impacts study area (CISA) for cultural resources is the Project Area. As directed by law, Class III cultural resources inventories and the USHPO consultations would be conducted for any projects involving federal lands, and adverse effects to NRHP-eligible sites would be avoided or mitigated as appropriate. Activities associated with the Proposed Action, Alternative B, and Alternative C would be in accordance with federal laws and agency guidelines. A Class III cultural resources inventory would be completed prior to construction under the Proposed Action, Alternative B, and Alternative C would all be

required. Impacts to any known or previously unknown NRHP-eligible sites that may be discovered during construction activities would be mitigated in accordance with the mitigation plan developed with the USHPO or the affiliated Tribes. Class III cultural resource inventories for each alternative would represent a positive impact to the CISA as areas within the survey corridor would either be cleared of cultural resources or new cultural resources would be inventoried and collected. Any new cultural resources finds would contribute to the historical record. Although sites located within disturbance areas are avoided or mitigated, sites located outside of and adjacent to disturbance area remain vulnerable to indirect impacts such as vandalism, illegal collection, and erosion. The No Action Alternative would not contribute to the discovery and documentation of cultural resources within the CISA, as no Class III cultural resources inventory would be completed.

Surface disturbance within the CISA would increase the potential for damaging or discovering buried cultural resources. These impacts would be greatest under Alternative C, as the largest amount of surface disturbance would occur. Alternative B would have the lowest potential of all action alternatives for unearthing or damaging buried cultural resources. The No Action Alternative would not contribute to the discovery or potential damaging of buried cultural resources within the CISA as no surface disturbance would occur in relation to the proposed project.

It is anticipated that there would be a cumulative increase in vandalism, illegal collection, and erosion due to the increased roads throughout the entire area under all action alternatives.

### 4.3.2 Prime and Unique Farmlands

The CISA for prime and unique farmlands is the County. Beginning in the 1970s, a transformation of the western land market gained momentum where farmland and rangelands began to be valued in terms of their real estate potential rather than their value as cropland and pasturelands (McGinty 2009). Between 1960 and 2008, farmlands in Utah have declined by 18 percent (or a total of 2.5 million acres, or approximately 52,080 acres per year) (McGinty 2009). The County has likely followed this trend. This decline is due primarily to the increased value of private rangeland property in the Intermountain West and the continued decline in the profitability of agricultural industries, particularly in arid public land ranches (McGinty 2009). Based on the anticipated additional infrastructure needed in support of continued oil and gas activities in the basin, it is reasonable to expect private farmlands, currently in hay production, as well as public land classified as prime farmlands would continue to be converted to non-agricultural use. Depending on what type of use these lands would be put, such uses/conversion should be considered long-term or permanent.

Under the Proposed Action, Alternative B, and Alternative C approximately 91 acres of farmlands (includes both private and prime farmlands) would be removed from use (long-term disturbance). If it is assumed that for every one acre of farmland converted to a non-agricultural use, another three to 10 acres may be lost due to fragmentation, then implementation of the alternatives could remove anywhere from 273 to 910 acres. If the maximum loss of farmlands from both direct disturbance and fragmentation is assumed, then implementation of any action alternative could remove approximately four percent of the farmlands in the CISA currently involved in hay production (910 acres/23,200 acres *100 = 3.9 percent).

Implementation of the No Action Alternative would not result in the loss of any farmlands within the CISA. No fragmentation of croplands would occur as a result of the No Action Alternative.

### 4.3.3 Geology, Including Mineral Resources and Energy Production

The CISA for tar sands is considered the extent of the BLM STSA, the nominated tar sands lease, and SITLA tar sands leases that overlap the Project Area. The CISA represents all tar sands leasing areas, whether currently leased or unleased, that would be impacted by construction of the alternatives, and is not representative of all the lands with minable tar sands in Uintah County. The CISA contains approximately 27,396 acres of leasable tar sand areas. Implementation of the Proposed Action would result in the long-term disturbance of 82acres of SITLA leasable tar sands areas in the CISA, 16 acres of the nominated tar sand lease, and 106 acres of the BLM STSA. Selection of Alternative B would result in the long-term disturbance of 165 acres of SITLA leasable tar sands areas in the CISA, 16 acres of the nominated tar sand lease, and 125 acres of the BLM STSA. Alternative C would result in the long-term disturbance of 82 acres of SITLA leasable tar sands areas in the CISA, would not disturb the nominated tar sand lease, and 110 acres of the BLM STSA. Roadway construction within a leasable tar sands area or the STSA would remove that land from production. Additionally, a linear road within a lease would fragment the easing area and could interrupt future mining operations. No additional cumulative impacts to the CISA from tar sands development are anticipated. The No Action Alternative would not contribute an incremental impact to tar sands leases or the STSA within the CISA.

The CISA for oil and gas development is Uintah County. Currently, there are approximately 10,672 permitted and active oil and gas wells within the county. Implementation of the Proposed Action would disturb approximately 221 acres of land leased for oil and gas production and/or land above leased minerals within the CISA. Alternative B would disturb approximately 146 acres of land leased for oil and gas production and/or land above leased minerals. Alternative C would disturb approximately 230 acres of land leased for oil and gas production and/or land above leased minerals. Development in oil and gas leasing areas would not remove minerals from oil and gas production, but would require avoidance of the proposed roadways to access minerals. Given the relatively low level of oil and gas development within the impacted areas, the action alternatives are not expected have a significant incremental impact on oil and gas development within the CISA. The No Action Alternative would not contribute an incremental impact to oil and gas leases within the CISA.

### 4.3.4 Soils and Vegetation, Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species

The CISA for soils and vegetation is the USGS hydrological unit code (HUC) 12 watersheds overlapping the Project Area. Impacts from past, present, and reasonably foreseeable future actions within the CISA would cumulatively and incrementally increase disturbed soil acreages and likely reduce soil productivity until such time that reclamation is deemed successful in terms of soil stability and productivity, or result in the permanent loss due to onsite development. Past and ongoing surface disturbing activities within the CISA include agricultural development, mineral extraction, and infrastructure development. Additionally, as discussed in **Section 3.4.3** several SITLA tar sands areas have been leased and are currently within the planning process. Once developed these areas would likely experience the removal of topsoils and subsoils to reach subsurface tar sands deposits.

Construction under the Proposed Action would initially disturb approximately 451 acres of soils within in the CISA. Alternative B would have the lowest incremental impact on soil resources as it only initially disturbs 389 acres of the CISA. Alternative C would represent the largest disturbance to soil resources as 461 acres of soil would initially be disturbed. With the application of additional site specific measures to

foster improved chances for successful reclamation and reduce subsequent loss of soil resource from wind and water erosion, cumulative impacts would be reduced, but not fully mitigated.

Past, present, and reasonably foreseeable future actions would cumulatively and incrementally reduce available vegetation cover types until such time that reclamation is deemed successful, or the site is permanently altered. Past and ongoing surface disturbing activities within the CISA include agricultural development, oil and gas development, livestock grazing, and urban development. Additionally, as discussed in **Section 3.4.3** several SITLA tar sands areas have been leased and are currently within the planning process. Once developed these areas would likely experience the removal of vegetation to reach subsurface tar sands deposits. Construction under the Proposed Action would initially disturb approximately 451 acres of vegetation within in the CISA. Alternative B would have the lowest incremental impact on vegetation as it only initially disturbs 389 acres of the CISA. Alternative C would represent the largest disturbance to vegetation as 461 acres of soil would initially be disturbed. Additionally, implementation of the Proposed Action would result in the incremental loss of 50 acres of potential habitat BLM-sensitive plant species within the CISA. Pedestrian surveys for BLM-sensitive species potential habitat have not been completed for Alternative B and Alternative C. Indirect incremental impacts from disturbance within the CISA to vegetation resources potentially would include the reduction of numerous habitat functions including soil stability, erosion control, species biodiversity, domestic (livestock) and wildlife forage and habitat, and sensitive species habitats. The loss of vegetation within the CISA would reduce the amount of available forage. An indirect cumulative impact could occur as a result of a sustained demand for forage by livestock and wildlife and a reduced amount of available vegetation as a result of the proposed project.

The BLM VFO has yet to observe much reclamation success in the basin (BLM 2012a). It is estimated that a minimum of 10 years may be required on grass dominated communities to establish adequate ground cover to present erosion and provide suitable forage. Woody-dominated communities could require up to 50 years to restabilize and revegetate disturbed sites and mature juniper trees could require up to 100 years revegetate.

Federal, state and local regulations require management and control of noxious weed and invasive plant species. The severity of the threat posed by individual plant species determines the amount of control required. Past, present and future projects in the County would minimize the spread of such plant species through the implementation of noxious weed management plans, subsequent monitoring of the plans for the plans overall effectiveness, and adjusting the plans as needed to ensure their effectiveness.

For BLM sensitive plant species, cumulative impacts would be increased for the Hamilton and horseshoe milkvetch species, and possibly the sterile yucca as a result of habitat loss under each action alternative. Cumulative effects to these species include those impacts discussed for general vegetation. Changes in land use patterns or increased human encroachment also would adversely impact occupied and suitable habitats for these species. In addition, care in development of reclamation of potential habitats supportive for these species could reduce the cumulative impacts to these species habitats, and could avoid the need to list any or all of the species under the auspices of the ESA. Thus implementation of the alternatives would not result in a trend towards federal listing of the Hamilton milkvetch or horseshoe milkvetch.

### 4.3.5 Lands and/or Access

The CISA for lands and access is the County. Past, present, and reasonably foreseeable future lands and/or access actions within the CISA would be directly related to the oil and gas and recreational use. The Proposed Action would affect two of the 12 existing BLM ROWs or easements and three of the nine existing SITLA ROWs or easements. The final engineering designs for Alternative B and Alternative C have yet to be finalized. As such it is unknown exactly how many existing lands and/or access authorizations may be affected. The plans for road and utility intersections, including features such as advanced warning signals, would be finalized at the final design stage and prior to commencing construction. Impacts to these existing ROWs and easements would include disruption to ongoing operation and/or maintenance of the facilities within the ROWs or easements. ROWs in support of oil and gas and subsequent supporting infrastructure would continue. Increased numbers of linear ROWs (powerlines, pipelines, roads, etc.) could result in overlapping authorizations, causing administrative and operational confusion and possible incompatible uses for the same sites. Development of a major roadway and connection to the existing infrastructure could increase the use of local county roads that were not previously used for access to lands surrounding the proposed routes. Increased use of connected county roads could add additional maintenance costs to the county, may require upgrading local connector roads to support increased traffic, and could result in increased traffic. Local road users and nearby residents may experience increased traffic that was not present prior to construction of the bypass. Continued coordination and negotiations with the affected ROW grantees and other authorized parties could reduce such impacts.

### 4.3.6 Livestock Grazing

The CISA for range resources includes the grazing allotments associated with the Proposed Action. As identified in **Table 3.6-1**, there are approximately 1,222 AUMs within the CISA. Past, present, and reasonably foreseeable future actions within the CISA, would result in the loss of AUMs, affect livestock distribution on the allotment and subsequent use of the available forage, affect needed livestock operations (including gathering/release/movement of livestock), limit the use of existing water facilities (reservoirs, ponds, springs), and further reduce AUMs through the proliferation of noxious and invasive weed species. The Proposed Action would remove approximately 17 AUMs (1.3 percent) from use within the CISA. Alternative B would reduce the amount of AUMs in the CISA by 10 AUMs (0.8 percent). Alternative C would reduce the amount of available AUMs within the CISA by 17. Introduction of a roadway into the CISA for livestock grazing would fragment existing grazing allotment, which could alter their use by cattle and prevent unassisted movement throughout the entire allotment. Increased vehicle traffic within the roadway from the alternatives would increase the potential for mortality and harassment of livestock as access and traffic within the CISA. However, the potential for mortality and injury to livestock would be lowest under the Proposed Action as a boundary fence would be installed to prevent livestock from migrating into the proposed ROW.

### 4.3.7 Paleontology

Impacts to paleontological resources from construction activities are not additive across a landscape; therefore, the CISA for paleontological resources is the Project Area. Cumulative impacts to paleontological resources within the CISA would result from activities associated with excavating and constructing the proposed roadway. Construction activities could damage or destroy unknown fossils or fossil localities within the CISA. Increased access to the CISA could result in increased vandalism and

increased illegal collection of paleontological resources within the Project Area. The Proposed Action would result in the second largest amount of surface disturbance (451 acres) of the action alternatives. Additionally, the Proposed Action would result in the incremental loss of 184 acres of PFYC 5 areas, which have a high potential for fossil resources. As such, the Proposed Action would provide the second largest incremental impact paleontological resources within the CISA when compared to the other action alternatives. Pedestrian paleontological surveys have cleared the Proposed Action route for surficial paleontological resources. Although, the estimated 451 acres of surface disturbance under the Proposed Action would represent an incremental risk of damaging subsurface paleontological resources that cannot be easily identified in a pedestrian survey.

Alternative B would result in the incremental disturbance of 389 acres of soils and rock within the CISA. Of the 389 acres of surface disturbance proposed under Alternative B, 83 acres would occur within PFYC 5 areas. Therefore, Alternative B would likely produce the lowest incremental impact from surface disturbance to unknown paleontological resources within the CISA when compared to the other action alternatives. Pedestrian paleontological surveys have not been completed for Alternative B, so the potential for the disturbance, damaging, or destruction of both surficial and subsurface paleontological resources is currently unknown. A pedestrian paleontological survey would be completed for this route prior to surface disturbance and mitigation for paleontological resources, if present, would be determined by the appropriate SMA.

Alternative C would represent the largest incremental impact to paleontological resources within the CISA. Of the 461 acres of total disturbance proposed under Alternative C, 194 would occur within PFYC 5 areas. Therefore, Alternative C would provide the largest potential for the disturbance of unknown paleontological resources within the Project Area when compared to the other action alternatives. While pedestrian paleontological surveys have been completed for most of the Alternative C alignment (where it overlaps with the Proposed Action alignment), Alternative C has the highest potential for the disturbance of unknown paleontological resources as it would disturb the largest amount of soils. If selected, a pedestrian survey would be completed prior to construction for the parts Alternative C not covered by existing surveys and mitigation for paleontological resources, if present, would be assigned.

Increased access and transportation corridors within the CISA under all action alternatives would increase the potential for vandalism or illegal collection of known and unknown fossil resources within the Project Area.

No negative impacts to paleontological resources would occur as a result of the No Action Alternative as no new disturbance or access corridor would occur within the CISA. The existing transportation system would remain intact and areas that may contain paleontological resources would remain isolated or more difficult to access. As such, the existing paleontological resources within the CISA would not have a heightened potential for vandalism or illegal collection that is associated with the proposed project.

Construction activities within the CISA would also increase the potential for the discovery of new fossil localities, which would be a beneficial contribution to the fossil record. The potential for discovery of new fossil resources would be greatest under Alternative C, as 10 and 71 more acres of earth would be disturbed when compared to the Proposed Action and Alternative B, respectively. The No Action alternative would not increase the potential for the discovery of new fossil resources as no pedestrian

paleontological surveys or surface disturbance would occur in association with the Project. Should any paleontological resources be uncovered, surface-disturbing activities would cease until a mitigation plan has been approved by the appropriate SMA.

### 4.3.8 Recreation

The CISA for recreation is the County. Recreation opportunities in the CISA include activities discussed in **Section 3.9** (i.e., mountain bicycling, camping, hunting, hiking, and OHV recreation), as well as angling, boating, swimming, enrichment programs, youth and teen programs, races/marathons/triathlons, golfing, special events, and access to a community center and 11 city parks (Uintah Recreation District 2014).

For individuals or groups seeking solitude in a more natural environment, past, present, and reasonably foreseeable future activities in the CISA have directly transformed, and will continue to transform, scenic vistas to a more roaded, developed, and somewhat industrial landscape. Potential adverse cumulative impacts to recreation opportunities in these areas could include diminished values for recreation due to increased noise from traffic and construction activities. Prior development has built an existing road network throughout the CISA, although fewer roads have been constructed east of State Route 45. These roads and associated noise from traffic have changed the character of recreation opportunities in the CISA, including reducing naturalness, unconfined recreation, and solitude. The road maintenance activities that would be required if an action alternative is selected would result in the revisiting of construction crews that could further, albeit inconsistently, cause direct and indirect disturbances to recreational resources in the CISA. Diminished values of recreational lands within the CISA could result in decreased use by the public.

The Proposed Action would have a direct impact on two of the bike trails within the McCoy Flats Trail System. The Proposed Action would mitigate impact to the McCoy Flats Trail System by installing box culverts with an elevated ceiling that would accommodate the safe passage of mountain bikers and pedestrians under the proposed ROW. Additionally, impacts to existing mountain bike trails would be mitigated through funding the development of mountain biking opportunities at the Little Mountain-LaPoint Mountain Bike Trail System. The Dog Valley Route does not impact the McCoy Flats Trail System as this area is avoided. Alternative C would intersect three trails within the McCoy Flats Trail System.

The action alternatives would provide recreational users with more potential access to public lands in the CISA. A new bypass would help connect the existing road system and could provide easier access to natural areas for biker, hikers, campers, and other recreationalists.

The No Action Alternative would not result in any negative impacts to the recreational resources within the CISA as no construction would occur related to the Project. Additionally, the No Action Alternative would not result in any benefits to the recreational community as no new road would be constructed that could increase access to natural areas in the CISA.

### 4.3.9 Socioeconomics

The CISA for socioeconomics is defined as the County. Without a vast supply of energy resource reserves in the area, the CISA likely would be much less developed and populated than it is today. As a

result of ongoing development of oil and gas resources in the basin, the cities and rural communities within the CISA have experienced considerable population growth. This growth has and continues to provide much of the impetus for new residential and commercial development and expansion of local government infrastructure and services. This economic activity underlies important economic and social conditions and trends in the area. For example, labor markets are characterized by unemployment that is commonly below statewide levels, higher transient elements of the workforce, competition and shortage of qualified labor, and higher labor compensation costs. Cumulative social effects also have occurred and energy resource development has resulted in some conflicts with recreation, tourism, and grazing on public lands.

Implementation of the Proposed Action, Alternative B, or Alternative C, when considered along with other existing (past and present) and planned (reasonably foreseeable) land uses, would incrementally contribute to continued economic and population growth in the CISA. This growth could result in the construction and use of new infrastructure in Vernal and Naples, such as additional motels/hotels, eateries, retail shops, service businesses, and a new convention center, which is currently under construction. The development of a road bypass under each action alternative would provide the opportunity for new businesses to establish along the selected route on private and state lands, which could provide new jobs and tax revenue streams within the CISA. However, increased pressure on the local housing market and social services would not be expected as a result of the action alternatives due to the short-term nature of the roadway construction and small number of personnel needed.

Construction of the new roadways would have an impact on taxes within the CISA. For instance construction on private lands would mean those lands within the alignment would be removed from property tax assessment and revenue to the County would be reduced. This impact would be greatest under Alternative B as 132.2 acres of private land would be subject to long-term disturbance. The Proposed Action and Alternative C would result in the long-term disturbance of 105.8 acres of private lands. Conversely, construction of a new road bypass would produce a short-term increase in tax revenues to the Federal Government, Utah and the County from sales taxes, lodging taxes, and income taxes. These incomes would likely be greatest under Alternative C, as the 12.6 miles of road would likely require the most time and materials when compared to the other action alternatives. The Proposed Action is approximately 12.4 miles in length and would likely generate the second largest federal, state, and county tax revenue. Alternative B is the shortest route (10.7 miles) and would likely produce the smallest amount of federal, state, and county tax revenue.

Development of the road bypass under the alternatives would divert commercial vehicles from utilizing Highway 40 within Vernal and Naples. Therefore, trucks containing explosive or hazardous materials would avoid the more densely populated areas within the CISA and lower the potential for impacts to health, safety, and property. Conversely, implementation of an action alternative could divert recreational and private traffic from Vernal and Naples resulting in a loss of local business traffic.

Implementation of the No Action Alternative, when considered along with other existing and planned land uses, would not incrementally contribute to continued economic and population growth in the CISA. Rather, existing adverse social impacts (e.g., concerns over public safety, high commercial vehicle traffic, transport of explosive and hazardous materials) would continue and may increase in the future if vehicle congestion along U.S. Highway 40 increases to support additional oil and gas development in the basin.

### 4.3.10 Visual Resources

The CISA for visual resources is defined as the extent of the VRM Class III areas impacted by the Proposed Project. This CISA was selected due to the dominance of Class III areas in the Project Area (approximately 99 percent of BLM-administered lands). This CISA accounts for impacts to visual resources that are affected by ongoing resource management, transportation projects, and energy and mineral extraction, which are generally managed under a common land use plan.

Although the Project Area contains Class III and Class IV areas, Class IV areas were dismissed from inclusion in the CISA due to their limited extent in the Project Area (approximately one percent of BLM-administered lands).

Past, present, and reasonably foreseeable future activities in the CISA have directly transformed, and will continue to transform, scenic vistas to a more roaded, developed, and somewhat industrial landscape. This is most pronounced south of U.S. Highway 40, where oil and gas exploration is prevalent. Within the CISA, approximately 683 wells are currently producing, permitted, suspended drilling operations, shut-in, or temporarily abandoned (UDOGM 2014). Development of oil and gas typically includes construction of roads, well pads, pipelines, power lines, compressors, and other facilities. This construction typically changes the landform and provides varying degrees of visual contrast from the existing vegetation communities. In most of the CISA, development associated with oil and gas activities is consistent with VRM Class III management objectives.

Construction of a road bypass in the CISA would result in changes to the visual character of areas within sight of the disturbance. In general, the dark color of the asphalt and linear shape of the road designs under each action alternative would contrast the existing landscape. This contrast would adversely affect the CISA's scenic quality and appearance of naturalness. Visual contrast would also be visible in the night sky from headlights on commercial/industrial vehicles.

Other past, present, and reasonably foreseeable public land uses in the CISA have also directly transformed, and will continue to transform, the character of the landscape. These activities include, but are not limited to, transportation projects, livestock grazing and improvements, OHV driving, non-motorized recreation, and vegetation treatments. Construction of new roads, as well as upgrades and expansions of existing roads, has increased visual contrast on the landscape due to changes to the contour and color of the natural landscape. In addition, construction of livestock facilities (e.g., fences and waters) and wildlife waters, cross-country OHV driving, mountain biking on non-motorized trails, and vegetation treatments (e.g., chainings), have altered the character of the landscape with changes in vegetation pattern and the introduction of human-made features on the land. In most of the CISA, the development described above is consistent with VRM Class III management objectives. The Proposed Action would incrementally increase the cumulative disturbance by adding 81.4 acres of long-term disturbance within the CISA. Alternative B would incrementally increase the cumulative disturbance by adding 15.9 acres of long-term disturbance within the CISA. Alternative C would represent the largest impact to VRM Class III areas by incrementally increasing 74.7 acres within the CISA. Disturbance within designated VRM Class III areas associated with the alternatives would be consistent with management objectives because the VRM objectives for this visual class permit moderate changes to the characteristic landscape that would accommodate the level of surface disturbances and visual contrasts

created by proposed project activities. The No Action Alternative would not incrementally contribute to disturbance within VRM Class III areas in the CISA.

### 4.3.11 Water Resources, Including Floodplains, Hydrologic Conditions (Stormwater), and Waters of the U.S.

The CISA for water resources is USGS hydrological unit code (HUC) 12 watersheds overlapping the Project Area. Existing depletions to watersheds within the CISA include oil and gas development, municipal water use, irrigation, and livestock management. Construction of a new roadway within the CISA would require the use of water for construction and dust suppression activities. Construction under the Proposed Action would require the depletion of 339 acre-feet of water. Detailed engineering designs have not yet been completed for Alternative B, but given the shorter length of overall road, Alternative B is expected to require less water for construction than the Proposed Action and Alternative C. similar to Alternative B, Alternative does not yet have final engineering drawings, so the water requirements for construction are not yet known. However, as that Alternative C proposes the longest road when compared to the other action alternatives, it can be assumed that it would require the greatest amount of water during construction. All water needed for construction under each alternative would come from sources tributary to the Green River, and would therefore be considered Green River depletions. Depletions from the action alternatives would represent an incremental contribution to the demand of water within the CISA and the greater Green River watershed. However, given the relatively small depletion compared to the average annual flow of the Green River (4,064,290 acre-feet), significant impacts to the flow of the Green River are not anticipated. No water would be required for the No Action Alternative.

Development of the proposed roadways would require the cross of intermittent and ephemeral streams and their associated 100-year floodplains. Construction under the Proposed Action would initially disturb approximately 3.3acres of 100-year floodplains. The No Action Alternative would initially disturb5.5 acres of 100-year floodplains. Alternative C would result in the short-term disturbance of 5.5 acres of 100-year floodplains. Disturbance to the natural contours and existing vegetation of 100-year floodplains could result in altered floodplain conditions that would inhibit function. While implementation of the alternatives would incrementally contribute to the altered function of floodplains within the CISA, interim reclamation, project design features, and the avoidance of floodplains, where feasible, would decrease the potential for adverse impacts to 100 year floodplains within the CISA. Under the No Action Alternative, no surface disturbance related to the proposed project would occur within 100-year floodplains.

Impacts from past, present, and reasonably foreseeable future actions within the CISA would cumulatively and incrementally increase disturbed soil acreages and likely increase soil erosion and sediments until such time that reclamation is deemed successful in terms of soil stability and productivity, or result in the permanent loss due to onsite development. The Proposed Action is expected to incrementally increase the sediment loads into the Green River system by 99 tons annually. Increased total sediments and specific sediments containing salts, selenium, and other minerals would affect the quality of water within the Green River, a Water of the U.S. With the application of measures to foster improved chances for successful reclamation and reduce subsequent loss of soil resource from erosion; adherence to state and federal requirements regarding water quality and floodplain protection; and proper application of industry design standards; cumulative impacts to water resources would be reduced, but not fully mitigated.

Final engineering drawings for Alternative B and Alternative C have not been completed; therefore, accurate sediment load projections related to these alternatives cannot be determined. For purposes of analysis, these alternatives will be compared to the Proposed Action based off of their total surface disturbance. Implementation of Alternative B would result in disturbance to a total of 389 acres, or 87 percent of the Proposed Action, As such incremental impacts from increased sedimentation would be the same, but 14 percent less than those for the Proposed Action. Alternative C would disturb approximately 461 acres, or 102 percent of the Proposed Action. As such incremental impacts under Alternative C from increased sedimentation would be the same, but two percent more than those described for the Proposed Action. The No Action Alternative is not expected to increase sediment loads into the Green River above background levels as no construction and ground disturbance would occur.

#### 4.3.12 Wildlife Resources, Including Migratory Birds and Raptors, USFWS-Designated and Non-Designated Wildlife and Fishery Species

The CISA for wildlife is the County. Past and present actions in the CISA (including minerals development, road construction, and livestock improvements among others) have resulted in loss or degradation of natural habitats, fragmentation of previously uninterrupted habitats, displacement of wildlife species, increased vehicle collisions with wildlife, and increased human access to wildlife habitats, which increases the potential for poaching and wildlife harassment. Activities associated with recreation and livestock grazing have also contributed to the cumulative impacts on wildlife within the CISA; however, the contribution of these activities is not quantifiable. Oil and gas activity have been present within the CISA for decades and have recently experienced a boom. Within the CISA, approximately 10,672 wells are currently producing, permitted, or shut-in (UDOGM 2014). Disturbance associated with these wells includes vegetation loss for well pads, pipeline, and road construction, as well as any supporting facilities (e.g. compressors, tank batteries, staging areas).

While surface disturbance corresponds to the total amount of direct habitat loss, more accurate calculations of total habitat loss (direct and indirect) are not determinable for wildlife and fishery species in general, as the impacts would be species specific and depend upon:

- The status and condition of the population(s) or individual animals being affected;
- Seasonal timing of the disturbance;
- Value and quality of the habitats;
- Physical parameters of the affected and nearby habitats (e.g., the extent of topographical relief and vegetative cover); and
- The type of surface disturbance.

However, surface disturbance calculations are considered a useful tool for quantifying habitat loss as any direct removal of habitat for transportation infrastructure, mineral development, or other developments would reduce the overall carrying capacity of the CISA. Under the Proposed Action, approximately 451 acres of surface disturbance would occur within areas that may be used by wildlife for habitat. Alternative B would disturb approximately 389 acres of wildlife habitats. Alternative C would result in approximately 461 acres of surface disturbance. Development activities would displace wildlife and preclude wildlife from using areas with more intense human activity. The development of a new transportation corridor

could further interrupt migration routes and would further fragment portions of seasonal ranges for some species. Other indirect impacts could result in increased stress on local wildlife populations within the CISA, which could result in deteriorated physical condition, decreased reproductive success, and nutritional condition due to increased energy expenditure.

#### 4.3.12.1 Greater Sage-grouse

The CISA for the greater sage-grouse is the extent of the occupied habitat that is impacted by the action alternatives. Past, present, and reasonably foreseeable impacts to the CISA include loss of habitat and habitat fragmentation as a result of mineral development, livestock grazing, infrastructure development, and other surface disturbing activities. The Proposed Action would incrementally contribute 288 acres of occupied habitat for the greater sage-grouse. Alternative B would incrementally disturb 227 acres of surface disturbance within the CISA. Alternative C would contribute an additional 298 acres of surface disturbance to occupied greater sage-grouse over the past, present, and reasonably foreseeable impacts to the CISA. As discussed in **Section 4.2.1.12.5.3**, habitat loss in occupied habitat for the greater sage-grouse could extend beyond the disturbance areas as sage-grouse generally avoid areas with heightened noise levels and human activity. The No Action Alternative would not contribute to the loss of occupied greater sage-grouse habitat within the CISA.

The Proposed Action would result in construction within one mile of a known lek location. Increased noise levels and human activity in proximity to leks has been shown to reduce lek attendance, increase nesting distancing from leks, and decrease nest initiation rates for greater-sage grouse (Braun 1986; Lyon and Anderson 2003; Remington and Braun 1991). However, given that this lek has been inactive the past three years, realized impacts would be expected to be minimal. Adverse impacts to the known lek location would also be expected to be minimal under Alternative B and Alternative C, as these ROWs would be constructed further from the lek. No impacts to the known lek would be expected under the No Action Alternative, as no leks occur within 1 mile of their disturbance areas. Implementation of the alternatives when combined with past, present, and reasonably foreseeable development would not likely result in a trend towards federal listing of the greater sage-grouse. This determination is based on the ability of the design feature (and ACEPMs for the Proposed Action) to achieve BLM resource and value objectives offsite, the existing of oil and gas development south of the Project Area, and the inactive status during the past three years for the only nearby lek,

#### 4.3.12.2 Special Status Fish

The CISA for special status fish is Colorado River Basin. Existing depletions to the CISA include, but are not limited to, oil and gas development, municipal water use, irrigation, industrial use, and livestock management. Construction of a new roadway within the CISA would require the use of water for construction and dust suppression activities. Construction under the Proposed Action would require the depletion of 339 acre-feet of water. Detailed engineering designs have not yet been completed for Alternative B, but given the shorter length of overall road, Alternative B is expected to require less water for construction than the Proposed Action and Alternative C. Similar to Alternative B, Alternative C does not yet have final engineering drawings, so the water requirements for construction are not yet known, but it can be assumed that Alternative C would require the greatest amount of water during construction. Depletions to the Colorado River system would inhibit its ability to create and maintain the physical habitat and biological environment necessary for the special status fish species. An incremental increase

in water loss within the Colorado River system could contribute to alterations in flow regimes that favor non-native fish. The No Action Alternative would not impact sensitive fish species through water depletions, as no water would be required.

Implementation of the action alternatives would increase soil erosion and subsequent sedimentation into the Colorado River system due to the removal of vegetation, increased soil exposure, and steepening of exposed soils in areas with cut and fill. The Proposed Action is expected to incrementally increase the sediment loads into the Colorado River system by 99 tons annually. Final engineering drawings for Alternative B and Alternative C have not been completed; therefore, accurate sediment load projections related to these alternatives cannot be determined. For purposes of analysis, these alternatives will be compared to the Proposed Action based off of their total surface disturbance. Implementation of Alternative B would result in disturbance to a total of 389 acres, or 87 percent of the Proposed Action, As such incremental impacts are expected to be 14 percent lower in magnitude than those for the Proposed Action. Alternative C would disturb approximately 461 acres, or 102 percent of the Proposed Action. Impacts from sedimentation on sensitive fish species are expected to be two percent larger in magnitude than those described for the Proposed Action. Increased sediment loads on the Colorado River system degrade aquatic habitats by increasing turbidity and salinity. Under the No action alternative erosion and sedimentation rates within the CISA would be expected to remain at background levels as no construction under the Proposed Project would occur. No impact to these species is anticipated from the No Action Alternative.

Implementation of the alternatives when combined with past, present, and reasonably foreseeable development "***may affect, is likely to adversely affect***" the bonytail, Colorado pikeminnow, humpback chub, and razorback sucker, and their USFWS-designated critical habitats.

#### 4.3.12.3 Bats

The CISA for special status bat species is the County. Within the CISA, past, present, reasonably foreseeable development (mineral exploration, infrastructure development, and agricultural use) has contributed and will continue to contribute to the loss of potential foraging and roosting habitats for bats. As traffic within the CISA is expected to continue to increase in previously undisturbed habitats, roosting sites associated with cliff areas adjacent to proposed routes, such as those along Asphalt Ridge, could be adversely affected and potentially abandoned. Implementation of the alternatives would contribute to the loss of potential prey species and decreased availability and use of certain habitats through displacement, habitat fragmentation, and habitat modification. Construction under the Proposed Action would initially disturb approximately 451 acres of vegetation that could serve as foraging or roosting habitat for bats within in the CISA. Alternative B would have the lowest incremental direct impact on vegetation as it only initially disturbs 389 acres of the CISA, but encroaches upon potentially roost habitat along Asphalt Ridge. Alternative C would represent the largest disturbance to vegetation as 461 acres of potential habitat would initially be disturbed. Impacts to foraging habitat as a result of vegetation loss are anticipated to be negligible due to the generalist diet of most bat species. No impact to these species is anticipated from the No Action Alternative.

Based on the information above, the implementation of either of the action alternatives in conjunction with past, present, and reasonably foreseeable development may adversely affect individual bats, but would not likely result in a trend towards federal listing of the big free-tailed bat,Townsend's big-eared

bat, or spotted bat. Implementation of the action alternatives would not likely result in an appreciable loss of bat populations within the CISA.

#### 4.3.12.4 Special Status Raptor Species

Based on the similarity of impacts to BLM and State listed raptor species, they are discussed together in the cumulative impacts analysis for this project. The CISA for special status raptor species is the Vernal Planning Area. Past and present actions in the CISA (including minerals development, road construction, and livestock improvements among others) have resulted in loss or degradation of foraging, roosting, and nesting habitat for special status raptor species. Construction under the Proposed Action would initially disturb approximately 451 acres of vegetation that could serve as foraging or nesting habitat for raptors. Alternative B would disturb approximately 389 acres of potential nesting and foraging habitat the CISA. Alternative C would represent the largest disturbance to vegetation as 461 acres of nesting and foraging habitat for raptors would initially be disturbed. Increased noise levels, human presence, and light sources in the Project Area from the construction and use of a new roadway could reduce the use of the habitats adjacent to the roadway, decreased breeding density and forage use, and reduce the size of undisturbed swaths of habitat within the Project Area (Reijnen et al. 1995; Stone 2000; Jacobson 2002). Operation of the proposed roadway under either of the three action alternatives would increase the potential for collisions with carrion-feeding raptor species (USFS 2005). No impact to these species is anticipated from the No Action Alternative.

Based on the information above, the implementation of either of the action alternatives in conjunction with past, present, and reasonably foreseeable development may adversely affect individual birds, but would not likely result in a trend towards federal listing of the bald eagle, ferruginous hawk, golden eagle, and short-eared owl. Implementation of the action alternatives would not likely result in an appreciable loss of raptor populations within the CISA.

#### 4.3.12.5 Western Burrowing Owl and White-tailed Prairie Dog

Based on their similarity in habitat, cumulative impacts to the western burrowing owl and white-tailed prairie dog are discussed together. The CISA for these species is the Vernal Planning Area. Past and present actions in the CISA (including minerals development, road construction, and livestock improvements among others) have resulted in loss, degradation, and fragmentation of habitat for the western burrowing owl and white-tailed prairie dog. Disturbance within active prairie dog colonies would remove occupied habitat for the white-tailed prairie dog and also would remove potential nesting habitat for western burrowing owls. The Proposed Action and Alternative C would not result in the incremental loss of any white-tailed prairie dog colonies. Alternative B would disturb approximately 7.3 acres of UDWR mapped white-tailed prairie dog colonies. Colonies established near roadways would be subject to higher levels of noise and human activity, which could deter western burrowing owls from establishing nests in these areas. Construction of the alternatives could increase hunting pressure on white-tailed prairie dogs from increased human visitation to the habitat areas as a result of a new roadway. No impact to these species is anticipated from the No Action Alternative.

Based on the information above, the implementation of either of the action alternatives in conjunction with past, present, and reasonably foreseeable development may adversely affect individual birds, but would not likely result in a trend towards federal listing of the western burrowing owl and white-tailed

prairie dog. Implementation of the action alternatives would not likely result in an appreciable loss of raptor populations within the CISA.

*This page intentionally left blank.*

# 5.0 CONSULTATION AND COORDINATION

## 5.1 INTRODUCTION

CEQ regulations under NEPA require an "early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a Proposed Action" (40 CFR 1501.7). In order to satisfy this CEQ requirement, the BLM requested input from other agencies and the public to determine concerns and issues associated with this EA. A summary of these efforts follows below.

## 5.2 PERSONS, GROUPS AND AGENCIES CONSULTED

**Table 5.2-1** lists those persons, groups, and agencies that were consulted in preparation of this EA.

**Table 5.2-1: Persons, Groups, and Agencies Consulted**

| Name | Purpose & Authorities for Consultation or Coordination | Findings and Conclusions |
|---|---|---|
| SITLA | In May 2014, SITLA accepted an invitation from the BLM VFO to become a cooperating agency on this project. | In May 2014, the Cooperators were invited to review the plant of development to determine potential impacts. In December 2014, the Cooperators were invited to review the preliminary draft EA, and meet regarding their review on January 12, 2015. Their comments and concerns have been considered during the drafting of this EA. Further coordination is ongoing.<br><br>In letter dated October 17, 2014, SITLA expressed support for the Proposed Action, as they do not want the presence of the McCoy Flats Trail System to interfere with development of the proposed AVER (SITLA 2014c). |
| Utah PLPCO | In May 2014, PLPCO accepted an invitation from the BLM VFO to become a cooperating agency on this project. | In May 2014, the Cooperators were invited to review the plan of development to determine potential impacts. In December 2014, the Cooperators were invited to review the preliminary Draft EA, and meet regarding their review on January 12, 2015. Their comments and concerns have been considered during the drafting of this EA. Further coordination is ongoing. |
| USHPO | Section 106 consultation for undertakings as required by the NHPA (16 U.S.C. 470) | Consultation is pending. |

| Name | Purpose & Authorities for Consultation or Coordination | Findings and Conclusions |
|---|---|---|
| USFWS | Informal Section 7 Consultation with the USFWS as the agency with the expertise on impacts to federally listed, proposed, and candidate plant and wildlife species. | Consultation is pending. |
| Native American Indian Tribes | | Consultation is pending. |

## 5.3 SUMMARY OF PUBLIC PARTICIPATION

Public participation for the project was initiated with the posting of a notice on the BLM NEPA Register. This notice informed the public regarding the project, its public scoping period, and its public comment period. On May 12, 2014, the BLM issued a press release announcing a 30-day public scoping period on the proposed project. The press release identified the scoping period as extending from May 12 to June 12, 2014. It also announced a public scoping open house for June 5, 2014 at the Vernal City Offices. The BLM encouraged the public to provide written comments on the proposed project via the following avenues: in person at the scoping meeting or at the BLM VFO; U.S. mail; or email. The BLM received scoping comments from 195 individuals who identified 686 individual issues and concerns, many of them similar in focus, nature, and extent. Copies of the final public scoping report (BLM 2014a) are available at the BLM VFO.

## 5.4 EA PREPARATION AND REVIEW

The Proposed Action and Dog Valley Route Alternatives were largely prepared by CIVCO Engineering, Inc. and its subcontractors on behalf of the County. The Dog Valley Route Alternative (previously known as the Dog Valley 11 route) was originally identified by the UTSSD in 2008, and later dropped from further consideration because the route did not meet the UTSSD's established planning criteria. Specifically, the UTSSD determined the Dog Valley Route Alternative would be too costly and could result in unwanted changes to residents living along Vernal City Street 1500 West. This route was re-evaluated by the BLM in 2014 following the scoping exercise conducted for this EA. At that time, public commenters and BLM specialists identified the Dog Valley Route Alternative as being potentially responsive to the BLM's need, despite its limitations. Although the BLM respects the County's findings regarding the Dog Valley Route Alternative, the BLM determined the Dog Valley Route Alternative was appropriate to be carried forward for detailed analyses in this EA. Alternative C was developed by the BLM and its subcontractors in an effort to avoid adverse impacts to greater sage-grouse.

**Table 5.4-1** lists those staff responsible for the preparation and review of this EA.

**Table 5.4-1: Environmental Assessment Preparers and Reviewers**

| BLM Vernal Field Office | | |
|---|---|---|
| **Name** | **Title** | **EA Responsibilities** |
| Stephanie Howard | Project Lead; Environmental Coordinator | Air Quality & Greenhouse Gas Emissions; Prime and Unique Farmlands; Socio-Economics |
| Leticia Neal | Archaeologist | Cultural (Including Archaeological Resources and Native American Religious Concerns) |
| Betty Gamber | Geologist | Geology (Including Mineral Resources and Energy Production); Paleontology |
| Aaron Roe | Natural Resource Specialist | Invasive Plants and Noxious Weeds Species; Vegetation; BLM Sensitive Plant Species |
| Bill Civish | Natural Resource Specialist | Soils; Recreation; Visual Resources |
| Maggie Marston | Natural Resource Specialist | Vegetation; BLM Sensitive Plant Species |
| Katie White Bull | Natural Resource Specialist | Lands and/or Access |
| Cindy Bowen | Realty Specialist | Lands and/or Access |
| Alec Bryan | Natural Resource Specialist | Livestock Grazing and Rangeland Health Standards |
| Craig Newman | Range Management Specialist | Livestock Grazing and Rangeland Health Standards |
| Jason West | Natural Resource Specialist | Recreation; Visual Resources |
| James Hereford II | Natural Resource Specialist | Water Resources (Including Floodplains, Hydrologic Conditions [Stormwater], and Waters of the U.S) |
| Brandon McDonald | Wildlife Biologist | Wildlife (Including Migratory Birds/Raptors, USFWS-Designated and Non-Designated Wildlife Species |
| **CIVCO Engineering, Inc.** | | |
| **Name** | **Title** | **EA Responsibilities** |
| Troy Ostler | Civil Engineer | Designed Proposed Roadway |
| Bret Reynolds | Civil Engineer | Designed Proposed Roadway |
| **Jones & DeMille Engineering** | | |
| **Name** | **Title** | **EA Responsibilities** |
| Brian Barton | Civil Engineer | Designed Proposed Roadway |
| Michael Hawley | Civil Engineer | Designed Proposed Roadway |
| Adam Perschon | Senior GIS Analyst | GIS |
| **Uintah County** | | |
| **Name** | **Title** | **EA Responsibilities** |
| Adam Massey | Chairman Uintah Transportation Board | Guidance to UTSSD and County Commissioners |
| Mike McKee, Mark Raymond and Darlene Burns | Uintah County Commissioners | Guidance and Direction, Coordination with BLM |

| | | |
|---|---|---|
| Cheri McCurdy | Executive Director, Uintah Transportation Special Services District | Proposed Plan Development |
| Bill Stringer | Uintah County Public Lands Director | Coordination with UTSSD and County Commissioners |
| **Wilkinson Ferrari and Co.** | | |
| **Name** | **Title** | **EA Responsibilities** |
| Kris McBride | Public Relations Specialist | Public Relations and Conducted Public Scoping Meeting |
| Mimi Rogers | Public Relations Specialist | Public Relations and Conducted Public Scoping Meeting |
| **Kleinfelder** | | |
| **Name** | **Title** | **EA Responsibilities** |
| Karen Simpson | Senior Project Manager/ Environmental Planning Team Lead | Project Lead; Quality Review |
| Jean Nitschke-Sinclear | Senior Project Manager | Project Lead; Cultural (Including Archaeological Resources and Native American Religious Concerns); Prime and Unique Farmlands; Geology (Including Mineral Resources and Energy Production); Soils and Vegetation (Including Invasive Plants and Noxious Weed Species, and BLM Sensitive Plant Species); Lands and/or Access; Livestock Grazing and Rangeland Health Standards; Water Resources (Including Floodplains, Hydrologic Conditions [Stormwater], and Waters of the U.S); Technical Review |
| Chuck Cleeves | Resource Specialist | Socioeconomics |
| Melissa Bridendall | Resource Specialist | Recreation; Visual Resources; USFWS-Designated and Non-Designated Wildlife and Fishery Species; Writer-Editor |
| Terry Farmer | Resource Specialist | Recreation |
| Cale Wharry | Resource Specialist | Paleontology; Wildlife (Including Migratory Birds/Raptors) |
| Nicole Peace | GIS Program Manager | GIS |
| Jacob Weber | GIS Analyst | GIS |
| Alex Leonard | GIS Analyst | GIS |

# 6.0 REFERENCES


American Association of State Highway and Transportation Officials (AASHTO). 2006. Road Design Guide, 3rd Edition 2006, with updated Chapter 6.

American Association of State Highway and Transportation Officials (AASHTO). 2011. A Policy on Geometric Design of Highways and Streets, 6th Edition.

Anderson, D.E., O.J. Rongstad, and W.R. Mytton. 1989. Response of Nesting Red-Tailed Hawks to Helicopter Overflights. *The Condor* 91(2):296-299.

Ashley Regional Medical Center. 2012. About Ashley Regional Medical Center. Available at: http://www.avmc-hospital.org/about_us.aspx. Accessed March 7, 2013.

Bingham Research Center. 2013. Available at: http://rd.usu.edu/htm/bingham/. Accessed August 5, 2013.

Braun, C.E. 1986. Changes in Sage-Grouse Lek Counts with Advent of Surface Coal Mining. Proceedings, Issues and Technology in the Management of Impacted Western Wildlife. Thorne Ecological Institute 2:227-231.

Bureau of Indian Affairs (BIA). 2014. Newfield Exploration Company's Exploration and Development Agreement Area #1 Environmental Assessment and Biological Assessment (EA No. U&O-FY13-Q4-133). Uintah and Ouray Agency, Ft. Duchesne, UT 84026. Decision Record and Finding of No Significant Impact dated April 21, 2014. Pages 171 + appendices.

Bureau of Land Management (BLM). 1984. Visual Resource Management. BLM Manual 8400. Washington, D.C.: U.S. Department of the Interior, Bureau of Land Management, Visual Resource Management Program.

_____. 1986a. Visual Resource Inventory. BLM Manual H-8410-1. Washington, D.C.: U.S. Department of the Interior, Bureau of Land Management.

_____. 1986b. Visual Resource Contrast Rating. BLM Manual H-8431-1. Washington, D.C.: U.S. Department of the Interior, Bureau of Land Management.

_____. 1997. "Fundamentals of Rangeland Health and Their Companion Rules: Standards for Rangeland Health and Guidelines for Grazing Management for BLM in Utah." Salt Lake City, UT. Available at: http://www.blm.gov/ut/st/en/prog/grazing/utah_standards_for.htm. Accessed October 27, 2014.

_____. 1998. Paleontological Resource Management. Manual H-8270. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/coop_agencies/paleontology_library.Par.78212.File.dat/h8270-1.pdf. Accessed November 21, 2014.

_____. 2001. National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands. Washington, DC. January 2001.

_____. 2003. The BLM's Priorities for Recreation Visitor Services. BLM Workplan Fiscal Years 2003-2007. United States Department of the Interior, Bureau of Land Management. Dated May 2003.

_____. 2004. "Final Mineral Report, Mineral Potential Report for the Vernal Planning Area Encompassing Approximately 5.1 Million Acres, Duchesne, Daggett, Uintah, and Grand Counties, Utah". Bureau of Land Management, Salt Lake City, UT. Pages 50.

_____. 2005. Bureau of Land Management Vernal Field Office Draft Resource Management Plan and Environmental Impact Statement, Appendix L. Washington, DC. January 2005.

_____. 2006a. Resource Development Group Uinta Basin Natural Gas Project Final Environmental Impact Statement. UT-080-2003-0300V. Vernal, Utah: U.S. Department of the Interior, Bureau of Land Management, Vernal Field Office.

_____. 2006b. EOG Resources, Inc., Chapita Wells/Stagecoach Area Final Environmental Impact Statement (UTU-080-2005-0010 FES 07-50). Vernal Field Office, Vernal, Utah. Dated May 2007, modified in 2008. Pages 257+appendices.

_____. 2007a. Potential Fossil Yield Classification (PFYC) System. Instruction Memorandum No. 2008-009, Attachment 1. United States Bureau of Land Management, Washington D.C. Office. Available at: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/20080/im_2008-009.html. Accessed October 30, 2014.

_____. 2007b. Gasco Production Company's Wilkin Ridge Exploratory Drilling Project. Draft Environmental Assessment UT-080-2006-329. Vernal Field Office, Vernal, Utah.

_____. 2008a. Vernal Field Office Record of Decision and Approved Resource Management Plan. Vernal Field Office, Utah, October 2008.

_____. 2008b. BLM National Environmental Policy Act Handbook H-1790-1.

_____. 2008c. Proposed Resource Management Plan and Final Environmental Impact Statement, Vol. 4. BLM-UT-PL-08-006-1610, UT-080-2005-071, FES-08-34. Salt Lake City, UT. August 2008.

_____. 2011a. BLM Washington Instruction Memorandum (IM) No. 2012-043, Greater Sage-Grouse Interim Management Policies and Procedures.

_____. 2011b. BLM Washington Instruction Memorandum (IM) No. 2012-044, BLM National Greater Sage-grouse Land Use Planning Stategy.

_____. 2012a. Gasco Energy, Inc., Uinta Basin Natural Gas Development Project FEIS, Volume 1. Green River District Office, Vernal, UT. March 2012, Pages 220.

_____. 2012b. Decision Record and Final EA for the McCoy Flats Trail System. DOI-BLM-G010-2012-0057. Vernal Field Office, UT. October 2012.

_____. 2013a. Approved Land Use Plan Amendments/Records of Decision for Allocation of Oil Shale and Tar Sands Resources on Lands Administered by the Bureau of Land Management in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement. Washington, DC. March 2013.

_____. 2013b. BLM Washington Instruction Memorandum (IM) No. 2013-142. Interim Policy, *Draft – Regional Mitigation* Manual Section – 1794.

_____. 2013c. Draft Environmental Impact Statement for Newfield Development Corporation Monument Butte Oil and Gas Development Project in Uintah and Duchesne Counties, Utah. UT-G010-2009-0217. December 2013.

_____. 2014a. Public Scoping Report, BLM Environmental Assessment, Ashley Valley Energy Route. Vernal Field Office, Utah, July 2014.

_____. 2014b. GIS Data for Oil and Gas and Tar Sand Leased Areas. Vernal Field Office, Utah. Received September 25, 2014 and October 1, 2014.

_____. 2014c. BLM - LR2000 online database and Master Title Plats, accessed October 6-9, 2014.

_____. 2014d. Utah State Office GIS Data for Livestock Grazing. Downloaded September 23, 2014.

_____. 2014e. Vernal Field Office GIS Data for Paleontology. Received from J. Kyle Smith September 25, 2014.

_____. 2014f. Vernal Field Office GIS Data for McCoy Flats Non-motorized Trail System. Received from J. Kyle Smith November 21, 2013.

_____. 2014g. Utah State Office GIS Data for Visual Resources. Downloaded September 23, 2014.

_____. 2014h. Vernal Field Office GIS Data for Raptors. Downloaded September 25, 2014.

_____. 2014i. Utah State Office GIS Data Greater Sage-grouse. Downloaded September 24, 2014.

Bureau of Land Management and U.S. Forest Service (BLM and USFS). 2013. Utah Greater Sage-grouse Draft Land Use Plan Amendment and Environmental Impact Statement. Utah State Office, October 2013.

California Department of Transportation (California DOT). 2006. California Bypass Study – The Economic Impact of Bypasses, Volume 1: Planning Reference. May 2006.

Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.

D'Eon, R. G. and R. Serrouya. 2005. Mule Deer Seasonal Movements and Multi-Scale Resource Selection using Global Positioning System radiotelemetry. *Journal of Mammalogy* 86:736–744.

DeNavas-Walt, C. et. al. 2012. Income, Poverty, and Health Insurance Coverage in the United States: 2011. Carmen DeNavas-Walt, B. D. Proctor, J. C. Smith. United States Census Bureau. Available at: http://www.census.gov/prod/2012pubs/p60-243.pdf. Accessed March 5, 2013.

Federal Emergency Management Agency (FEMA). 2014. FEMA National Flood Hazard Layer. Digital Version. Downloaded March 20, 2014.

Fitzgerald, J.P., C.A. Meany, and D.M. Armstrong. 1994. Mammals of Colorado. Denver Museum of Natural History and University Press of Colorado. Niwot, Colorado.

Forman, R.T.T., and L.W. Alexander. 1998. "Roads and Their Major Ecological Effects." Annual Review of Ecology and Systematics. Vol. 29. Pp. 207-231.

Gelbard, J., and J. Belnap. 2003. "Roads as conduits for exotic plant invasions in a semiarid landscape." J. Soc. Conserv. Biology 17(2): 420-432.

Gordon, K.M., K.C. Keffer, and S.H. Anderson. 2003. Impacts of Recreational Shooting on Black-tailed Prairie Dog Behavior, Population, and Physiology. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming. Laramie, Wyoming.

Gunther, K., M. Biel, and H. Robinson. 1998. Factors Influencing the Frequency of Road killed Wildlife in Yellowstone National Park. In: Evink, G.L., P. Garrett, D. Zeigler, and J. Berry (eds.). Proceedings of the International Conference on Wildlife Ecology and Transportation: 32–42. Fort Myers, FL. FL-ER-69-98. Florida Department of Transportation, Tallahassee, FL.

Jacobson, S.L. 2002. Mitigation Measures for Highway-caused Impacts to Birds. USDA Forest Service, Redwood Sciences Laboratory, Pacific Southwest Research Station. Available at: http://www.fs.fed.us/psw/publications/documents/psw_gtr191/psw_gtr191_1043-1050_jacobson.pdf. Accessed November 24, 2014.

Ingelfinger, F.M. 2001. The Effects of Natural Gas Development on Sagebrush Steppe Passerines in Sublette County, Wyoming. M.S. Thesis, University of Wyoming, 110 pp.

James, L.F., J.O. Evans, M.H. Ralphs, and R.D. Child (editors). 1991. Noxious Range Weeds. Westview Press. Boulder, Colorado.

Johnsgard, P.A. 2002. *North American Owls: Biology and Natural History*. Smithsonian Institute Press, Washington.

Kleinfelder, Inc. (KLF) 2014a. "CIVCO Engineering's Weed Survey for the Ashley Valley Energy Route. Uintah County, Utah." Denver, CO. Report 138501/LIT14R10973. December 16, 2014.

_____. 2014b. "CIVCO Engineering's Vegetation and Raptor Surveys for the Ashley Valley Energy Route, Uintah County, Utah." Denver, CO. Report 20150543/LIT14R0547. December 16, 2014.

Korve Engineering. 2007. "Final SR – 40 Alternate Truck Route Study Traffic Volume Analysis." Korve Engineering, A Division of DMJM Harris, Midvale, UT. DMJM Harris Project No. 60021776. Dated May 21, 2007. Pages 20 + figures.

Leong, D. and G. Weisbrod. 2000. Summary of Highway Bypass Studies. December 2000.

Lyon, A. G. and S. H. Anderson. 2003. Potential Gas Development Impacts on Sage-Grouse Nest Initiation and Movement. Wildlife Society Bulletin 31:486-491.

Maxfield, B., Wildlife Conservation Biologist, Utah Division of Wildlife Resources. Personal Communication with S. Florin, Staff Professional II, Kleinfelder, Inc., October 6, 2014.

McGinty, Ellie Leydsman, compiler. 2009. Rangeland Resources of Utah. Utah State University-Cooperative Extension Services and State of Utah Governor's Public Lands Policy Coordination Office. Logan, Utah. State of Utah Control No. 080720, USU Control No. 080300. Pages 153-156.

Montgomery Archaeological Consultants (MOAC). 2015. "Cultural Resource Inventory of the Proposed Ashley Valley Energy Route for CIVCO Engineering, Uintah County, Utah." Prepared by Jacki A. Montgomery, Jody J. Patterson and Amy Ackman, P.O. Box 219, Moab, UT 84532. Report No. MOAC 13-355, Revised. Dated May 25, 2015. Pages 59, plus appendices.

Naugle, D.E., K.E. Doherty, and B.L. Walker. 2006. Sage-Grouse Winter Habitat Selection and Energy Development in the Powder River Basin: Completion Report. June 24, 2006. 23 pp.

Noss, R.F. and A.Y. Cooperrider. 1994. Saving Nature's Legacy: Protecting and Restoring Biodiversity. Defenders of Wildlife and Island Press, Washington, D.C.

Parrish, J.R., F.P. Howe, and R.E. Norvell. 2002. "Utah Partners in Flight Avian Conservation Strategy Version 2.0". Utah Partners in Flight Program, Utah Division of Wildlife Resources, 1594 West North Temple, Salt Lake City, UT 84116, UDWR Publication Number 02-27. i–xiv + 302 pp.

Reijnen, R., R. Foppen, C. T. Braak, and J. Thissen. 1995. The Effects of Car Traffic on Breeding Bird Populations in Woodland, III. Reductions of Density in Relation to Proximity of Main Roads. Journal of Applied Ecology 32: 187-202.

Renfrew, R.B., C.A Ribic, J.L. Knack. 2005 Edge Avoidance by Nesting Grassland Birds: a Futile Strategy in a Fragmented Landscape. The Auk 122(2): 618-636.

Remington, T.E. and C.E. Braun. 1991. How Surface Coal Mining Affects Sage-Grouse, North Park, Colorado. Proceedings, Issues and Technology in the Management of Impacted Western Wildlife. Thorne Ecological Institute 5:128-132.

Rodriguez-Estrella, R., J.A. Donazar, and F. Hiraldo. 1998. Raptors as indicators of environmental change in the scrub habitat of Baja California Sur, Mexico. Conservation Biology, Vol 12, No. 4 (August 1998): 921-925.

Romin L. and J. Muck. 2002. Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances. U.S. Fish and Wildlife Service. Salt Lake City, Utah.

Sawyer, H., R. Nielson, D. Strickland, and L. McDonald. 2006. 2006 Annual Report. Sublette Mule Deer Study (Phase II): Long-term Monitoring Plan to Assess Potential Impacts of Energy Development on Mule Deer in the Pinedale Anticline Project Area. Western Ecosystems Technology, Inc. Cheyenne, WY. 101pp + appendices.

School and Institutional Trust Lands Administration (SITLA). 2014a. GIS Data for Oil and Gas and Tar Sand Leased Areas. Received September 23, 2014.

_____. 2014b. Recreational Use of Trust Lands." Available at http://trustlands.utah.gov/business-groups/surface/recreational-use-of-trust-lands/. Accessed September 18, 2014.

_____. 2014c. Kevin Carter, SITLA Director, Written Correspondence to Mike Stiewig, Acting District Manager at the BLM Green River District. Salt Lake City, Utah, October 17, 2014.

Seglund, A.E., A.E. Ernst, M. Grenier, B. Luce, A. Puchniak, and P. Schnurr. 2004. White-tailed Prairie Dog Conservation Assessment.

Smith, Michael D., R.S. Krannich and L.M. Hunter. 2001. Growth, Decline, Stability, and Disruption: A Longitudinal Analysis of Social Well-Being in Four Western Rural Communities. *Rural Sociolog*y 66(3):425-450.

Steidl, R.J. and R.G. Anthony. 2000. Experimental Effects of Human Activity on Breeding Bald Eagles. Ecological Applications, Vol. 10, No. 1. (February, 2000) pp. 258-268.

Stone, E. 2000. Separating the Noise from the Noise: A Finding in Support of the "Niche Hypothesis," that Birds are Influenced by Human-induced Noise in Natural Habitats. Anthrozoos 13(4): 225-231.

Tileston, J.V., and R.R. Lechleitner. 1966. Some Comparisons of the Black-tailed and White-tailed Prairie Dogs in North-central Colorado. *The American Midland Naturalist* 75(2):292-316.

U.S. Bureau of Economic Analysis (BEA). 2014a. Regional Data, GDP and Personal Income Summary for Utah in 2011. Available at: http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=3#reqid=70&step=1&isuri=1. Accessed February 28, 2013.

_____. 2014b. Regional Data, GDP and Personal Income Summary for Uintah County from 2008-2011. Available at:

http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=3#reqid=70&step=1&isuri=1. Accessed February 28, 2013.

U.S. Census Bureau. 2000. Profile of General Demographic Characteristics: 2000 Census (DP-1). Available at: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed March 1, 2013.

_____. 2010a. 2010 U.S. Census. Available at: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

_____. 2010b. 2010 Census Briefs - Overview of Race and Hispanic Origin: 2010. Prepared by Karen R. Humes, Nicolas A. Jones and Roberto R. Ramirez. Brief number: C2010BR-02. Available at: http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf. Accessed March 4, 2013.

_____. 2013a. Demographic and Housing Estimates 2007-2011 American Community Survey 5-Year Estimates (DP05). Available at: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed November 6, 2014.

_____. 2013b. Selected Economic Characteristics in the United States 2008-2012 American Community Survey 5-Year Estimates (DP03). Available at: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed November 6, 2014.

_____. 2013c. Selected Housing Characteristics in the United States - 2007-2011 American Community Survey 5-Year Estimates (DP04). Available at: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed November 6, 2014.

_____. 2014. State and County QuickFacts. Available at: http://quickfacts.census.gov/qfd/states/49/49047.html. Revised July 8, 2014.

U.S. Department of Agriculture – National Agricultural Statistics Service (USDA-NASS). 2014. "Quick Statistics – Hay Production in Uintah County, Utah, 2012). Available at: http://www.nass.usda.gov/Quick_Stats/Lite. Accessed November 17, 2014.

U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS). 2003. Soil Survey of Uintah Area, Utah – Parts of Daggett, Grand and Uintah Counties. Published by the National Cooperative Soil Survey, Washington, DC. Pages 1,450.

_____. 2014. Web Soil Survey – Soil Survey Geographic database (SSURGO). Data downloaded September 22, 2014.

U.S. Fish and Wildlife Service (USFWS). 2014. Beginner's Guide to Greater Sage-grouse – Greater Sage-grouse Conservation Primer Series, Primer #1. Accessed online: http://www.fws.gov/greatersagegrouse/factsheets/Primer1-SGBeginnersGuide.pdf.

_____. 2014b. Critical Habitat Portal. Available at: http://criticalhabitat.fws.gov/. Accessed November 20, 2014.

U.S. Forest Service (USFS). 2004. *Restoring Western Ranges and Wildlands*, Vol 1. Rocky Mountain Research Station. Gen Tech Rept. RMRS-GTR-136-Vol 1. September 2004. Pages 294.

_____. 2005. A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions. Technical Report PSW-GTR-191. Authored by Erickson, W.P.; Johnson, G.D.; and Young. D.P. Available at: http://www.fs.fed.us/psw/publications/documents/psw_gtr191/Asilomar/pdfs/1029-1042.pdf. Accessed November 24, 2014.

Uinta Paleontological Associates, Inc. (Uinta Paleo). 2014. Paleontological Existing Data and Field Survey Report for the Proposed Alternate Truck Route AKA Ashley Valley Energy Route Project (AVER). Prepared April 28, 2014.

Uintah Basin Applied Technology College (UBATC). 2013. Available at: http://www.ubatc.edu/. Accessed August 5, 2013.

Uintah Basin Healthcare. 2012. Available at: http://www.ubmc.org/getpage.php?name=index. Accessed April 2012.

Uintah County. 2005. Uintah County General Plan, as amended in 2012. Uintah County, Utah.

_____. 2011. Uintah County Land Use Plan 2010. Amended September 26, 2011 and November 28,

2011. Prepared by Berg Engineering and Uintah County.

_____. 2013. Uintah County Departments website. Available at: http://co.uintah.ut.us/. Accessed March 7, 2013.

Uintah County Economic Development. 2013. Uintah County Demographics. Available at: http://vernalutah.org/?option=com_content&view=section&layout=blog&id=7&Itemid=41. Accessed August 5, 2013.

Uintah County Emergency Management. 2013. Local Fire Departments Page. Available at: http://www.co.uintah.ut.us/em/firedepts.php. Accessed March 7, 2013.

Uintah County School District. 2012. Uintah School District – Dashboard Report December, 2012. Available at: http://www.uintah.net/documents/Dashboard%20Report%20April%202014%20-%20web%20version.

Uintah Recreation District. 2014. Uintah Recreation District – Where Fun Comes Naturally. Available at: http://www.uintahrecreation.org. Accessed December 17, 2014.

Utah Association of Realtors. 2011. Quarterly Activity by County Quarter 4-2011. Available at: http://utahrealtors.com/news-center/housing-statistics/quarterly-reports/. Accessed March 7, 2013.

_____. 2012. Quarterly Activity by County Quarter 4-2012. Available at: http://utahrealtors.com/news-center/housing-statistics/quarterly-reports/. Accessed March 7, 2013.

_____. 2013. State County-by-County Summary, Local Market Updates by County, June 2013. Available at: http://utahrealtors.com/news-center/housing-statistics/state-summary/. Accessed August 5, 2013.

Utah Automated Geographic Resource Center (Utah AGRC). 2013. Surface Land Ownership Data. Available at: http://gis.utah.gov/. Accessed September 27, 2013.

Utah Department of Corrections. 2013. Uintah County Jail. Available at: http://corrections.utah.gov. Accessed March 7, 2013.

Utah Department of Environmental Quality (UDEQ). 2008. Authorization to Discharge under the Utah Pollutant Discharge Elimination System-Storm Water General Permit for Construction Activities, Permit No. UTR3000000. Division of Water Quality. Available at: http://www.waterquality.utah.gov/UPDES/stormwater/documents/GeneralConstruction Permit UT R300000t.pdf. Accessed November 7, 2014.

Utah Department of Natural Resources-Division of Water Resources (UDNR-DWaR). 1999. Utah State Water Plan: Uintah Basin. Salt Lake City, Utah. Dated December 1999. Pages 213. Available at: http://www.water.utah.gov/planning/SWP/Uintah/Uintah1999.pdf. Accessed September 25 2014].

Utah Department of Public Safety. 2012. 2011 Crime in Utah Report. Available at: http://publicsafety.utah.gov/bci/documents/Crime_In_Utah_20111.pdf.

_____. 2013. 2012 Crime in Utah Report. Available at: http://publicsafety.utah.gov/bci/documents/Crime_In_Utah_2012.pdf.

Utah Department of Transportation (UDOT). 2012. Standard Specifications and Standard Drawings for Road and Bridge Construction. Available at: http://www.udot.utah.gov/. Accessed November 18, 2014.

Utah Department of Workforce Services (UDWS). 2012. Utah Annual Report of 2011 Labor Market Information, 2011 Calendar Year. Published October 2012. Available at: http://jobs.utah.gov/department/index.html#annualReport.

_____. 2013. Utah Department of Workforce Service Online Blog. Available at: http://jobs.utah.gov/blog/. Accessed November 21, 2014.

_____. 2014. Labor Force Data – Historical Data (Not Seasonally Adjusted) – Uintah County. Available at: http://jobs/utah/gov/jsp/wi/utalmis/countyhistdata.do. Accessed November 7, 2014.

Utah Division of Oil, Gas and Mining (UDOGM). 2014. GIS Well Count Data for CISA. Available at: http://linux1.ogm.utah.gov/WebStuff/wwwroot/division/tabs.html. Accessed: November 11, 2014.

Utah Division of Wildlife Resources (UDWR). 2005. Utah Comprehensive Wildlife Conservation Strategy – Effective October 1 2005-2015. Publication No. 05-19.

_____. 2008. Statewide Management Plan For Mule Deer. Utah Division Of Wildlife Resources. Available at: http://wildlife.utah.gov/hunting/biggame/pdf/mule_deer_plan.pdf. Accessed November 6, 2008.

_____. 2009. Utah Pronghorn Statewide Management Plan. Utah Division Of Wildlife Resources, Department Of Natural Resources. Available at: http://wildlife.utah.gov/hunting/biggame/pdf/Statewide_prong_mgmt_2009.pdf. Accessed November 6, 2008.

_____. 2011. Utah's State Listed Species by County. Last updated March 29, 2011. Available at: http://dwrcdc.nr.utah.gov/ucdc/viewreports/sscounty.pdf. Accessed November 15, 2014.

_____. 2013. Utah Upland Game Annual Report 2012-13. Publication No. 13-19. State of Utah Natural Resources, Division of Wildlife Resources. Prepared by Bernales, H.; Robinson, J.D.; and Stringham, B. Available at: http://wildlife.utah.gov/uplandgame/annualreports/2012.pdf. Accessed November 6, 2008.

_____. 2014a. Widllife Habitat Data. Downloaded Sage-grouse (April 30 and November 3, 2014); Mule Deer, Elk, and Pronghorn (September 22, 2014); Prairie Dog Colonies (September 25, 2014); Ring-necked Pheasant and Wild Turkey (November 3, 2014).

_____. 2014b. Utah Big Game Annual Report 2013. Utah Department of Natural Resources, Division of Wildlife Resources. Publication Number 14-22. Prepared by Bernales H., Hersey K.R., and Shannon, J. Available at: http://wildlife.utah.gov/hunting/biggame/pdf/annual_reports/13_bg_report.pdf. Accessed November 6, 2014.

_____. 2014c. Utah Conservation Data Center. State of Utah Department of Natural Resources, UDWR Salt Lake City, Utah. Available at: http://dwrcdc.nr.utah.gov/ucdc. Accessed November 24, 2014.

Utah Economic Council. 2014. 2014 Utah Economic Outlook. Collaboration of the Governor's Office of Planning and Budget and Bureau of Economic and Business Research of the University of Utah.

Utah Geological Survey (UGS). 2014. Geologic Map of Vernal 30'x60' Quadrangle. Downloaded 9/23/2014.

Utah Governor's Office of Planning and Budget (UGOPB). 2012. 2012 Economic Report to the Governor. Demographic and Economic Analysis Division. November 2012.

_____. 2014. 2012 Baseline City Population Projections, 2010-2060. Available at: http://gomb.utah.gov/budget-policy/demographic-economic-analysis/. Accessed November 6, 2014.

Utah State Tax Commission. 2012. Utah Property Tax 2011 Annual Statistical Report. Prepared by Property Tax Division. August 1, 2012.

_____. 2013a. Utah Property Tax 2012 Annual Statistical Report. Prepared by Property Tax Division. August 1, 2013.

_____. 2013b. Utah Property Tax 2012 Annual Statistical Report. Prepared by Property Tax Division. August 1, 2013.

_____. 2013c. Utah Code Title 59, Chapter 12, Sales & Use Tax Act, Combined Sales and Use Tax Rates spreadsheet. Rates effective July 1, 2013.

_____. 2014a. Utah Property Tax 2013 Annual Statistical Report. Prepared by Property Tax Division. August 1, 2014.

_____. 2014b. Utah State Tax Commission Annual Report, 2012-2013 Fiscal Year. January 1, 2014.

Utah Weed Control Association (UWCA). 2009. "Utah's Noxious Weed List." Available at: http://www.utahweed.org/index.htm. Accessed April 24, 2013.

Watson, M.L. 2005. Habitat Fragmentation and the Effects of Roads on Wildlife And Habitats. New Mexico Department of Game and Fish, Conservation Services Division. Available at: http://www.wildlife.state.nm.us/conservation/habitat_handbook/documents/2004EffectsofRoadsonWildlifeandHabitats.pdf. Accessed November 6, 2014.

Wodraska, Lya. 2014. "Vernal Has Growing System of Trails, but for How Long?" Salt Lake Tribune, August 12, 2014. Available at http://www.sltrib.com/sltrib/outdoors/58263282-117/trails-area-vernal-trail.html.csp. Accessed November 18, 2014.

*This page intentionally left blank.*

# APPENDIX A –
# BLM INTERDISCIPLINARY TEAM CHECKLIST

*This page intentionally left blank.*

# INTERDISCIPLINARY TEAM CHECKLIST

**Project Title**: Ashley Valley Energy Route

**NEPA Log Number**: DOI-BLM-UT-G010-2014-0077-EA

**File/Serial Number**: UTU69125-76

**Project Leader**: Stephanie Howard

**DETERMINATION OF STAFF:** ***(Choose one of the following abbreviated options for the left column)***

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

| Determination | Resource/Issue | Rationale for Determination | Signature | Date |
|---|---|---|---|---|
| **RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)** | | | | |
| NI | Air Quality & Greenhouse Gas Emissions | Dust and other emissions would occur from vehicles during construction and use of the road. However, impacts from emissions are expected to be short term (during construction only) and indistinguishable from background emissions as measured by monitors or predicted by models. Emissions will occur from vehicles using the road, but those vehicles will not be an increase in traffic because the road is not a new destination, just a new location for the existing traffic to occur.<br><br>Greenhouse gas emissions: No greenhouse gas standards have been established by EPA or other regulatory authorities. The assessment of greenhouse gas emissions and climate change is in its earliest stage. Global greenhouse gas models can be inconsistent, and localized models are lacking. Consequently, it is not technically feasible to quantify the net impacts to climate based on local greenhouse gas emissions. It is anticipated that greenhouse gas emissions associated with this action and its alternative(s) would be negligible because no such communities are present, and the road would be available to all for use, although use by commercial and/or hazmat would be targeted. | Stephanie Howard | 5/30/2014 |
| NP | BLM Natural Areas | None Present as per GIS and RMP layer review | Jason R. West | 8/2/2013 |
| PI | Cultural: Archaeological Resources | A class I survey for the project area, and a class III survey for the proposed action has been completed. Al alternatives have the potential to impact historic properties. | Stephanie Howard | 5/26/2015 |
| NI | Cultural: Native American Religious Concerns | No Native American Religious Concerns have been identified to date. The Project will not restrict Native American access to traditional cultural properties. Coordination is ongoing. | Stephanie Howard | 5/26/2015 |
| NP | Designated Areas: Areas of Critical Environmental Concern | None Present as per Vernal RMP | Jason West | 8/2/2013 |

| Determination | Resource/Issue | Rationale for Determination | Signature | Date |
|---|---|---|---|---|
| NP | Designated Areas: Wild and Scenic Rivers | None Present as per the Vernal RMP | Jason West | 8/2/2013 |
| NP | Designated Areas: Wilderness Study Areas | None Present as per the Vernal RMP | Jason West | 8/2/2013 |
| NI | Environmental Justice | Minority or economically disadvantaged communities or populations would not be disproportionately adversely affected by the proposed action or alternatives. | Stephanie Howard | 5/30/2014 |
| PI | Farmlands (prime/unique) | Irrigated prime farmland as identified by the NRCS is present on private land in the project area. This is a non-federal connected action. | Stephanie Howard | 5/30/2014 |
| NI | Fuels/Fire Management | No impact to fuels projects would occur. The project would not hinder fire management activities. | | |
| PI | Geology/Minerals/Energy Production | Project would impact tar sands along Asphalt Ridge. It could expose the tar sand deposit which might be beneficial in providing more information about the thickness of the deposit, but it could also cause loss of some tar sand resources. Any tar sands removed could potentially be used in the road construction. This road project crosses the Duchesne River Formation, Mesaverde Formation, Mancos Formation and Quaternary Alluvium. | Betty Gamber | 8/12/2013 |
| IPNW: PI<br><br>Soils: PI<br><br>Veg: PI | Invasive Plants/Noxious Weeds, Soils & Vegetation | IPNW: Surface disturbance creates the potential for the spread or introduction of noxious and invasive plants. Weed survey needed. As part of the reclamation plan will need an invasive weed plan in accordance with District guidelines.<br><br>Soils: Disturbance to soils would occur with new road construction. Reclamation must meet the Green River District Reclamation Guidelines. Seed-mixes for reclamation in Horseshoe and Hamilton milkvetch habitat should not include non-native species that may persist.<br><br>Veg: Surface disturbance will impact native vegetation. | IPNW: Aaron Roe<br><br>Soils: Bill Civish<br><br>Veg: Aaron Roe<br><br>M. Marston | 8/12/2013<br><br>6/2/2014 |
| PI? | Lands/Access | The proposed road is subject to all valid existing rights.<br>At the present time there is no road in existence.<br>Uintah Transportation District wants to secure these lands for development of the Ashley Valley Energy Route (AVER).<br>There are three power lines that the AVER would cross or parallel. The proponent would need to take into account the power line heights and pole placement and coordinate with the power company as necessary.<br>The AVER would cross the Highland Canal, which may or may not be impacted depending on the type of crossing proposed.<br>The AVER crosses Highway 45, and several County claimed B and D class roads. These other roads may or may not be impacted. (The POD states that Existing dirt roads and some paved roads will be reconstructed as the alignment of the new roadway impacts them. This cannot be done without a ROW on those existing roads). | Katie White Bull | 6/2/14 |

| Determination | Resource/Issue | Rationale for Determination | Signature | Date |
|---|---|---|---|---|
| | | The AVER would bisect private lands. The County would have to reach an agreement with private land owners for those areas where the route crosses between private and federal lands.<br><br>Would the ingress/egress on each end of AVER include the construction of turning lanes on HWY 40?<br>Would the AVER close or prohibit access to Uintah County claimed roads in the area?<br>It is unclear on what type of crossing is proposed at the intersection with Highway 45.<br>It is unclear what type of crossing is proposed at the Highland Canal. | | |
| NP | Lands with Wilderness Characteristics (LWC) | None Present as per Vernal RMP | Jason West | 8/2/2013 |
| PI | Livestock Grazing & Rangeland Health Standards | The proposed truck route would pass through three active cattle allotments, Rich and Stetson , McCoy Flat, and Twelve Mile. Livestock on the roadway would pose a risk to public safety. Fencing of both sides of the road to keep livestock off of the roadway would improve public safety. A water development is in the way of the proposed alignment.<br><br>The project would not have an impact on Rangeland Health Standards and Guidelines. | Alec Bryan<br>(Rich & Stetson and McCoy Flat)<br>&<br>Craig Newman<br>(Twleve Mile) | |
| PI | Paleontology | A paleontological survey of the ROW will need to be performed to determine what paleo resources may be affected. | Betty Gamber | 8/5/2013 |
| PI | Plants:<br>BLM Sensitive | As per GIS layers and preliminary site surveys conducted July 2014, the following UT BLM sensitive plant species have potential habitat within the project area: *Astragalus hamiltonii* and *Astragalus equisolensis. Yucca sterilis* has potential to occur in the area, however preliminary surveys did not identify suitable habitat for this species, and given the clonal nature of the species the potential for future colonization is negligible.<br><br>Seed-mixes for reclamation in Horseshoe and Hamilton milkvetch habitat should not include non-native species that may persist.<br><br>Additional BLM Sensitive species are precluded based on VFO GIS layers, known habitat information that includes elevation/soils and geology queries, and currently known BLM Sensitive plant locations. | Aaron Roe/M. Marston<br>Jessica Brunson | 6/2/2014<br>5/29/2015 |
| NP | Plants:<br>Threatened, Endangered, Proposed, or Candidate | A review of field office GIS layers revealed no known occurrences of Threatened, Endangered, Candidate or Proposed Species populations or potential/suitable habitat in or near the project area. In addition, preliminary site surveys conducted in July 2014 did not identify potential habitat for any TEPC plant species. | Aaron Roe<br><br>Maggie Marston<br><br>Jessica Brunson | 6/2/2014<br><br><br>5/29/2015 |
| NP | Plants:<br>Wetland/Riparian | No wetland or riparian areas are present in the project area as per review of the office GIS files and preliminary field review. | Jessica Brunson | 5/29/2015 |

| Determination | Resource/Issue | Rationale for Determination | Signature | Date |
|---|---|---|---|---|
| PI | Recreation | Designated Mountain Bike trail system (McCoy Flats) 2012. 56 miles of high use, regionally significant mountain bike system. Special recreation permit use for proposed dualthalon, bike racing, and a major mountain bike festival take place directly in or adjacent to the proposed route. Development investment includes full trailhead construction, including a large pavilion, shade structure, interpretive signing, vault toilet, cattle guards etc. The VFO has provided support letters to Uintah County in behalf of the grant efforts. Signed Memorandum of Understanding with SITLA recognizing the trail system (2012). Publicity for the trail system has been wide spread including Moutain bike magazine (National and International readership), At Your Leisure television program, local and regional news stories. | Jason West | 8/2/2013 |
| PI | Socio-Economics | Economics: Proposed action will create an alternate route for trucks currently going through Vernal, possibly reducing visitation of travelers (local or not) to local stores, or resulting in competition associated with new stores along the route on private or state land.<br>Social: Currently hazardous materials are being trucked through town. Any accidents involving the trucks hauling these materials would present a risk to public health and safety. The proposed action is designed to get this traffic off Vernal Main Street. | Stephanie Howard | 5/30/2014 |
| PI | Visual Resources | VRM III and VRM IV lands existing within the project area. | Jason West | 3/2/2013 |
| NI | Wastes (hazardous/solid) | No hazardous waste sites are present in the project area, so no impact will occur. No chemicals subject to reporting under SARA Title III in amounts greater than 10,000 pounds would be used, produced, stored, transported, or disposed of annually in association with the project. Trash and other waste materials would be cleaned up and removed immediately after completion of operations. | Stephanie Howard | 5/30/2014 |
| PI | Water: Floodplains | The proposed project is near the 12 Mile Wash 100 year floodplain as determined by GIS and on the ground investigation in the area. This could see indirect and direct impacts during the construction phase of the project. Storm water protection should be implemented to help reduce potential concerns with floodplain impacts including but not limited to an engineered design of the road that shows how these potential concerns will be resolved. | James Hereford II | 6/5/2014 |
| NI | Water: Groundwater Quality | Groundwater would not be impacted because the proposed project is for surface use. | Betty Gamber | 8/5/2013 |
| PI | Water: Hydrologic Conditions (stormwater) | Hydrologic conditions in the area consist of many dry ephemeral washes, low to moderate slopes, very saline and clay soils. These soils are prone to erosion during storm water runoff events, due to the low permeability rates of clay soils in the area and the size of the channels. The proposed action will also cross many of the ephemeral washes along the proposed route. These should be identified and controls should be put in place to control flow and reduce erosion | James Hereford II | 6/5/2014 |

| Determination | Resource/Issue | Rationale for Determination | Signature | Date |
|---|---|---|---|---|
| | | during stormwater events. Its recommended that applicant commits to a engineered road design and storm water control plan that addresses drainages and sites in the proper mechanism to reduce potential erosion concerns. | | |
| NI | Water: Surface Water Quality | Surface water quality will not be affected by the current proposed action. The area is mainly dry ephemeral washes that flash during strong storm events. No perennial surface waters exist on the proposed action. | James Hereford II | 6/5/2014 |
| PI | Water: Waters of the U.S. | Waters of the U.S. have the potential to see indirect impacts from the current proposed action. The proposal falls with the Lower Green Hydrologic Unit Boundary as identified through GIS data. It is recommended that company consults with EPA and develops a storm water plan that addresses erosion concerns and how to reduce those through proper BMPs. | James Hereford II | 6/5/2014 |
| NP | Wild Horses | There are no designated wild horse management areas within the project area. | | |
| PI | Wildlife: Migratory Birds (including raptors) | Project is located within migratory bird nesting and foraging habitat. Project is not located within a Bird Habitat Conservation Area. There is no documented raptor nests located within ½ mile of the project area; however, raptor nesting surveys will be required within ½ mile each side of the center line of the proposed route alignment. | Brandon McDonald | 5/30/2014 |
| PI | Wildlife: Non-USFWS Designated | The RMP/ROD identifies crucial fawning habitat within the project area (T5S; R21E; Sec. 25). In addition, the project area located within McCoy Flat contains active, scattered white-tailed prairie dog colonies (unmapped). Recommended mitigation should include a $10,000 payment for the relocation of the existing antelope guzzler to a targeted location (UTM Location: NAD 83 0622503 / 4463847), near the McCoy Flats area. Site-specific NEPA and clearance surveys will be handled separately from this EA by the BLM Vernal Field Office. | Brandon McDonald | 5/30/2014 |
| PI | Wildlife: Threatened, Endangered, Proposed or Candidate | It is anticipated that water depletion will occur during construction activities.<br><br>Project area is located within Preliminary Priority Habitat for greater sage-grouse. In addition, the project area is located within 0.8 miles of the Observatory Lek. Project activities will conform to WO-IM-2012-043. | Brandon McDonald | 5/30/2014 |
| NP | Woodlands/Forestry | None Present | David Palmer | |

**FINAL REVIEW:**

| Reviewer Title | Signature | Date | Comments |
|---|---|---|---|
| Environmental Coordinator | | | |
| Authorized Officer | | | |

*This page intentionally left blank.*

# APPENDIX B –
# RECLAMATION PLAN FOR THE ASHLEY VALLEY ENERGY ROUTE PROJECT

*This page intentionally left blank.*

# RECLAMATION PLAN FOR THE PROPOSED ASHLEY VALLEY ENERGY ROUTE

## INTRODUCTION

The purpose of this document is to provide the Reclamation Plan, including the weed control actions, Plan for the proposed Ashley Valley Energy Route (AVER) project. This plan is consistent with BLM Instruction Memorandum UTG000-2011-003, entitled the *Green River District Reclamation Guidelines for Reclamation Plans*, dated March 28, 2011 (BLM 2011). The following plan is consistent with the 1997 *Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah*.

Reclamation will be completed on all surface lands within the Project Area not physically covered by the final paved road, except for an approximately 10-foot-wide strip located adjacent to both sides of the proposed roadway that will remain devoid of vegetation. This plan would apply to BLM-administered lands within the AVER Project Area, involving 98 acres under the proposed action. Reclamation actions on non-BLM lands would be conducted per the direction of the involved landowner.

In addition to minimizing project-related surface disturbance in the Project Area, the following reclamation actions would be conducted to meet BLM's short-term goal (i.e., immediately stabilize disturbed areas and to provide the necessary conditions to achieve the long-term goal) to the greatest extent practicable; and the long-term goal (i.e., facilitate eventual ecosystem reconstruction by returning the lands to a safe, stable, and proper functioning condition). In addition, the following actions would take into consideration restoration of landforms and vegetative communities to restore or maintain the potential for Greater sage grouse in the involved vegetation communities, sustain integrity of biotic communities associated with those vegetation communities, maintain the hydrologic function, reduce fugitive dust, and compliment the visual resources of the surrounding area.

## Objective 1 – Establish a desired self-perpetuating plant community

The objective is to attain 75 percent basal cover based on similar undisturbed adjacent native vegetative communities, and comprised of desired species and/or seeded species within 5 years of initial reclamation action. Species diversity should approximate the surrounding undisturbed area. For areas that are in poor range condition due to past land management practices, then the species diversity should approximate the sites as described in the NRCS Ecological Site description. However, if after three growing seasons there is less than 30 percent of the basal cover based on similar undisturbed native vegetative communities then the BLM Authorized Officer may require additional reclamation efforts.

### *Seed Mix*

The BLM-administered public lands include several dominant ecological sites, several having inclusions of very low or unproductive sites, such as rock outcrop, bare ground and scattered pinyon-juniper woodlands. For BLM-administered public lands within the AVER Project Area the reseed mixes have been developed for either a sagebrush community (refer to **Table 1**) or a mixed desert shrub community

(refer to **Table 2**). Application rate would be pounds of Pure Live Seed/acre and would be doubled the rates shown below if a broadcasting method is used. These seed mixtures offer the best opportunity for success based on the involved soil characteristics, terrain and adjacent native communities. Due to the Project Area being within Greater sage-grouse habitat, the proposed seeding mixes would also augment the potential for sage grouse habitat, i.e., the sagebrush and mixed desert shrub communities. A diversified selection of native seeds found local to the Project Area would be used. Locally harvested seed would be sought to the greatest extent possible; however seed selection would largely be influenced by market availability. Non-native species would be mixed in low concentrations with natives for the purpose of assisting in initial plant establishment. Non-native species must be non-aggressive, i.e., will not expand beyond/outside the seeded area and will not out-compete native species in the long-term. Of the 98 acres of BLM-administered lands within the proposed action Project Area, approximately 32 percent, or 31 acres, would be reseeded using the sagebrush seed mixture and the remaining 68 percent, or 67 acres, would be reseeded with the mixed shrub seed mixture.

**Table 1. Sagebrush Vegetation Community Seed Mixture**

| Common Name | Scientific Name | Rate Pure Live Seed lbs/acre |
|---|---|---|
| **GRASSES** | | |
| Crested wheatgrass | *Agropyron cristatum* 'Hycrest'[1] | 1.0 |
| Bottlebrush squirreltail | *Elymus elymoides* | 1.0 |
| Sand dropseed | *Sporobolus cryptandrus* | 1.0 |
| Western wheatgrass | *Pascopyrum smithii* | 1.0 |
| Needle and threadgrass | *Stipa comata* | 1.0 |
| **FORBS** | | |
| Globemallow | *Sphaeralcea parvifolia* | 1.0 |
| Yellow beeplant | *Cleome lutea* | 0.5 |
| Shaggy fleabane | *Erigeron pumilus* | 0.5 |
| Hoary aster | *Machaeranthera canescens* | 0.5 |
| **SHRUBS** | | |
| Wyoming sagebrush[2] | *Artemesia tridentate v. wyomingensis* | 2.0 |
| Shadscale | *Atriplex confertifolia* | 2.0 |
| Fourwing saltbush | *Atriplex canescens* | 0.5 |
| **Pure Live Seed Total** | | **12.0** |

[1] The Hycrest variety will be used, or a more drought-tolerant variety if available. This species is drought tolerant, very good success as a reclamation species, and does not extend beyond the area in which it is seeded. However, it may prevent other native grass species from becoming established in the seeded area and thus should be used in very limited quantities and in select areas.

[2] This species will be broadcast on the surface and left uncovered after the other seed is either drill-seeded or broadcast and covered. It is important to keep seeds of this species uncovered.

**Table 2. Mixed Desert Shrub Vegetation Community Seed Mixture**

| Common Name | Scientific Name | Rate Pure Live Seed lbs/acre |
|---|---|---|
| **GRASSES** | | |
| Crested wheatgrass | *Agropyron cristatum* 'Hycrest' | 1.0 |
| Bottlebrush squirreltail | *Elymus elymoides* | 1.0 |
| Western wheatgrass | *Pascopyrum smithii* | 2.0 |
| **FORBS** | | |
| Scarlett globemallow | *Sphaeralcea coccinea* | 1.0 |
| **SHRUBS** | | |
| Shadscale | *Atriplex confertifolia* | 2.0 |
| Fourwing saltbush | *Atriplex canescens* | 3.0 |
| **Pure Live Seed Total** | | **10.0** |

DRAFT

***Seed Storage***

If seed needs to be stored for any length of time prior to application, seed would be stored in a cool, dry place required to keep seed viable. All seed utilized would be tested prior to application to ensure BLM specifications for pure live seed (PLS), purity and noxious weeds, etc., have been met. Seed tags would be provided to the Authorized Officer as requested. The seeding contractor must know the specific planting requirements for the species to be seeded. Successful germination is enhanced by depth of planting and timing of planting. The seed contractor should direct the seed supplier to sort and bag the seed based on seed size and optimal seeding time.

***Seedbed Preparation***

Seedbeds would be constructed to physically hold as much water as possible. Rippers, harrows, disks, chisel plows or similar equipment would be used to loosen soil and alleviate compaction. After loosening subsoil to desirable depths and after topsoil is reapplied, soils may be imprinted and/or pocketed. Pockets create microclimates which protect small emerging seedlings, increase soil holding capacity and decrease runoff and erosion.

***Seed Placement***

Proper care would be taken to plant the assorted sized seeds in the seed mix to their proper seeding depths, usually 5 times the width of the seed (refer to seed storage above). Knowledge of species-specific planting depths is essential to optimize germination success. Due to likely differences in seed size and optimal seeding depths, it may be appropriate to reseed the same site several times. It should be noted that Wyoming big sagebrush seeds would be placed on the surface and would not be covered; as such it would be placed last on the seeded area.

***Seeding Method***

Drill seeding will be the preferred method of seeding except in areas where topography or substrate compositions (rock) precludes the use of a drill. If drill seeding is not possible, broadcast seeding will be implemented. If the broadcast method is used (such as on slopes of 40 percent or greater), the seed rates for drill seeding would be doubled and the seed would be immediately covered to prevent seed desiccation or predation by birds or rodents. The seeds could be covered in several ways including spreading and crimping straw over the seeded area, raking the area by hand, or dragging a chain or chain-linked fence segment over the seeded area. Minimum seeding rates for the Ecological Sites are shown in Tables 1 and 2. If the seed is to be broadcast, the application rate would be doubled.

***Seeding Season***

Seeding would be conducted between late fall and early spring to mimic the natural optimal seeding conditions. Specific seeding would depend on the site's soil moisture, ground temperature and snow cover. The seeding contractor must be knowledgeable about the optimal seeding times for the species involved. There may be certain species in the final seed mixture that require early spring/winter application for optimal seeding success.

DRAFT

***Mulching***
Certified weed free straw may be used and crimped into place to attempt to capture and hold moisture, stabilize soil, provide needed organic matter, and protect seed. If appropriate the seed mix for a specific area may be augmented by the inclusion of an annual grain to re-establish and stabilize soils in the late spring/summer months. Such an effort would help combat weed growth, supply organic matter, oxygenate soil, alleviate compaction, and minimize water and soil runoff.

***Slopes***
As stated in the Proposed Action, side slopes would have ratios varying from 1:1 to 6:1 depending on the depth of the cut or fill and the type of existing material encountered. Seed rates in these areas may need to be increased, even doubled, as appropriate. Depending on the site-specific conditions, seed may applied by applying straw mats, a hydromulch solution, or broadcast and cover by harrowing, drag bar, roller, as determined effective and safe.

***Amendments***
If initial reclamation activities are unsuccessful, soils amendments may be added to meet the long-term goals of restoration. Potential soil amendments may include: topsoil, compost, woodchips, wood-pulp, straw, elemental sulfur or other safe acids, gypsum, fertilizer, slow-release fertilizer, humus, or any other amendments which prove effective in combating saline/alkaline soil characteristics typical of the Project Area.

## Objective 2 – Ensure slope stability and topographic diversity

Disturbed areas would be reconstructed to the approximate original contour or to assure the site looks natural or blends with the surrounding terrain.

Where applicable, slopes or steep terrain would be imprinted/mulched, stepped down to lessen the slope in an effort to control erosion. Berms or temporary waterbars would be used to control site erosion. Any berms or waterbars would be maintained and repaired as needed until the site is determined stable, at which time such berms and/or waterbars would be flattened to blend with the surroundings and revegetated. Summer grown mulch and imprinting may also be considered to help control erosion while simultaneously competing against weeds between desirable seeding windows.

## Objective 3 – Reconstruct and stabilize altered water courses and drainage features

Drainage crossings, cut and fill areas, road shoulders would be constructed and/or installed as needed per the final designs and in accordance with established AASHTO's Geometric Design Standards and Roadside Design Guides, and UDOT's Standard Specifications and Standard Drawings for Road and Bridge Construction. Established natural water courses of ephemeral and perennial drainages would be maintained. The size and type of site-specific drainage structures and their placement would be determined during the final design.

DRAFT

## Objective 4 – Ensure the biological, chemical, and physical integrity of the topsoil resources during all phases of construction, operation and reclamation.

***Topsoil Stripping/Storage***

Prior to new surface disturbance and where soil texture, color, and other characteristics visibly differ from its surroundings, test pits will be dug to estimate the depth of the topsoil layer. This action will help determine the topsoil depth and would minimize the possible missing of top and subsoil layers. At all construction sites, topsoil will be carefully segregated from the subsoil, i.e., windrowed parallel to disturbance and kept separate from other soil materials, and maintained for future use in rehabilitating the locations. All topsoil stored beyond one season would be gently compacted to an acceptable height to ensure viability and imprinted/mulched and seeded to reduce erosion and to ensure the long-term viability of the resource. Topsoil storage areas will be identified with appropriate signage.

***Redistribution of Topsoil***

After road construction is complete, salvaged topsoil will be re–distributed evenly over disturbed surfaces. With permission of the BLM Authorized Officer, topsoil may be moved from a site while still viable for use on disturbed sites with similar soil characteristics elsewhere in the Project Area.

## Objective 5 – Re-establish the visual composition and characteristics to blend with the natural surroundings.

Surface-disturbed areas would be reconstructed to the approximate original contour or to assure the site looks natural or blends with the surrounding terrain. It may be appropriate to feather long running straight edges of the road/shoulders, using natural-looking berms and/or waterbars, retaining vegetation (such scattered juniper trees) to minimize visual impacts. However, such actions would only be completed if they are consistent with established Federal, state and industry standards for safety-related visibility for the roadway's users.

## Objective 6 – Control the occurrences of noxious weeds and undesirable invasive species by utilizing principles of integrated weed management including prevention, mechanical, chemical, and biological control methods.

A pre-disturbance noxious weed inventory would be conducted to determine the presence of noxious weeds prior to beginning the project and to determine whether treatment is needed prior to disturbance. If noxious weeds are found, a report would be provided to BLM that includes:

- A GPS location recorded in North American Datum 1983
- Species
- Canopy Cover or number of plants
- General infestation size (estimate of square feet or acres)

Information would be provided to the BLM Weed Coordinator prior to beginning disturbance and would also be documented in the annual reclamation report.

- To reduce the spread/introduction of noxious and invasive weed species via project-related vehicles and equipment, the selected contractors will power-wash all construction equipment and vehicles entering the Project Area from outside the Uinta Basin.
- Starting prior to reclamation actions, the selected contractor will annually inspect the Project Area to identify, treat, and control any noxious weed infestations. Any herbicide application on BLM lands will be applied in accordance with the BLM-approved Pesticide Use Proposal (PUP). All pesticide applications will be recorded on a Pesticide Application Record form within 24 hours of application. Pesticide Application Records and an annual report will be provided to the BLM Weed Coordinator by December 1 each year for all weed treatments occurring within BLM's fiscal year (October 1 –September 30).
- A Biological Control Agent Release Proposal and corresponding site-specific review, including additional NEPA compliance as appropriate, would be prepared and approved prior to releasing a biological control agent on BLM lands.
- An integrated weed management (IWM) plan utilizing chemical, mechanical, and biological control of noxious and invasive weed species will be implemented.
- Use certified noxious weed-free seed and mulch in all reclamation areas.
- Monitoring of the noxious/invasive plant species will also be implemented on an annual basis to ensure control efforts are effectively controlling target populations.
- Only BLM approved pesticides and adjuvants shall be used on BLM lands.

The following measures for surface disturbance activities would be implemented to minimize the likely introduction and/or proliferation of noxious and invasive weed species on the Project Area as a result of the AVER project.

- Travel through weed infested areas shall be avoided or minimized to the greatest extent practicable.
- Sand, gravel, borrow, and fill material utilized for the road reconstruction project will be from noxious weed-free sources to prevent the introduction and spread of weeds.
- Staging areas for construction activities and construction equipment will be located in weed-free sites.
- The Project Area and stockpiled material will be maintained in a weed-free condition to prevent weed seed production. These include but are not limited to cut-fill slopes, topsoil reserves, roadsides, etc.
- Implement Early Detection and Rapid Response (EDRR) by reporting all new noxious weed infestations on BLM lands to the BLM Weed Coordinator and controlling new weed infestations when found and before seed set if possible.

**Control and Management**

As required, the following measures would be implemented for project-related surface disturbance activities on BLM-administered lands:

- All herbicide treatments shall be applied by a Utah licensed Pesticide Applicator. If licensed in another state, a reciprocal license may be obtained through the Utah Department of Agriculture website.
- Control weeds within the disturbance areas, including borrow areas along roads. Reseed if feasible to promote competition with weeds.

- All disturbance areas shall be monitored for noxious weeds annually, for a minimum of three growing seasons following completion of the project or until desirable vegetation is established. If weeds are located during the monitoring period, they will be treated.
- Mechanical dragging (before seed set), manual control, and biological control will be considered before implementing the use of chemical treatments to control weeds.

*Chemical Control*

Noxious and invasive weed species identified during the pre-construction weed inventory will be spot- or broadcast-sprayed with appropriate herbicides (according to BLM-approved PUP) during the first spring following commencement of construction activities, and again in the mid-summer. Chemical weed control will occur twice each year (spring and mid-summer) until BLM has determined that noxious and invasive weed infestations have been adequately controlled (three growing seasons after construction completion). After BLM has determined weed infestations have been controlled, the County will complete routine maintenance of the right-of-way (ROW) (including weed control) as required by the BLM ROW easement. Chemical control will commence simultaneously with road construction activities. Noxious and invasive species that are identified within or adjacent to the ephemeral drainages associated with the proposed roadway will be sprayed only with herbicides approved for use in riparian areas.

*Mechanical Control*

Prior to surface disturbance, noxious and invasive weed species identified during the pre-construction weed inventory that are located near ephemeral drainages or near known sensitive plant species locations and habitat will be mowed, and/or removed by hand/shovel. Mechanical control methods will be implemented concurrently with chemical treatment in the spring.

*Biological Control*

If BLM determines that biological control of weed species is appropriate for IWM, the following species could be utilized in accordance with BLM's Biological Control Agent Release guidelines. Field bindweed (*Convulvulus arvensis*) was identified along the existing roadway during initial biological investigations that were completed for preparation of the Environmental Assessment document. Field bindweed gall mites **(***Aceria malherbae***)** have proven effective as biological control of this species and may be utilized to reduce infestations of this species within the Project Area. If musk thistle (*Carduus nutans*), Canada thistle (*Cirsium arvense*), or bull thistle (*Cirsium vulgare*) are identified, the musk thistle crown weevil **(***Trichosirocalus horridus***)** could be utilized to help control these species.

**<u>Standard Stipulations</u>**

- Spraying or application of herbicides/pesticides will not be completed when wind speeds exceed 10 miles per hour or if heavy rainfall or other adverse weather conditions exist.
- No herbicide/pesticide application will occur within the following distances of open water, such as springs, wetlands, streams, ponds, or lakes, unless otherwise specified on the herbicide/pesticide label:
    - 100 feet aerial application
    - 25 feet boom truck application
    - 10 feet backpack sprayer application

- Herbicide/pesticide applications within 1,500 feet of special status plants/populations will need to be coordinated with the BLM Weed Coordinator. Additional measures may be incorporated into application plans for control around special status plants/populations.
- All herbicide/pesticide applications will be in strict conformity with the label instructions.
- All commercial and private applicators of herbicides/pesticides will be currently licensed or hold reciprocal license with the State of Utah.
- Empty containers shall be disposed of in accordance with label instructions.
- Equipment shall not be washed or cleaned out near streams or open water.
- Herbicides/pesticides shall only be transported when properly secured and with containers properly sealed and labeled.

**Invasive Plants To Be Controlled**

- All federal listed noxious weeds (not currently in VFO).
- All state-listed noxious weeds.
- All neighboring stated-listed weeds as part of EDRR.
- All county-listed noxious weeds within the entire state of Utah.
- Other invasive plants deemed important for control by BLM, due to high risk of invasion and impacts to adjacent undisturbed vegetation areas. Currently halogeton (*Halogeton glomeratus*), Russian thistle (*Salsola kali*), and kochia (*Bassia prostrata*) are additional weeds needing control.

## Objective 7 – Manage all waste materials

Vegetation removed as part of the construction would be disposed of off-site or per the direction of the appropriate surface landowner. On a site-specific basis, it may be appropriate to use the removed vegetation as part of the mulch or organic material added to aid in soil and water retention after reclamation. All industrial wastes, toxic substances and organic material not re-used onsite will be contained in a restrict area and disposed of at an off-site permitted disposal facility.

## Objective 8 – Conduct monitoring that is able to assess the attainment or failure of reclamation actions.

BLM's Green River District's 2011 monitoring guidelines would be adhered to. Specifically:

- Monitoring would be designed and conducted to monitor basal vegetative cover.
- In cooperation with the BLM, an undisturbed reference site would be selected prior to monitoring. One site will be used for multiple reclamation sites as long as the site potentials are similar. The following reference site criteria would apply:
    - Reference sites would be permanently marked, and the location recorded by GPS North American Datum 1983.
    - A reference site would be established in each unique NRCS Ecological Site that the ROW passes through.
    - A photograph consisting of a general view of the marked reference site would be submitted along with the reference site data.

- Qualitative monitoring data would be collected after the second growing season following reclamation actions. Quantitative data would be collected after the third and fifth growing seasons, and the year the County determines that reclamation meets the long-term objective of 75 percent basal cover as compared to the reference site. BLM has determined that the 75-percent basal cover will be sufficient to establish or re-establish a self-sustaining, vigorous, diverse (or otherwise approved) plant communities with a density sufficient to control erosion and invasive plants and can re-establish wildlife habitat and/or or forage production.
- In areas where the reference site data shows less than 5 percent basal cover due to past land management practices, then the objective for the disturbed area that is being reclaimed would be 5 percent basal cover after the third growing season and eight percent after the fifth growing season.
- Any one species should not account for more than 30 percent of the total measured basal cover.
- One monitoring transect would be established per each NRCS Ecological Site passed through by the ROW that is greater than 0.75 miles.
- General view photographs of the reclaimed areas would be submitted with the quantitative data. Photographs would be taken at the same photo point each time and as close to the same time of year as previous photos were taken to reduce differences in plant growth characteristics.

An annual reclamation report will be submitted to the Authorized Officer. The report would document compliance with all aspects of the reclamation objectives and standards, documenting monitoring data, and would recommend revised reclamation strategies, if necessary. If approved the revised reclamation strategies and/or actions would be implemented as needed. The process of monitoring, evaluating, documenting and implementing this plan would be repeated until the reclamation goals are achieved or as determined by the Authorized Officer.

**References Cited**

Bureau of Land Management (BLM). 2011. Instruction Memorandum GR-2011-003, "Green River District Reclamation Guidelines for Reclamation Plans". Dated March 28, 2011. Vernal, Utah. 8 pp.

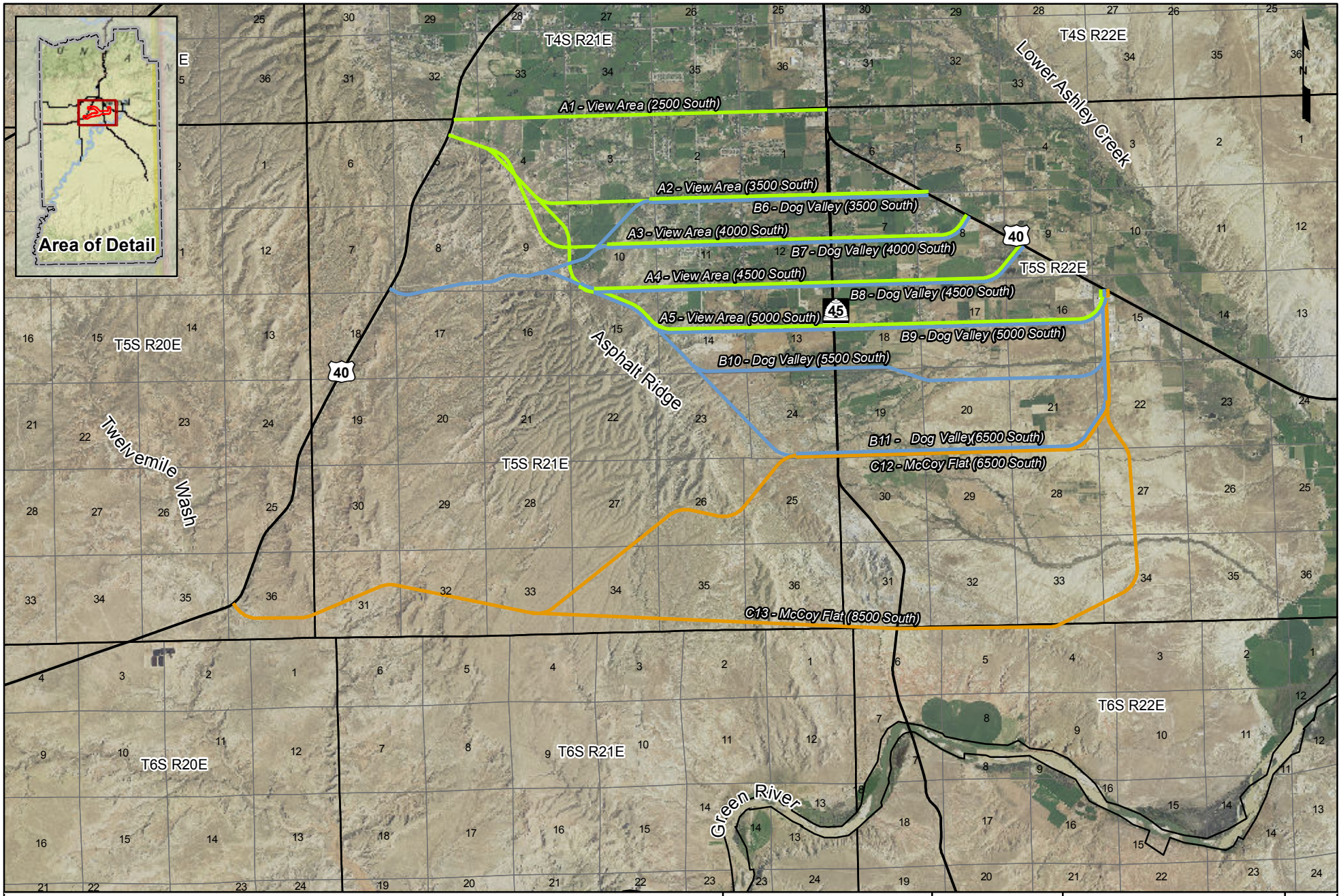
Bureau of Land Management and U.S. Forest Service (BLM-USFS). 2007. *The Gold Book Surface Operating Standards and guidelines for Oil and Gas Exploration and Development.* 4th ed. BLM/WO/SO-06/021+3071/REV07. BLM. Denver, CO 78 pp.

DRAFT

*This page intentionally left blank.*

# APPENDIX C –
# UINTAH COUNTY STAKEHOLDER'S INPUT
# REGARDING PRELIMINARY PROJECT ROUTES
# FOR THE ASHLEY VALLEY ENERGY ROUTE PROJECT

*This page intentionally left blank.*




0 0.5 1 2 Miles

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

**Legend**

- A - View Area Routes
- B - Dog Valley Routes
- C - McCoy Flat Routes
- Roads
- Township/Range
- Section

**Land Ownership**

- Federal
- Private
- State

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

| | |
|---|---|
| PROJECT NO. | 138501 |
| DRAWN: | 7/8/2015 |
| DRAWN BY: | J. Weber |
| CHECKED BY: | M.Bridendall |
| FILE NAME: | AVER_EA_Figure_AppendixC_Alternatives.mxd |

***Uintah County***

Ashley Valley Energy Route
Comparison of Alternatives
Considered by the County
Uintah County, Utah

APPENDIX

**C**

*This page intentionally left blank.*

| Route Name | Resource Concern | Public Concerns (First public comment period - November 2007 and June 2008) | Technical Issues | Economic Issues* | Social Issues | Traffic Movement | County's Rationale for Route Consideratio | Length of New Constructio | Length of Upgrad | Estimated Total Lengt | Estimated Time to Travel Rou | Elements Considered in Travel Tim | BLM's Determination for Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 - View Area (2500 South) | Noise, safety and other proximity issues related to adjacent homes and schools. Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 70% stated that alignment A1 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as A1 received an 11% approval rating for future consideration.<br><br>With respect to written comments, the strongest opposition against a particular street being used as an alternate truck route was made against 2500 South. The majority of these comments stated safety for residents and children, property devaluation, noise and pollution as reasons to avoid 2500 South.<br><br>A few people did state support for 2500 South as a future alternate truck route. Reasons for this support included: close proximity to where trucks are currently travelling, cost, easier access to the airport and the avoidance of sprawl. However, a few comments were made stating that 2500 South was not feasible for an alternate truck route because it cannot currently handle airport traffic.<br><br>There were a few comments regarding preserving an area for an upscale development in Vernal. One comment suggested that 2500 South be preserved for such a development and not for an alternate truck route.<br><br>One comment stated fear of driving on 2500 South because there is currently too much traffic in this location.<br><br>There were several concerns that 2500 South is not feasible for a route because it will cause property values to drop. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Route increases overall project length by 2.1 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 47 private residences (27 likely & 20 probable). The cost associated with this acquisition is $11,750,000. Roadway construction cost estimate is $17,300,000. The total estimated cost for this alignment is $29,050,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the full length of the route. | Traffic movement on this alignment would be good with respect to a direct path between west US-40 and east US-40. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 1.5 Miles | Roughly 3 Miles | Roughly 14.5 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 17.5 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not responde to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| A2 - View Area (3500 South) | Noise, safety and other proximity issues related to adjacent homes and schools. Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. | Respondents were asked during the first public comment period to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 65% stated that alignment A2 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as A2 received an 8% approval rating for future consideration.<br><br>A few comments stated that 3500 South should not be used for future study due to safety, cost and traffic concerns.<br><br>One person stated support for an alternate truck route on 3500 South because of its close proximity to US 191 and airport expansion. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Route increases overall project length by 0.7 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 70 private residences (56 likely & 14 probable). The cost associated with this acquisition is $17,500,000. Roadway construction cost estimate is $18,800,000. The total estimated cost for this alignment is $36,300,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the full length of the route. | Traffic movement on this alignment begins to hamper the continous flow by causing traffic to go northerly then southerly rather than having a relatively straight east-west movement. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 3 Miles | Roughly 3 Miles | Roughly 14 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 16 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not responde to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| A3 - View Area (4000 South) | Noise, safety and other proximity issues related to adjacent homes and schools. Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. | Respondents were asked during the first public comment period to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 57% stated that alignment A3 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as A3 received an 8% approval rating for future consideration.<br><br>A few comments indicated opposition to the View Area at 4000 South for safety or cost concerns. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Route increases overall project length by 1.5 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 68 private residences (55 likely & 13 probable). The cost associated with this acquisition is $17,000,000. Roadway construction cost estimate is $27,200,000. The total estimated cost for this alignment is $44,200,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the full length of the route. | Traffic movement on this alignment begins to hamper the continous flow by causing traffic to go northerly then southerly rather than having a relatively straight east-west movement. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 5 Miles | Roughly 2.5 Miles | Roughly 14.5 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 16 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| A4 - View Area (4500 South) | Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. Noise, safety and other proximity issues related to adjacent homes and schools. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 7% stated that alignment A4 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as A4 received a 5% approval rating for future consideration.<br><br>One person stated support for 4500 South because this locateion would keep traffic out of the downtown area but not negatively impact downtown businesses. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Route increases overall project length by 2.5 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 38 private residences (33 likely & 5 probable) and 2 business buildings. The cost associated with this acquisition is $10,500,000. Roadway construction cost estimate is $31,200,000. The total estimated cost for this alignment is $40,700,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the full length of the route. | Traffic movement on this alignment begins to hamper the continous flow by causing traffic to go northerly then southerly rather than having a relatively straight east-west movement. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 5.5 Miles | Roughly 2.5 Miles | Roughly 14.5 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 17 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| A5 - View Area (5000 South) | Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. Noise, safety and other proximity issues related to adjacent homes and schools. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 6% stated that alignment A5 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as A5 received a 3% approval rating for future consideration. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Route increases overall project length by 2.6 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 38 private residences (21 likely & 17 probable). The cost associated with this acquisition is $9,500,000. Roadway construction cost estimate is $35,700,000. The total estimated cost for this alignment is $45,200,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the full length of the route. | Traffic movement on this alignment begins to hamper the continous flow by causing traffic to go northerly then southerly rather than having a relatively straight east-west movement. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 7 Miles | Roughly 2 Miles | Roughly 15 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 18 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| B6 - Dog Valley (3500 South) | Noise, safety and other proximity issues related to adjacent homes and schools. Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 9% stated that alignment B6 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as B6 received a 4% approval rating for future consideration.<br><br>A few comments indicated opposition to the View Area at 3500 for safety or cost concerns.<br><br>One respondant opposed Dog Valley 3500 South because it is a heavy residential area. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Grades of roadway crossing asphalt ridge. Route reduces overall project length by 0.5 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 63 private residences (49 likely & 14 probable). The cost associated with this acquisition is $15,750,000. Roadway construction cost estimate is $21,800,000. The total estimated cost for this alignment is $37,550,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the easterly 75% of the length of the route. | Traffic movement on this alignment would be good with respect to a direct path between west US-40 and east US-40. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 4 Miles | Roughly 3 Miles | Roughly 13 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 14.5 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| B7 - Dog Valley (4000 South) | Noise, safety and other proximity issues related to adjacent homes and schools. Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 5% stated that alignment B7 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as B7 received a 6% approval rating for future consideration.<br><br>One respondant opposed Dog Valley 4000 South because it is a heavy residential area. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Grades of roadway crossing asphalt ridge. Route increases overall project length by 0.4 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 61 private residences (48 likely & 13 probable). The cost associated with this acquisition is $15,250,000. Roadway construction cost estimate is $27,700,000. The total estimated cost for this alignment is $42,950,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the easterly 75% of the length of the route. | Traffic movement on this alignment would be good with respect to a direct path between west US-40 and east US-40. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 5 Miles | Roughly 2.5 Miles | Roughly 12.5 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 15 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |

| Route Name | Resource Concern | Public Concerns (First public comment period - November 2007 and June 2008) | Technical Issues | Economic Issues* | Social Issues | Traffic Movement | County's Rationale for Route Consideratio | Length of New Constructio | Length of Upgrad | Estimated Total Lengt | Estimated Time to Travel Rou | Elements Considered in Travel Tim | BLM's Determination for Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B8 - Dog Valley (4500 South) | Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. Noise, safety and other proximity issues related to adjacent homes and schools. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 6% stated that alignment B8 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as B8 received an 8% approval rating for future consideration. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Grades of roadway crossing asphalt ridge. Route increases overall project length by 0.4 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 31 private residences (26 likely & 5 probable) and 2 business buildings. The cost associated with this acquisition is $8,750,000. Roadway construction cost estimate is $30,400,000. The total estimated cost for this alignment is $39,150,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the easterly 75% of the length of the route. | Traffic movement on this alignment would be good with respect to a direct path between west US-40 and east US-40. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 5.5 Miles | Roughly 2.5 Miles | Roughly 12.5 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 15 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| B9 - Dog Valley (5000 South) | Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. Noise, safety and other proximity issues related to adjacent homes and schools. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 9% stated that alignment B9 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as B9 received a 12% approval rating for future consideration. | Access's to adjacent property versus profile changes to meet design standards. Speed limits would impact free movement of vehicles. In residential area, speed limits would be between 25 MPH and 35 MPH. Numerous driveway accesses along the route would impact free flow of traffic on the alternate truck route. Grades of roadway crossing asphalt ridge. Route increases overall project length by 1.5 miles. | Right-of-way costs associated with residential area. This alignment could require the acquisition of up to 31 private residences (14 likely & 17 probable). The cost associated with this acquisition is $9,750,000. Roadway construction cost estimate is $35,000,000. The total estimated cost for this alignment is $44,750,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the easterly 75% of the length of the route. | Traffic movement on this alignment would be good with respect to a direct path between west US-40 and east US-40. Traffic movement would be poor due to slow speeds and conflicts in residential areas. | The overall reason this alignment did not move forward for consideration was the lack of public support for this alignment. | Roughly 6.5 Miles | Roughly 2.5 Miles | Roughly 13 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 15 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| B10 - Dog Valley (5500 South) | Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 7% stated that alignment B10 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as B10 received a 21% approval rating for future consideration.<br><br>There were a few comments stating support for 5500 South as an alternate truck route because it has fewer residences. | Access's to adjacent property versus profile changes to meet design standards. Grades of roadway crossing asphalt ridge. Route increases overall project length by 1.5 miles. | Right-of-way costs associated with agricultural area. This alignment could require the acquisition of private properties along the alignment (no residences will be directly impacted). The cost associated with this acquisition is $4,000,000. Roadway construction cost estimate is $38,900,000. The total estimated cost for this alignment is $42,900,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property the easterly 75% of the length of the route. | Traffic movement on this alignment begins to hamper the continous flow by causing traffic to go northerly then southerly rather than having a relatively straight east-west movement. | The overall reason this alignment did not move forward was the traffic movement causing traffice to move more north and south. This movement will cause truck traffic to avoid use of the roadway. | Roughly 9 Miles | Roughly 1 Mile | Roughly 13.5 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 14.5 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| B11 - Dog Valley (6500 South) | Connections to north south roads would increase mobility in the area but would increase cumulative impacts to properties outside of project corridor. Wetland area and Canal as Cultural site. | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 8% stated that alignment B11 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as B11 received a 61% approval rating for future consideration.<br><br>A few people stated opposition to Dog Valley at 6500 South because this area is too far away from where trucks are travelling. | Access's to adjacent property versus profile changes to meet design standards. Grades of roadway crossing asphalt ridge. Route increases overall project length by 2.3 miles. | Right-of-way costs associated with agricultural area. This alignment could require the acquisition of private properties along the alignment (no residences will be directly impacted). The cost associated with this acquisition is $5,000,000. Roadway construction cost estimate is $42,300,000. The total estimated cost for this alignment is $47,300,000. | The respondents to the public comment period indicated that a major concern of having the alternate truck route along this alignment was that trucks could access the local road system and travel anywhere within the residential areas. They indicated that they did not desire side street access. Impacts private property on the easterly end of the route between SR -45 and US-40. | Traffic movement on this alignment begins to hamper the continous flow by causing traffic to go northerly then southerly rather than having a relatively straight east-west movement. | The overall reason this alignment did not move forward was the traffic movement causing traffice to move more north and south. This alignment has the most north south movement of all alignments considered. This movement will cause truck traffic to avoid use of the roadway. | Roughly 10 Miles | Roughly 1 Mile | Roughly 15 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 16 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route responds to the agency's objective of minimizing explosive and hazardous material transport through residential and downtown areas. There has also been public support expressed for this alternative, especially by the mountain biking community. This route was carried forward for detailed analysis in the EA as the Dog Valley Route Alternative. |
| C12 - McCoy Flat (6500 South) | Wetland area and Canal as Cultural site | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 9% stated that alignment C12 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as C12 received a 64% approval rating for future consideration.<br><br>A few people stated opposition to McCoy Flat at 6500 South because this area is too far away from where trucks are travelling. | Grades of roadway crossing asphalt ridge. | Right-of-way costs associated with agricultural area. This alignment could require the acquisition of private properties along the alignment (no residences will be directly impacted). The cost associated with this acquisition is $1,000,000. Roadway construction cost estimate is $49,800,000. The total estimated cost for this alignment is $50,800,000. | Impacts private property on the easterly end of the route between SR -45 and US-40. | Traffic movement on this alignment would be good with respect to a direct path between west US-40 and east US-40. | This alignment was chosen because of the least technical issues, impacts on private property and traffic movement. This alignment allows for the best movement for truck traffic and minimizes potential conflicts with passenger vehicles. | Roughly 11.5 Miles | Roughly 1 Mile | Roughly 12.5 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 13.5 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | BLM has determined that this proposed route does not respond to the agency's objective of addressing identified public safety concerns: Commercial/industrial vehicles carrying explosive and hazardous materials through residential and downtown areas would not be minimized. In addition, there has been a general lack of public support for this alternative. This route was dismissed from detailed analysis. |
| C13 - McCoy Flat (8500 South) | | Respondents were asked to indentify which three alternate truck routes they would like dropped from further consideration. Of those responding, 13% stated that alignment C13 should be removed.<br><br>Respondants were also asked to identify the top three routes that should be considered for a future truck route. The route identifed as C13 received a 53% approval rating for future consideration. | Grades of roadway crossing asphalt ridge. Route increases overall project length by 1.5 miles. This alignment would have the additional grade issues caused by being on the down grade of SR-45 toward the Green River. | Right-of-way costs associated with agricultural area. This alignment could require the acquisition of private properties along the alignment (no residences will be directly impacted). The cost associated with this acquisition is $1,000,000. Roadway construction cost estimate is $55,700,000. The total estimated cost for this alignment is $56,700,000. | Impacts a small amount of private property on the east end of the route between SR-45 and US-40. Potential impacts to a future site for the Vernal City - Uintah County Airport. | Traffic movement on this alignment would be good with respect to a direct path between west US-40 and east US-40. | This alignment did not move forward due to technical issues with grades and the potential conflict with the potential airport site. | Roughly 13.5 Miles | Roughly 1 Mile | Roughly 14.5 Miles (as opposed to the roughly 18 miles of going through town). | Roughly 15.5 Minutes (as opposed to the roughly 26 minutes of going through town). | The Travel Time is based on the distance divided by the average speed. The average speed used is the current posted speed on existing roadways, 35 MPH through residential areas on new/upgrade construction and 55 MPH through non-residential areas on new/upgrade construction areas. NO CONSIDERATION WAS GIVEN TO SIGNAL LIGHTS OR STOP SIGNS. This could lengthen time on all areas of existing highway/roadways. | Although there has been public support expressed for this alternative, BLM has determined that the impacts from this route to resources on BLM lands, especially those related to sage grouse and the bike trails, is equal to or greater than the impacts expected from the proposed action and Route B11. Therefore this alternative does not respond to the BLM's objective to minimize impacts to resources of concern. Routing of the project on private and state lands is outside of the authority of the BLM. This route was dismissed from detailed analysis. |

*including estimated cost

**Public Concerns Received by Uintah County**
**During the November 2007 and June 2008 Public Comment Periods**

| Public Concerns | Summary of Public Comment |
|---|---|
| Support for Alternate Truck Route | Those in attendance at the first public meeting found transportation to be very important to Uintah County's growth and development. The results of a survey also indicated that those in attendance definitely thought a corridor should be preserved for an alternate truck route and that it was very important to protect such a corridor from future development until a roadway could be built. |
| Southern Routes | A few public comments stated that a truck route should be preserved as far south as possible. The majority of those comments focused on keeping a route safely out of residential areas. A few justified their comments by stating a southern route would allow for "fresh development." Another comment warned that choosing a southern route might cause an increase in traffic for Naples.<br><br>One person commented that a route south of 5500 South should be preserved and another person commented that route south of 5000 South should be preserved.<br><br>One comment indicated that any route preserved south of 2500 South would cause harm to downtown businesses. Although no geographical boundaries were included, a fair amount of comments were concerned that an alternate truck route might negatively impact business and tourism in Vernal.<br><br>There were a few comments that state and federal lands should be used before using private lands. |
| Northern Routes | A few comments were made suggesting consideration of a northern route on US 191. However, one comment did warn that a northern route would entail utility disruption.<br><br>A few people stated support for an alternate truck route on 500 South, 500 North or 1500 South. Reasons for this support included such topics as pollution, business impacts, airport traffic, trucks travelling to Wyoming and Colorado and existing easement at these locations.<br><br>One comment stated support for an alternate truck route on 100 North and 100 South with one-way traffic on each street. |

| Public Concerns | Summary of Public Comment |
|---|---|
| | A few objected to all alternatives north of 4500 South or 5500 South because choosing one of those routes would eventually place the corridor in the middle of the community.<br><br>A few comments stated that 2500 South – 4000 South was an areas too populated for an alternate truck route. |
| Most important Criteria When Choosing a Route | When asked to rank 11 criteria to be used when determining an alternate truck route corridor alignment, respondents stated that minimizing home and business relocations should be the most important factor to consider. Relieving congestion on Vernal's Main Street by removing truck traffic from the roadway and minimizing impacts to properties ranked very important among the evaluation criteria. Preserving a corridor that serves the highest traffic volume with minimal noise impacts also ranked high amongst the criteria. Minimizing impacts to agricultural properties, biological resources and construction and right-of-way costs ranked important in public responses. Although still identified as important by those responding to the survey, the lowest ranked criteria were choosing a route that provides the quickest travel time and one that produces the lowest project cost. |
| Comments on Impacts to Residential and Agricultural Areas | The most consistent comment made by those providing input was that residential areas should be avoided when identifying an alternate truck route corridor. Reasons for these comments were based on the following issues: Safety, property devaluation, noise, and pollution. The vast majority of these comments included safety concerns for children living in current residential areas.<br><br>A few comments were made that agricultural areas should be avoided when identifying an alignment. In contrast, a few comments were made stating that an alternate route should be preserved only in open areas and on state and federal lands so as to minimize housing and property impacts. |
| View Area Routes | A few comments state opposition to any route originating from the View Area because all the land is prime commercial real estate |
| Dog Valley | Consistent with those favoring a southern route, many comment stated support for a route originating at Dog Valley.<br><br>One comment objected to all routes originating at Dog Valley because they are not direct enough. |
| McCoy Flat | Consistent with those favoring a southern route, many comments stated support for a route originating at McCoy Flat. One comment stated that the McCoy Flat routes would cost more but are worth preserving. Any yet another comment stated that McCoy Flat routes |

| Public Concerns | Summary of Public Comment |
|---|---|
| | would cost less. One person commented that the routes originating at McCoy Flat are the safest. |
| Other Routes | There were a few suggestions for an alternate truck route to be placed somewhere along 3100 or 3200 South. One person stated support for a route near 3100 South and attached maps and color photographs for illustration purposes. Another person commented on a similar route somewhere near 3200 South that proceeds along a non-residential area until it reaches Highway 40.<br><br>The following route suggestions were included in written comments:<br>• An east/west bypass from below the dam to Highway 40;<br>• Use current highway on Maeser Road past dump;<br>• East to River Bridge at bottom of twist to Naples and Highway 40;<br>• The bypass route should run east;<br>• A 12 mile road parallel to I25 to State Road 45;<br>• Break north as you enter the valley, run along 2500 West, break to the east crossing Highway 191 and then cut through Ashley area to the south connecting to 1500 East/Highway 40 making a big belt loop;<br>• A bypass route on the south side of the scenic view area that hits Highway 40 near Jensen, Utah;<br>• Pave 9 miles of road to Ouray to Indian Canyon – access at Glen Bench for power plant;<br>• Go further east 1-1.5 miles and still arrive at Highway 40 before arriving at Ashley Creek Bridge<br>• Use Highway 95 and go west hugging the south end of Asphalt Ridge (before it descended into the Green River) then hook back up with the seismic road;<br>• Connect to existing Highway 40 east and west and US 45 (Bonanza highway);<br>• Keep the trucks on Highway 40. |

*This page intentionally left blank.*

# APPENDIX D –
# SOILS DATA

*This page intentionally left blank.*

## Appendix D, Table 1 - General Soils Information

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| Abracon | 1 | 9 | Fan remnant | Slope alluvium derived from sandstone, limestone, shale & quartzite | 1-3 | Loam | 0.37 | Low | Well drained |
| Abracon | 2 | 700 | Fan remnant | Slope alluvium derived from sandstone, limestone, shale & quartzite | 3-8 | Loam | 0.37 | Medium | Well drained |
| Badland-Rock Outcrop Complex | 12 | 421 | Badland (50%) – Erosion remnant, hill, ridge | Associated with shale, siltstone, sandstone, limestone and quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-75 | --- | 0.10 | Very high | Excessively drained |
| | | | Rock outcrop (35%) – Cliff, erosion remnant, escarpment, ledge | Associated with shale, siltstone, sandstone, limestone and quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-100 | --- | | Very high | --- |
| Begay | 19 | 45 | Fan remnant | Eolian deposits over alluvium derived from sandstone | | Sandy loam | 0.24 | Low | Well drained |
| **Blackston** | 23 | 67 | Fan remnant | Alluvium & slope alluvium derived from sandstone, limestone, shale & quartzite | 0-2 | Loam | 0.43 | Low | Well drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| **Blackston** | 24 | 121 | Fan remnant | Alluvium & slope alluvium derived from sandstone, limestone, shale & quartzite | 2-4 | Loam | 0.43 | Low | Well drained |
| Blackston | 25 | 20 | Fan remnant | Alluvium & slope alluvium derived from sandstone, limestone, shale & quartzite | 4-8 | Loam | 0.43 | Medium | Well drained |
| Boreham | 27 | 102 | Fan remnant | Loamy alluvium over loamy-skeletal alluvium derived from sandstone, limestone, shale & quartzite | 0-2 | Loam | 0.43 | Low | Well drained |
| Braf-Rock Outcrop Complex | 28 | 90 | Braf (60%) – Structural bench | Eolian deposits over alluvium derived from sandstone | 2-15 | Loam | 0.32 | Very high | Excessively drained |
| | | | Rock outcrop (25%) – Cliff, erosion remnant, escarpment, ledge | Associated with shale, siltstone, sandstone, limestone and quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-100 | --- | 0.20 | Very high | --- |
| Clapper Complex | 43 | 78 | Hill | Slope alluvium & colluvium derived from sandstone, limestone, shale & quartzite | 25-50 | Very cobbly or gravelly loam | 0.10 | High | Well drained |
| Clapper | 44 | 995 | Hill | Slope alluvium & colluvium derived from sandstone, limestone, shale & quartzite | 2-25 | Gravelly loam | 0.20 | Low | Well d rained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| Clapper-Badland-Rock Outcrop Complex | 45 | 396 | Clapper (45%) – Hill | Slope alluvium & colluvium derived from sandstone, limestone, shale & quartzite | 25-50 | Gravelly loam | 0.20 | Medium | Well drained |
| | | | Badland (35%) – Erosion remnant, hill, ledge | Associated with shale, siltstone, sandstone, limestone and quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-75 | --- | | Very high | Excessively drained |
| | | | Rock outcrop (15%) – Cliff, erosion remnant, escarpment, ledge | Associated with shale, siltstone, sandstone, limestone and quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-100 | --- | | Very high | --- |
| Clapper-Montwel Complex | 52 | 674 | Clapper ((60%) – Fan remnant | Slope alluvium, derived from sandstone, limestone, shale & quartzite | 2-50 | Gravelly loam | 0.43 | Low | Well drained |
| | | | Montwel (25%) - Hill | Slope alluvium & colluvium derived from shale, siltstone, & sandstone | 15-50 | Loam | 0.20 | Very high | Well drained |
| Cliff | 53 | 21 | Alluvial flat | Alluvium derived from sandstone, limestone, shale, & quartzite | 2-4 | Sandy loam | 0.32 | Very low | Well drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| Denco | 65 | 73 | Hill | Slope alluvium over residuum derived from shale | 8-25 | Silty clay loam | 0.32 | Very high | Well drained |
| Firstgap | 71 | 371 | Structural bench, hill | Slope alluvium over residuum derived from shale & siltstone | 2-20 | Loam | 0.43 | | Well drained |
| Gerst | 74 | 157 | Hill | Slope alluvium over residuum derived from shale & sandstone | 4-25 | Parachannery loam | 0.43 | Very high | Well drained |
| Gerst-Rock Outcrop | 77 | 121 | Gerst (50%) – Hill | Slope alluvium over residuum derived from shale & sandstone | 4-40 | Loam | 0.43 | Very high | Well drained |
| | | | Rock outcrop (35%) – Cliff, erosion remnant, escarpment, ledge | Associated with shale, siltstone, sandstone, limestone and quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-100 | --- | | Very high | --- |
| Green River | 89 | 35 | Floodplain | Alluvium derived from sandstone and shale | 0-2 | Loam | 0.37 | Low | Moderately well drained |
| Greybull | 91 | 179 | Hill | Slope alluvium over residuum derived from shale | 4-20 | Clay loam | 0.37 | High | Well drained |
| Greybull | 92 | 442 | Hill | Slope alluvium & colluvium over residuum derived from shale | 20-50 | Clay loam | 0.37 | Very high | Well drained |
| Greybull-Utaline-Badlands Complex | 94 | 608 | Greybull (40%) – Hill | Slope alluvium & colluvium over residuum derived from shale | 8-50 | Clay loam | 0.37 | High | Well drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| | | | Utaline (35%) – Fan remnant | Slope alluvium derived from sandstone, limestone, shale, & quartzite | 8-25 | Loam | | Medium | Well drained |
| | | | Badlands (10%) – Erosion remnant, hill, ledge | Associated with shale, siltstone, sandstone, limestone and quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-75 | --- | | Very high | Excessively drained |
| Hanksville | 95 | 55 | Hill | Slope alluvium over residuum from shale | 2-25 | Silty clay loam | 0.43 | Very high | Well drained |
| Hanksville-Uffens Complex | 98 | 21 | Hanksville (50%) – Hill | Slope alluvium over residuum from shale | 2-25 | Silty clay loam | 0.43 | Very high | Well drained |
| | | | Uffens (35%) – Fan remnant | Alluvium derived from sandstone, limestone, & shale | 3-8 | Loam | | High | Well drained |
| Hideout-Badlands-Rock Outcrop Complex | 102 | 166 | Hideout (35%) – Structural bench | Eolian deposits & slope alluvium derived from sandstone | 2-8 | Loam | --- | Very high | Well drained |
| | | | Badlands (25%) – Erosion remnant, hill, ledge | Associated with shale, siltstone, sandstone, limestone & quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-75 | --- | | Very high | Excessively drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| | | | Rock outcrop (25%) – Cliff, erosion remnant, escarpment, ledge | Associated with shale, siltstone, sandstone, limestone & quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-100 | --- | | Very high | --- |
| Homko | 106 | 25 | Strath terrace | Alluvium derived from sandstone, limestone, shale & quartzite | 0-4 | Loam | 0.37 | High | Well drained |
| Honlu | 108 | 352 | Fan remnant | Slope alluvium derived from sandstone, limestone, shale & quartzite | 1-8 | Sandy loam | 0.37 | Medium | Well drained |
| Honlu | 109 | 462 | Fan remnant | Slope alluvium derived from sandstone, limestone, shale & quartzite | 8-15 | Very cobbly sandy loam | 0.20 | Medium | Well drained |
| Lind | 131 | 54 | Structural bench, hill | Alluvium derived from sandstone, limestone, shale & quartzite | 0-2 | Loam | 0.43 | Low | Poorly drained |
| Lind | 132 | 39 | Fan remnant, structural bench | Alluvium derived from sandstone, limestone shale & quartzite | 2-4 | Loam | 0.43 | Low | Poorly drained |
| Mespun | 133 | 224 | Fan remnant, hill | Eolian deposits derived from sandstone | 4-25 | Fine sand | 0.28 | Very low | Excessively drained |
| Mikim | 137 | 9 | Alluvial fan | Alluvium derived from sandstone, limestone, shale & quartzite | 3-15 | Loam | 0.43 | Medium | Well drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| Montwel | 145 | 825 | Hill | Slope alluvium & colluvium over residuum derived from shale, siltstone & sandstone | 15-50 | Very cobbly clay loam | 0.37 | Very high | Well drained |
| Montwell-Hideout Complex | 147 | 60 | Montwel (45%) – Hill | Slope alluvium over residuum derived from shale, siltstone & sandstone | 2-25 | Loam | 0.37 | High | Well drained |
| | | | Hideout (40%) – Structural bench | Eolian deposits & slope alluvium derived from sandstone | 2-8 | Loam | --- | Very high | Well drained |
| Montwel-Honlu-Rock Outcrop Complex | 148 | 604 | Montwel (50%) - Hill | Colluvium over residuum derived from shale, siltstone, & sandstone | 50-90 | Loam | 0.37 | Very high | Well drained |
| | | | Honlu (30%) – Hill | Slope alluvium derived from sandstone, limestone, shale & quartzite | 25-40 | Loam | | High | Well drained |
| | | | Rock outcrop (10%) – Cliff, erosion remnant, escarpment, ledge | Associated with shale, siltstone, sandstone, limestone 7 quartzite of the Browns park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-100 | --- | | Very high | --- |
| **Nakoy** | 160 | 4 | Fan remnant | Eolian deposits over alluvium derived from sandstone, limestone, shale & quartzite | 1-5 | Loamy fine sand | 0.32 | Very low | Well drained |
| **Nolava-Nolava, Wet Complex** | 162 | 17 | Nolava (60%) – Fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 0-2 | Loam | 0.43 | Low | Moderately to well drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| | | | Nolava, wet (25%) – Fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 0-2 | Loam | | Low | Moderately to well drained |
| **Nolava-Nolava, Wet Complex** | 163 | 334 | Nolava (60%) – Fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 2-4 | Loam | 0.43 | Low | Moderately to well drained |
| | | | Nolava, wet (25%) – Fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 2-4 | Loam | | Low | Moderately to well drained |
| Nolava | 164 | 39 | Fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 4-8 | Loam | 0.43 | Medium | Well drained |
| Paradox | 159 | 23 | Alluvial flat | Alluvium derived from sandstone & shale | 3-8 | Loam | 0.43 | Medium | Well drained |
| **Paradox** | 17 | 41 | Alluvial flat | Alluvium derived from sandstone & shale | 1-3 | Silty clay loam | 0.43 | High | Well drained |
| *Pits* | 181 | 4 | Not rated | --- | --- | --- | 0.02 | --- | --- |
| **Riemod** | 188 | 77 | Strath terrace, fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 0-2 | Loam | 0.43 | Low | Well drained |
| Riemod | 189 | 141 | Strath terrace, fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 2-4 | Loam | 0.43 | Low | Well drained |
| Riemod | 190 | 163 | Strath terrace, fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 4-8 | Loam | 0.43 | Low | Well drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| Rock Outcrop | 193 | 19 | Rock outcrop– Cliff, erosion remnant, escarpment, ledge | Associated with shale, siltstone, sandstone, limestone & quartzite of the Browns Park, Duchesne River, Green River, Mancos, Park City & Uinta Formations | 1-100 | --- | --- | Very high | --- |
| **Shotnick** | 205 | 2 | Alluvial flat | Eolian deposits & alluvium derived from sandstone, limestone & shale | 0-4 | Loamy sand | 0.32 | Very low | Well drained |
| Shotnick | 206 | 49 | Alluvial flat | Eolian deposits & alluvium derived from sandstone, limestone & shale | 2-4 | Sandy loam | 0.32 | Very low | Well drained |
| Shotnick | 207 | 22 | Alluvial flat | Eolian deposits & alluvium derived from sandstone, limestone & shale | 4-8 | Sandy loam | 0.32 | Very low | Well drained |
| Shotnick-Walkup Complex | 209 | 10 | Shotnick (65%) – Alluvial flat | Eolian deposits & alluvium derived from sandstone, limestone & shale | 0-2 | Sandy loam | 0.32 | Very low | Well drained |
| | | | Walkup (25%) – Alluvial flat | Alluvium derived from sandstone, shale & quartzite | 0-2 | Sandy loam | | Very low | Moderately well drained |
| Splimo | 216 | 424 | Hill | Slope alluvium & colluvium over residuum derived from limestone, calcareous sandstone & conglomerate | 25-50 | Extremely channery loam | 0.10 | Very high | Well drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| Splimo | 217 | 18 | Hill | Slope alluvium & colluvium over residuum derived from limestone, calcareous sandstone & conglomerate | 8-25 | Very cobbly loam | 0.15 | High | Well drained |
| Splimo-Clapper Complex | 220 | 587 | Splimo (50%) – Hill | Slope alluvium & colluvium over residuum derived from limestone, calcareous sandstone & conglomerate | 25-50 | Very cobbly loam | 0.15 | High | Well drained |
| | | | Clapper (35%) – Hill | Slope alluvium & colluvium derived from sandstone, limestone, shale & quartzite | 25-50 | Gravelly loam | 0.15 | Low | Well drained |
| Turzo | 240 | 12 | Alluvial flat | Alluvium derived from quartzite, sandstone, limestone & shale | 4-8 | Clay loam | 0.43 | High | Well drained |
| Turzo | 242 | 62 | Alluvial flat | Alluvium derived from quartzite, sandstone, limestone & shale | 0-4 | Loam | 0.43 | Medium | Well drained |
| Turzo-Umbo Complex | 243 | 10 | Turzo (65%) – Alluvial flat | Alluvium derived from quartzite, sandstone, limestone & shale | 0-2 | Loam | 0.43 | Medium | Well drained |
| | | | Umbo (20%) – Alluvial flat | Alluvium derived from quartzite, sandstone, limestone, & shale | 0-2 | Loam | | Medium | Moderately well drained |
| **Turzo-Umbo Complex** | 244 | 107 | Turzo (65%) – Alluvial flat | Alluvium derived from quartzite, sandstone, limestone & shale | 2-4 | Loam | 0.43 | Medium | Well drained |

| Soil Series[1] | Mapping Unit | Project Acres | Landform[2] | Parent Material | Slope (Percent) | Surface Texture | K Factor, Whole Soil[3] | Runoff Class | Drainage Class |
|---|---|---|---|---|---|---|---|---|---|
| | | | Umbo (20%) – Alluvial flat | Alluvium derived from quartzite, sandstone, limestone, & shale | 2-4 | Loam | | Medium | Moderately well drained |
| Uffens | 249 | 376 | Stream terrace | Alluvium derived from sandstone, limestone & shale | 3-8 | Loam | 0.43 | High | Well drained |
| Utaline | 254 | 41 | Fan remnant | Alluvium derived from sandstone, limestone, shale & quartzite | 2-8 | Very gravelly sandy loam | 0.15 | Medium | Well drained |
| Wyasket | 276 | 18 | Floodplain, drainageway | Alluvium derived from sandstone, limestone, shale & quartzite | 2-4 | Loam | 0.37 | Medium | Poorly drained |
| **Yarts** | 280 | 459 | Alluvial flat | Alluvium derived from sandstone, shale & quartzite | 2-4 | Fine sandy loam | 0.37 | Very low | Well drained |
| *Water* | *285* | *8* | --- | --- | --- | --- | --- | --- | --- |
| **TOTAL** | | **11,685** | | | | | | | |

Source: USDA-NRCS Web Soil Survey – Soil Survey Geographic database (SSURGO). Accessed October 6, 2014.

[1]Soil series names in bold are determined to be prime and unique farmlands, if irrigated, based on criteria and assessment of data from the USDA-NRCS' 2003 Uinta County soil survey.

[2] Figures within the parentheses indicate the percent of the major or dominant soils within a soil complex.

[3]K Factor for Whole Soil (Kw): Indicates the susceptibility of the dominant soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss of sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value the more susceptible the soil is to sheet and rill erosion by water. Kw values are modified by the presence of rock fragments.

## Appendix D, Table 2 - Reclamation Potential

| Soil Series | MU | Project Acres | Reclamation Potential[1] | pH[2] | Sodium Adsorption Ration (SAR)[3] | Topsoil Depth (inches)[4] | Salinity (mmhos/cm)[5] |
|---|---|---|---|---|---|---|---|
| Abracon | 1 | 9 | Fair | 7.9-9.0 | 7.0 | 0-8 | 0.0-2.0 |
| Abracon | 2 | 700 | Fair | 7.9-9.0 | 7.2 | 0-4 | 0.0-2.0 |
| Badland-Rock Outcrop Complex | 12 | 421 | Not rated | 7.9-11.0 | 10.0 | 0-2 | 4.0-20.0 |
| Begay | 19 | 45 | Poor | 7.9-8.4 | 6.0 | 0-4 | 0 |
| Blackston | 23 | 67 | Fair | 7.9-8.4 | 4.7 | 0-8 | 0.0-2.0 |
| Blackston | 24 | 121 | Fair | 7.9-8.4 | 4.7 | 0-8 | 0.0-2.0 |
| Blackston | 25 | 20 | Fair | 7.9-8.4 | 4.7 | 0-8 | 0.0-2.0 |
| Boreham | 27 | 102 | Poor | 7.9-9.0 | 6.9 | 0-13 | 0.0-4.0 |
| Braf-Rock Outcrop Complex | 28 | 90 | Poor | 7.9-8.4 | 3.0 | 0-3 | 0.0-2.0 |
| Clapper Complex | 43 | 78 | Fair | 7.9-9.0 | 4.1 | 0-2 | 0.0-2.0 |
| Clapper | 44 | 995 | Fair | 7.9-9.0 | 4.6 | 0-7 | 0.0-2.0 |
| Clapper-Badland-Rock Outcrop Complex | 45 | 396 | Fair | 7.9-9.0 | 4.6 | 0-7 | 0.0-20.0* |
| Clapper-Montwel Complex | 52 | 674 | Fair | 7.0-9.0 | 4.6 | 0-7 | 0.0-2.0 |
| Cliff | 53 | 21 | Fair | 7.9-9.0 | 9.0 | 0-4 | 0.0-4.0 |
| Denco | 65 | 73 | Poor | 7.9-9.0 | 3.0 | 0-4 | 0.0-4.0 |
| Firstgap | 71 | 371 | Fair | 7.9-8.4 | 9.0 | 0-5 | 2.0-8.0 |
| Gerst | 74 | 157 | Poor | 7.9-9.0 | 1.8 | 0-5 | 0.0-2.0 |
| Gerst-Rock Outcrop Complex | 77 | 121 | Poor | 7.9-9.0 | 2.5 | 0-2 | 0.0-2.0 |
| Green River | 89 | 35 | Fair | 7.9-9.0 | 9.0 | 0-2 | 8.0-16.0 |
| Greybull | 91 | 179 | Fair | 7.9-8.4 | 8.9 | 0-3 | 2.0-4.0 |
| Greybull | 92 | 442 | Fair | 7.9-8.4 | 9.0 | 0-1 | 2.0-4.0 |
| Greybull-Utaline-Badland Complex | 94 | 608 | Fair | 7.9-8.4 | 8.9 | 0-2 | 0.0-20.0* |
| Hanksville | 95 | 55 | Poor | 7.9-9.4 | 7.6 | 0-3 | 2.0-8.0 |
| Hanksville-Uffens Complex | 98 | 21 | Poor | 7.9-9.0 | 7.6 | 0-3 | 2.0-8.0 |
| Hideout-Badland-Rock Outcrop Complex | 102 | 166 | Poor | 7.9-8.4 | 0.0 | 0-2 | 0.0-20.0* |
| Homko | 106 | 25 | Poor | 7.9-9.0 | 21.6 | 0-2 | 2.0-4.0 |

| Soil Series | MU | Project Acres | Reclamation Potential[1] | pH[2] | Sodium Adsorption Ration (SAR)[3] | Topsoil Depth (inches)[4] | Salinity (mmhos/cm)[5] |
|---|---|---|---|---|---|---|---|
| Honlu | 108 | 352 | Fair | 7.9-8.4 | 6.9 | 0-4 | 0.0-4.0 |
| Honlu | 109 | 462 | Fair | 7.9-8.4 | 6.8 | 0-5 | 0.0-4.0 |
| Lind | 131 | 54 | Fair | 7.9-8.4 | 5.1 | 0-5 | 2.0-8.0 |
| Lind | 132 | 39 | Fair | 7.9-8.4 | 5.3 | 0-5 | 2.0-8.0 |
| Mespun | 133 | 224 | Poor | 6.6-8.4 | 0.0 | 0-9 | 0 |
| Mikim | 137 | 9 | Poor | 7.9-8.4 | 4.5 | 0-6 | 0.0-2.0 |
| Montwel | 145 | 825 | Fair | 7.9-9.0 | 7.8 | 0-3 | 0.0-2.0 |
| Montwel-Hideout Complex | 147 | 60 | Fair | 7.9-9.0 | 7.8 | 0-2 | 0.0-2.0 |
| Montwel-Honlu-Rock Outcrop Complex | 148 | 604 | Fair | 7.9-9.0 | 7.8 | 0-2 | 0.0-4.0 |
| Nakoy | 160 | 4 | Poor | 7.9-9.0 | 7.7 | 0-14 | 0.0-2.0 |
| Nolava-Nolava, Wet Complex | 162 | 17 | Fair | 7.9-9.0 | 4.6 | 0-10 | 0.0-4.0 |
| Nolava-Nolava, Wet Complex | 163 | 334 | Fair | 7.9-9.0 | 4.8 | 0-13 | 0.0-4.0 |
| Nolava | 164 | 39 | Fair | 7.9-9.0 | 6.1 | 0-4 | 0.0-4.0 |
| Paradox | 169 | 23 | Fair | 7.9-9.0 | 8.0 | 0-3 | 0.0-4.0 |
| Paradox | 171 | 41 | Fair | 7.9-8.4 | 3.0 | 0-14 | 0.0-4.0 |
| Pits | 181 | 4 | Not rated | --- | --- | --- | 0 |
| Riemod | 188 | 77 | Fair | 7.9-9.0 | 6.3 | 0-6 | 0.0-2.0 |
| Riemod | 189 | 141 | Fair | 7.9-9.0 | 6.1 | 0-2 | 0.0-2.0 |
| Riemod | 190 | 163 | Fair | 7.9-9.0 | 5.9 | 0-2 | 0.0-2.0 |
| Rock Outcrop | 193 | 19 | Not rated | --- | --- | -- | --- |
| Shotnick | 205 | 2 | Poor | 7.9-9.0 | 3.0 | 0-8 | 0.0-2.0 |
| Shotnick | 206 | 49 | Fair | 7.9-9.0 | 3.0 | 0-8 | 0.0-2.0 |
| Shotnick | 207 | 22 | Fair | 7.9-9.0 | 3.0 | 0-4 | 0.0-2.0 |
| Shotnick-Walkup Complex | 209 | 10 | Fair | 7.4-9.0 | 3.0 | 0-8 | 0.0-4.0 |
| Splimo | 216 | 424 | Poor | 7.9-9.0 | 4.3 | 0-2 | 0.0-2.0 |
| Splimo | 217 | 18 | Poor | 7.9-9.0 | 5.0 | 0-3 | 0.0-2.0 |
| Splimo-Clapper Complex | 220 | 587 | Poor | 7.9-9.0 | 5.0 | 0-3 | 0.0-2.0 |
| Turzo | 240 | 12 | Fair | 7.9-9.0 | 8.9 | 0-11 | 0.0-2.0 |
| Turzo | 242 | 62 | Poor | 8.5-9.0 | 15.0 | 0-4 | 4.0-8.0 |
| Turzo-Umbo Complex | 243 | 10 | Fair | 7.9-9.0 | 8.9 | 0-9 | 0.0-2.0 |
| Turzo-Umbo Complex | 244 | 107 | Fair | 7.9-9.0 | 8.9 | 0-11 | 0.0-2.0 |

| Soil Series | MU | Project Acres | Reclamation Potential[1] | pH[2] | Sodium Adsorption Ration (SAR)[3] | Topsoil Depth (inches)[4] | Salinity (mmhos/cm)[5] |
|---|---|---|---|---|---|---|---|
| Uffens | 249 | 376 | Poor | 8.5-11.0 | 18.9 | 0-1 | 4.0-8.0 |
| Utaline | 254 | 41 | Poor | 7.9-8.4 | 2.8 | 0-3 | 0.0-2.0 |
| Wyasket | 276 | 18 | Fair | 7.4-9.0 | 8.1 | 0-9 | 4.0-8.0 |
| Yarts | 280 | 459 | Fair | 7.9-9.0 | 5.0 | 0-3 | 2.0-4.0 |
| *Water* | 285 | 8 | Not rated | --- | --- | --- | --- |
| **TOTAL** | | **11,685** | | | | | |

Source: USDA-NRCS Web Soil Survey – Soil Survey Geographic database (SSURGO). Accessed October 6, 2014.

[1]Reclamation Potential: The potential for the dominant soil but does not eliminate the need for onsite investigation.

[2]pH: The pH scale ranges between 1 to 14, pH 7 is neutral, less than 7 is acidic and greater than 7 is basic. The pH scale is logarithmic, i.e., each whole pH value less than 7 is 10 time more acidic than the next higher value and each whole pH value greater than 7 is 10 times more basic than the next lower value. (Pure water is neutral.)

[3]Sodium Adsorption Ratio (SAR): Sodium, measured as a ratio relative to calcium and magnesium in the soil, influences the nutrient uptake capabilities of the soil. Soils having an SAR value of 13, or more, have a reduced capacity to aid plants in taking up needed nutrients.

[4]Topsoil Depth: Topsoil is the uppermost layer of a soil and includes the most organic matter directly contributing the most nutrients to vegetation as well as having a positive effect on available water holding capacity and infiltration rates as well as soil organism abundance and overall health.

[5]Salinity is expressed as the electrical conductivity as millimhos per centimeter (mmhos/cm) at 25 degrees Celsius of the saturated soil. Salinity affects the suitability of a soil for vegetation production, as well as the potential of the soil to corrode metal and concrete.

## Appendix D, Table 3 - Vegetation Communities or Ecological Site Information

| Soil Series | MU | Project Acres | Dominant Ecological Site[1] | Major Native Vegetation Components[2] |
|---|---|---|---|---|
| Abracon | 1 | 9 | Semi-desert loam (Wyoming sage) | Indian ricegrass, bottlebrush squirreltail, galleta (curly grass), needleandthread, globemallow, Wyoming big sage, winterfat |
| Abracon | 2 | 700 | Semi-desert loam (Wyoming sage) | Indian ricegrass, bottlebrush squirreltail,galleta (curly grass), needleandthread, globemallow, Wyoming big sage, winterfat |
| Badland-Rock Outcrop Complex | 12 | 421 | --- | --- |
| Begay | 19 | 45 | Semi-desert sandy loam (fourwing saltbush) | Indian ricegrass, needleandthread, galleta (curly grass), fourwing saltbush, Wyoming big sage |
| Blackston | 23 | 67 | Desert loam (shadscale) | Indian ricegrass,galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Blackston | 24 | 121 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Blackston | 25 | 20 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Boreham | 27 | 102 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Braf-Rock Outcrop Complex | 28 | 90 | Desert shallow loam (black sage) | Bottlebrush squirreltail, galleta (curly grass), black sage, shadscale |
| Clapper Complex | 43 | 78 | Semi-desert stony loam (juniper) | Galleta (curly grass), needleandthread, Indian ricegrass, bluebunch wheatgrass, bottlebrush squirreltail, birchleaf mountain mahogany, black sage, Mormon tea, Utah juniper |
| Clapper | 44 | 995 | Semi-desert gravelly loam (Wyoming sage) | Galleta (curly grass), Indian ricegrass, needleandthread, Wyoming big sage, bud sage, shadscale, winterfat |
| Clapper-Badland-Rock Outcrop Complex | 45 | 396 | Semi-desert gravelly loam (Wyoming sage) | Galleta (curly grass), Indian ricegrass, needleandthread, Wyoming big sage, bud sage, shadscale, winterfat |
| Clapper-Montwel Complex | 52 | 674 | Semi-desert gravelly loam (Wyoming sage) | Galleta (curly grass), Indian ricegrass, needleandthread, Wyoming big sage, bud sage, shadscale, winterfat |
| Cliff | 53 | 21 | Semi-desert sandy loam (fourwing saltbush) | Indian ricegrass, needleandthread, galleta (curly grass), fourwing saltbush, Wyoming big sage |
| Denco | 65 | 73 | Desert clay (shadscale) | Bottlebrush squirreltail, Indian ricegrass, shadscale, bud sage, winterfat |
| Firstgap | 71 | 371 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Gerst | 74 | 157 | Semi-desert shallow loam (black sage) | Indian ricegrass, galleta (curly grass), slender buckwheat, black sage, shadscale, bud sage |

| Soil Series | MU | Project Acres | Dominant Ecological Site[1] | Major Native Vegetation Components[2] |
|---|---|---|---|---|
| Gerst-Rock Outcrop Complex | 77 | 121 | Semi-desert shallow loam (juniper) | Bluebunch wheatgrass, galleta (curly grass), black sage, Mormon tea, Utah juniper |
| Green River | 89 | 35 | Alkali bottoms (alkali sacaton) | Saltgrass, alkali sacaton, alkali bluegrass, greasewood |
| Greybull | 91 | 179 | Desert shallow loam (shadscale) | Galleta (curly grass), Indian ricegrass, shadscale, Mormon tea, bud sage |
| Greybull | 92 | 442 | Desert shallow loam (shadscale) | Galleta (curly grass), Indian ricegrass, shadscale, Mormon tea, bud sage |
| Greybull-Utaline-Badland Complex | 94 | 608 | Desert shallow loam (shadscale) | Galleta (curly grass), Indian ricegrass, shadscale, Mormon tea, bud sage |
| Hanksville | 95 | 55 | Desert shallow clay (mat saltbush) | Galleta, mat saltbush, bud sage |
| Hanksville-Uffens Complex | 98 | 21 | Desert shallow clay (mat saltbush) | Galleta, mat saltbush, bud sage |
| Hideout-Badland-rock Outcrop Complex | 102 | 166 | Semi-desert shallow loam (black sage) | Indian ricegrass, galleta (curly grass), slender buckwheat, black sage, shadscale, bud sage |
| Homko | 106 | 25 | Desert alkali bench (Castlevalley saltbush) | Indian ricegrass, bottlebrush squirreltail, galleta (curly grass), greenmollly, shadscale, Castlevalley saltbush |
| Honlu | 108 | 352 | Semi-desert loam (Wyoming sage) | Indian ricegrass, bottlebrush squirreltail, galleta (curly grass), needleandthread, globemallow, Wyoming big sage, winterfat |
| Honlu | 109 | 462 | Semi-desert loam (Wyoming sage) | Indian ricegrass, bottlebrush squirreltail, galleta (curly grass), needleandthread, globemallow, Wyoming big sage, winterfat |
| Lind | 131 | 54 | Desert loam (shadscale) | Indian ricegrass,galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Lind | 132 | 39 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Mespun | 133 | 224 | Semi-desert sand (fourwing saltbush) | Indian ricegrass, needleandthread, galleta (curly grass), scarlet globemallow, crispleaf buckwheat, sand sagebrush, fourwing saltbush |
| Mikim | 137 | 9 | Semi-desert loam (Wyoming sage) | Indian ricegrass, bottlebrush squirreltail, galleta (curly grass), needleandthread, globemallow, Wyoming big sage, winterfat |
| Montwel | 145 | 825 | Desert shallow loam (shadscale) | Galleta (curly grass), Indian ricegrass, shadscale, Mormon tea, bud sage |
| Montwel-Hideout Complex | 147 | 60 | Desert shallow loam (shadscale) | Galleta (curly grass), Indian ricegrass, shadscale, Mormon tea, bud sage |
| Montwel-Honlu-Rock Outcrop Complex | 148 | 604 | Desert very steep shallow loam (shadscale) | Galleta (curly grass), shadscale, Castlevalley saltbush, bud sage |
| Nakoy | 160 | 4 | Desert sandy loam (Indian ricegrass) | Indian ricegrass, galleta (curly grass), globemallow, fourwing saltbush, shadscale, Mormon tea winterfat |
| Nolava-Nolava, Wet Complex | 162 | 17 | Desert loam (shadscale) | Indian ricegrass,galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Nolava-Nolava, Wet Complex | 163 | 334 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |

| Soil Series | MU | Project Acres | Dominant Ecological Site[1] | Major Native Vegetation Components[2] |
|---|---|---|---|---|
| Nolava | 164 | 39 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Paradox | 169 | 23 | Semi-desert loam (Wyoming sage) | Indian ricegrass, bottlebrush squirreltail,galleta (curly grass), needleandthread, globemallow, Wyoming big sage, winterfat |
| Paradox | 171 | 41 | Semi-desert loam (Wyoming sage ) | Indian ricegrass, bottlebrush squirreltail, galleta (curly grass), needleandthread, globemallow, Wyoming big sage, winterfat |
| Pits | 181 | 4 | --- | --- |
| Riemod | 188 | 77 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Riemod | 189 | 141 | Desert loam (shadscale) | Indian ricegrass,galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Riemod | 190 | 163 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Rock Outcrop | 193 | 19 | --- | --- |
| Shotnick | 205 | 2 | Desert sandy loam (Indian ricegrass) | Indian ricegrass, galleta (curly grass), globemallow, fourwing saltbush, shadscale, Mormon tea winterfat |
| Shotnick | 206 | 49 | Desert sandy loam (Indian ricegrass) | Indian ricegrass, galleta (curly grass), globemallow, fourwing saltbush, shadscale, Mormon tea winterfat |
| Shotnick | 207 | 22 | Desert sandy loam (Indian ricegrass) | Indian ricegrass,galleta (curly grass), globemallow, fourwing saltbush, shadscale, Mormon tea winterfat |
| Shotnick-Walkup Complex | 209 | 10 | Desert sandy loam (Indian ricegrass) | Indian ricegrass,galleta (curly grass), globemallow, fourwing saltbush, shadscale, Mormon tea winterfat |
| Splimo | 216 | 424 | Semi-desert shallow loam (juniper) | Bluebunch wheatgrass, galleta (curly grass), black sage, Mormon tea, Utah juniper |
| Splimo | 217 | 18 | Semi-desert shallow loam (black sage) | Indian ricegrass, galleta (curly grass), slender buckwheat, black sage, shadscale, bud sage |
| Splimo-Clapper Complex | 220 | 587 | Semi-desert shallow loam (black sage) | Indian ricegrass,galleta (curly grass), slender buckwheat, black sage, shadscale, bud sage |
| Turzo | 240 | 12 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Turzo | 242 | 62 | Alkali flat (greasewood) | Alkali sacaton, bottlebrush squirreltail, galleta (curly grass), seepweed, shadscale, greasewood |
| Turzo-Umbo Complex | 243 | 10 | Desert loam (shadscale) | Indian ricegrass,galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Turzo-Umbo Complex | 244 | 107 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Uffens | 249 | 376 | Desert alkali bench (Castlevalley saltbush) | Indian ricegrass, bottlebrush squirreltail, galleta (curly grass), greenmollly, |

| Soil Series | MU | Project Acres | Dominant Ecological Site[1] | Major Native Vegetation Components[2] |
|---|---|---|---|---|
| | | | | shadscale, Castlevalley saltbush |
| Utaline | 254 | 41 | Desert loam (shadscale) | Indian ricegrass, galleta (curly grass), globemallow, shadscale, bud sage, winterfat |
| Wyasket | 276 | 18 | Wet salty streambank (coyote willow) | Saltgrass, alkali sacaton, alkali muhly, American sumac, coyote willow, Fremont's cottonwood |
| Yarts | 280 | 459 | Semi-desert sandy loam (fourwing saltbush) | Indian ricegrass, needleandthread, galleta (curly grass), fourwing saltbush, Wyoming big sage |
| *Water* | 285 | 8 | --- | --- |
| **TOTAL** | | **11,685** | | |

Source: USDA-NRCS Web Soil Survey – Soil Survey Geographic database (SSURGO). Accessed October 6, 2014.

[1] Dominant Ecological Site Name: The name describes three physical conditions, i.e., the climatic regime (desert, semi-desert, etc.), the surface soil texture (loam, shallow loam, stony loam, sandy loam, etc.), and the dominant plant species (Wyoming sage, black sage, juniper, etc.)

[2]Major native vegetation components: A list of the dominant native vegetation species likely to be found on the ecological site. Associated species are listed first by grasses, then forbs, shrubs and trees.

# APPENDIX E – SUMMARY OF POTENTIAL FOR AND/OR OCCURRENCE OF SPECIAL STATUS PLANT AND WILDLIFE SPECIES FOR THE ASHLEY VALLEY ENERGY ROUTE PROJECT

*This page intentionally left blank.*

## SUMMARY OF POTENTIAL FOR AND/OR OCCURRENCE OF SPECIAL STATUS PLANT AND WILDLIFE SPECIES FOR THE PROPOSED ASHLEY VALLEY ENERGY ROUTE (AVER) PROJECT

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| **Wildlife Species** | | | | |
| **Mammals** | | | | |
| Big free-tailed bat<br>*Nyctinomops macrotis* | WSC | Rocky areas in rugged country. The species has been observed in lowlands of river floodplain-arroyo association; also in shrub desert and woodland habitats. Roosts in rock crevices (vertical or horizontal) in cliffs; also in buildings, caves, and occasionally tree holes. Winter habits unknown. | Low: The species primarily occurs in the southern portion of Utah, although individuals may rarely occur in northern Utah. The species has been documented in the northeastern portion of Utah from Daggett County into Wyoming. Although uncommon to Uintah County, bats may occupy isolated, badland/rock outcrops as roosting sites in the Project Area, and may forage within the Project Area. | **No** |
| Black-footed ferret<br>*Mustela nigripes* | FE | Semi-arid grasslands and mountain basins. It is found primarily in association with active prairie dog colonies that contain suitable burrow densities and colonies that are of sufficient size (at least 100 acres). | None: In Uintah County, the USFWS considers all active prairie dog towns or complex of towns large enough to support ferrets to be potential black-footed ferret reintroduction habitat. Currently, the distribution of this species in Utah is limited to a nonessential, experimental population reintroduced into Coyote Basin, located approximately 17 miles east and across the Green River from the Project Area. Although several white-tailed prairie dog colonies occur in the Project Area on McCoy Flats, it is not reasonably foreseeable that the USFWS, in conjunction with the UDWR, would utilize these areas as a potential future black-footed ferret reintroduction sites. | Yes |
| Canada lynx<br>*Lynx lynx canadensis* | FT | Primarily occurs in Douglas-fir, spruce-fir, and subalpine forests at elevations above 7,800 feet above mean sea level (famsl). | None: If extant in Utah, this species most likely occurs in montane forests in the Uinta Mountains. No potential habitat for the species occurs within the Project Area. | Yes |
| Fringed myotis<br>*Myotis thysanodes* | WSC | The species is an uncommon resident in Utah. The fringed myotis inhabits caves, mines, and buildings, most often in desert and woodland areas. | None: This species primarily occurs in the southern portion of Utah and is not expected to be present in the Project Area. | Yes |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Spotted bat *Euderma maculatum* | WSC | Inhabits desert shrub, sagebrush-rabbitbrush, pinyon-juniper woodland, and ponderosa pine and montane forest habitats. The species also uses lowland riparian and montane grassland habitats. Suitable cliff habitat typically appears to be necessary for roosts/hibernacula. Spotted bats typically do not migrate and use hibernacula that maintain a constant temperature above freezing from September through May. | Low: The species have been reported in northeastern Uintah County, outside the current Project Area. However, as the Project Area includes sagebrush-rabbitbrush and scattered stands of pinyon-juniper woodland, potential habitat for this species may occur within the Project Area. | **No** |
| Townsend's big-eared bat *Corynorhinus townsendii* | WSC | Inhabits a wide range of habitats from semi-desert shrublands and pinyon-juniper woodlands to open montane forests. Roosting occurs in mines and caves, in abandoned buildings, on rock cliffs, and occasionally in tree cavities. Foraging occurs well after dark over water, along margins of vegetation, and over sagebrush. | Low: The species occurs throughout much of Utah including Uintah County. One individual was collected at the Ouray National Wildlife Refuge (NWR) in 1980. The species may occupy isolated, badland/rock outcrops as roosting sites in the Project Area, and may forage within shrubland areas in the Project Area. | **No** |
| White-tailed prairie dog *Cynomys leucurus* | WSC | Inhabits grasslands, plateaus, plains, and desert shrub habitats. White-tailed prairie dogs form colonies or "towns" and spend much of their time in underground burrows and hibernating during the winter months. | High: Approximately 131 acres of white-tailed prairie dog colonies occur within the Project Area. | **No** |
| **Birds** | | | | |
| American white pelican *Pelecanus erythrorhynchos* | WSC; PIF | Inhabits areas of open water including large rivers, lakes, ponds, and reservoirs with surrounding habitats ranging from barren to heavily-vegetated sites. Typically nests on isolated islands in lakes or reservoirs. | None: In Utah, the species is known to nest on islands associated with Great Salt and Utah Lakes and is now found at Strawberry Reservoir. In northeastern Utah, the species occurs as a transient on larger water bodies. No potential habitat for the species occurs within the Project Area. | Yes |
| Bald eagle *Haliaeetus leucocephalus* | WSC; BGEPA | In 2014, northeastern Utah had a total of seven active nests and one inactive nest (B. Maxfield, personal communication, October 6, 2014). The closest active nest to the Project Area was located on the Green River in Bohemian Bottom, which is just upstream from the Ouray National Wildlife Refuge, about 12 air miles south of the Project Area (B. Maxfield, personal communication, October 6, 2014). Winter habitat typically includes areas of open water, adequate food sources, and sufficient diurnal perches and night roosts. | High: Bald eagles are known to roost in cottonwood galleries along the Green River. Bald eagles may forage outside the river corridor in the Project Area. | **No** |
| Black-chinned hummingbird *Archilochus alexandri* | PIF | Habitat includes dry lowlands and foothills with pinyon-juniper woodlands, nesting sites can include cavities in rock outcrops. | Low: The Project Area lacks pinyon-juniper woodlands and thus offers little general habitat. However, there is low potential for suitable nesting habitat within the rock outcrops associated with the Asphalt Ridge area of the Project Area. | **No** |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Bobolink<br>*Dolichonyx oryzivorus* | WSC;<br>PIF | Inhabits mesic and irrigated meadows, riparian woodlands, and subalpine marshes at lower elevations (2,800 to 5,000 famsl). Suitable breeding habitat for this ground nester includes tall grass, flooded meadows, prairies, and agricultural fields; forbs and perch sites also are required. | Low: The species breeds in isolated areas of Utah, primarily in the northern half of the State. However, as farmlands in the Project Area may not be irrigated season long, the species is unlikely to occupy agricultural fields in the eastern portion of the Project Area. | Yes |
| Brewer's sparrow<br>*Spizella breweri* | PIF | A common to very common resident of the shrub steppe community, choosing to nest in tall, dense sagebrush. | Low: Although the Project Area includes sagebrush and mixed semi-desert shrub area, such shrubs lack the tall dense sagebrush and bare ground understory preferred by this species. As such there is low potential for this species to occur within the Project Area. | **No** |
| Broad-tailed hummingbird<br>*Selasphorus platycercus* | PIF | Habitat includes open woodland, especially pinyon-juniper, pine-oak, and conifer-aspen association; brushy hillsides; montane scrub and thickets. | None: No potential habitat for the species occurs within the Project Area. | Yes |
| Cassin's finch<br>*Carpodacus cassinii* | PIF | Habitat includes open coniferous forest. In migration and winter, habitat also includes deciduous woodland, secondary growth, scrub, brushy areas, and partly-open situations with scattered trees. | None: In Utah, the species is a year-round resident that occurs statewide in high and mid-elevation forests. No potential habitat for the species occurs within the Project Area. | Yes |
| Cassin's kingbird<br>*Tyrannus vociferan* | PIF | Habitat includes sparse woods and dry scrub areas. | None: The species is a common summer resident in southern Utah; however, no occurrence records exist for Uintah County. The species typically occurs south and outside of the Project Area. | Yes |
| Clark's nutcracker<br>*Nucifraga columbiana* | PIF | Habitat includes open coniferous forest, forest edge and clearings, primarily in mountains, but wandering into various habitats; in winter also in lowlands. | None: No potential habitat for the species occurs within the Project Area. | Yes |
| Ferruginous hawk<br>*Buteo regalis* | WSC;<br>PIF | Resides mainly in lowland open desert terrain characterized by barren cliffs and bluffs, pinyon-juniper woodlands, sagebrush-rabbitbrush, and cold desert shrub. Nesting habitat includes promontory points and rocky outcrops. | Low: The Project Area meets the general habitat requirements for the species. Known nest sites occur west and south well outside the Project Area. Kleinfelder conducted a raptor survey on June 19, 2014. The results of this survey revealed no raptor nests within 0.5 mile within the edge of the Project Area (Kleinfelder 2014). There remains low potential for the Project Area to provide foraging habitat for this species. | **No** |
| Golden eagle[3]<br>*Aquilla chrysaetos* | BGEPA | Found in mountainous areas, canyons, shrublands, and grasslands, and in shrub-steppe habitats in winter. | High: The Project Area meets the requirements for nesting and foraging habitat. Kleinfelder conducted a raptor survey on June 19, 2014. The results of this survey revealed no raptor nests within 0.5 mile within the edge of the Project Area (Kleinfelder 2014). While no nests are within the Project Area, the Project Area still provides excellent potential foraging habitat. | **No** |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Grasshopper sparrow *Ammodramus savannarum* | WSC; PIF | Prefers grasslands of intermediate height and are often associated with clumped vegetation interspersed with patches of bare ground. Other habitat requirements include moderately-deep litter and sparse coverage of woody vegetation. | Low: In Utah, breeding populations have only been found in the northern portion of the state (including Uintah County). As the Project Area lacks grasslands, no potential habitat for the species occurs within the Project Area. | Yes |
| Gray flycatcher *Empidonax wrightii* | PIF | Habitat includes arid areas of sagebrush or pinyon-juniper woodlands. | Low to Moderate: The species may nest in shrubs within the Project Area. | **No** |
| Gray vireo *Vireo vicinior* | PIF | Common in mature pinyon-juniper woodlands of SW Utah, scattered local populations may occur on the Colorado Plateau (including the Uinta Basin). Prefers dry, open, steep slopes having pinyon-juniper woodlands as nesting areas. Nests are located in trees about 8 feet off the ground. | None: No potential habitat for the species occurs within the Project Area. | Yes |
| Greater sage-grouse *Centrocercus urophasianus* | FC; PIF | Inhabits upland sagebrush habitat in rolling hills and benches. Breeding occurs on open leks (or strutting grounds), and nesting and brooding occurs in upland areas and meadows in proximity to water and generally within a 2-mile radius of the lek. During winter, sagebrush habitats at submontane elevations commonly are used. | Low to Moderate: The Project Area falls within UDWR mapped occupied, brooding, crucial winter, and substantial winter habitat. It also occurs within BLM/USFS preliminary priority and preliminary general management areas. A lek, inactive for the past 3 years (personal communication w/Brian Maxfield, UDWR Biologist) occurs 200 feet south of the Project Area. | **No** |
| Green-tailed towhee *Pipilo chlorurus* | PIF | Habitat is usually low shrubs, sometimes interspersed with trees. Avoids typical forests, preferring open pinyon-juniper woodlands. In pinyon-juniper, associated with sagebrush (*Artemesia* spp.) dominated openings with a rich high shrub species component. | None: A common breeder in northeastern Utah, the species may occupy desert shrublands within the Project Area. | **No** |
| Juniper titmouse *Parus inornatus* | PIF | Habitat includes sparse pinyon-juniper and oak woodlands. | None: Although a common and widespread bird in Utah, no potential habitat occurs for this species within the Project Area. | Yes |
| Lewis's woodpecker *Melanerpes lewis* | WSC; PIF | Inhabits open habitats including pine forests, riparian areas, and pinyon-juniper woodlands. Breeding habitat typically includes ponderosa pines and cottonwoods in stream bottoms and farm areas. The species inhabits agricultural lands and urban parks, montane and desert riparian woodlands, and submontane shrub habitats. | Low: In Utah, the species is widespread, but uncommon. Breeding has been observed in Ouray, Uintah County. Although there is riparian/wetland areas associated with private agricultural lands within the Project Area, these lands lack the cottonwood overstory component preferred by this species. As such, no potential habitat for the species occurs within the Project Area. | Yes |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Long-billed curlew *Numenius americanus* | WSC; PIF | Inhabits shortgrass prairies, alpine meadows, riparian woodlands, and reservoir habitats. Breeding habitat includes upland areas of shortgrass prairie or grassy meadows with bare ground components, usually near water. | None: A widespread migrant in Utah, breeding birds are fairly common, but localized primarily in central and northwestern Utah. Potential nesting has been reported in Uintah County, but has not been confirmed. No potential habitat for the species occurs within the Project Area. | Yes |
| Mexican spotted owl *Strix occidentalis lucida* | FT; PIF | In Utah, found primarily in rocky canyons. Nests in caves or crevices. Roosts on ledges or in trees in canyons. The species prefers mesic (moister/cooler) canyons with mixed conifer or riparian components. Breeding and nesting season: March through August. | None: No Mexican spotted owl nests or suitable habitat have been identified within the Project Area. | Yes |
| Mountain bluebird *Sialia currucoides* | PIF | Habitat includes subalpine meadows, grasslands, shrub-steppe, savanna, and pinyon-juniper woodlands; in south usually at elevations above 1,500 meters (4,900 feet). In winter and migration, also inhabits desert, brushy areas and agricultural lands. | None: In Utah, breeding typically occurs in high mountain valleys. No potential habitat occurs for this species within the Project Area. | Yes |
| Mountain plover *Charadrius montanus* | WSC; PIF | In the Uinta Basin, small mountain plover populations breed in shrub-steppe habitat where vegetation is sparse and sagebrush communities are dominated by *Artemesia* spp. with components of black sage and grasses. Nest locations also vary with respect to topography (nests are located on flat, open ground; on the top or at the base of slopes; or very close to large rocky outcroppings). | None: The only known breeding population of mountain plover in Utah is located on Myton Bench. Mountain plover concentration areas have been designated within the Myton Bench area, located approximately 25 miles SW of the Project Area. | Yes |
| Northern goshawk *Accipiter gentilis* | CAS | Generally found in a wide variety of forest types including deciduous, coniferous, and mixed forests. Typically mature and old growth forests and generally selects larger tracts of forest over smaller tracts. In the western U.S., characteristically nests in coniferous forests including those dominated by ponderosa pine, lodgepole, or in mixed forests dominated by various coniferous species including: Douglas-fir, cedar, hemlock, spruce, and larch. Western birds also nest in deciduous forests dominated by aspen, paper birch, or willow. | None: No potential habitat occurs for this species within the Project Area. | Yes |
| Pinyon jay *Gymnorhinus cyanocephalus* | PIF | Habitat includes semi-arid foothills with pinyon-juniper woodlands. | None: Common to pinyon-juniper forests of Utah, no potential habitat for this species occurs within the Project Area. | Yes |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Prairie falcon<br>*Falco mexicanus* | PIF | Prefers open habitat such as grasslands and prairies. May migrate during winter, but not over long distances, preferring to go just to lower elevations with favorable foraging areas. Prefers nesting on ledges of rocky cliffs high above the ground. | Low: No nests have been documented within 0.5 miles of the Project Area. The Project Area lacks suitable nesting sites, but could provide foraging habitat, especially in the open areas of the agricultural land. | **No** |
| Sage sparrow<br>*Amphispiza belli* | PIF | A common resident throughout Utah, migrating to SW Utah in the winter. Prefers shrub, grass and desert shrub habitats. Nests are built in low shrubs or on the ground. | Moderate to high: A majority of the Project Area consists of sagebrush or mixed shrub-grass communities. Low shrub vegetation occurs throughout and should be considered potential nesting and foraging habitat for this species. | **No** |
| Sage thrasher<br>*Oreoscoptes montanus* | PIF | Prefers greasewood and sagebrush habitats in low elevation desert areas. This species spends most of its time on the ground. Nests in low sagebrush or on the ground. . | Moderate to high: A majority of the Project Area consists of sagebrush or mixed shrub-grass communities. Low shrub vegetation occurs throughout and should be considered potential nesting and foraging habitat for this species. | **No** |
| Short-eared owl<br>*Asio flammeus* | WSC | Inhabits arid grasslands, agricultural areas, marshes, and occasionally open woodlands. In Utah, cold desert shrub and sagebrush-rabbitbrush habitats also are utilized. Typically a ground nester. | Moderate: The species breeds in northern Utah and potentially occurs as a migrant throughout the state. It is known to occur in Uintah County. Although no short-eared owl nests have been identified within the Project Area, the species could occupy desert shrubland areas and agricultural lands in the Project Area. | **No** |
| Swainson's hawk<br>*Buteo swainsonii* | PIF | Inhabits grasslands, deserts, agricultural areas, shrublands, marshlands, and riparian forests. Nests in trees in or near open areas. Breeding season: April 1 – July 15. | Low to moderate: Solitary trees associated with the agricultural lands in the eastern portion of the Project Area could serve as potential nesting sites, thus surrounding areas have potential foraging habitat. | **No** |
| Three-toed woodpecker<br>*Picoides tridactylus* | WSC; PIF | Prefers coniferous forest, primarily spruce and balsam fir. It inhabits areas where dead timber remains after fires or logging. It is found less frequently in mixed forest, and occasionally in willow thickets along streams. Also found in high elevation aspen groves, bogs, and swamps. | None: The species occurs in the northern portion of Uintah County, generally inhabiting coniferous forests above 8,000 feet amsl. As elevation in the Project Area is less than 8,000 feet, no potential habitat for the species occurs within the Project Area.. | Yes |
| Virginia's warbler<br>*Vermivora virginiae* | PIF | Habitat includes dry woodlands, scrub oak brushlands, canyons, and ravines. | None: No potential habitat for the species occurs within the Project Area. | Yes |
| Western burrowing owl<br>*Athene cunicularia* | WSC | Inhabits desert, semi-desert shrubland, grasslands, and agriculture areas. Nesting and shelter habitat primarily consists of flat, dry, and relatively open terrain; short vegetation; and abandoned mammal burrows (within northeastern Utah primarily in association with prairie dog complexes). | High: The Project Area meets the requirements for nesting and foraging habitat. Kleinfelder conducted a raptor survey on June 19, 2014. The results of this survey revealed no raptor nests within 0.5 mile within the edge of the Project Area (Kleinfelder 2014). However, potential breeding and nesting habitat is present in mapped white-tailed prairie dog colonies. | **No** |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Western yellow-billed cuckoo *Coccyzus americanus occidentalis* | FT; PIF | A riparian obligate found in large tracts of dense riparian woodlands. Breeding occurs in lowland riparian areas with dense canopies. This species has been seen occupying deciduous woodlands, alder thickets and desert farmlands/orchards. Breeding season: late June through July. | None: This species is known to occur at the Ouray NWR and along the Green River. The closest proposed critical habitat for this species occurs along the Green River, downstream of Horseshoe Bend, approximately 5 miles south of the Project Area. Riparian/wetlands are associated with agricultural lands in the eastern portion of the Project Area. However, such lands lack the mature, dense riparian overstory typically utilized by this species. | Yes |
| **Fish** | | | | |
| Bluehead sucker *Catostomus discobolus* | CAS | Occupies a wide range of aquatic habitats ranging from cold, clear mountain streams to warm, turbid rivers. | Moderate: This species occurs in the Green River downstream of the Project Area. | **No** |
| Bonytail *Gila elegans* | FE | Is endemic to the Colorado River system within main channels of large rivers, and favors swift currents. | Moderate: This species occurs in the Green River downstream of the Project Area. The closest USFWS-designated critical habitat is located 88 river miles downstream of the Project Area. | **No** |
| Colorado pikeminnow *Ptychocheilus lucius* | FE | Known from the Colorado River system. Uses large swift rivers. | Moderate: This species occurs in the Green River downstream of the Project Area. USFWS-designated critical habitat is located four river miles downstream of the Project Area. | **No** |
| Colorado River cutthroat trout *Oncorhynchus clarkii pleuriticus* | CAS | Requires cool, clear water and well-vegetated streambanks for cover and bank stability; instream cover in the form of deep pools and boulders and logs also is important; adapted to relatively cold water, thrives at high elevations. Most remaining populations are fluvial or resident. Occurs also in lakes. | None: No potential habitat for this species occurs within or downstream of the Project Area. | Yes |
| Flannelmouth sucker *Catostomus latipinnis* | CAS | Adults occur in riffles, runs, and pools in streams and large rivers, with the highest densities usually in pool habitat. Young live in slow to moderately-swift waters near the shoreline areas. | Moderate: This species occurs in the Green River downstream of the Project Area. | **No** |
| Humpback chub *Gila cypha* | FE | Is endemic to the Colorado River system within deep, swift-running rivers, with canyon-shaded environments. | Moderate: This species occurs in the Green River downstream of the Project Area. The closest USFWS-designated critical habitat is located 88 river miles downstream of the Project Area. | **No** |
| Razorback sucker *Xyrauchen texanus* | FE | Endemic to large rivers of the Colorado River system. | Moderate: This species occurs in the Green River downstream of the Project Area. USFWS-designated critical habitat is located four river miles downstream of the Project Area. | **No** |
| Roundtail chub *Gila robusta* | CAS | Adults inhabit low to high-flow areas in the Green River; young occur in shallow areas with minimal flow. | Moderate: This species occurs in the Green River downstream of the Project Area. | **No** |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| **Herptiles** | | | | |
| Corn snake<br>*Elaphe guttata* | WSC | Habitat includes pine woodlands, brushy fields, open hardwood forests, mangrove thickets, barnyards, abandoned buildings, and areas near springs, old trash dumps, and caves. | None: The species occurs outside of the Project Area, and is not expected to be present in the Project Area. | Yes |
| Smooth greensnake<br>*Opheodrys vernalis* | WSC | Habitat includes meadows, grassy marshes, moist grassy fields at forest edges, mountain shrublands, stream borders, bogs, open moist woodland, abandoned farmland, and vacant lots. | None: The species occurs outside of the Project Area, and is not expected to be present in the Project Area. | Yes |
| Western (Boreal) toad<br>*Bufo boreas* | WSC | Commonly found throughout most of Utah and can be found in a variety of habitats, including slow-moving streams, wetlands, desert springs, ponds, lakes meadows, and woodlands. | None: The species is commonly spread throughout central and northern Utah, generally in subalpine forests with year-round water. The only known occurrence in the Uinta Basin exists within the northwest portion of Uintah County. No potential habitat for the species occurs within the Project Area. | Yes |
| **Plant Species** | | | | |
| Alcove bog-orchid<br>*Habenaria zothecina* | S | Uintah County. Navajo or Nugget Sandstone Formation; seeps, hanging gardens, riparian areas in mixed desert shrub, pinyon-juniper, or oak brush communities; elevation range of 4,360-8,690 famsl; flowers late July-August. | None: The geological formation and habitat associated with this species do not occur in the Project Area. | Yes |
| Barneby's pepperplant<br>*Lepidium barnebyanum* | FE | Tribal land in Duchesne County. West Tavaputs Plateau, Indian Canyon. Uinta Formation. White to light tan shale outcrops and ridges, saddles, barren inclusions in pinyon juniper; Elevation range of 6,200-7,000 famsl. | Low: Known populations occur in Indian Canyon drainage in central Duchesne County, west and outside the Project Area. | Yes |
| Clay reed-mustard<br>*Schoenocrambe argillacea* | FT | Uintah County. Book Cliffs; contact zone of upper Uinta and lower Green River Formations; mixed desert shrub, Indian ricegrass and pygmy sagebrush communities; elevation range of 5,000-5,650 famsl; flowers May-early June. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project area. The contact zone between the Uinta Formation and the Green River Formation occurs south and outside the Project Area. | Yes |
| Gibbens penstemon<br>*Penstemon gibbensii* | S | Daggett County. Brown's Park (Bridger Basin endemic); Green River Formation; sandy/shaly bluffs, slopes; juniper, thistle, buckwheat, serviceberry community; elevation range of 5,500-6,400 famsl; flowers June. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Goodrich blazing star<br>*Mentzelia goodrichii* | S | Duchesne County. Green River Formation; escarpments of Willow and Argyle Canyons; steep white calciferous shale cliffs; open mountain brush communities; elevation range of 8,100-8,800 famsl; flowers July - August. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. The appropriate elevation does not occur within the Project Area. | Yes |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Goodrich cleomella *Cleomella palmeriana*. var. *goodrichii* | S | Uintah County. Mancos Shale, Tropic Shale, and Morrison Formation, heavy clay; mat-salt-bush, Cisco woodyaster, salt desert shrub community; elevation range of 4,000-6,000 feet amsl; flowers May. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Goodrich penstemon *Penstemon goodrichii* | S | Duchesne, and Uintah Counties. Near Lapoint, Tridell, Whiterocks; Duchesne River Formation; clay badlands; desert shrub, shadscale, pinyon-juniper or mountain brush communities; elevation range of 5,590 to 6,215 famsl; flowers late May - June. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Graham's penstemon *Penstemon grahamii* | S | Uintah, and Duchesne Counties. Green River Formation; oil shale or white shale knolls and talus; semi-barren mixed desert shrub or pinyon-juniper communities; elevation range of 4,600-6,700 famsl; flowers from late May - mid-June. | Low: The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Hamilton milkvetch *Astragalus hamiltonii* | S | Uintah County. Duchesne River, Mowry, Dakota and Wasatch Formations on sandy clay loam soils on fast-eroding soils on slopes; mixed desert shrub or pinyon-juniper communities; elevation range of 5,250-6,200 famsl; flowers late May-June. | Moderate: As of 2008, BLM had identified 19 occupied sites between LaPoint and Vernal (BLM 2008). Potential habitat has been identified on Asphalt Ridge. A field survey was conducted by Kleinfelder in June 2014. Approximately 50 acres of potential habitat were identified and surveyed. No *Astragalus* individuals were identified (Kleinfelder 2014). | **No** |
| Horseshoe milkvetch *Astragalus equisolensis* | 0 | Uintah County. Duchesne River Formation on rocky or gravelly sandy clay loam soils soils; mixed desert shrub communities; elevation range of 4,790-5,185 famsl; flowers May-early June. | Moderate: Potential habitat has been identified on Asphalt Ridge. A field survey was conducted by Kleinfelder in June 2014. Approximately 50 acres of potential habitat were identified and surveyed. No *Astragalus* individuals were identified (Kleinfelder 2014). | **No** |
| Huber pepperplant *Lepidium huberi* | S | Uintah County. Uinta Mountain foothills, Book Cliffs; Chinle, Park City, Weber Formations; eroding cliffs, alluvium; black sage or mountain brush communities; elevation range of 7,300-9,700 famsl; flowers June-August. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. The appropriate elevation does not occur within the Project Area. | Yes |
| Ownbey thistle *Cirsium ownbeyi* | S | Daggett, and North East Uintah Counties. East Uinta Mountain canyons; pinyon-juniper, mixed desert shrub or riparian communities; elevation range of 5,500-6,200 famsl; flowers late May-August. | None: No potential habitat. Known populations are associated with the Uinta Mountain canyons and drainages at elevations above those associated with the Project Area. | Yes |
| Pariette cactus *Sclerocactus brevispinus* | FT | Duchesne, and Uintah Counties. Pariette Bench south of Myton; Uinta Formation (Wagonhound Member), fine alkaline clay; shadscale, mat-saltbush community; elevation range of 4,700-5,400 famsl. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Park rock cress *Arabis vivariensis* | S | Uintah County. Weber Formation sandstone and limestone outcrops; mixed desert shrub or pinyon-juniper communities; elevation range of 5,000-6,000 famsl; flowers May. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Rock hymenoxis *Hymenoxys lapidicola* | S | Uintah County. Blue Mountain; Weber Formation, sandy ledges and crevices; pinyon-juniper or ponderosa-manzanita communities; elevation range of 5,700-8,100 famsl; flowers June. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Shrubby reed-mustard *Schoenocrambe suffrutescens* | FE | Duchesne, and Uintah Counties. Green River Formation; Badlands Cliffs, Gray Knolls, Little Rock Pack Mountain; calcareous shale; mixed desert shrub, pinyon-juniper or mountain brush communities; elevation range of 5,400-6,000 famsl; flowers late May - mid-August. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Stemless penstemon *Penstemon acaulis* | S | Daggett County. Browns Park Formation, ashy, gravelly or sandy ridges and knolls; sagebrush-desert grass or pinyon-juniper communities; elevation range of 5,840-7,285 famsl; flowers June-July. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Uinta Basin hookless cactus *Sclerocactus wetlandicus* | FT | Duchesne, and Uintah Counties. Alluvial benches of the Green River watershed from Ouray to Carbon County line; cold desert shrub communities; elevation range of 4,700-6,000 famsl. | None: No potential habitat. The Project Area is above and outside the alluvial benches of the Green River watershed and approximately 27 miles upstream from Ouray. | Yes |
| Uinta greenthread *Thelesperma caespitosum* | S | Duchesne County: Tavaputs Plateau, head of Antelope Canyon; white shale slopes of Green River Formation; elevation approximately at 5,900 famsl; flowers May - June. | None. No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Untermann fleabane *Erigeron untermannii* | S | Duchesne County. Tavaputs Plateau; Green River, Uinta Formations; dry calcareous ridges; pinyon-juniper or mountain brush communities; elevation range of 7,000-7,800 famsl; Flowers May–June. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |
| Ute ladies'-tresses *Spiranthes diluvialis* | FT | Daggett, Duchesne, and Uintah Counties. Found on unconsolidated alluvium associated with clear, low alkaline water in riparian and floodplain areas of the Green River and its tributaries and irrigation ditches and canals transporting water from these sources; elevation range of 4,400-6,810 famsl; flowers late July – September. | None: This species has been found along Ashley Creek, its tributaries and braids, wet meadows and irrigation/input canals upstream fed from Ashley Creek. The species has been documented north and well outside of the Project Area. No potential habitat occurs within or downstream of the Project Area | Yes |
| White River penstemon *Penstemon scariosus* var. *albifluvis* | FC | Uintah County. Green River Formation; South East of Bonanza; shale slopes; semi-barren mixed desert shrub or pinyon-juniper communities; elevation range of 5,000-6,000 famsl; flowers late May-June. | None: No potential habitat. The geological formation and soils associated with this species do not occur in the Project Area. | Yes |

| Species | Status[1] | Habitat Association[2] | Potential for Occurrence Within the Proposed Project Area and Cumulative Effects Area[2] | Eliminated From Detailed Analysis (Yes/No) |
|---|---|---|---|---|
| Sterile yucca<br>*Yucca sterilis* | S | Duchesne and Uintah Counties. In sandy soils within salt desert shrub, juniper, and sagebrush-shadscale communities; elevation range of 4,790 – 5,800 famsl; flowers in June. | Low: BLM has identified potential habitat within or adjacent to the Project Area. A field survey was conducted by Kleinfelder in June 2014 which revealed no suitable habitat within the surveyed area. (Kleinfelder 2014) | Yes |

[1] Wildlife Source: (USFWS 2009; UNHP-UDWR 2009a; Parrish et al. 2002); Plant Source: (USFWS 2009; BLM 2008)
[2] Wildlife Source: (Bosworth 2003; UNHP-UDWR 2009b); Plant Source: (BLM 2008; Kleinfelder 2014; UDWR 1998; UNPS 2009; UNHP-UDWR 2005; Welsh et al. 1993)
[3] Species was retained for analysis purposes based on its documented presence in the Project Area and special protection provided under the BGEPA.

Federally Listed Species:

- FE = Federally listed as endangered;
- FT = Federally listed as threatened;
- FC = Federally listed as candidate

State Sensitive Wildlife Species:

- CAS = State Conservation Agreement Species;
- WSA = Wildlife Species of Concern

Other Status (Wildlife):

- BGEPA = Bald and Golden Eagle Protection Act
- PIF = Partners in Flight species of concern, Colorado Plateau, Utah Mountains, potentially in the Vernal Field Office.

Other Status (Plants):

- S = Bureau-sensitive

**References**


Bureau of Land Management (BLM). 2008. *Proposed Resource Management Plan and Final Environmental Impact Statement*. Vernal, Utah. August 2008.

_____. 2010. *West Tavaputs Plateau Final Environmental Impact Statement*. Price Field Office. Price, Utah.

Bosworth, W.R., III. 2003. *Vertebrate Information Compiled by the Utah Natural Heritage Program: A Progress Report*. Publication Number 03-45. Salt Lake City, UT.

Kleinfelder, Inc. (KLF). 2014. "CIVCO Engineering's Vegetation and Raptor Surveys for the Ashley Valley Energy Route, Uintah County, Utah." Denver, CO. Report 20150543/LIT14R0547. December 16, 2014.

Maxfield, B., Wildlife Conservation Biologist, Utah Division of Wildlife Resources. Personal Communication with S. Florin, Staff Professional II, Kleinfelder, Inc., October 6, 2014.

Parrish, J.R., F.P. Howe, and R.E. Norvell. 2002. "Utah Partners in Flight Avian Conservation Strategy Version 2.0". Utah Partners in Flight Program, Utah Division of Wildlife Resources, 1594 West North Temple, Salt Lake City, UT 84116, UDWR Publication Number 02-27. i–xiv + 302 pp.

Utah Division of Wildlife (UDWR). 1998. Inventory of Sensitive Species and Ecosystems in Utah: Endemic and Rare Plants of Utah. Prepared for Utah Reclamation Mitigation and Conservation Commission, and the U.S. Department of Interior. June 1998. 696 pp.

Utah Native Plant Society (UNPS). 2009. Utah Rare Plant Guide. Salt Lake City, UT: Utah Rare Plant Guide Home Page. Retrieved December 07, 2009, from Available at: http://www.utahrareplants.org.

Utah Natural Heritage Program, Utah Division of Wildlife Resources (UNHP-UDWR). 2005. Plant Information: A Progress Report. By M.A. Ben Franklin. Utah Division of Wildlife Resources. Publication Number 05-40. December 2005.

Utah Natural Heritage Program, Utah Division of Wildlife Resources (UNHP-UDWR). 2009a. Utah's State Listed Species by County. Sensitive Species List for Uintah and Duchesne counties (last updated September 15, 2009). Retrieved November 19, 2009, from http://dwrcdc.nr.utah.gov/ucdc/ViewReports/sscounty.pdf.

Utah Natural Heritage Program, Utah Division of Wildlife Resources (UNHP-UDWR). 2009b. The Utah Conservation Data Center (Wildlife for Uintah and Duchesne counties, UT). Retrieved November 19, 2009, from http://dwrcdc.nr.utah.gov/ucdc.

Welsh, S. L., N.D. Atwood, S. Goodrich, and L.C. Higgens (eds). 1993. *A Utah Flora* (2nd edition revised). Brigham Young University, Provo, UT. 986 pp.

# APPENDIX F –
# BLM VISUAL CONTRAST RATING WORKSHEET

*This page intentionally left blank.*

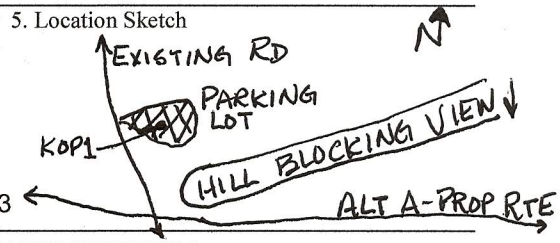
Form 8400-4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# VISUAL CONTRAST RATING WORKSHEET

| | |
|---|---|
| Date | May 27, 2015 |
| District | Green River |
| Resource Area | Vernal District Office |
| Activity(program) | Realty |

## SECTION A. PROJECT INFORMATION

| 1. Project Name | 4. Location | 5. Location Sketch |
|---|---|---|
| Ashley Valley Energy Route (UTU69125-76) | Township 4 South |  |
| 2. Key Observation Point: #1 Parking lot, proposed route | Range 21 East | |
| | Section 21 | |
| 3. VRM Class: Class III | UTM Coordinates: 622057, 4469618 NAD 83 | |



## SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---|---|---|---|
| FORM | Rolling terrain with some angular features & flats | Uniform short | --- |
| LINE | Horizontal & diagonal | Continuous & even with areas of transition | --- |
| COLOR | Light tans & reds | Light to dark green, mottled | --- |
| TEX-TURE | Discontinuous smooth & rough | Even, dense, medium grain with some gradation to sparse | --- |

## SECTION C. PROPOSED ACTIVITY DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---|---|---|---|
| FORM | Flat to rolling | Linear forms created | --- |
| LINE | Straight to curved | Strong regular line created by edge effect | --- |
| COLOR | Black | Light green to brown | --- |
| TEX-TURE | Smooth | Patchy to smooth | --- |

## SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONTRAST

| | | FEATURES: LAND/WATER BODY (1) | | | | VEGETATION (2) | | | | STRUCTURES (3) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Strong | Moderate | Weak | None | Strong | Moderate | Weak | None | Strong | Moderate | Weak | None |
| ELEMENTS | Form | | X | | | | | X | | | | | X |
| | Line | | X | | | | X | | | | | | X |
| | Color | X | | | | | | X | | | | | X |
| | Texture | | X | | | | X | | | | | | X |

2. Does project design meet visual resources management objectives? ☒ Yes ☐ No (Explain on reverse side)

3. Additional mitigation measures recommended ☐ Yes ☐ No (Explain on reverse side)

| Evaluator's Names | Date |
|---|---|
| Chad Incorvia | 5/27/2015 |

## SECTION D. (Continued)

Comments from item 2.

The strong line and color contrast created by the proposed road will draw attention.

Additional Mitigation Measures (See item 3)

Use Alternate B to avoid visual contrast.

Standard Mitigation Measures:

5/27/15 - Field conditions: soils were wet with puddles in places on area roads. Prolonged rains during month had stimulated considerable grass and forb production. Air temp was about 60 degrees F, partly-mostly cloudy. Photos attached.

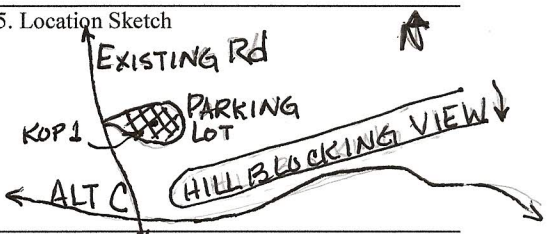
Form 8400-4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**VISUAL CONTRAST RATING WORKSHEET**

| | |
|---|---|
| Date | May 27, 2015 |
| District | Green River |
| Resource Area | Vernal District Office |
| Activity(program) | Realty |

## SECTION A. PROJECT INFORMATION

| 1. Project Name | 4. Location | 5. Location Sketch |
|---|---|---|
| Ashley Valley Energy Route (UTU69125-76) | Township 4 South |  |
| 2. Key Observation Point | Range 21 East | |
| #1 Parking lot, Alternative C | Section 21 | |
| 3. VRM Class | UTM Coordinates: | |
| Class III | 622057, 4469618 NAD 83 | |



## SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---|---|---|---|
| FORM | Rolling terrain with some angular features & flats | Uniform short | --- |
| LINE | Horizontal & diagonal | Continuous & even with areas of transition | --- |
| COLOR | Light tans & reds | Light to dark green, mottled | --- |
| TEX-TURE | Discontinuous smooth & rough | Even, dense, medium grain with some gradation to sparse | --- |

## SECTION C. PROPOSED ACTIVITY DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---|---|---|---|
| FORM | Flat to rolling | Linear forms created | --- |
| LINE | Straight to curved | Strong regular line created by edge effect | --- |
| COLOR | Black | Light green to brown | --- |
| TEX-TURE | Smooth | Patchy to smooth | --- |

## SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONTRAST

| | | FEATURES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LAND/WATER BODY (1) | | | | VEGETATION (2) | | | | STRUCTURES (3) | | | |
| | | Strong | Moderate | Weak | None | Strong | Moderate | Weak | None | Strong | Moderate | Weak | None |
| ELEMENTS | Form | | X | | | | | X | | | | | X |
| | Line | | X | | | | X | | | | | | X |
| | Color | X | | | | | | X | | | | | X |
| | Texture | | X | | | | X | | | | | | X |

2. Does project design meet visual resources management objectives? ☒ Yes ☐ No (Explain on reverse side)

3. Additional mitigation measures recommended ☐ Yes ☐ No (Explain on reverse side)

| Evaluator's Names | Date |
|---|---|
| Chad Incorvia | 5/27/2015 |

## SECTION D. (Continued)

Comments from item 2.

The strong line and color contrast created by the proposed road will draw attention.

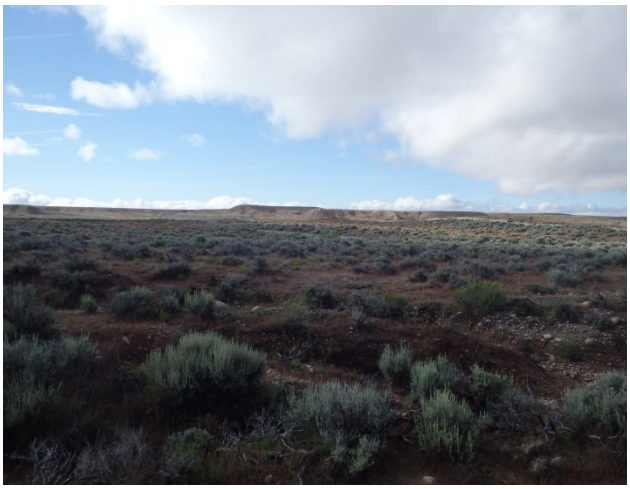
Additional Mitigation Measures (See item 3)

Use Alternate B to avoid visual contrast.

Standard Mitigation Measures:

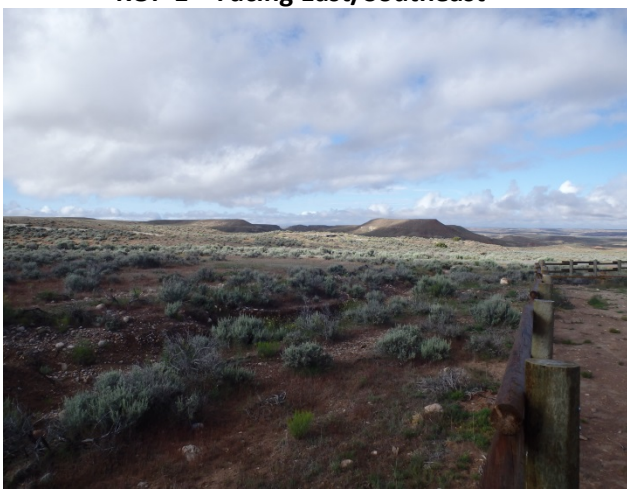
5/27/15 - Field conditions: soils were wet with puddles in places on area roads. Prolonged rains during month had stimulated considerable grass and forb production. Air temp was about 60 degrees F, partly-mostly cloudy. Photos attached.

**KOP 1 – Facing East**



**KOP 1 – Facing East/Southeast**

**KOP 1 – Facing South**



**KOP 1 – Facing South/Southeast**

Form 8400-4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**VISUAL CONTRAST RATING WORKSHEET**

| | |
|---|---|
| Date | May 29, 2015 |
| District | Green River |
| Resource Area | Vernal District Office |
| Activity(program) | Realty |

## SECTION A. PROJECT INFORMATION

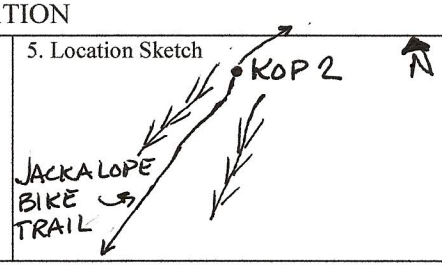
1. Project Name
Ashley Valley Energy Route (UTU69125-76)

2. Key Observation Point
#2 Jackalope Bike Trail, highest point on BLM land

3. VRM Class
Class III

4. Location
Township 4 South
Range 21 East
Section 21
UTM Coordinates:
622057, 4469618 NAD 83

5. Location Sketch




## SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---|---|---|---|
| FORM | Rolling to steep hillslope | Irregular | None |
| LINE | Curving & soft angular | Complex & broken | None |
| COLOR | Light tan to brownish red | Dark green | --- |
| TEX-TURE | Soft/smooth | Uneven/random | --- |

## SECTION C. PROPOSED ACTIVITY DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---|---|---|---|
| FORM | Flat | Linear | --- |
| LINE | Curved | Regular lines | --- |
| COLOR | Black | Light green | --- |
| TEX-TURE | Smootoh | Smooth | --- |

## SECTION D. CONTRAST RATING ☐ SHORT TERM ☐ LONG TERM

1. DEGREE OF CONTRAST

| | | FEATURES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LAND/WATER BODY (1) | | | | VEGETATION (2) | | | | STRUCTURES (3) | | | |
| | | Strong | Moderate | Weak | None | Strong | Moderate | Weak | None | Strong | Moderate | Weak | None |
| ELEMENTS | Form | | X | | | | X | | | | | | X |
| | Line | | | X | | | X | | | | | | X |
| | Color | | X | | | | | X | | | | | X |
| | Texture | | | X | | | X | | | | | | X |

2. Does project design meet visual resources management objectives? ☒Yes ☐ No
(Explain on reverse side)

3. Additional mitigation measures recommended
☐ Yes ☒No (Explain on reverse side)

| Evaluator's Names | Date |
|---|---|
| Chad Incorvia | 5/27/2015 |

SECTION D. (Continued)

Comments from item 2. The only visible section of the proposed route is approximately 2 miles south of KOP and will have little visible draw.

Additional Mitigation Measures (See item 3)

None

Standard Mitigation Measures:

5/27/15 - Field conditions: soils were wet with puddles in places on area roads. Prolonged rains during month had stimulated considerable grass and forb production. Air temp was about 60 degrees F, partly-mostly cloudy. Photos attached.

**KOP 2 – Facing South**

**KOP 2 – Facing Southwest***

**KOP 2 – Facing Southwest**

**KOP 2 – Facing West/Southwest**

*Zoomed to Proposed Action/Alternative C ROW

Form 8400-4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**VISUAL CONTRAST RATING WORKSHEET**

Date May 27, 2015
District Green River
Resource Area Vernal District Office
Activity(program) Realty

## SECTION A. PROJECT INFORMATION

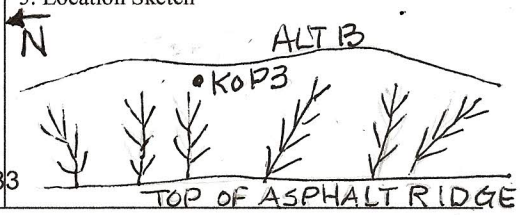
1. Project Name
Ashley Valley Energy Route (UTU69125-76)

2. Key Observation Point
#3 - Asphalt Ridge

3. VRM Class
Class III

4. Location
Township 4 South
Range 21 East
Section 15
UTM Coordinates:
624080, 4471371 NAD 83

5. Location Sketch




## SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---|---|---|---|
| FORM | Steep diagonal transition to rolling | Irregular forms created by vegetation | --- |
| LINE | Angular digitate edge | Diffuse edge | --- |
| COLOR | Light tan to orange | Light to dark green | --- |
| TEX-TURE | Rough to smooth | Uneven/random | --- |

## SECTION C. PROPOSED ACTIVITY DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---|---|---|---|
| FORM | Flat to rolling | Linear forms created by clearing | --- |
| LINE | Straight to slightly curved | Strong regular lines created by clearing | --- |
| COLOR | Black | Light green | --- |
| TEX-TURE | Smooth | Patchy to smooth | --- |

## SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONTRAST

| | | FEATURES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LAND/WATER BODY (1) | | | | VEGETATION (2) | | | | STRUCTURES (3) | | | |
| | | Strong | Moderate | Weak | None | Strong | Moderate | Weak | None | Strong | Moderate | Weak | None |
| ELEMENTS | Form | | X | | | | X | | | | | | X |
| | Line | | X | | | | X | | | | | | X |
| | Color | | X | | | | X | | | | | | X |
| | Texture | | | X | | | | X | | | | | X |

2. Does project design meet visual resources management objectives? ☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigation measures recommended
☐ Yes ☐No (Explain on reverse side)

| Evaluator's Names | Date |
|---|---|
| Chad Incorvia | 5/27/2015 |

## SECTION D. (Continued)

Comments from item 2.

The strong line and color contrast created by the proposed road will draw attention.

Additional Mitigation Measures (See item 3)

Follow natural contours and low areas to minimize visual impact of strong, straight line.

Standard Mitigation Measures:

5/27/15 - Field conditions: soils were wet with puddles in places on area roads. Prolonged rains during month had stimulated considerable grass and forb production. Air temp was about 60 degrees F, partly-mostly cloudy. Photos attached.

**KOP 3 – Facing Southeast**

**KOP 3 – Facing South/Southwest**

**KOP 3 – Facing Southwest**

**KOP 3 – Facing West/Northwest**

*This page intentionally left blank.*