



Bridger Valley Electric Association Wildland Fire Protection Plan

JANUARY 2021

PREPARED FOR

Bridger Valley Electric Association

PREPARED BY

SWCA Environmental Consultants

BRIDGER VALLEY ELECTRIC ASSOCIATION WILDLAND FIRE PROTECTION PLAN

Prepared for

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1 INTRODUCTION

Bridger Valley Electric Association's (BVEA's) service area covers approximately 3,170 square miles in southwestern Wyoming, as well as Summit and Daggett Counties in Utah (Figure 1). A large portion of BVEA's southern service area includes the Uinta-Wasatch-Cache National Forest, Ashley National Forest, and Flaming Gorge National Recreational Area.

BVEA's overhead transmission and distribution construction consists mainly of wooden western red cedar poles with ACSR conductor, and an underground distribution system that consists mainly of direct burial 25-kV 1/0 conductor.

Table 1. Bridger Valley Electric Association - Service Area Statistics

State	Acres	Miles of Transmission	Miles of Overhead Distribution	Miles of Underground Distribution	Substations	Number of Members
Wyoming/ Utah	2,028,800	184	1,010	231	13	6,915

1.1 Organization of the Wildland Fire Protection Plan

The Plan includes the following sections:

Section 3: Objectives of the Wildland Fire Protection Plan

Section 4: Wildfire Risk Analysis

Section 5: Wildfire Prevention Strategies and Protocols

Section 6: Community Outreach and Education

Section 7: Integration with Applicable Plans

Appendix A: Supplementary Mapping and Interagency Fuel Treatment Decision Support Mapping

Appendix B: Detailed Mapping of High-risk Segments and Action Plan

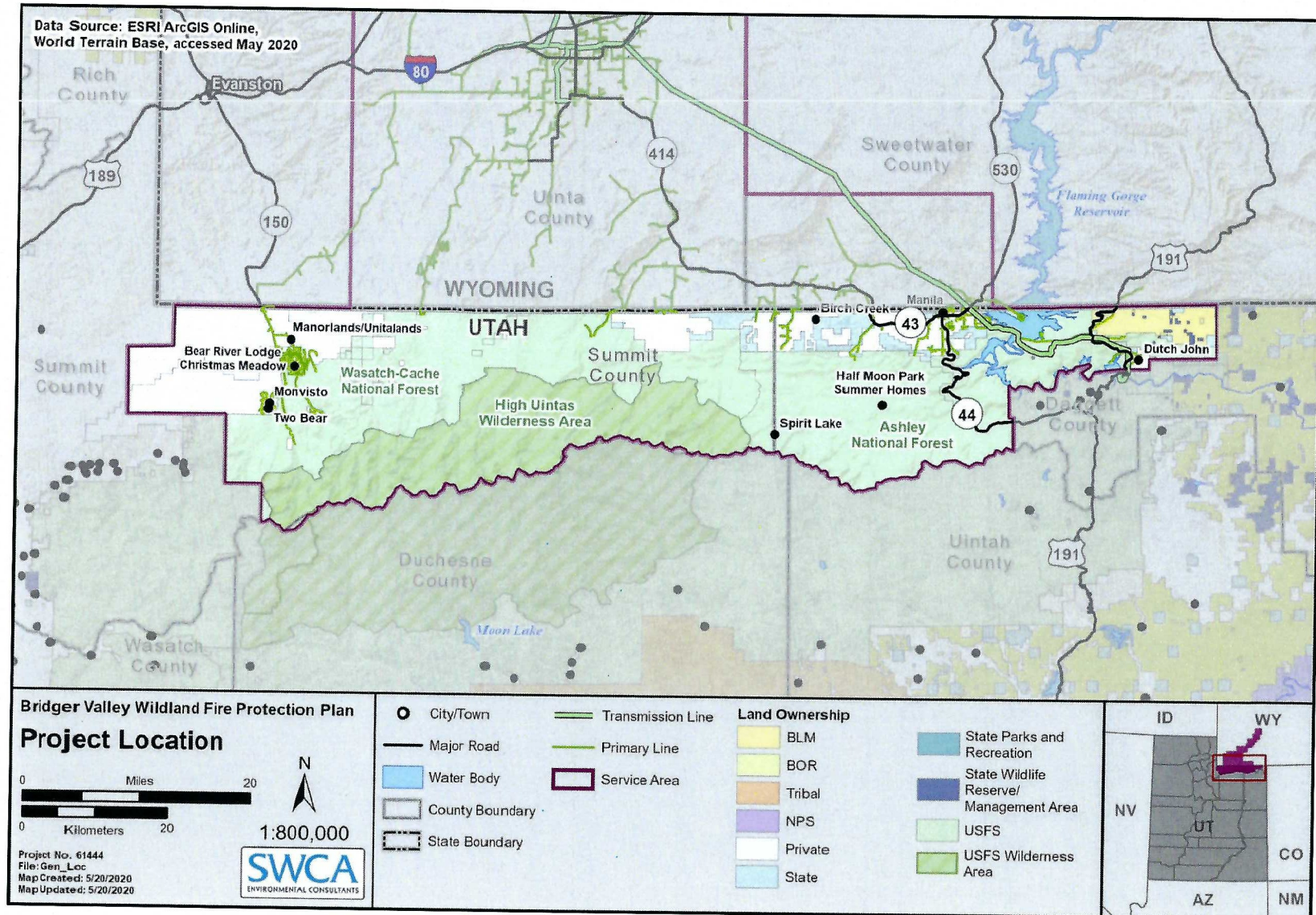


Figure 1. General project location, showing BVEA's infrastructure, and service area, and land ownership.

2 OVERVIEW

2.1 Policy Statement

Given recent increases in wildfire frequency and severity throughout Utah, on March 28, 2020, the Governor signed House Bill 66, Wildland Fire Planning and Cost Recovery, a law that grants the Public Service Commission rulemaking authority to enact rules establishing procedures for the review and approval of wildland fire protection plans. The law requires qualified utility and electric cooperatives to prepare and submit for approval a wildland fire protection plan in accordance with the requirements outlined in the Bill.¹

2.2 Purpose of the Wildfire Mitigation Plan

This Wildland Fire Protection Plan (Plan) describes the range of activities that Bridger Valley Electric Association (BVEA) is taking or considering to mitigate the threat of power line-ignited wildfire, including the protocols and procedures that BVEA would undertake, as well as industry best practices. The Plan complies with the requirements outlined under House Bill 66 to prepare a wildland fire protection plan by June 1, 2020, and every 3 years thereafter. The final plan has been reviewed by all pertinent agencies, including a third-party review by subject matter experts. The plan was duly adopted by the BVEA Board of Directors on May 27, 2020.

All sections of the plan will be reviewed and revised on an annual basis, and the findings will be presented to the Board of Directors. The Plan will be fully revised every 3 years, which will include a revised risk analysis and development of plan recommendations to incorporate new technology and industry best practices.

2.3 Existing Wildfire Planning Efforts within the Service Area

The Plan is designed to align with wildfire mitigation goals identified in other existing land management plans already in place in the service area. The service area incorporates portions of Daggett County and Summit County. Within each county are numerous Communities at Risk (CAR) from wildfire, which are referenced in the Utah Department of Natural Resources (DNR) Utah Wildfire Risk Assessment Portal (UWRAP)² and which may have specific wildfire mitigation measures proposed under municipal and county planning documents.

2.3.1 Summit County

As of 2019, Summit County is home to approximately 43,000 people (Utah Department of Natural Resources [DNR] 2019). It occupies approximately 1,849 square miles (1,183,360 acres) of land in the northeastern portion of the state and borders Wyoming. The county owes its name to the high mountain summits forming the divides of the Weber, Bear, and Green River drainages. Fire response for the entire northern Utah region is coordinated through the Northern Utah Interagency Fire Center (NUIFC), in cooperation with the Eastern Great Basin Coordination Center. The NUIFC is a cooperative effort among the Bureau of Land Management (BLM), U.S. Forest Service (USFS), and the Utah Division of Forestry,

¹ <https://le.utah.gov/~2020/bills/static/HB0066.html>

² Utah DNR Wildfire Risk Assessment Portal: <https://wildfirerisk.utah.gov/>

Fire and State Lands (UDFFSL). The NUIFC is responsible for dispatch and coordination for approximately 14 million acres of land that averages 500 fires per year (SWCA Environmental Consultants [SWCA] 2007a).

In 2019, Summit County developed a Community Wildfire Protection Plan (CWPP) to empower citizens and local governments to increase community safety and resilience to wildfire. The plan identifies areas at high risk to fire, creates risk reduction strategies, and calls for increased community collaboration, outreach, and education. Summit County identifies utilities as protected values. While there are no additional specific actions related to utilities in this plan, overarching actions include watershed protection and protection of water facilities. This is especially important in Summit County, as much of the watershed serves the Salt Lake Valley. Specific mitigation measures to meet this goal include fuel reduction and facility resilience assessments. The plan identifies past mitigation efforts that were successful, including public outreach and education, firefighter training, fuel break maintenance, and a new public emergency alert system. Future goals for Summit County include public outreach and education, response personnel training, and the creation of more defensible space. Of most interest to utilities in this plan may be the fuels reduction goals (DNR 2019). Summit County's CWPP is not available online, but the 2007 Northern Utah Regional Wildfire Protection Plan (RWPP),³ covering Box Elder, Cache, Davis, Morgan, Rich, Salt Lake, Summit, Tooele, Utah, Wasatch, and Weber Counties is available at the link below.

In 2018, Summit County developed an Emergency Management Plan (EMP) to mitigate disaster and improve disaster response and recovery. The plan establishes an Emergency Management Plan Committee to assist the Emergency Manager in updating the plan. Included in this committee are utility representatives. The plan also identifies that for many communities in Summit County, wildfire is a major potential hazard. Fuel reduction programs, improved access to communities, and firefighter training are all discussed in the EMP as potential mitigation actions (Summit County 2018).

In 2017, the Mountainland Association of Governments (covering Summit, Utah, and Wasatch Counties) developed a hazard mitigation plan, available at the link below.⁴ The plan's purpose is to help grow hazard awareness and identify measures to reduce vulnerability and risk in each county. Potential wildfire mitigation strategies identified in the plan include creating defensible space around powerlines and replacing flammable vegetation (Mountainland Association of Governments 2017).

2.3.2 *Daggett County*

Daggett County is one of the least populated counties in the state, which is attributable to its mountainous landscape and remote location. Daggett County has two fire departments: one in Dutch John that covers the east side of the county, and the Manila Fire Department, which covers the west side of the county. The county has no paid, full-time fire fighters and no official fire warden. The State Fire Warden, associated with UDFFSL, is currently serving the county in this role, as well as providing wildland fire training to volunteers (SWCA 2007b). When a fire exceeds the capability of local and area resources, additional resources are solicited through the Uintah Basin Interagency Fire Center (UBIFC). Under a local agreement with Sweetwater County in Wyoming, Daggett County firefighters are also first responders to fires within Sweetwater County.

Daggett County has not completed a county CWPP, and therefore, the 2007 Uintah Basin RWPP⁵ is the most recent wildfire planning document for the county. The Uintah Basin RWPP identifies approximately

³ Northern Utah Regional Wildfire Protection Plan: <https://digitallibrary.utah.gov/awweb/awarchive?item=31610>

⁴ Mountainland Association of Governments Hazard Mitigation Plan: <https://mountainland.org/hazards>

⁵ Uintah Basin Regional Wildfire Protection Plan: <https://digitallibrary.utah.gov/awweb/awarchive?type=file&item=31611>

64 miles of power and gas lines in Daggett County as at risk (Uintah Basin Association of Governments 2004).

2.3.3 United States Forest Service

BVEA lines cross areas of the Wasatch-Cache and Ashley National Forests (see Figure 1).

Fire management planning for both national forests is now in a spatial format contained in the Wildland Fire Decision Support System. Fire management plans (FMPs) are informed by the forest management plan and the Utah Fire Amendment, which applies to all forests in the state of Utah. The FMP allows for a wide range of management responses, from management for resource benefit to full suppression. It also allows for various hazardous fuels management tools including prescribed fire and mechanical management. The Ashley National Forest Plan is currently under review and will include similar allowances for management responses and hazardous fuels management tools.

Fuel management projects are developed and prioritized by evaluating hazards at risk and condition class. When evaluating critical areas, protection of highly valued resource areas (HVRAs), including natural and human-made features, will be accounted for. Each forest will collaborate on these efforts with state, county, federal, and utility partners. Currently, the Ashley National Forest identifies priority areas using a process through Shared Stewardship with the State of Utah. The forest is seeking to increase the number of acres treated per year.

BVEA will continue to work with both National Forests to ensure all BVEA actions align with existing Forest Service policies, plans, directives, and special use authorizations regarding activities within the utility rights-of-way (ROWs) (USFS 2020).

2.3.4 Bureau of Land Management

In 2020, the BLM issued an instruction memorandum to establish policies regarding routine operation and maintenance activities on electric utilities' ROW to reduce wildfire risk. This memorandum establishes that the ROW holders have the authority to conduct operation and maintenance activities and that they must do everything reasonable to reduce wildfire risk within or in the immediate vicinity of their ROW. Furthermore, ROW holders must comply with any requirements to control or prevent property damage and protect public health and safety. Unless in direct conflict with applicable laws and regulations, the BLM requests to be notified within 30 days of maintenance completion (BLM 2020). Federal agencies routinely develop fuel treatment planning to address hazardous fuels within their jurisdiction. BVEA could work with the BLM and USFS to look for opportunities to treat fuels in and around the BVEA ROW to help mitigate wildfire risk in areas projected to have high or extreme fire behavior. See Appendix A, Figure A-1 for an example of fuel treatments that are occurring or are ongoing in the BVEA service area.

In 2018, the BLM Vernal Field Office in the Green River District developed an FMP to describe fire management strategies created to protect BLM values against wildfire and to describe tools used to meet natural resource objectives. The Vernal Field Office covers portions of Daggett, Duchesne, and Uintah Counties, and only a very small section of the BVEA service area. Fire management objectives outlined in the plan include management of noxious weeds and insect infestations with fire or mechanically, biologically, or chemically. The plan does not make any direct mention of utilities, however, BVEA could work with the BLM to develop vegetation management protocols.

In 2005, the BLM issued a finding of no significant impact (FONSI) in response to an environmental assessment (EA) regarding the Utah Land Use Plan Amendment for Fire and Fuels Management. This

amendment outlined changes to wildland fire management performed by the Salt Lake Field Office (which covers Wasatch County). Overall goals of wildfire management under these documents include firefighter and public safety, collaborative risk reduction in the wildland urban interface, and allowing fire to function in its ecological role where appropriate. The EA recognizes that utility corridors are a value at risk (BLM 2005) and BVEA could work with the BLM using this framework to develop vegetation management protocols.

2.4 Roles and Responsibilities

2.4.1 Company Structure

Implementation of the Plan will be performed by Andy Hewitt and Bobby Larsen at BVEA. Mr. Hewitt and Mr. Larsen will be responsible for operational practices, system hardening, enhanced inspections, situational awareness, reclosing and re-energization, public safety and notification, vegetation management, and wildfire response and recovery. Mr. Hewitt will serve as the lead personnel, and Mr. Larsen will serve as the key technical personnel.

2.4.2 Coordination with Outside Entities

Figure 1 outlines the land ownership within the BVEA service area. Contact information for all entities within the service area is provided in Section 7.

2.4.2.1 COUNTY

All counties in the state of Utah are affected by Utah Code Section 65A-8-6 (House Bill 146, which was passed by the Utah Legislature in the 2004 General Session and took effect in March 2006).

Utah Code Section 65A-8-6 requires that counties meet eligibility requirements to enter into a cooperative agreement with the UDFFSL for wildfire protection. The Code states that counties shall

- adopt a wildland fire ordinance based on minimum standards established by the division (UDFFSL);
- require that the county fire department or equivalent private provider under contract with the county meet minimum standards for wildland training, certification, and wildland fire suppression equipment based on nationally accepted standards as specified by the division (UDFFSL); and
- file with the division (UDFFSL) a budget for fire suppression costs.

Each of these eligibility requirements must be met before UDFFSL may enter into a cooperative agreement for wildfire protection with any county.

The Summit County Emergency Operations Center is located in Park City and is the site where officials coordinate emergency responses in Summit County. The Summit County Emergency Manager delegates responses to the appropriate personnel in the event of an emergency (Summit County 2018). Further detail on the Summit County incident command system is available in the Summit County Emergency Management Plan.

The tri-county area, made up of Duchesne, Daggett, and Uintah Counties, takes a unified approach to emergency management. Daggett County follows procedures analogous to those described below for Uintah County.

The Uintah County Emergency Operations Plan describes firefighting operations under emergency support function (ESF) 4. ESF 4 actions are those taken by local fire departments; mutual aid assistance from neighboring jurisdictions; and, in some cases, state, federal, and private industry resources and technical expertise to control and suppress fires that threaten to become major emergencies. Mutual aid compact agreements between local governments will be followed through established and recognized firefighting standards and methods. Coordination with local, state, federal, and private companies is accomplished under the Incident Command System element of the National Incident Management System (NIMS) Command and Management component of the National Response Framework. A representative from each agency will report to the Incident Command Post or emergency operations center where information can be gathered and disseminated. Each representative will be part of a Unified Command system.

2.4.2.2 STATE

Wildfires that occur on state and private land outside of city limits are managed by the UDFSL, and fire suppression efforts are coordinated through county fire wardens, who work with federal agencies and local fire departments (Utah Division of Emergency Management 2019).⁶

2.4.2.3 FEDERAL

As mentioned previously, fire response for portions of the northern Utah region is coordinated through the NUIFC, in cooperation with the Great Basin Coordination Center. The NUIFC is a cooperative effort among the BLM, USFS, and the UDFSL. The NUIFC creates initial response plans called “run cards” to define fire response within geographic areas. These run cards are created based on fire weather, management objectives, fuel conditions, and response resource availability. The NUIFC also creates a Mobilization Plan that guides multi-agency fire response (NUIFC 2018).⁷ Daggett county uses the UBIFC. The UBIFC is the dispatch center for the state and federal agencies in the Uintah Basin. The UBIFC also is managed by the Great Basin Coordination Center.

The BLM Vernal Field Office is part of the Uintah Basin Interagency Cooperators Committee and the Uintah Basin Fuels Committee. Fire Management Officers from the Ashley National Forest, Dinosaur National Monument, Bureau of Indian Affairs, State of Utah, and BLM form the committee. The committees collaborate on fire education, prevention, and response (BLM 2018).

3 OBJECTIVES OF THE WILDFIRE MITIGATION PLAN

BVEA’s overarching goal is to provide safe, reliable, and economic electric service to its members. In order to meet this goal, BVEA routinely constructs, operates, and maintains its electrical lines and equipment in a manner that minimizes the risk of catastrophic wildfire posed by its electrical lines and equipment. The following outlines the objectives for wildfire mitigation identified in this document.

3.1 Minimizing Sources of Ignition

The goal of this Plan is to assess and minimize the probability that the BVEA transmission and distribution system may contribute to or be the origin of a wildfire ignition. In addition, the Plan identifies measures to be taken to protect the system from wildfire damage to secure service for BVEA members.

⁶ Utah State Hazard Mitigation Plan: <https://hazards.utah.gov/wp-content/uploads/Utah-State-Hazard-Mitigation-Plan-2019.pdf>

⁷ Northern Utah Interagency Fire Danger Operating Plan: <https://gacc.nifc.gov/gbcc/dispatch/ut-nuc/management/management.html>

3.2 Resiliency of the Electric System

An additional goal of this Plan is to ensure long-term resilience of the BVEA electric grid. Through implementing this Plan, BVEA will be able to assess industry best practices and technologies that are designed to be implemented to reduce the potential for a service interruption and improve and facilitate restoration of service.

3.3 Wildfire Prevention Strategies and Protocols

This Plan details a number of wildfire prevention strategies and protocols that are designed to prevent and/or mitigate the threat of wildfire to system infrastructure and to communities who depend on BVEA service. These are described in more detail in Section 5.

- **Vegetation Management** – Measures to control vegetation near overhead transmission lines, detailing clearance specifications, as well as hazardous fuels information to reduce potential wildfire spread.
- **Enhanced Inspections** – Assessment and diagnostic activities and mitigating actions. Inspections would focus on ensuring all infrastructure is in working condition and that vegetation clearance specifications are maintained.
- **Situation Awareness** – Methods to improve system awareness and environmental conditions.
- **Operational Practices** – Mitigating actions that are taken on a day-to-day basis to reduce wildfire risks. These actions prepare BVEA for high-risk periods, associated with heavy winds and dry conditions.
- **System Hardening** – Technical and system upgrades aimed at reducing potential contact between infrastructure and fuel sources and making the system more resilient to wildfire and other natural disasters.
- **Procedures for De-energization and Reclosing** – Conditions under which lines may be de-energized to reduce wildfire risk or protect people and/or equipment during a wildfire incident, and the conditions for which restoring service after the risk has abated.
- **Wildfire Response and Recovery** – Procedures for wildfire response in order to formalize protocols in the event of an ignition.
- **Public Safety and Notification** – Measures for engaging the community in identifying and reducing wildfire risk, including public warnings and notifications in the interest of public safety.

3.4 Identifying Unnecessary or Ineffective Actions

This Plan should be revised every 3 years. As part of that revision process, BVEA would monitor the effectiveness of the wildfire mitigation strategies within this document to assess the merits of the modifications and to implement adaptive management to improve future results. During the annual review process, BVEA should also update mitigation strategies through review of industry best practices.

4 WILDFIRE RISK ANALYSIS

The wildfire risk analysis process utilizes the Utah Department of Natural Resources UWRAP. The purpose of the wildfire risk analysis is to identify areas within the BVEA service area that are particularly

susceptible to high-intensity, severe wildfire behavior, so as to develop mitigation measures for preventing utility related ignitions and to improve system resilience to outside wildfire threat.

4.1 Fire History

While firefighters suppress 95% of Utah wildfires on initial attack, adverse weather and topography, heavy fuel loads, and urban development can create catastrophic wildfire conditions. The three largest fires in Utah have occurred since 2007, each burning more than 70,000 acres. 2007 saw the greatest number of acres burned in a single year since 2000; 1,385 wildfires burned almost 650,000 total acres. This total includes the largest wildfire in Utah's history, the Milford Flat fire, which destroyed nearly 364,000 acres (Utah Division of Emergency Management 2019).

Between 1973 and 2017, Summit County experienced 872 fires (SWCA 2007a; Monitoring Trends in Burn Severity [MTBS] interagency database⁸). The majority of these were wildland fires that occurred in the western portion of the county along major roads and highways. Between 1984 and 2017, Daggett County experienced seven fires (MTBS).

Figure 2 illustrates the high fire occurrence history within the BVEA service area. Many of these fires were located in close proximity to BVEA infrastructure. The greatest concentration of fires has occurred in and around Monviso, Two Bear, and Dutch John and on federal land adjacent to Flaming Gorge National Recreation Area. Many of these fires are likely a result of human ignitions, highlighting a need for greater public education and outreach for reducing fire ignitions. Because the greatest fire density is associated with recreational areas, targeted education to those users would be advisable. As a utility provider throughout this area, BVEA could be a partner to other agencies in these public education efforts.

⁸ MTBS: <https://www.mtbs.gov/>

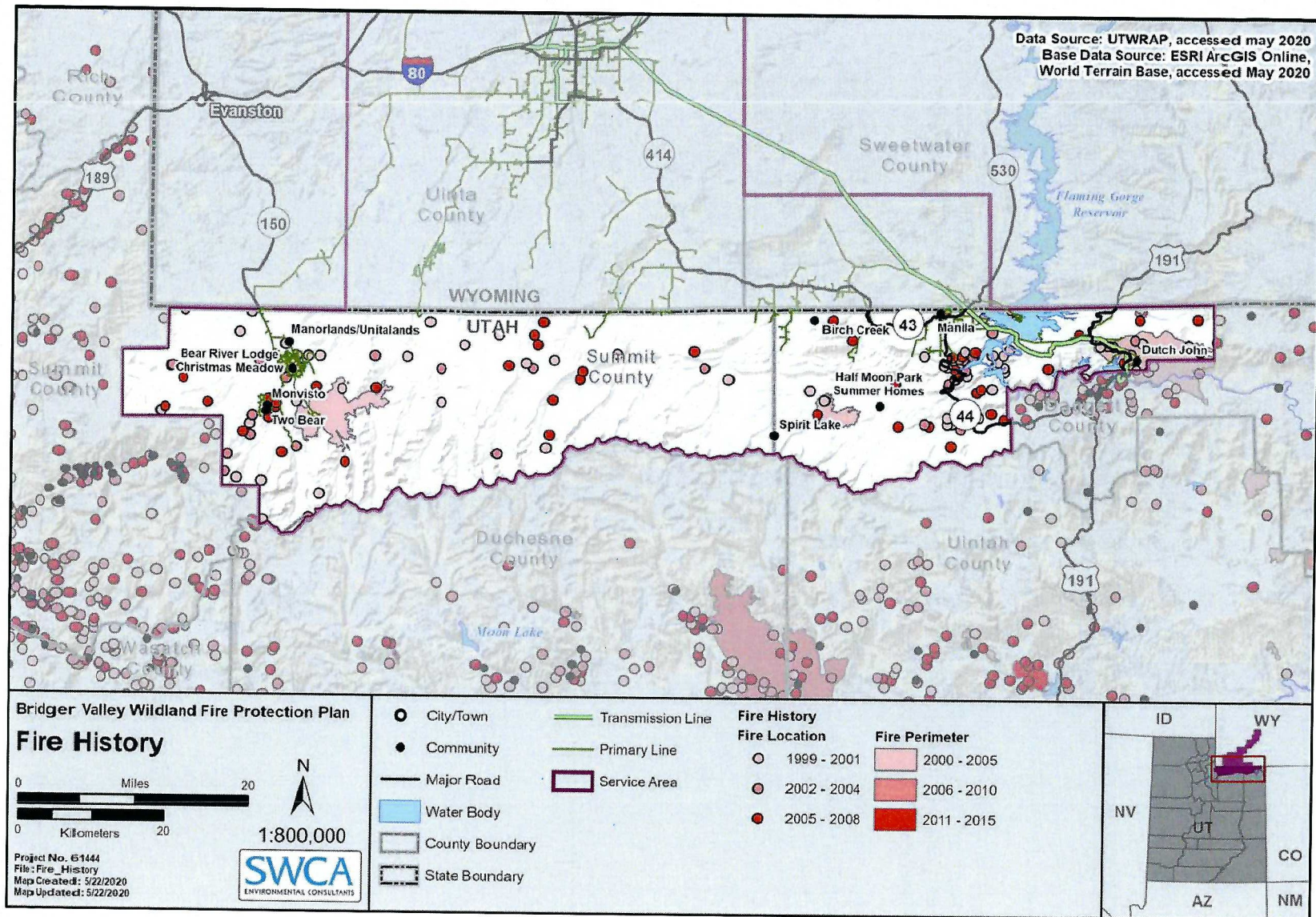


Figure 2. Fire occurrence history within the BVEA service area.

4.2 Vegetation Communities

The BVEA service area falls mostly within the Wyoming Basin and Wasatch and Uintah Mountains ecoregions.

The Wyoming Basin ecoregion occurs in the high northeastern portion of the Northern Utah region. It is characterized by arid grasslands and shrublands, surrounded by mountains without the extensive pinyon-juniper forests found to the south in the Colorado Plateau ecoregion (Omernik 1987). Latitude and physiography are influential factors in distinguishing this ecoregion from others (World Wildlife Fund [WWF] 2001). The dominant vegetation in the ecoregion is varied species of the sagebrush-steppe interspersed with desert shrublands, dunes, and barren areas in more arid regions (WWF 2001).

Fire, wind, and variations in precipitation and temperature are the major disturbances in the ecoregion. Cheatgrass out-competes native bunchgrasses and has also altered the ecoregion's fire regime. Fire suppression has also altered the structure and composition of some areas of the ecoregion by resulting in buildup of fuels (WWF 2001).

The Wasatch and Uintah Mountain ecoregion is a block of high montane habitat stretching from southeastern Idaho and southwestern Wyoming to isolated ranges of the Colorado Plateau in southern Utah. It is composed of high, glaciated mountains, dissected plateaus, foothills, and intervening valleys. The ecoregion encompasses two different mountain ranges; the Wasatch, a major north-south range; and the Uinta, one of few major east-west ranges in the United States (WWF 2001).

50 years of attempted fire exclusion, combined with favorable climatic conditions, have allowed juniper expansion to go unchecked (Ferry et al. 1995). Decreases in fire frequency are also seriously affecting ponderosa pine forests. Historically, the ponderosa pine ecosystem had frequent, low-intensity, surface fires that perpetuated park-like stands with grassy undergrowth (Barrett 1980, as cited in Ferry et al. 1995). In recent years, however, humans have attempted to exclude fire on these sites, resulting in ponderosa pine forests that are overstocked and subject to severe stand-destroying fires (Mutch et al. 1993, as cited in Ferry et al. 1995). Long-term fire suppression has also resulted in a loss of aspen.

The BVEA service area is made up primarily of sagebrush shrub and hardwood communities (Figure 3). Of notable concern in the service area is cheatgrass (*Bromus tectorum*), a highly competitive invasive grass species from Eurasia. Cheatgrass has altered native plant community structure and promotes wildfire by increasing the risk of shorter fire return intervals (Bishop et al. 2019). As cheatgrass continues to spread throughout the western United States, new threats are placed on communities and infrastructure.

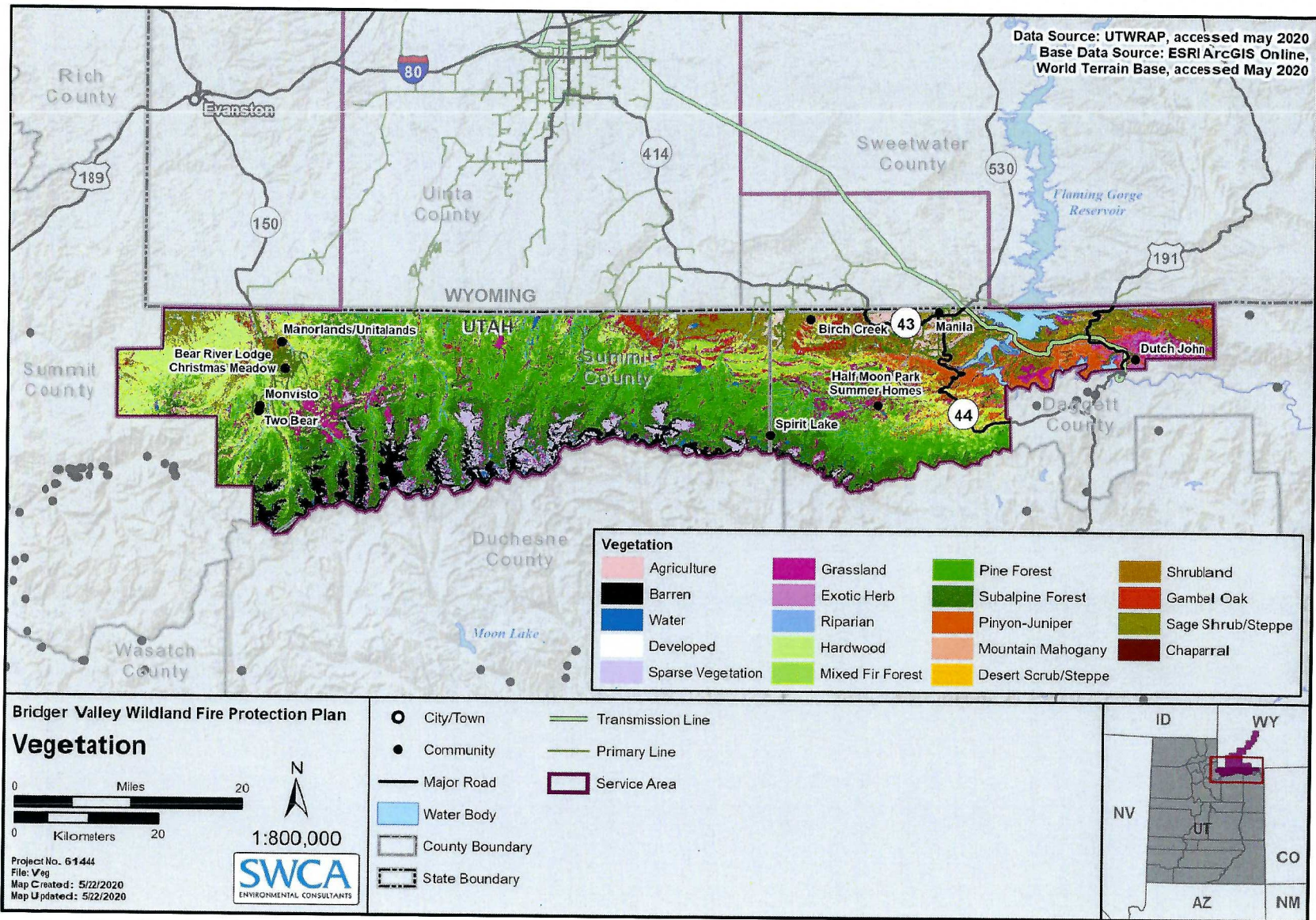


Figure 3. Vegetation classification from UWRAP.

The BVEA infrastructure is located primarily in areas of sage shrub/steppe (27.2%) (Table 3). Fire frequency in this vegetation community varies, depending on sagebrush species and subspecies, but is considered to be between 10 and 110 years depending on precipitation, elevation, species, and associated vegetation (SWCA 2007a). Fire behavior in sage shrub/steppe depends upon the condition of the stand. In areas where there is continuous vegetation with thick interlocking tree-shrub crowns, there is greater potential for high-intensity fire, with rapid rates of spread. If shrub fuel is interspersed with dry, fine grass fuels, rates of spread are also high, as grass transmits flames between woody shrubby vegetation that burns with high intensity. In areas where drought, habitat fragmentation, and vegetation treatments, like prescribed fire and mechanical thinning have occurred, wildfire is more likely to be patchy as the fine fuel matrix is removed and canopies are more separated (Bukowski and Baker 2013). In these areas, rates of spread are lower and fire fighters are able to suppress and contain a fire more easily.

Table 3. Vegetation Community Classification within the 0.5-mile Corridor for BVEA Lines

Value		Acres	Percent
1	Agriculture	4,700.88	10.610
2	Barren	1,275.07	2.878
3	Water	799.09	1.804
4	Developed	2,391.77	5.398
5	Sparse Vegetation	408.53	0.922
6	Grassland	1,610.64	3.635
7	Exotic Herb	1,369.57	3.091
8	Riparian	1,656.02	3.738
9	Hardwood	7,205.92	16.265
10	Mixed Fir Forest	383.20	0.865
11	Pine Forest	3,320.03	7.494
12	Subalpine Forest	758.48	1.712
13	Pinyon-Juniper	3,474.63	7.843
14	Mountain Mahogany	420.19	0.948
15	Desert Scrub/Steppe	1,052.31	2.375
16	Shrubland	720.46	1.626
17	Gamble Oak	692.56	1.563
18	Sage Shrub/Steppe	12,064.04	27.230
19	Chaparral	1.11	0.003

4.2.1 Fuels

The fuels in the planning area are classified using Scott and Burgan's (2005) Standard Fire Behavior Fuel Model classification system. This classification system is based on the Rothermel surface fire spread equations, and each vegetation and litter type is broken down into 40 fuel models.

The general classification of fuels is by fire-carrying fuel type (Scott and Burgan 2005):

- | | |
|-------------------|------------------------|
| (NB) Non-burnable | (TU) Timber-Understory |
| (GR) Grass | (TL) Timber Litter |

(GS) Grass-Shrub

(SB) Slash-Blowdown

(SH) Shrub

The dominant fuel models that occur within the BVEA line buffer (a 0.25-mile buffer on either side of the line) are shown in Table 4 and Figure 4. These data are based on UWRAP. It is important to note that these data were captured and classified by LANDFIRE in 2008 and more recent fuel data is now available outside of the UWRAP platform. Under direction of UDFSL, this analysis is based on the UWRAP fuel data in order to allow comparison between plans, but BVEA will consider utilizing more recent fuel data during subsequent updates to the plan; 2016 fuel data are presented in Appendix A, Figure A-2.

Table 4. Scott and Burgan Fuel Model Composition within the 0.5-mile Corridor for BVEA Lines

Value		Acres	Percent
91	NB1	1,225.02	2.757
93	NB2	2,050.88	4.615
98	NB3	737.80	1.660
99	NB9	334.05	0.752
101	GR1	5,979.23	13.455
102	GR2	2,319.38	5.219
121	GS1	6,041.63	13.596
122	GS2	10,395.95	23.394
141	SH1	226.16	0.509
142	SH2	2,354.27	5.298
145	SH5	28.50	0.064
147	SH7	857.12	1.929
161	TU1	3,471.48	7.812
165	TU5	4,729.62	10.643
181	TL1	5.59	0.013
183	TL3	3,564.10	8.020
185	TL5	2.98	0.007
186	TL6	98.42	0.221
188	TL8	16.27	0.037

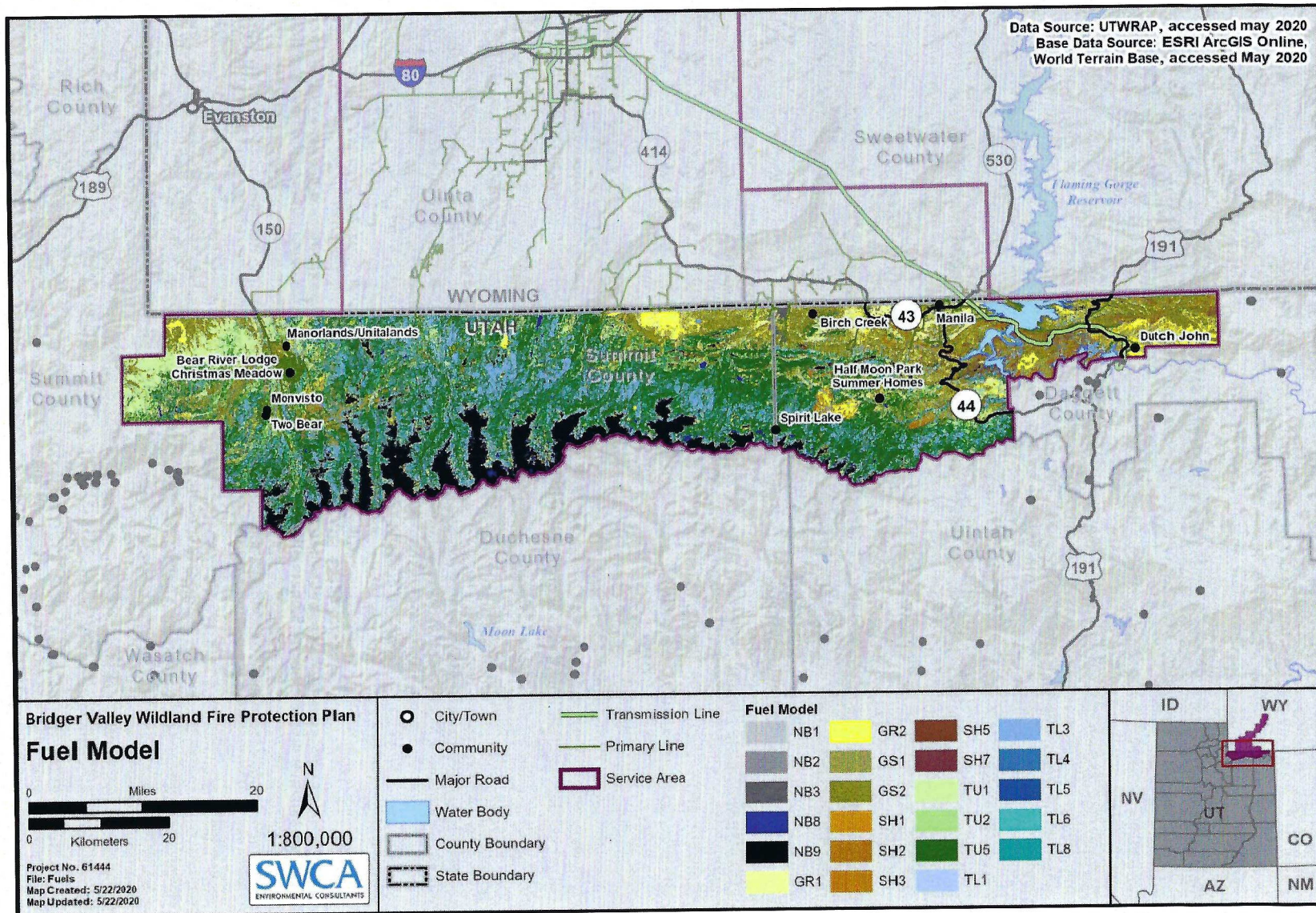


Figure 4. Fuel model classification for the BVEA service area from UWRAP.

The fuels that would contribute to fire behavior within the BVEA service area are described below in Table 5.

Table 5. Fuel Model Descriptions

1. Nearly pure grass and/or forb type (Grass)	
i.	GR1: Grass is short and patchy. Spread rate is moderate (5–20 chains/hour); flame length low (1–4 feet); fine fuel load (0.40 ton/acre).
ii.	GR2: Moderately coarse continuous grass, average depth about 1 foot. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet); fine fuel load (1.10 tons/acre).
2. Mixture of grass and shrub, up to about 50% shrub cover (Grass-Shrub)	
i.	GS1: Shrubs are about 1 foot high, low grass load. Spread rate moderate (5–20 chains/hour); flame length low (1–4 feet); fine fuel load (1.35 tons/acre).
ii.	GS2: Shrubs are 1–3 feet high, moderate grass load. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet); fine fuel load (2.1 tons/acre).
3. Shrubs cover at least 50% of the site; grass sparse to non-existent (Shrub)	
i.	SH1: Low fuel load, depth about 1 foot, some grass fuels present. Spread rate very low (0–2 chains/hour); flame length very low (0–1 feet).
ii.	SH2: Moderate fuel load (higher than SH1), depth about 1 foot, no grass fuels present. Spread rate low (2–5 chains/hour); flame length low (1–4 feet); fine fuel load (5.2 tons/acre).
iii.	SH7: Very heavy shrub load, possibly with pine overstory. Fuel bed depth 4–6 feet. Spread rate high (20–50 chains/hour); flame length very high (12–25 feet).
4. Grass or shrubs mixed with litter from forest canopy (Timber-Understory)	
i.	TU1: Fuel bed is low load of grass and/or shrub with litter. Spread rate low (2–5 chains/hour); flame length low (1–4 feet); fine fuel load (1.3 tons/acre).
ii.	TU5: Fuel bed is high load conifer litter with shrub understory. Spread rate moderate (5–20 chains/hour); flame length moderate (4–8 feet).
5. Dead and downed woody fuel (litter) beneath a forest canopy (Timber Litter)	
i.	TL3: Moderate load. Spread rate very slow (0–2 chains/hour); flame length low (1–4 foot); fine fuel load (0.5 ton/acre).
ii.	TL6: Moderate load, less compact. Spread rate moderate (5–20 chains/hour); flame length low (1–4 feet).
6. Insufficient wildland fuel to carry wildland fire under any condition (Non-burnable)	
i.	NB1: Urban or suburban development; insufficient wildland fuel to carry wildland fire.
ii.	NB2: Snow/ice.
iii.	NB3: Agricultural field, maintained in non-burnable condition.
iv.	NB9: Bare ground.

4.3 Topography

Summit County's topography is diverse. Located in the northeastern portion of the state, the county owes its name to the high mountain summits forming the divides of the Weber, Bear, and Green River drainages. The eastern portion of the county is dominated by the east-west-trending Uinta Mountains, while a high back valley of the Wasatch Mountains forms the county's western border (SWCA 2007a). Economic activities in the area focus on mini, timber production, livestock, skiing, and tourism (Media Solutions 2006).

Located in the northeastern corner of the state, on the border with Wyoming and Colorado, Daggett County's landscape is also largely characterized by the Uinta Mountains. Also significant to the landscape is the Flaming Gorge Reservoir, a large, human-made waterbody. The Green River is the largest river in the county. Land use in the county is primarily agriculture, power generation, and recreation (SWCA 2007b).

Topography is important in determining fire behavior. Steepness of slope, aspect (direction the slope faces), elevation, and landscape features can all affect fuels, local weather (by channeling winds and affecting local temperatures), and rate of spread of wildfire. There are many steep slopes throughout the BVEA service area that would influence fire behavior and spread. In the western portion of the service area, the Uintah Mountains cover the southern edge. These high alpine environments are extremely topographically complex. North of the Uintah Mountains, the land becomes relatively flat, filled with croplands. In the mountains, both aspect and slope are extremely varied, whereas in the valley, there are few slope or aspect changes. Northwest of the Uintah Mountains are smaller hills shaped by water features, creating a more moderately topographically complex landscape. Northeast of the Uintah Mountains, smaller hills and flat, low-lying areas make up the majority of the landscape. Closer to Flaming Gorge, water features cut the landscape into steep cliffs, terraces, and benches.

4.4 Weather

Of the three fire behavior components, weather is the most likely to fluctuate. Accurately predicting fire weather remains a challenge for forecasters. As winds and rising temperatures dry fuels in the spring and summer, conditions can deteriorate rapidly, creating an environment that is susceptible to wildland fire. Fine fuels (grass and leaf litter) can cure rapidly, making them highly flammable in as little as 1 hour following light precipitation. Low live fuel moistures of shrubs and trees can significantly contribute to fire behavior in the form of crowning and torching. With a high wind, grass fires can spread rapidly, engulfing infrastructure and communities, often with limited warning for evacuation.

The driest temperatures in the region occur during May through September, with temperatures reaching into the high 70s and 80s in June, July, and August east of Coalville (Figures 5 and 6) and temperatures in the high 80s and 90s in July in Flaming Gorge (Figures 7 and 8). These dry conditions would elevate fire behavior during this period as vegetation dries and becomes more available for combustion. The average monthly precipitation is low during July, and increases slowly in August through September and October as a result of monsoon rain patterns. Vegetation management, and other wildfire mitigation measures, should be completed prior to peak fire season (May–October). BVEA endeavors to comply with this whenever possible.

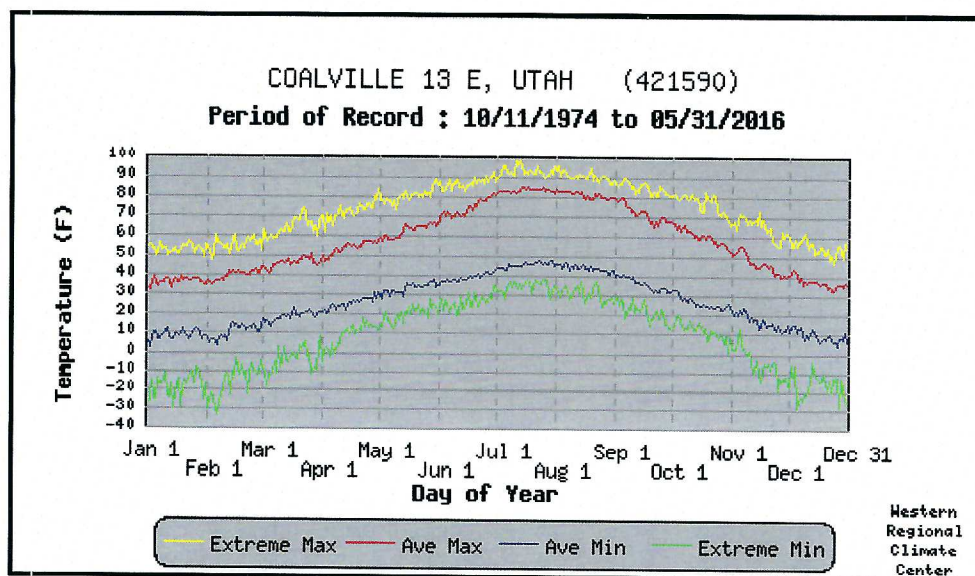


Figure 5. Daily temperature extremes and averages for Coalville 13 E, Utah.

Source: Western Regional Climate Center (2020).

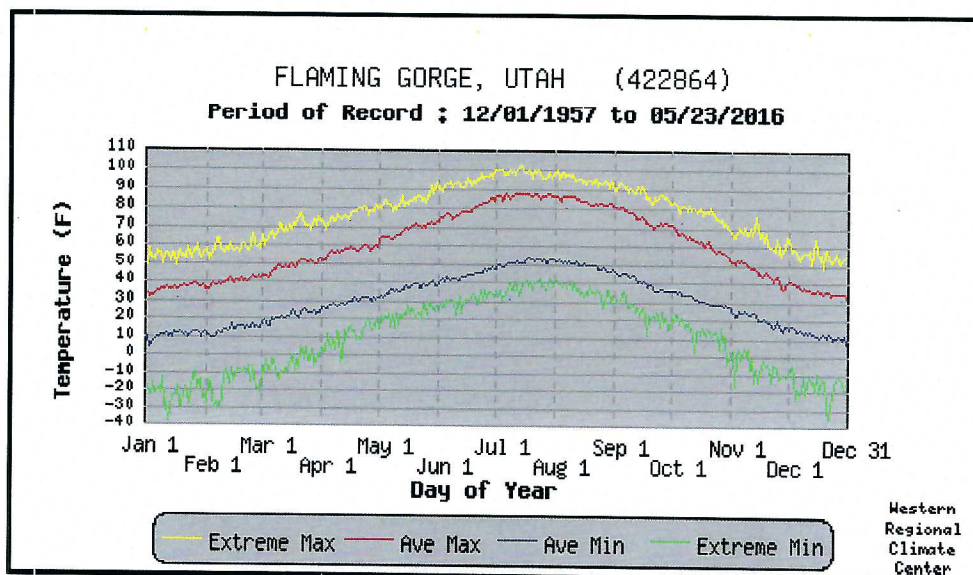


Figure 6. Daily temperature extremes and averages for Flaming Gorge, Utah.

Source: Western Regional Climate Center (2020).

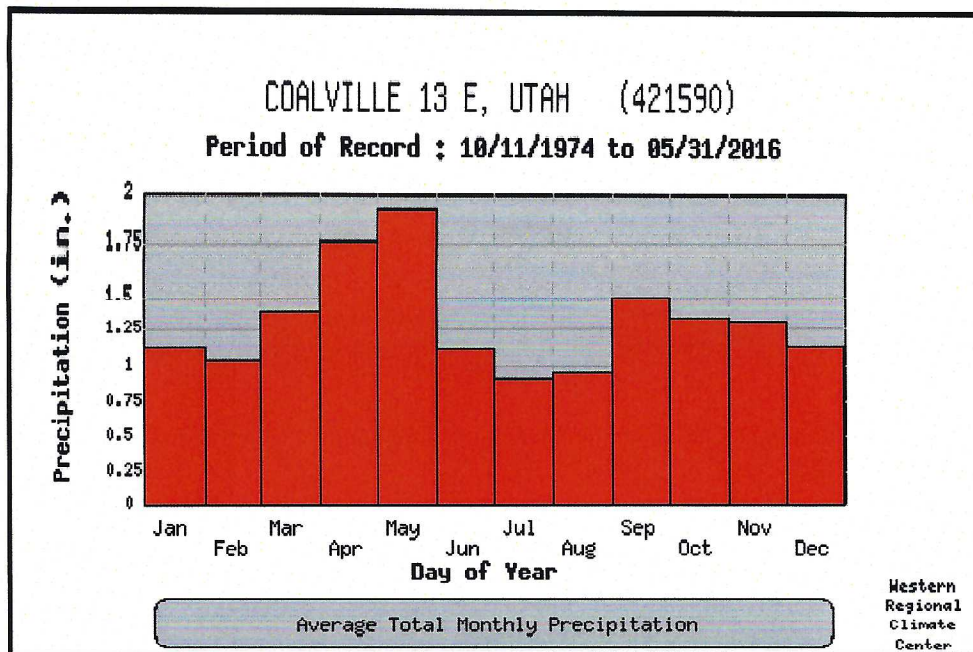


Figure 7. Monthly average precipitation for Coalville 13 E, Utah.
Source: Western Regional Climate Center (2020).

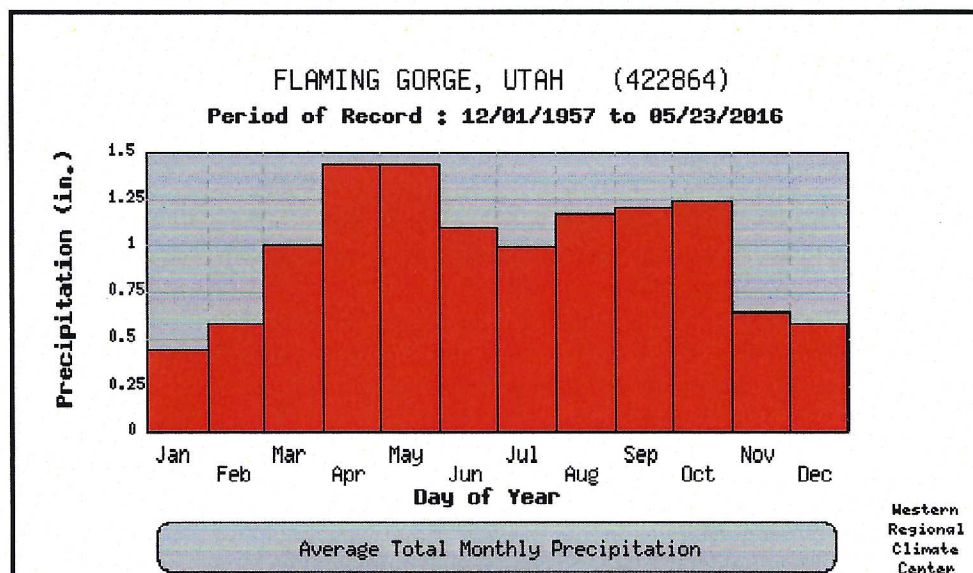


Figure 8. Monthly average precipitation for Flaming Gorge, Utah.
Source: Western Regional Climate Center (2020).

4.5 Fire Behavior

This Plan utilizes UWRAP map products to support analysis of fire behavior and risk within the BVEA service area. This analysis assists BVEA in identifying areas that are most prone to wildfire in order to create a plan to prioritize vegetation management actions to mitigate potential fire effects. In areas predicted to have the highest fire behavior, BVEA can also consider prioritizing infrastructure improvements that ensure resilience of the grid. Furthermore, in areas where fire behavior is expected to be high, as a result of fuels, topography, weather, and past fire occurrence, BVEA will work with the

community to identify actions that communities can take to mitigate against potential ignitions and to alert the community to prepare in the event of a wildfire event.

4.6 Analysis Approach

In order to assess wildfire risk in the service area and provide priority areas for which BVEA should focus mitigation measures, this analysis focuses on the following data layers in UWRAP: aggregated values, wildfire threat, and wildfire risk. These layers are defined in the following way and described in more detail below.

- **Wildfire Threat:** Potential fire behavior based on fire occurrence, landscape, effectiveness of fire suppression resources
- **Fire Effects:** Adverse impacts by a wildfire based on the impacts to identified values (i.e., infrastructure, property, natural assets, drinking water, etc.)
- **Wildfire Risk:** The possibility of loss or harm occurring from a wildfire. Combination of wildfire threat and wildfire effects

4.6.1 Aggregate Value Impacts

The Aggregate Value Impacts is an overall rating based on the Wildland Development Areas (also known as Wildland Urban Interface), Forest Assets, Riparian Assets, Drinking Water Importance Areas, and Infrastructure Response Function scores in UWRAP. The individual Value Impacted Categories are based on a scale of 1 to 9 and were derived for each of the values impacted using Response Function scores (UWRAP 2020). For the service area, the Aggregate Value Impact categories within the service boundary are shown in Figure 9.

Because a large portion of the BVEA lines are located in areas of high recreational value or in association with existing human-made infrastructure (i.e., along highways), it is not surprising that most of the lines fall in areas identified as having high impact potential from wildfire. Table 6 shows the breakdown of acres associated with various categories of aggregated value within a 0.25-mile buffer around BVEA infrastructure/0.5-mile corridor. Over 80% of the corridor is classed as medium to high aggregate value. This means that there is a heavy concentration of values that are at risk adjacent to some lines, further highlighting the need for mitigation measures across many portions of the BVEA lines.

Table 6. Acres within Various Aggregate Value Impact Categories for the 0.25-mile Buffer around BVEA Infrastructure/0.5-mile Corridor

Reclassified Value		Acres	Percent
1	Low	24.46	0.061
2		2.22	0.006
3		66.27	0.165
4		4.67	0.012
5		106.29	0.265
6	Medium	144.65	0.361
7		288.09	0.719
8		604.56	1.508

Reclassified Value		Acres	Percent
10		1,389.81	3.467
11		849.92	2.120
12		855.54	2.134
13		312.47	0.779
14		1,042.25	2.600
15	High	32,081.44	80.022

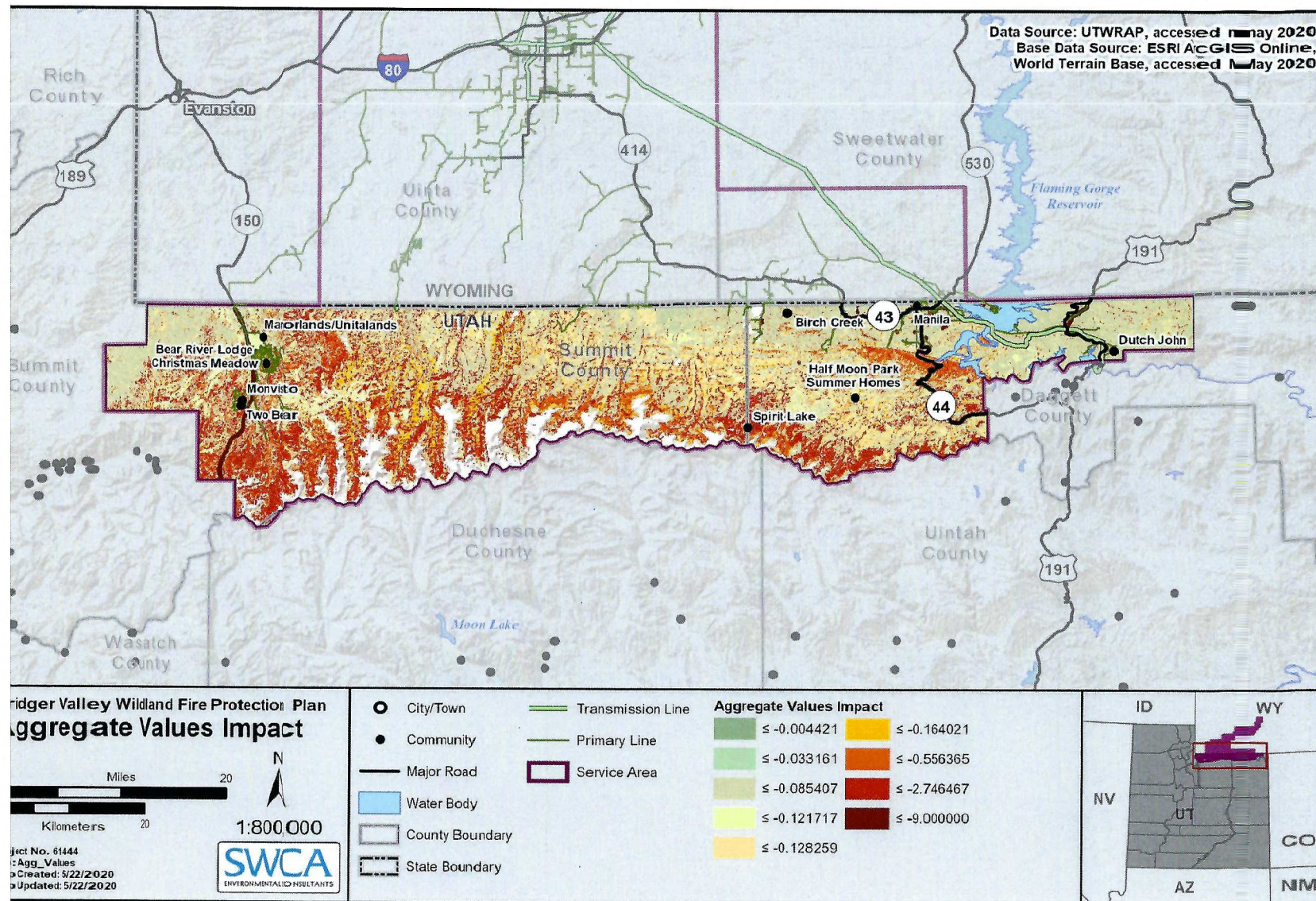


Figure 9. Aggregate Value Impacts for the BVEA service area from UWRAP.

4.6.2 Wildfire Threat

The Fire Threat Index (FTI) in UWRAP is derived from historical fire occurrence, landscape characteristics including surface fuels, percentile weather derived from historical weather observations and terrain conditions. These inputs are combined using analysis techniques based on established fire science to develop resultant fire behavior (UWRAP 2020).

FTI combines the probability of an acre igniting (Fire Occurrence), the expected final fire size based on rate of spread in four weather percentile categories, and the effectiveness of fire suppression resources (UWRAP 2020).

Figure 10 illustrates the wildfire threat from UWRAP for the service area. The majority (>93%) of the BVEA infrastructure (based on a 0.25-mile buffer around BVEA infrastructure/0.5-mile corridor) is projected to be at low wildfire threat (Table 7). Over 1,366 acres of the corridor are projected to be at medium to high threat.

Table 7. Wildfire Threat within a 0.25-mile Buffer around the BVEA Infrastructure/0.5mile Corridor

Reclassified Value		Acres	Percent
1	Low	7,747.53	36.742
2		4,659.26	22.096
3		3,064.94	14.535
4		1,983.89	9.408
5		1,366.74	6.482
6		897.67	4.257
7	Medium	530.90	2.518
8		275.28	1.305
9		219.77	1.042
10		134.99	0.640
11		83.96	0.398
12		62.68	0.297
13		36.22	0.172
14		16.87	0.080
15	High	5.51	0.026

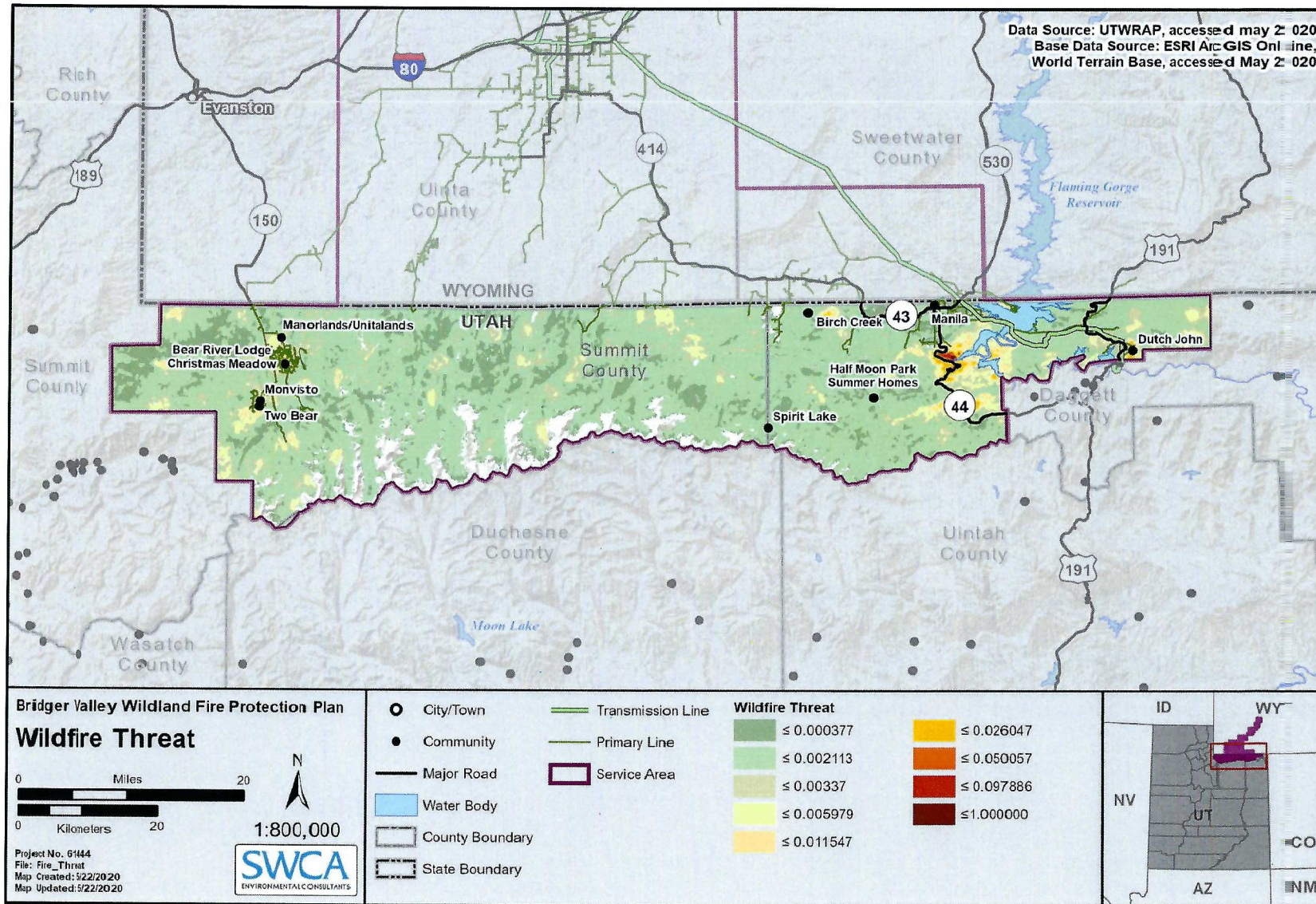


Figure 10. Fire threat for the BVEA service area from UWRAP.

4.6.3 Wildfire Risk

The wildfire risk data in UWRAP represent the possibility of loss or harm occurring from a wildfire. The metric identifies areas with the greatest potential impacts from a wildfire considering the likelihood of an area burning and the impacts to values and assets aggregated together (Appendix A). The UWRAP risk map layer (Figure 11) is a combination of the aggregate values and wildfire threat layers presented above and is used in this plan to identify priority areas for mitigation treatments.

Figure 11 illustrates the wildfire risk throughout the BVEA service area. The majority (~99%) of the BVEA infrastructure (based on a 0.25-mile buffer around BVEA infrastructure/0.5-mile corridor) is projected to be at low wildfire risk (Table 8). Over 134 acres are rated as medium or higher wildfire risk. These are the areas where BVEA should focus mitigation measures.

Table 8. Wildfire Risk within a 0.25-mile Buffer around BVEA Infrastructure/0.5-mile Corridor

Reclassified Value	Acres	Percent
1 Low	37,740.90	94.139
2	1,464.85	3.654
3	478.49	1.194
4	163.61	0.408
5	59.66	0.149
6	48.65	0.121
7	34.03	0.085
8 Medium	19.79	0.049
9	19.13	0.048
10	24.46	0.061
11	16.01	0.040
12	14.23	0.036
13	5.34	0.013
14	0.89	0.002
15 High	0.67	0.002

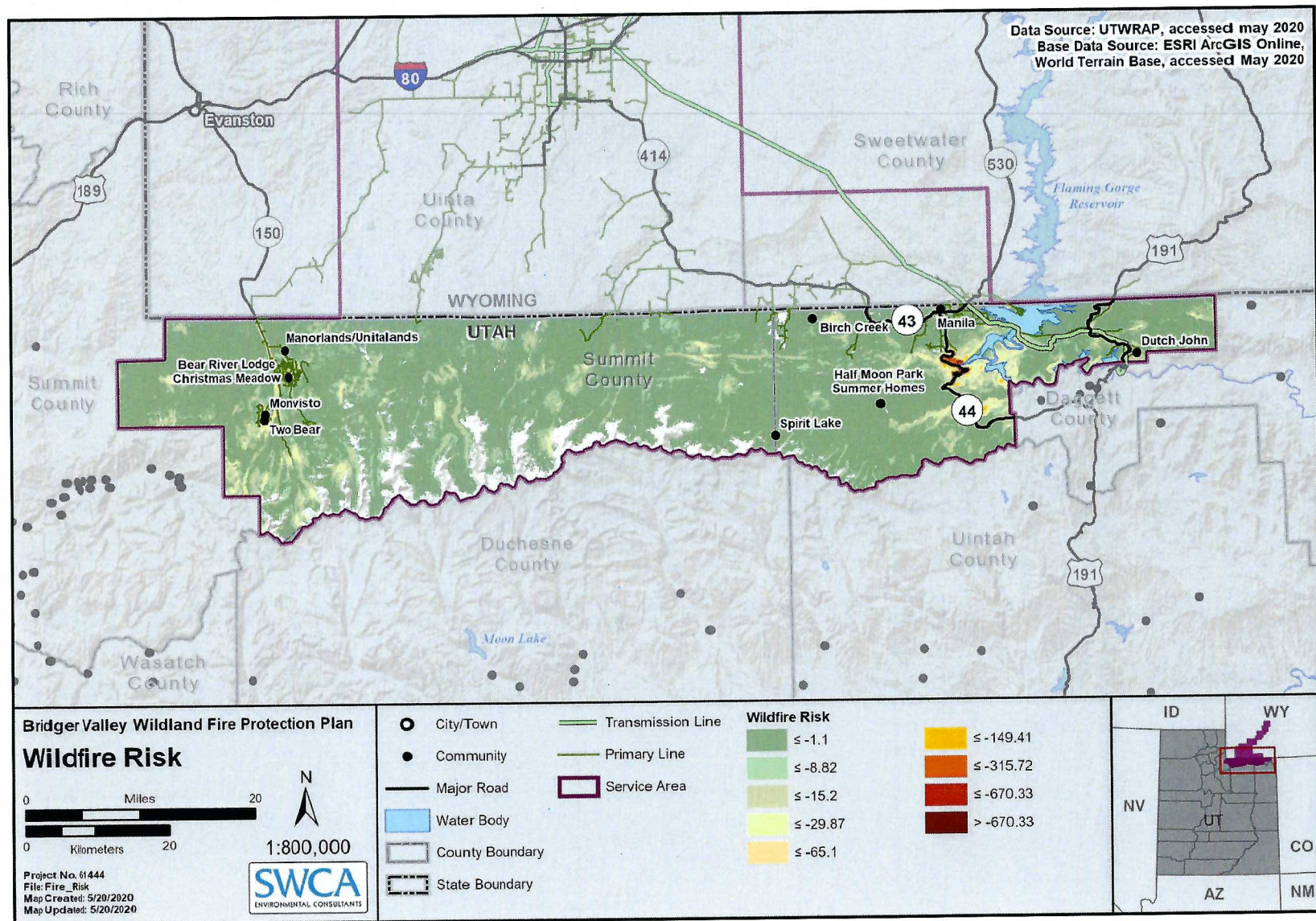


Figure 11. Wildfire risk for the BVEA service area from UWRAP.

4.7 Risk Assessment and Action Plan

The goal of the wildfire risk assessment presented in Figure 11 is to identify sections of the BVEA service area that are at elevated risk for wildfire. Appendix B shows this same data set spatially zoomed to show details associated with high-risk segments of the BVEA lines. Table B-1 in Appendix B describes those high-risk segments with associated mitigation measures that could be applied to mitigate that risk. A priority scale from low to high is applied across all high-risk segments to facilitate implementation based on the intensity of the risk. The risk assessment is based on desktop analysis. BVEA will ground truth priority sections prior to proceeding with Plan implementation.

BVEA can use Table B-1 as an action plan for implementing mitigation measures as this Plan is implemented. The table can be revised during annual reviews and 3-year updates to show progress toward mitigation goals.

5 WILDFIRE PREVENTION STRATEGIES AND PROTOCOLS

5.1 Inspection Procedures

Line inspections provide a continuous picture of system repair needs, crew scheduling, and evaluations of human power needs. BVEA follows all Rural Utilities Service (RUS), National Rural Electric Cooperative Association (NRECA), and Rural Electric Safety Achievement Program (RESAP) standards for operation, maintenance, and vegetation management.

1. BVEA inspects at least annually every distribution overhead primary voltage feeder and taps 15 kV and 25 kV.
 - a. Maintenance and safety issues noted and dated.
 - i. Service order generated and tracked to completion.
 - ii. Service order attended to in a timely fashion.
 - b. Vegetation issues within ROW noted and dated.
 - i. Service order generated and tracked to completion.
 - ii. Service order attended to in a timely fashion.
 - c. Vegetation issues outside of ROW that may create potential issues by falling into ROW.
 - i. Service order generated and tracked to completion.
 - ii. Landowner contacted about out-of-ROW issues and potential remedies. Removal of issue if at all possible.
 - iii. Landowner contact documented signed and dated.
2. BVEA inspects all transmission lines 69 kV at least annually.
 - a. Maintenance and safety issues noted and dated.
 - i. Service order generated and tracked to completion.
 - ii. Service order attended to in a timely fashion.

- b. Vegetation issues within ROW noted and dated.
 - i. Service order generated and tracked to completion.
 - ii. Service order attended to in a timely fashion.
- c. Vegetation issues outside of ROW that may create potential issues by falling into ROW.
 - i. Service order generated and tracked to completion.
 - ii. Landowner contacted about out-of-ROW issues and potential remedies. Removal of issue if possible.
 - iii. Landowner contact documented signed and dated.
- 3. BVEA inspects any distribution overhead primary voltage feeder and taps 15 kV and 25 kV, or transmission overhead line 69 kV, that has any issues reported by the members, public, or employees.
 - a. Service order generated and tracked to completion.
 - b. Service order attended to in a timely fashion.
- 4. BVEA inspects any distribution overhead primary voltage feeder and taps 15 kV and 25 kV, or transmission overhead line 69 kV, that has five or more consecutive operations in a 24-hour period, on a relay, recloser, or S&C trip saver.
 - a. Service order generated and tracked to completion.
 - b. Service order attended to in a timely fashion.

5.1.1 *Inspection Schedule*

Bridger Valley inspects every distribution overhead primary voltage feeder and taps 15 kV and 25 kV at least annually. All 69-kV transmission lines are also inspected at least annually.

Inspections may also be performed in a separate operation or while performing other duties, as desired.

5.1.2 *Documentation*

All service orders are tracked to completion.

5.1.3 *On-site repair*

~~Whenever possible, operations personnel will complete repairs during the inspection process. If repairs~~ require scheduling at a later date, a maintenance order will be generated and tracked.

5.1.4 *Responsibility*

The Line Superintendent is responsible for providing oversight for inspections.

5.2 *Vegetation Management Protocols*

When vegetation falls within the ROW, a service order is generated and attended to promptly. When vegetation issues are noted outside of the ROW with potential to fall into the ROW, a service order is

5.2.1 Procedure

- The ROW is prepared following Rural Utilities Service (RUS) standards, by removing trees, clearing underbrush, and trimming trees so that the ROW is cleared close to the ground and to the width specified (Figure 12).
- BVEA will seek required government permits or applicable authorization for vegetation and tree removal or trimming, including but not limited to, federal, state, municipal, and tribal laws, ordinances, rules, and regulations. BVEA shall seek to trim/remove vegetation and/or trees that in BVEA's opinion present an immediate hazard, danger, or substantial risk to BVEA's system, employees or public safety. BVEA will ensure that all federal approval processes are followed for actions within the ROW.
- Low-growing shrubs, which will not interfere with the operation or maintenance of the line, shall be left undisturbed as directed by the owner.
- Slash may be chipped and blown on the ROW.
- The landowner's written permission must be received prior to cutting trees outside the ROW.
- Trees fronting the width of the ROW shall be trimmed symmetrically unless otherwise specified.
- Dead trees beyond the ROW that could strike the line if they fall must be removed.
- Leaning trees beyond the ROW that could strike the line in falling and would require topping if not removed must be removed or topped.
- Shade, fruit, or ornamental trees must be trimmed and not removed unless otherwise authorized.
- Vegetation trimming should be employed to avoid contact, as well as proximity, and to ensure that the tree will not grow to within a hazardous distance before the next inspection (arc distance), resulting in an arc fault. Vegetation clearance will be based on inspection frequency, for example, removing all vegetation that is close enough to cause a fault or could cause a fault in the next 2 years. In drought-prone areas where tree growth is stunted, growth can rebound when drought conditions abate. BVEA will consider the fact that growth rates can be nonlinear when establishing inspections frequency.
- BVEA continually reduces fire risk by using motorized equipment in highly vegetated areas by walking or always having a fire extinguisher or other method of fire suppression available.
- BVEA shall encourage members to report trees that are potential hazards, in and outside the ROW, that may become a threat to public safety and/or the system's reliability.
- BVEA will annually budget an amount sufficient to secure the services of an independent tree contractor to assist the cooperative with its vegetation management program, including tree removal when authorized, tree trimming, and application of herbicide within the ROW.
- The activities of the vegetation management program will be documented and maintained annually by the Operations Manager.
- BVEA may consider working with stakeholders to utilize overhead ROWs as fire breaks, which impacts the type of vegetation allowed on the ROW and may impact the width of the ROW.

5.2.2 Inspection Standards

BVEA will perform periodic inspections of its distribution and transmission lines to monitor the growth of vegetation. BVEA inspects every distribution overhead primary voltage feeder and taps 15 kV and 25 kV at least annually. All 69-kV transmission lines are also inspected at least annually.

Inspections will include both drone and visual line patrols, as well as vehicle patrols, and will fulfill the requirement of a vegetation inspection as well as a general maintenance inspection.

5.2.3 Clearance Standards

In order to adhere to RUS standards, there must be a minimum of 10 feet of clearance on either side of infrastructure. In total, the cleared width for infrastructure will be a minimum of 30 feet (see Figure 12).

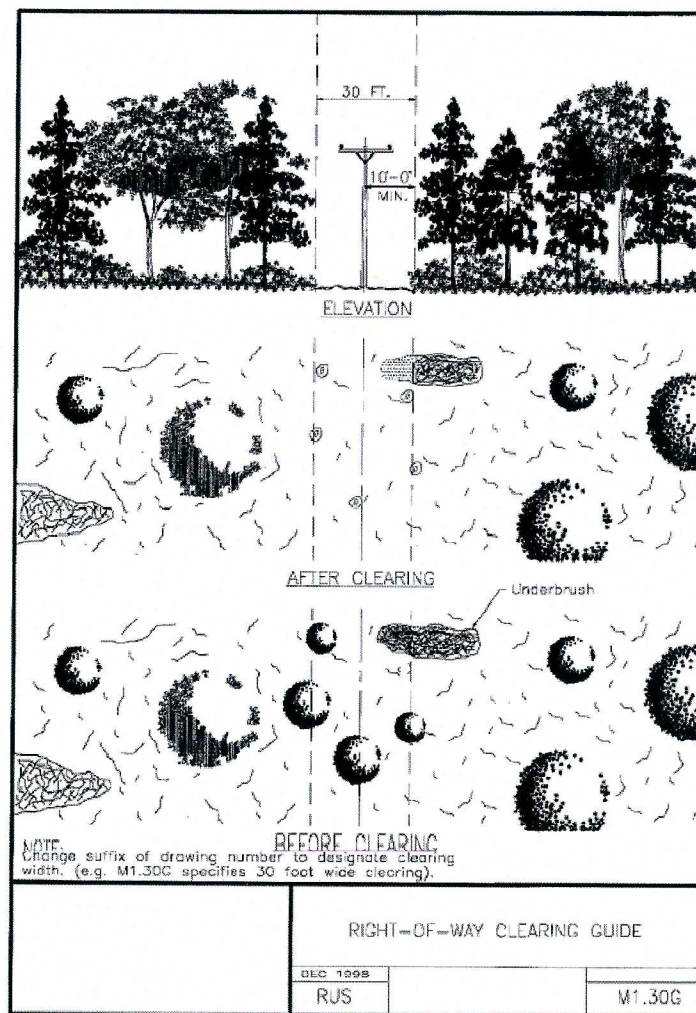


Figure 12. ROW clearing guide.

5.2.4 Responsibility

The Line Superintendent is responsible for the ongoing vegetation management, including recordkeeping of tree trimming to ensure the safety of landowners, employees, and the public.

The Operations Manager is responsible for reviewing records involving vegetation management. From these records, an annual summary is to be provided to the BVEA General Manager/CEO as a key indicator to the Board of Directors.

5.3 Modifications and Upgrades to Infrastructure

5.3.1 System improvements

BVEA infrastructure is designed, constructed, and maintained to meet or exceed relevant federal, state, or industry standards. In addition, BVEA monitors and follows as appropriate the National Electric Safety Code. In addition to adhering to all standards, BVEA will consider some or all of the following system hardening solutions:

- Provide additional access roads along power line ROW and maintain standards.
- Ensure vegetation clearances around poles, with a minimum radius of 10 feet.
- Adopt alternative technologies as they become available (for example, live-feed camera technology, wire-break sensing, and arc detection technology).

5.3.2 Raptor Protocols

All new power lines are built for raptor protection. This is accomplished by having wider spacing between phase-to-phase and phase-to-ground. Line hoses, plastic bird caps, and bird guards are used specifically in potential problem areas. In cases for which nesting continues to be a problem, nests are moved and additional structures may be constructed away from the powerline to prevent contact.

5.4 De-energizing Protocols and Reclosing

As the power within this rural area is predominately a radial feed, shutting down the entire feed is not an option for BVEA. The distribution of electrical power to pumps that provide water for livestock, crops, and fire suppression is of the utmost importance. BVEA also has members who are dependent on electricity to power their oxygen machines and other types of devices that offer life support. Through a thorough analysis, BVEA has balanced the risk of fire with these provisions and has determined that maintaining electric supply to members outweighs the potential wildfire risk of maintaining an energized line.

During extremely high-risk fire conditions (heavy winds and prolonged periods of low humidity) in very sensitive areas (those outlined in Appendix B), the automatic line recloser could be placed in non-reclose mode to further reduce wildfire risk. While this is not a procedure that BVEA prefers to employ, it is an option under extreme conditions.

In the event of wildfire, BVEA provides personnel to work directly with incident command and attends all incident meetings to provide input and coordination between fire operations and BVEA system operation. If, during a fire, a distribution or transmission line is requested to be removed from service for the safety of firefighting personnel, BVEA will work closely with incident command using industry

clearance and safety procedures for any line outages to ensure the safe operation of fire crews and equipment.

BVEA uses different protective devices to operate its overhead distribution power lines.

1. Substation feeders
 - a. Schweitzer 651R reclosing relay
 - i. Reclosing sequence of two fast and two slow operations, then lock-out.
 - ii. Capable of being set to non-reclose or one operation to lock-out.
 2. Taps off of feeders
 - a. Schweitzer 651R reclosing relay
 - i. Reclosing sequence of two fast and two slow operations, then lock-out.
 - ii. Capable of being set to non-reclose or one operation to lock-out.
 - b. S&C trip saver
 - i. Reclosing sequence of two fast and two slow operations, then lock-out.
 - ii. Capable of being set to non-reclose or one operation to lock-out.
 - c. Hydraulic oil filled recloser
 - i. Reclosing sequence of two fast and two slow operations, then lock-out.
 - ii. Capable of being set to non-reclose or one operation to lock-out.
 - d. Fuses, T speed or K speed

BVEA uses different protective devices on its 69-kV overhead transmission line.

1. Schweitzer protective relays
 - a. SEL 311C
 - i. Two operations to lock-out.

5.5 Restoration of Service

During normal line operation when the power flow is interrupted, the line recloser will try to re-energize. If the fault is temporary and can clear, the power will be restored. If the fault does not clear, the line will remain de-energized. When the power flow is interrupted under high-risk fire conditions, crews respond and will not attempt to manually reclose any line protection devices without first inspecting the section of line to be re-energized. Once the problem is identified and resolved, the crews will re-energize the line manually in order to reduce the risk of starting a fire.

BVEA will work closely with the incident commander in the event that a hold order is placed on the line. BVEA will coordinate as needed with an emphasis on stressing the importance of always treating lines as energized.

BVEA's transmission systems should always be considered energized.

In the event of a wildfire impacting the BVEA service area, BVEA will staff up its operations department to coordinate activities to restore service. Restoration of power will be coordinated with County,

municipal fire, and public works departments, in coordination with the incident commander in charge of the wildfire operations. In the event additional resources are needed, BVEA may also engage contractors on an as-needed basis. BVEA would adhere to the following steps during the restoration of electrical service:

Emergency Declaration: Fire declaration would be made by the County or municipality with jurisdiction.

Inspection and Assessment: BVEA staff will patrol and record any damage to lines resulting from wildfire. The inspection will include assessing infrastructure repairs, removing debris, and assessing safety hazards. BVEA will work with the local agency in charge of the fire before accessing the burn area.

Planning: Following initial assessment, BVEA engineers and managers will meet to discuss the extent of any damage and develop a plan of work to restore service. Line segments and infrastructure that support the most critical infrastructure needs will be prioritized.

Mobilize: BVEA will coordinate the crews and materials needed to rebuild infrastructure and restore service. Contractors may be employed as needed.

Rebuild: Any repairs and rebuilding will be undertaken by BVEA as soon as the area is safe to access. Initial effort will be focused on replacing lines and restoring any damaged circuits.

Restore: BVEA or contract crews will restore electric services to homes and businesses as soon as possible after the wildfire.

Restoration of services will be prioritized depending on the specific incident, critical areas first, and available resources:

- Public and worker safety.
- Life support and other critical members.
- Critical infrastructure, including county and municipal facilities, Sheriff's department, police and fire departments, other infrastructure (water, sewage, gas, communications), and incident command sites.
- Major commercial activities/accounts.
- Reduce the total number of members affected.
- Reduce the length of time members have been without power.

5.6 Situational Awareness

Situational awareness regarding wildfire risk and hazard is a critical component of wildfire preparedness. Some weather conditions contribute to elevated wildfire hazard, and monitoring of those conditions is important throughout the wildfire season. BVEA should gather data throughout the season and access short- and long-range forecasts so as to be prepared to mobilize crews in the event of a potential ignition and/or passage of a wildfire throughout the service area. Good situational awareness would include:

- Analyzing historical weather data to determine patterns and identify vulnerable periods.
- Monitoring incoming weather data in real time.

- Providing a detailed daily weather forecast to operations staff during fire season.
- Considering installation of weather stations in areas identified to be at high risk of wildfire, and providing all weather data to operations staff to improve situational awareness.
- Communicating with the Daggett and Summit County Emergency Managers and other agency contacts (Table 10) to ensure BVEA is added to any emergency alert systems for hazardous weather events.
- Utilizing existing dynamic web services to inform operations and maintenance (O&M) staff regarding wildfire potential and wildfire activity within the service territory,⁹ and incorporating this information into morning safety briefings.
- Considering installation of camera networks for fire detection in high risk areas.
- Monitoring evolution of technology related to situational awareness and incorporating into the BVEA O&M as appropriate.

6 COMMUNITY OUTREACH AND EDUCATION

6.1 Public Safety and Notification

The following are actions that BVEA currently employs and/or would consider adopting in order to improve public safety and notifications:

- Coordination prior to fire season with county emergency managers and fire staff to determine fire season outlook and potential red-flag periods.
- Coordination during emergencies or large-scale outages with county emergency managers and fire staff in conjunction with agency dispatch.
- Development of communication protocols with county health departments for emergency notifications to vulnerable members (i.e., medical facilities, schools, etc.).
- Expansion of social media reach across the service area highlighting high-fire risk periods.
- Development of a web-based map for the public to see current outages and estimated restoration.

Additional public outreach options that could be employed in conjunction with county or local emergency managers include:

- Utilizing local radio and television media to broadcast public service messages.
- Compiling and disseminating information to members regarding community wildfire preparedness, evacuation, and vigilance before and during fire season (UDFFSL Wildfire

⁹ Wildland Fire Assessment System: <https://www.wfas.net/>

Preparedness Literature;¹⁰ Ready, Set, Go;¹¹ Firewise;¹² Fire Adapted Communities¹³). Working with state and government officials to provide a consistent public message to members regarding wildfire preparedness.

- Specific outreach required for people visiting the area for recreation.

7 INTEGRATION WITH APPLICABLE PLANS

Fire response for the service area would be coordinated through the NUIFC, in cooperation with the Great Basin Coordination Center. The NUIFC is a cooperative effort among the BLM, USFS, and UDFSL. The NUIFC is responsible for dispatch and coordination for approximately 14 million acres of land that average 500 fires per year. Daggett County uses the UBIFC. The UBIFC is the dispatch center for the state and federal agencies in the Uintah Basin and is managed by the Great Basin Coordination Center.

BVEA engages closely with the County Emergency Managers. During wildland fire events, BVEA works in full coordination with the Utah Department of Public Safety and well as agency incident command for the wildland event.

Section 2.3 outlines existing wildfire planning documents for entities within the service area. The contacts for these entities, in addition to important contact information for agency staff who may need to be contacted in the event of a wildfire, are included in Table 10. The contact information presented below will be reviewed and updated on an annual basis.

Table 10. Agency Contact List

Name	Entity	Phone	Email
Mike Eriksson	UDFFSL	435-671-9170	mikeeriksson@utah.gov
Blain Hamp	UDFFSL	435-752-8701	blainhamp@utah.gov
Travis Dupaix	Daggett County	435-659-0195	tdupaix@daggettcountry.org
Alan Siddoway	Summit County	435-615-3518	asiddoway@summitcounty.org
Chris Deets	BLM	435-630-5929	cadeets@blm.gov
Joe Flores	USFS	435-781-5109	joseph.flores@usda.gov

¹⁰ UDFSL: <https://ffsl.utah.gov/fire/wildfire-community-preparedness/>

¹¹ Ready, Set, Go: https://www.wildlandfirersg.org/s/?language=en_US

¹² Firewise: <https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA/Firewise-USA-Resources/Firewise-USA-sites>

¹³ Fire Adapted Communities: <https://fireadapted.org/>

8 LITERATURE CITED

- Bishop Tara B. B.; Munson, Seth; Gill, Richard A.; Belnap, Jayne; Petersen, Steven L.; St. Clair, Samuel B. 2019. Spatiotemporal patterns of cheatgrass invasion in Colorado Plateau National Parks. *Landscape Ecology* 43:925–941.
- BLM. 2005. Utah Land Use Plan Amendment for Fire and Fuels Management.
- BLM. 2018. Green River District Fire Management Plan. On File at BLM office.
- BLM. 2020. Routine Operations and Maintenance to Reduce Fire Risk on Utility Rights-of-Way. Available at: <https://www.blm.gov/policy/im-2020-005>.
- Bukowski, Beth E., and William L. Baker. 2013. Historical fire regimes, reconstructed from land-survey data, led to complexity and fluctuation in sagebrush landscapes. *Ecological Applications*. 23(3):546–564.
- Ferry, Gardner W. Ferry Clark, Robert G., Mutch, Robert W., Leenhouts, Willard P. and G. Thomas Zimmerman (Ferry et al.). 1995. Altered Fire Regimes Within Fire-adapted Ecosystems. Available at: <http://biology.usgs.gov/s+t/noframe/ml197htm>.
- Media Solutions, University of Utah. Accessed 12/2006. Available at: http://www.media.utah.edu/UHE/index_frame.html
- Mountainland Association of Governments. 2017. Mountainland Pre-Disaster Hazard Mitigation Plan.
- Monitoring Trends in Burn Severity (MTBS). 2017. MTBS Data Access: Fire Level Geospatial Data.
- Northern Utah Interagency Fire Center (NUIFC). 2018. Northern Utah Interagency Fire Danger Operating Plan.
- Omernik. 1987. Primary Distinguishing Characteristics of Level III Ecoregions of the Continental United States. Available at: <http://www.hort.purdue.edu/newcrop/cropmag/ecoreg/descript.html>
- Scott, J.H. and Burgan R.E. 2005. Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model. USDA Forest Service, Rocky Mountain Research Station.
- Summit County. 2018. Emergency Management Plan.
- SWCA. 2007a. Northern Utah Regional Wildfire Protection Plan.
- SWCA. 2007b. Uintah Basin Regional Wildfire Protection Plan.
- Uintah Basin Association of Governments (UBAOG). 2004. Uintah Basin Pre-disaster Mitigation Plan. Prepared by the Uintah Basin Association of Governments, Vernal, Utah.
- U.S. Forest Service. 2020. 36 CFR Part 251. Land Uses, Special Uses, Procedures for Operating Plans and Agreements for Powerline Facility. Available at: <https://www.federalregister.gov/documents/2020/07/10/2020-13999/land-uses-special-uses-procedures-for-operating-plans-and-agreements-for-powerline-facility>.

Utah Department of Natural Resources (DNR). 2019. Summit County Wildfire Preparedness Plan.

Utah Division of Emergency Management. 2019. Utah State Hazard Mitigation Plan. Available at:
<https://site.utah.gov/dps-emergency/wp-content/uploads/sites/18/2019/02/1-Introduction.pdf>

UWRAP. 2020. Utah Department of Natural Resources, Wildfire Risk Assessment Portal. Oregon
Department of Forestry. Available at: <https://wildfirerisk.utah.gov/About>

World Wildlife Fund (WWF). 2001. Terrestrial ecoregions of North America: A Conservation
Assessment. Wasatch and Uinta montane forests. Island Press. Available at:
http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na0530_full.html

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APPENDIX A

UWRAP and Inter-Agency Fuel Treatment Decision Support System (IFTDSS) Supplemental Mapping

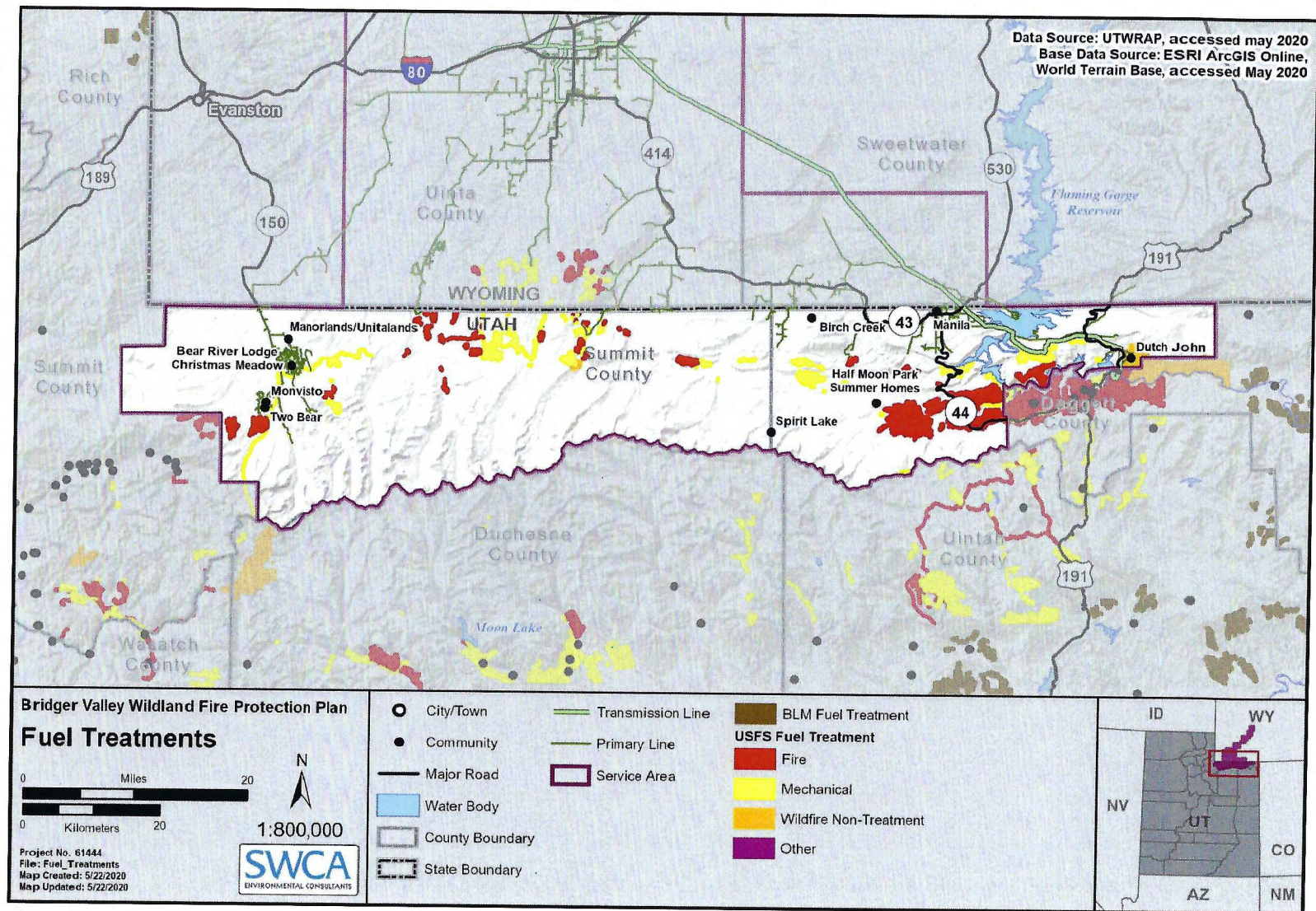


Figure A-1. Fuel treatment locations, as provided by the USFS and BLM.

Note many fuel treatments are in areas of BVEA infrastructure. Whenever possible, BVEA will work with federal agencies to design future fuel treatments to contribute to wildfire mitigation around BVEA infrastructure.

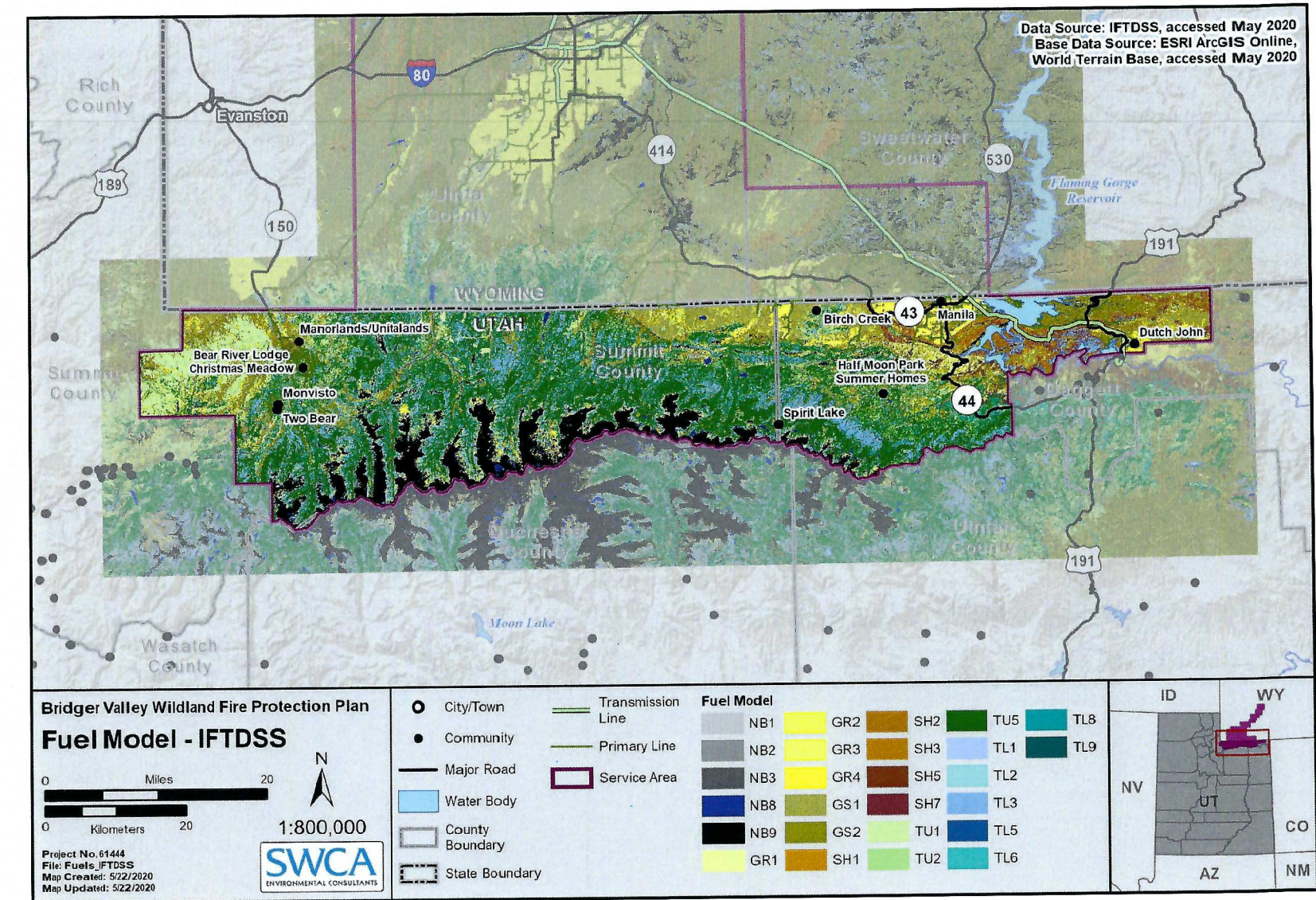


Figure A-2. Updated fuel model data for the BVEA service area, utilizing 2016 LANDFIRE Scott and Burgan Fuel data. Future revisions of the Plan should consider incorporating this new data, contingent on revisions to UWRAP.

APPENDIX B

Detailed Mapping of High-Risk Segments with Action Plan

Map ID	Feeder	Description	Wildfire Risk Analysis Segment indicator and description	Mitigation Strategy	Priority (L, M, H)
B-1	3457	Area A-1 is located in the southwestern portion of the BVEA service area, close to the Manorlands/ Uintalands community and adjacent to the Wyoming-Utah border.	<p>A-1 represents a segment of distribution line that is located on private land, east of the Bear River along the Mirror Lake Scenic Byway. The line is located in grass-shrub fuels, which could experience flame lengths of 4-8 ft and have the potential to transmit rapidly spreading fires (~33-44ft/min). The line is located in a relatively flat area, which would slow fire spread. Much of the risk associated with this segment is a result of the presence of the highway and utilities elevating the aggregated values. The proximity to the highway may increase the potential for human ignitions from passing motorists.</p> <p>The segment is composed of western red cedar poles and #4ACSR conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • Fire prevention signage on the highway (work with the County and UDOT) • More frequent vegetation inspections. • Encourage more frequent vegetation treatments along highway ROW (County). 	Low- due to the localized nature of the risk, and relatively low risk across the wider landscape adjacent to the line.
B-1	8561, 3212, 3445	Area A-2 is located in the southwestern portion of the BVEA service area, close to the Bear River Lodge Christmas Meadow Community and adjacent to the Wyoming-Utah border.	<p>A-2 represents a segment of distribution line that is located on USFS and private land, along the Mirror Lake Scenic Byway and just east of the Bear River. The line is located in grass-shrub and timber-shrub fuels. Grass-shrub fuels could experience flame lengths of 4-8 ft and timber-shrub fuels could experience flame lengths of greater than 30 ft. Grass-shrub fuels transmit slowly spreading fires (<5.5ft/min); timber-shrub fuels transmit rapidly spreading fires (~33-44ft/min). The line is located in an area with varied slopes which may channel winds, increasing fire spread. The line is close to the highway, which may be more prone to human ignitions from passing motorists. Like A-1 much of the risk associated with this segment is a result of the presence of the highway and residential values elevating the aggregated value score.</p> <p>The segment is composed of western red cedar poles and #4 ACSR conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • Fire prevention signage on the highway and public outreach campaign with local residents (work with the County and UDOT) • More frequent vegetation inspections. • Encourage more frequent vegetation treatments along highway ROW (County). 	High- due to the density of values at risk in the community and potential for fire spread from the highway, east into the community.

Map ID	Feeder	Description	Wildfire Risk Analysis Segment indicator and description	Mitigation Strategy	Priority (L, M, H)
B-2	7145,	Area B-1 is located in the southwestern portion of the BVEA service area, close to the Monviso Community and adjacent to the Wyoming-Utah border.	<p>B-1 represents a segment of distribution line that is located on USFS and private land, adjacent to the Mirror Lake Scenic Byway and the Bear River. The line is located in timber-shrub, grass-shrub, and conifer litter fuels. Timber-shrub fuels could experience flame lengths of 12-20 ft and have the potential to transmit rapidly spreading fires (~33-44ft/min). Grass-shrub fuels could experience flame lengths of 4-8 ft and transmit slowly spreading fires (<5.5ft/min). Conifer litter fuels experience low flame lengths (<2 ft) and transmit slowly spreading fires (<5.5ft/min). The line is located in an area with varied slopes which may channel winds, increasing fire spread. Much of the risk associated with this segment is a result of the presence of the highway and residential values elevating the aggregated value score. The proximity of the segment to the highway and residential areas make it more prone to human ignitions from passing motorists and other human activity.</p> <p>The segment is composed of underground construction with 25-kV 1/0 direct burial conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • Fire prevention signage on the highway and public outreach campaign with local residents (work with the County and UDOT) • More frequent vegetation inspections. • Encourage more frequent vegetation treatments along highway ROW (County). 	High- due to the density of values at risk in the community and potential for fire spread from the highway into the community.
B-2	4041	Area B-2 is located in the southwestern portion of the BVEA service area, adjacent to the Mirror Lake Scenic Byway and the Two Bear Community.	<p>B-2 represents a segment of distribution line that is located on USFS and private land, approximately adjacent to the Bear River and the Mirror Lake Scenic Byway. The line is located in timber-grass-shrub and conifer litter fuels. These fuels experience flame lengths of less than 2 ft and transmit slowly spreading fires (<5.5ft/min). The line is located in a flat area which would slow fire spread. Like B-1, much of the risk associated with this segment is a result of the presence of the highway and residential values elevating the aggregated value score. The proximity of the segment to the highway and residential areas make it more prone to human ignitions from passing motorists and other human activity.</p> <p>The segment is composed of western red cedar poles and #4 ACSR conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • Fire prevention signage on the highway and public outreach campaign with local residents (work with the County and UDOT) • More frequent vegetation inspections. • Encourage more frequent vegetation treatments along highway ROW (County). 	High- due to the density of values at risk in the community and potential for fire spread from the highway into the community.

Map ID	Feeder	Description	Wildfire Risk Analysis Segment indicator and description	Mitigation Strategy	Priority (L, M, H)
B-3	3701	Area C-1 is located in the southeastern portion of the BVEA service area, east of the Flaming Gorge Reservoir and adjacent to the Wyoming-Utah state line and the town of Manila, Utah.	<p>C-1 represents a segment of distribution line that is located on state trust and private land. The line is located in grass-shrub fuels, which could experience flame lengths of 4-8 ft and transmit rapidly spreading fires (33-44ft/min). The line is located in an area with varied slopes which may channel winds, increasing fire spread. The line is close to the town of Manila which elevates the risk due to the density of aggregated values. The area has a history of high fire occurrence, likely due to the increased human activity around the community.</p> <p>The segment is composed of western red cedar poles and #4 ACSR conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • Fire prevention signage on the highway and public outreach campaign with local residents (work with the County and UDOT) • More frequent vegetation inspections. • Encourage more frequent vegetation treatments along highway ROW (County). 	High- due to the density of values at risk in the community and potential for fire spread from the highway into the community.
B-3	5415	C-2 is located east of the Flaming Gorge Reservoir and about 3 miles south of the town of Manila, UT and the Wyoming-Utah state line.	<p>C-2 represents a segment of distribution line that is located on state trust, national recreation area, and private lands. The line is located in grass-shrub fuels, which could experience 4-8ft flame lengths, and high rates of spread (33-44 ft/min). The line is located in an area with varied slopes which may channel winds, increasing fire spread. The lines proximity to Flaming Gorge Reservoir elevates the risk due to the density of aggregated values, particularly drinking water impacts. The area has a history of extremely high fire occurrence, likely due to the increased human activity associated with recreational use.</p> <p>The segment is composed of western red cedar poles and #4 ACSR conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • Fire prevention signage on the highway and public outreach campaign targeted at recreationalists (work with the County and UDOT) • More frequent vegetation inspections. • Encourage more frequent vegetation treatments along highway ROW (County). 	High- due to the extremely high aggregated values in the area, and extreme fire history.
B-3	20-03	C-3 is located approximately 4 miles southeast of the town of Manila, UT and just west of the Flaming Gorge Reservoir.	<p>C-3 represents a segment of distribution line that is located on national recreation area and state trust land. The line is located in grass-shrub fuels, which could experience moderate (4-8ft) to high (12-20ft) flame lengths, and moderate-extreme rates of spread (22- 50+ ft/min). The line is located in an area with varied slopes which may channel winds, increasing fire spread. The line spans and is adjacent to a national recreation area which may be prone to human ignitions from motorists and recreationalists. There is a history of higher fire occurrence in the area.</p> <p>The segment is composed of western red cedar poles and #4 ACSR conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • More frequent vegetation inspections. • More frequent vegetation treatments. • Fire prevention signage on the highway and public outreach campaign targeted at recreationalists (work with the County and UDOT) 	High- due to the high aggregated values in the area, and high fire history.

Map ID	Feeder	Description	Wildfire Risk Analysis Segment indicator and description	Mitigation Strategy	Priority (L, M, H)
B-4	Transmission line	D-1 is located east of the Flaming Gorge Reservoir, in the southeastern portion of the BVEA service area, just east of highway 191.	<p>D-1 represents a segment of transmission line that is located on national recreation area, USFS, and state trust land. The line is located in grass-shrub fuels, which could experience 4-8ft flame lengths, and moderate-extreme rates of spread (22- 50+ ft/min). The line is located in an area with varied slopes which may channel winds, increasing fire spread. The lines proximity to Flaming Gorge Reservoir elevates the risk due to the density of aggregated values, particularly drinking water impacts. The area has a history of extremely high fire occurrence, likely due to the increased human activity associated with recreational use.</p> <p>The segment is composed of western red cedar poles and 4/0 ACSR conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • Fire prevention signage on the highway and public outreach campaign targeted at recreationalists (work with the County and UDOT) • More frequent vegetation inspections. • Encourage more frequent vegetation treatments along highway ROW (County). 	High- due to the high aggregated values in the area, and high fire history.
B-4	3374	D-2 is located east of the Flaming Gorge Reservoir in the southeastern portion of the BVEA service area, south of the Wyoming-Utah border.	<p>D-2 is adjacent to the Dutch John community and adjacent to highway 191. It represents a segment of distribution line that is located on national recreation area and private land. The line is located in grass-shrub fuels, which could experience 4-8ft flame lengths, and extreme rates of spread (> 50 ft/min). The line is located in an area with varied slopes which may channel winds, increasing fire spread. The lines proximity to Flaming Gorge Reservoir, Dutch John and other values at risk, elevates the risk due to the density of aggregated values. The area has a history of extremely high fire occurrence, likely due to the increased human activity associated with recreational use.</p> <p>The segment is composed of western red cedar poles #4 ACSR Conductor. It is scheduled for replacement in 2050.</p>	<ul style="list-style-type: none"> • Fire prevention signage on the highway and public outreach campaign targeted at recreationalists (work with the County and UDOT) • More frequent vegetation inspections. • Encourage more frequent vegetation treatments along highway ROW (County). 	High- due to the high aggregated values in the area, and high fire history.

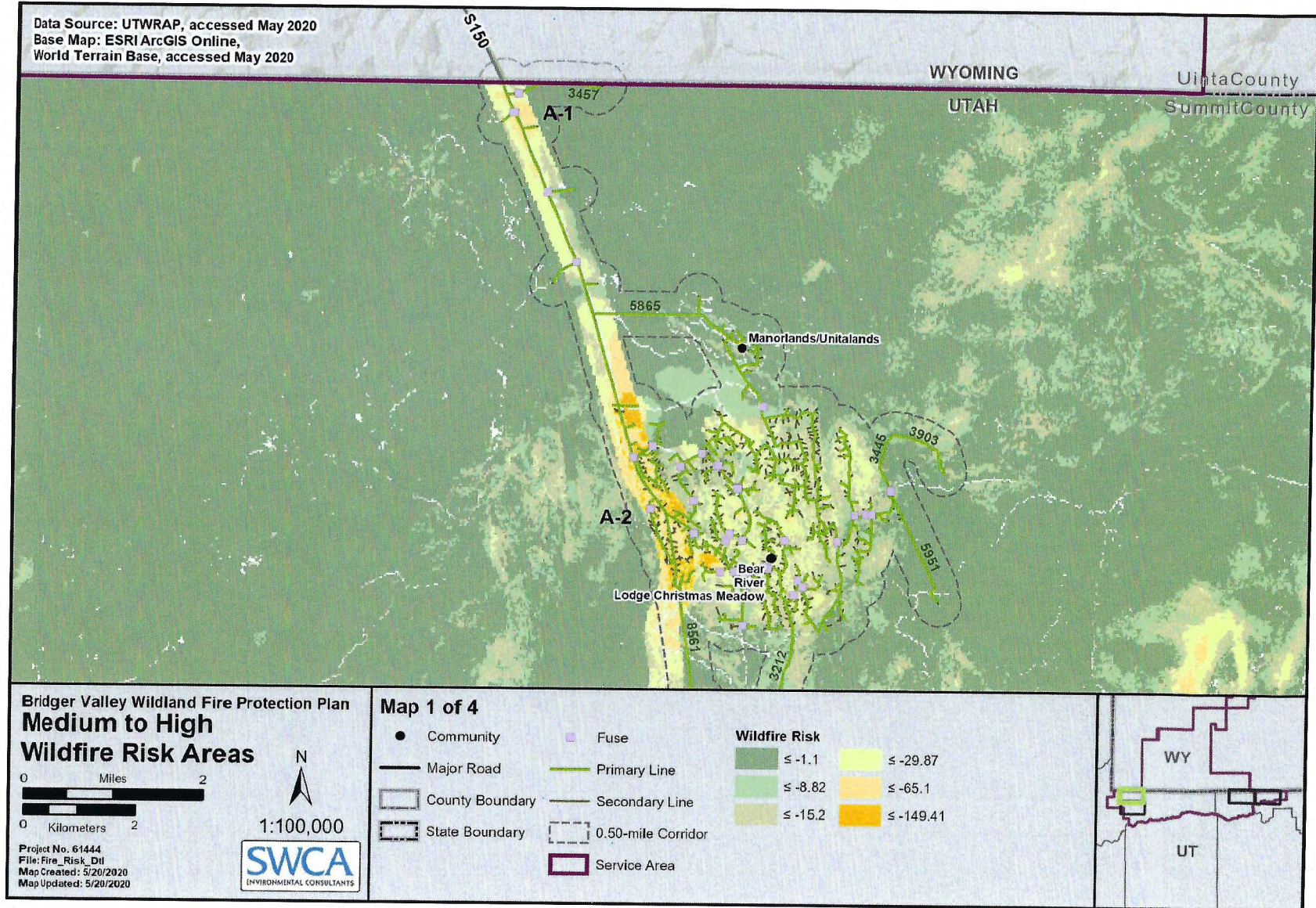


Figure B-1. Medium to high wildfire risk areas (map 1 of 4).

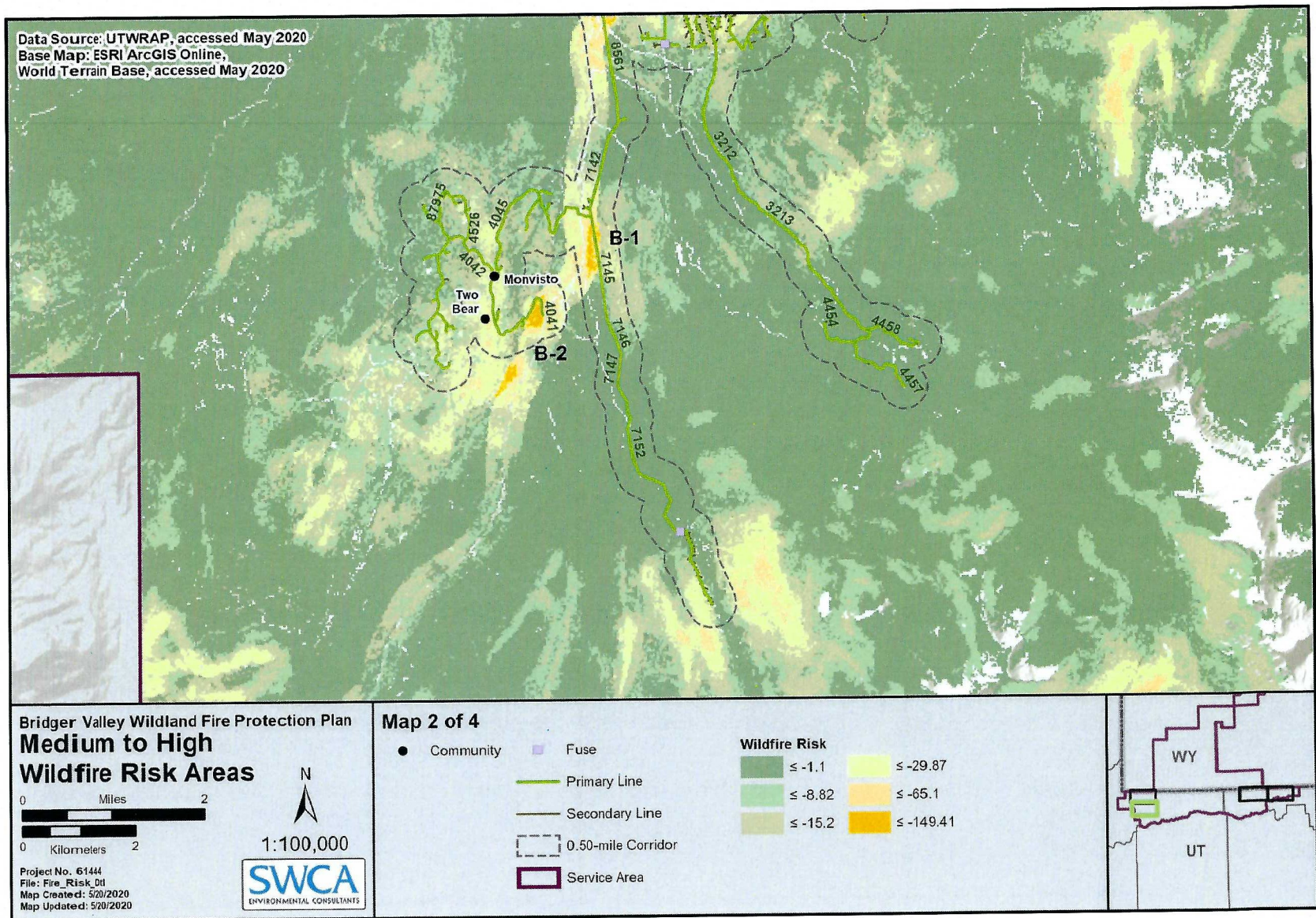


Figure B-2. Medium to high wildfire risk areas (map 2 of 4).

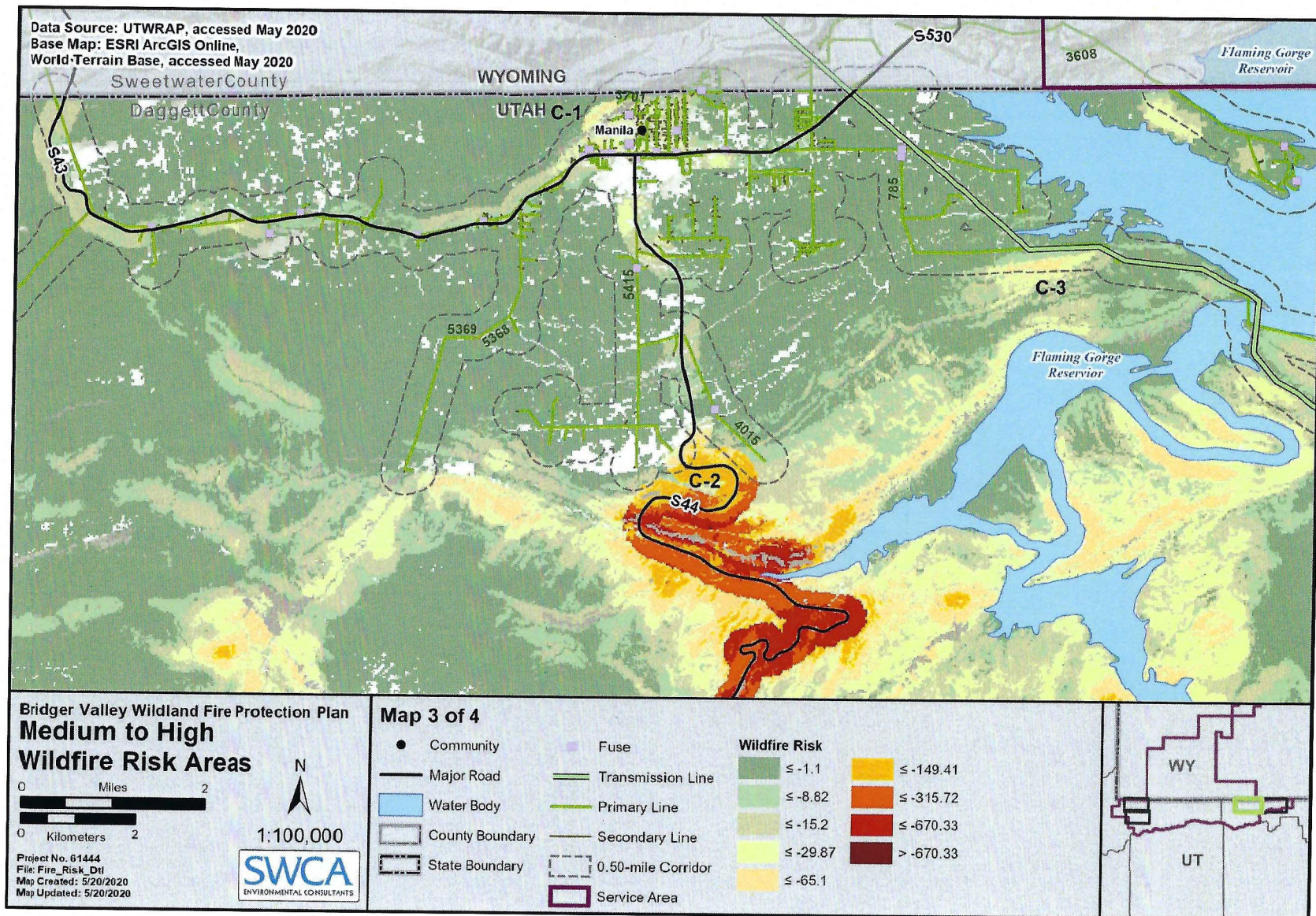


Figure B-3. Medium to high wildfire risk areas (map 3 of 4).

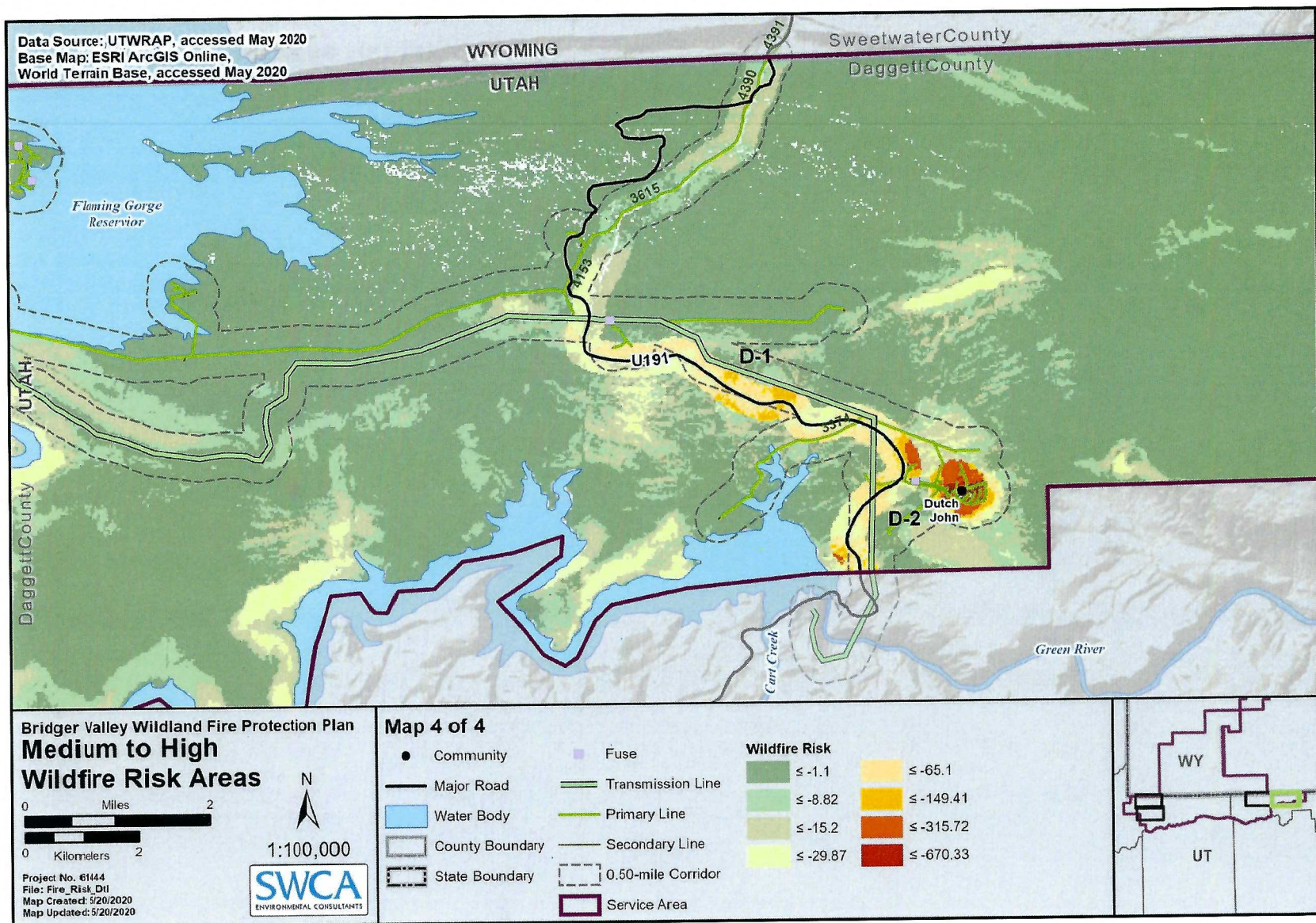


Figure B-4. Medium to high wildfire risk areas (map 4 of 4).