



WILDLAND FIRE PROTECTION PLAN

Dixie Power

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Versioning Record

The following table details the nature, date, and primary author of major revisions to the document. The location of significant changes and updates should be noted in the description column.

Date	Version	Author	Revision Description
9/29/2023	1.0	Colin Jack	2023 Version

1 Introduction/Executive Summary

For Dixie Power, which aims to protect public safety and preserve the reliable delivery of electricity, wildfire mitigation is without question a top priority. While an electric utility can never fully eliminate the risk of fire, Dixie Power is committed to taking all practical actions available to it to prevent the devastation that a wildfire could bring to the people and communities we serve. This Wildland Fire Protection Plan lays out the steps we are taking to do so.

The plan contained in the following document has been drafted to comply with the requirements specified in Utah Code 54-24-203 and has been reviewed by the pertinent agencies, with input from all interested parties, has been reviewed by a third-party expert, and duly adopted by the Board of Directors of Dixie Power, all of which has been documented in the body of the plan. A Glossary of Terms, specific to this industry and used throughout this plan is included in Appendix C.

1.1 Purpose of the Plan

The purpose of the analysis and practices detailed in this Wildland Fire Protection Plan (WFPP) is to:

1. Protect the public.
2. Minimize the chance of the cooperative's powerlines starting wildfires.
3. Speed the recovery from any wildfires that may occur.

This WFPP describes Dixie Power's strategies, programs, and procedures to mitigate the threat of electrical equipment ignited wildfires, and addresses the unique features of its service territory, such as topography, weather, infrastructure, grid configuration, and areas most prone to wildfire risks. This includes the maintenance of its transmission and distribution (T&D) assets as well as the management of vegetation in the ROWs that contain these assets.

All sections in this plan will be regularly updated and modified as needed, depending on experience. As a minimum, this plan will be reviewed annually and the findings presented to the cooperative's Board of Directors (Governing Authority,) and updated every three years with new assessments and to incorporate new technology and current best practices.

1.2 Objectives of the WFPP

The main objective of this Wildland Fire Protection Plan (WFPP) is to implement an actionable plan to create increased reliability and safety while minimizing the likelihood that Dixie Power assets may be the origin or contributing factor in the ignition of a wildfire. This plan was developed to be consistent with current industry best management practices will comply with current Utah State law¹, and National Electric Safety Code (NESC) regulations and guidelines.

¹ Title 54, Chapter 24, Part 2 Wildland Fire Protection Plans

To help develop the WFPP, Dixie Power compared emerging technologies that not only reduce the likelihood of a service interruption, but also minimize the risk of ignition from the fault causing the outage.

The secondary objective is to measure, through the annual evaluation of certain performance metrics, the effectiveness of the specific wildfire mitigation strategies. Where a particular action, program component or protocol proves unnecessary or ineffective, Dixie Power will assess whether modification or replacement is suitable. Per Utah Code 54-24-203 requirements, this WFPP will be reviewed and updated every 3 years.

Table 1. Plan Compliance with Utah Code 54-24-203 Requirements

HB 66-2020, 54-24-203 Sect. Requirement	Description	Plan Section Number
(1)	An electric cooperative shall prepare a wildland fire protection plan in accordance with the requirements of this chapter.	
(2)	A wildland fire protection plan under Subsection (1) shall include:	
(2) (a)	A description of areas within the service territory of the electric cooperative that may be subject to a heightened risk of wildland fire.	1.4, 4.2, 4.5
(2) (b)	A description of the procedures, standards, and time frames that the electric cooperative will use to inspect and operate its infrastructure.	5.2, 5.2.2, 5.2.3, 5.2.4, 5.2.5
(2) (c)	A description of the procedures and standards that the electric cooperative will use to perform vegetation management.	5.3, 5.3.1, 5.3.2
(2) (d)	A description of proposed modifications or upgrades to facilities and preventative programs that the electric cooperative will implement to reduce the risk of its electric facilities initiating a wildland fire.	5.4
(2) (e)	A description of procedures for de-energizing power lines and disabling reclosers to mitigate potential wildland fires, taking into consideration:	5.1.1, 5.1.2
(2) (e) (i)	The ability of the electric cooperative to reasonably access the proposed power line to be de-energized;	5.1.1

(2) (e) (ii)	The balance of the risk of wildland fire with the need for continued supply of electricity to a community; and	5.1.1
(2) (e) (iii)	Any potential impact to public safety, first responders, and health and communication infrastructure	5.1.1
(2) (f)	A description of the procedures the electric cooperative intends to use to restore its electrical system in the event of a wildland fire; and	6.2, 6.2.1
(2) (g)	A description of potential consultation, if applicable, with state or local wildland fire protection plans.	7.5.1
(3) (a)	An electric cooperative shall submit the wildland fire protection plan described in this section to its governing authority:	
(3) (a) (i)	On or before June 1, 2020; and	
(3) (a) (ii)	On or before October 1 of every third year after calendar year 2020.	7.5.3
(3) (b)	The governing authority shall:	
(3) (b) (i)	review the plan submitted under Subsection (3)(a); and	7.2
(3) (b) (ii)	consider input from:	
(3) (b) (ii) (A)	The Division of Forestry, Fire, and State Lands created in Section 65A-1-4;	7.5.1
(3) (b) (ii) (B)	Any other appropriate federal, state, or local entity that chooses to provide input; and	7.5.1
(3) (b) (ii) (C)	other interested persons who choose to provide input.	7.5.2
(3) (c)	The governing authority shall approve a wildland fire protection plan submitted under Subsection (3)(a) if the plan:	7.5.3
(3) (c) (i)	is reasonable and in the interest of the electric cooperative members; and	7.5.3
(3) (c) (ii)	appropriately balances the costs of implementing the plan with the risk of a potential wildland fire.	7.5.3
(3) (d)	An electric cooperative shall file with the commission a wildland fire protection plan submitted and approved under this section.	7.5.4
(4)	An electric cooperative shall:	
(4)(a)	file with its governing authority an annual report detailing the electric cooperative's compliance with the wildland fire protection plan; and	7.2
(4)(b)	file with the commission a copy of the annual compliance report described in Subsection (4)(a).	7.5.4

1.3 Utility Profile and History

Dixie Power is a non-profit rural electric cooperative, originally established under the United States Department of Agriculture (USDA) Rural Electrification Act (REA) in 1946, and currently serves approximately 30,000 customers in the southwest corner of Utah, in Washington, Iron, and Millard counties, and the northwest corner of Arizona, in Mohave County. The governing body of Dixie Power is a nine-member Board of Directors, each democratically elected by the members/owners/customers in the nine director districts. More information on Dixie Power and its history can be found at: <https://www.dixiepower.com/company/history/>.

The management team of Dixie Power consists of:

LaDel Laub, Chief Executive Officer, ladell@dixiepower.com
Colin Jack, PE, Chief Operating Officer, colinj@dixiepower.com
Chery Hulet, Chief Financial Officer, cheryh@dixiepower.com

The official mailing address of the cooperative is:

71 East Highway 56
Beryl, Utah 84714

The phone number for any or all of the offices is: 866-673-3297

The Mission Statement of Dixie Power is:

"Building Trust by equitably serving our members and communities with safe, reliable, affordable energy."

Everything Dixie Power does is to meet the mission detailed in that statement.

1.4 The Service Area

Dixie Power serves suburban and rural residential, agricultural, commercial, and light industrial customers in the communities of Flowell, Newcastle, Modena, Pine Valley, St George, Washington, Hurricane, Beaver Dam, and Scenic. Dixie Power also serves the reservation of the Kanosh Band of Paiutes in Millard County, near the town of Kanosh. To serve these customers Dixie Power has:

County, State	Customers	Acres	Miles of Tmsn	Substations	Miles of OH Dist	Miles of UG Dist
Millard, UT	550	181,145	5	2	154	8
Iron, UT	951	759,843	33	6	232	34
Washington, UT	25,903	219,777	124	21	153	607
Mohave, AZ	3,071	272,477	28	3	111	33
TOTALS	30,475	1,433,243	190	32	650	682

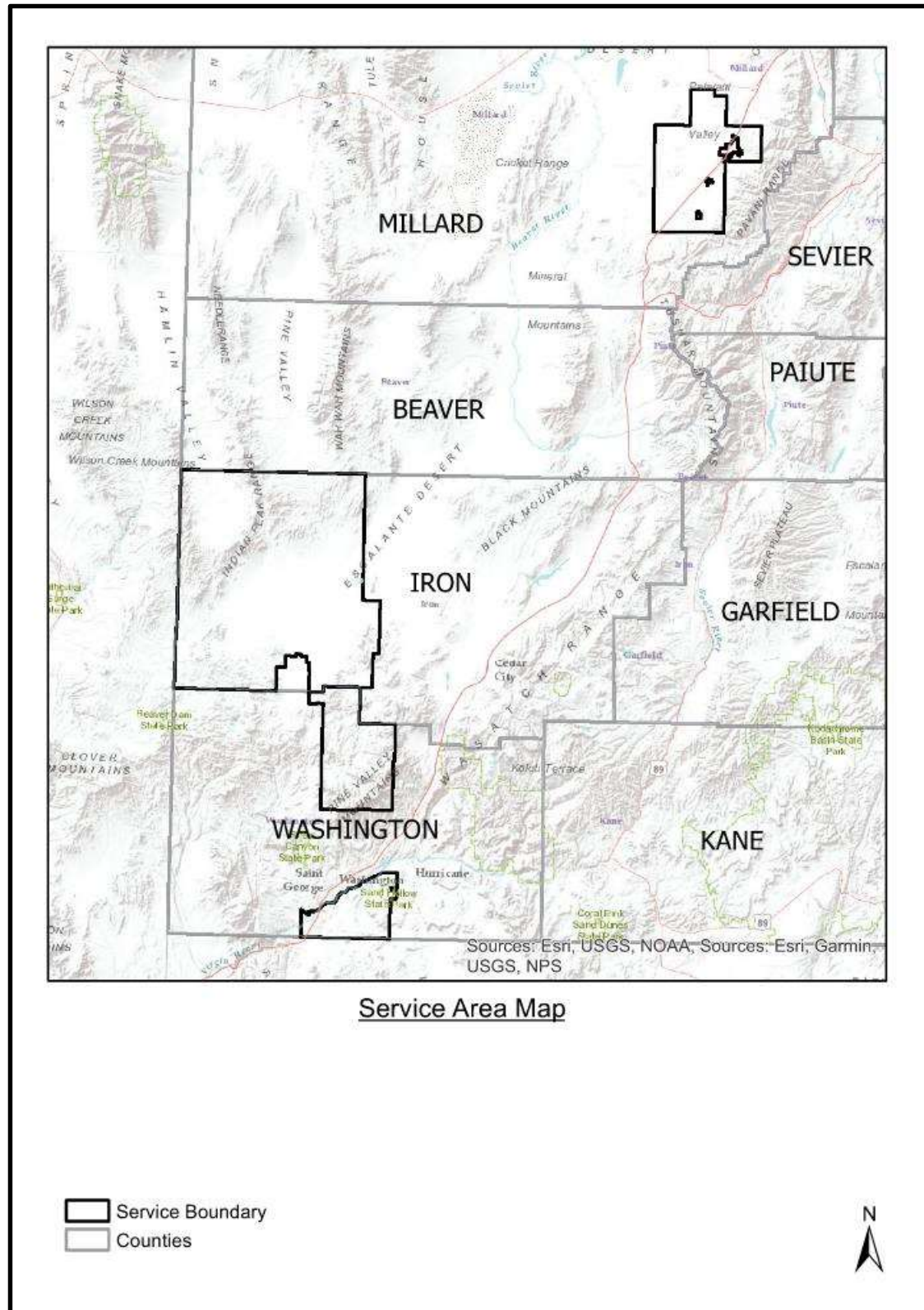
Washington County lies in the southwest corner of Utah. Its south border abuts the northern border of the state of Arizona, and its west border abuts the east border of the state of Nevada. Its terrain is rough and arid, with a little area devoted to agriculture. It is a mixture of mountains and flat stretches. Washington County is predominantly a residential and commercial area, the summers are sweltering and mostly clear, the winters are very cold and partly cloudy, and it is dry year-round. Over the course of the year, the temperature typically varies from 31°F to 101°F and is rarely below 21°F or above 108°F. The average monthly rainfall ranges between 0.2 inches in June and 1.2 in February.

Also in Washington County is the mountain town of Pine Valley, approximately 45 minutes north of the county seat, St. George. It is located at the head of the Santa Clara River in the Pine Valley Mountains, at an elevation of 6,542 ft ASL. Pine Valley is located in a pine forest and has the greatest danger of wildland fires of all the areas in the Dixie Power system.

Iron County lies on the west edge of Utah. Its west border abuts the east border of the state of Nevada. The Iron County terrain is a study in contrast to its arid western reaches of the Escalante Desert and Great Basin ranges to the meadows and forests of the High Plateau on the east. Iron County is predominantly an agricultural area, the summers are warm, dry, and mostly clear and the winters are freezing, snowy, and partly cloudy. Over the course of the year, the temperature typically varies from 18°F to 87°F and is rarely below 3°F or above 94°F. The average monthly rainfall ranges between 0.3 inches in June and 0.9 in August.

Millard County lies on the west side of Utah. Its west border abuts the east border of the state of Nevada. The county terrain consists of arid, rough undulating flatlands interrupted by numerous hills and mountain ridges. The Pahvant Mountains form the county's eastern boundary. Fillmore and other farming communities lie at the base of the Pahvant Mountains. Millard County is predominantly an agricultural area, with several small towns along I-15. The summers are hot, dry, and mostly clear and the winters are freezing, snowy, and partly cloudy. Over the course of the year, the temperature typically varies from 17°F to 92°F and is rarely below 3°F or above 99°F. The average monthly rainfall ranges between 0.3 inches in January and 1.0 in May.

Figure 1. Service Area



2 Overview of Utility's Fire Prevention Strategies

This WFPP integrates and interfaces with Dixie Power's existing operations plans, asset management, and engineering principles, which are themselves subject to change. Future iterations of the WFPP will reflect any changes to these strategies and will incorporate new best management practices as they are developed and adopted.

Table 2 summarizes Dixie Power's five mitigation components with associated programs and activities that support Dixie Power's ongoing commitment to wildfire prevention and mitigation.

Table 2. Mitigation Strategies/Activities

DESIGN AND CONSTRUCTION
Strategic undergrounding of distribution lines
Field recloser to vacuum-type breaker change-out program
Covered jumpers and animal guards
Non-expulsion fuses in select high-risk areas
Avian protection construction standards
Increase overhead wire spacing to reduce wire to wire contact
Substation perimeter fencing for security and protection
INSPECTION AND MAINTENANCE
Infrared inspections of substation equipment
Unmanned Aerial Vehicle (UAV) T&D line inspections
IR inspection program
Wood pole intrusive inspection and testing
Enhanced T&D vegetation right-of-way maintenance
Distribution system line patrols and detailed inspections
T&D system vegetation management program
Increased removal rate of undesirable trees on rights-of-way
Enhanced vegetation management prior to fire season
Enhanced line patrols during fire season

OPERATIONAL PRACTICES
Work procedures and Fire Hazard training for persons working in locations with elevated fire risk conditions
Community outreach/wildfire safety awareness
Contractor/staff safety training and orientation for vegetation management work
Fire suppression equipment on worksite during fire season
Provide liaison to county offices of emergency services (OES) during fire event
SITUATIONAL AWARENESS
Weather Monitoring in the service area
Monitoring active fires in the Southwest
RESPONSE AND RECOVERY
Coordination with local Department of Emergency Management
Crisis Communication Plan
Customer assistance programs for post-disaster recovery
Line patrols before re-energization
Emergency Restoration Plan

3 Utility Asset Overview

Dixie Power is headquartered in Beryl, Iron County, Utah, with additional offices in Bloomington and Bloomington Hills in St. George, Washington County, Flowell in Millard County Utah, and in Beaver Dam, Mohave County, Arizona.

Dixie Power also has warehouses and material storage yards in Beryl, Iron County, Utah, Bloomington Hills and Fort Pierce Industrial Park in St. George, Washington County, Flowell in Millard County, Utah, and in Beaver Dam, Mohave County, Arizona.

Dixie Power is an All-Requirements customer/owner of Deseret Power G&T (Generation and Transmission cooperative) whose energy portfolio consists of ownership in the Bonanza, IPP, Hunter 2, and Solomon generating stations, SunSmart, Dixie Solar, and Deseret Solar PV solar fields, and an allocation of hydro power from the Glen Canyon Dam on the Lake Powell.

Table 3a provides a high-level description of Dixie Power's Transmission and Distribution (T&D) assets. Table 3b provides an overview of Dixie Power's T&D assets relative to the WHP Zones, broken out by operating voltage levels.

Table 3a. Asset Overview

ASSET CLASSIFICATION	ASSET DESCRIPTION
Transmission Line Assets	Approximately 190 miles of conductor, transmission structures and switches at 34.5-138 kilovolt (kV).
Distribution Line Assets	Approximately 651 miles of overhead (OH) and 683 miles of underground (UG) conductor, cabling, transformers, voltage regulators, capacitors, switches, lined protective devices operating at or below 12.47-34.5 kV.
Substation Assets	Major equipment such as power transformers, voltage regulators, capacitors, reactors, protective devices, relays, open-air structures, switchgear, and control houses in 32 substation/switchyard facilities.

Table 4b. Overview of T&D Assets in WHP Zones

Assets	Total	Low		Moderate		High	
	Line-miles	Line-Miles	%	Line-miles	%	Line-miles	%
138 kV OH Transmission	58.3	11.7	20%	6.7	12%	39.9	68%
69 kV OH Transmission	104.9	30.9	29%	10.4	10%	63.6	61%
46 kV OH Transmission	5.0	5.0	100%	0.0	0%	0.0	0%
34.5 kV OH Transmission	22.2	3.5	16%	4.2	19%	14.6	66%
34.5 kV OH Distribution	27.9	0.0	0%	0.0	0%	27.9	100%
24.9 kV OH Distribution	152.8	137.8	90%	14.1	9%	1.0	1%
12.5 kV OH Distribution	469.4	201.5	43%	39.9	8%	228.0	49%
34.5 kV UG Distribution	0.2	0.0	0%	0.0	0%	0.2	100%
24.9 kV UG Distribution	8.0	7.9	98%	0.1	1%	0.1	1%
12.5 kV UG Distribution	674.6	212.3	31%	111.0	16%	351.2	52%
Totals							
Totals OH Transmission	190	51.1	27%	21.25	11%	118.01	62%
Totals OH Distribution	651	339.7	52%	53.92	8%	256.96	39%
Totals UG Distribution	683	220.1	32%	111.11	16%	352.01	52%
Total Substations	32.00	8.0	25%	7.00	22%	17.00	53%

4 Risk Analysis and Risk Drivers

4.1 Fire Risk Drivers Related to Construction and Operations

Dixie Power staff evaluated other utility's fire causes and applied its own field experience to determine the critical potential risk drivers. The categories listed below were identified as having the potential for causing powerline sparks and ignitions:

- *Standard expulsion fuses*
- *Age of assets*
- *Equipment/facility failure*
- *Foreign contact*
- *Vehicle impact*
- *Vandalism*

The cooperative has evaluated each of its powerlines (feeders) relative to the risk of starting a wildland fire. This analysis process started with overlaying the cooperative's Geographical Information System (GIS,) which maps all the powerlines owned and operated by the cooperative, over the Wildfire Hazard Potential GIS maintained by the Utah Division of Natural Resources (DNR) in their Utah Wildfire Risk Assessment Portal, UWRAP, (see: <https://wildfirerisk.utah.gov/>.)

The resulting composite maps for all the powerlines owned and operated by Dixie Power are found in Appendix D (Wildfire Hazard Potential Areas.) The overhead powerlines are drawn in blue in the composite maps and the underground powerlines are drawn in green. The areas of high Wildfire Hazard Potential are colored in red and orange, so the areas of interest are where the blue lines cross the orange and red areas. The overhead lines are a greater potential threat in a wildfire situation than underground lines because bare overhead wires are largely supported in open air on wooden poles and could be exposed to fire and lightning; underground lines are practically uninvolved in a wildfire situation because they're buried four feet under the surface level of the ground.

Using the composite GIS, each of the Dixie Power feeders were individually analyzed for risk of wildfire; the results of the analysis are displayed in the tables below. In the first column on the left is the name and map location of the substation. The second column gives the feeder number and the third column contains a description of the feeder, including a map reference number; each feeder starts at the substation and then extends out to the end of the line. The fourth column contains the description of the fire risk analysis for that feeder, including map reference numbers, and addresses fire risk levels as well as any projects required to reduce the threat of powerline-caused wildfires.

Escalante Valley (Beryl) Area Substations and Feeders			
Substation	Feeder	Description	Analysis
Austin Sub (Beryl Area Map B5)	181	OH South To Hwy 56 (Beryl Area Map B5 and B2)	This feeder serves mostly irrigated, cultivated land and so poses very negligible fire risk. The one area of concern includes the two segments on the southwest portion of this feeder where the OH line leaves irrigated land, near Highway 56 (see map B5 & B2.) The first 5.2-mile segment (181-1) of three-phase line has old poles and old conductor and so is scheduled for replacement in 2026. The second segment (181-2) is approximately 2 miles long with some three and single-phase line with old poles and conductor and is scheduled to be replaced in 2027.
	182	OH West to Modena (Beryl Area Map B5, B2, and B1)	This feeder crosses a lot of area with orange risk level and so requires a fair amount of detailed evaluation. The first segment of this feeder, going west, (map B5) has good, new poles with good ACSR conductor. Continuing west on this feeder (map B2) there are segments with old poles and old conductor that are slated for rebuild on the dates indicated in the following list for each segment: - 182-1: 3.5 miles in 2032 - 182-2: 4.1 miles in 2031 - 182-3: 1.75 miles in 2028 - 182-4: 3 miles in 2029 - 182-5: 8.1 miles in 2030 - 182-6: 5.5 miles in 2024 Continuing southwest past the town of Modena (map B1) there is a segment of line that is new, with new poles and conductor (2015) and so is considered to be of low threat for starting a wildfire.
	183	OH North (Beryl Area Map B5, B3, and B4)	This feeder serves mostly irrigated, cultivated land, and so poses very negligible fire risk.
	184	OH East (Beryl Area Map B5)	This feeder serves mostly irrigated, cultivated land, and so poses very negligible fire risk.
Bar V Sub (Beryl Area Map B7)	131	OH West (Beryl Area Map B7 and B5)	This feeder serves mostly irrigated, cultivated land, and so poses very negligible fire risk. At the very southern end of the feeder (map B7) it enters a red zone, where the line has new poles and conductor and so poses very little wildland fire risk. And, at the northwestern edge of the feeder, along Highway 56, (map B5) it crosses a red zone, and since this 6-mile segment (131-1)

			has old poles and old conductor it is scheduled to be replaced in 2025.
	132	Underbuild North to Hwy 56 (Beryl Area Map B7 and B5)	This feeder serves mostly irrigated, cultivated land, and so poses very negligible fire risk.
	134	UG East (Beryl Area Map B7)	Entirely underground feeder
Bowler Sub (Beryl Area Map B5)	162	34.5kV South to Mine Sub (Beryl Area Map B5)	This 2-mile 34.5kV transmission line (segment 162-1) goes south to the Mine Sub (map B5,) crosses an orange zone, has old poles and is scheduled for replacement in 2034.
	163	34.5kV North to Austin Sub (Beryl Area Map B5)	This 34.5kV transmission line goes north to the Austin Sub, crosses mostly irrigated, cultivated land (marked in green on the maps) and so poses very negligible fire risk.
Crossroads Sub (Beryl Area Map B5)	142	OH East Hwy 56 (Beryl Area Map B5)	This feeder partly serves irrigated, cultivated land which poses very negligible fire risk.
	143	OH West Hwy 56 (Beryl Area Map B5)	This feeder serves mostly irrigated, cultivated land, and so poses very negligible fire risk. The far western segment of this feeder (map B5) that enters an orange zone is new (2003,) with new poles and wire, and so poses very negligible risk of starting a wildfire.
	144	OH North Hwy 18 (Beryl Area Map B5)	This feeder serves mostly irrigated, cultivated land, and so poses very negligible fire risk.
Mine Sub (Beryl Area Map B5)	201	OH West (Beryl Area Map B5)	This feeder serves completely cleared ground around the old defunct silver mine, which is colored in white on the map, and so poses very negligible fire risk.
Moyle Sub (Beryl Area Map B6)	110	138kV to Moyle SW	Entirely contained within sub site
	111	unused	unused
	112	34.5kV to Crossroads Sub (Beryl Area Map B6 and B5)	This 34.5kV transmission line passes through irrigated, cultivated land which poses very negligible fire risk. However, in the middle of the line (segment 112-1) it crosses an orange zone, and since this 6.1-mile line segment has old poles and conductor it is scheduled to be replaced in 2033.
	113	34.5kV to Pinto/Pine Valley (Beryl Area Map B6 and B8)	This 34.5kV feeder crosses red and orange zones but has new poles and wire, except for a short 2.4-mile segment, the Reber and Ence taps to the east, which includes two short pieces (segment 113-1 on map B8) both of which have old poles and wire and so are scheduled to be replaced in 2023.
	114	34.5 kV To Newcastle (Beryl Area Map B6)	This 34.5kV transmission line passes entirely within the cleared ground inside the town of

			Newcastle, which is colored in white on the map, and so poses very negligible fire risk.
Moyle SW (Beryl Area Map B6)	101	138kV to Bowler Sub (Beryl Area Map B6 and B5)	This 138kV transmission line passes through irrigated, cultivated land which poses very negligible fire risk. However, in the middle of the line it crosses an orange zone, but since this line has newer poles and conductor it poses negligible fire risk.
New Castle Sub (Beryl Area Map B6)	123	3Ø OH Newcastle North (Beryl Area Map B6)	The first and last segments of this feeder cross mostly irrigated, cultivated land, and so pose very negligible fire risk. However, there is a middle 7.1-mile segment (123-1) of this feeder (map B6) that crosses an orange zone, and which has old poles and wire and so is scheduled to be replaced in 2032.
	124	OH Newcastle West - Hwy 56 (Beryl Area Map B6)	This feeder serves mostly irrigated, cultivated land and so poses very negligible fire risk.
	125	OH Newcastle East (Beryl Area Map B6)	This feeder does not leave the substation. It is a backup to feeder 124.
Pine Valley Sub (Beryl Area Map B9)	321	OH South/Pine Valley Town (Beryl Area Map B9)	This feeder lies entirely within the town of Pine Valley (map B9) and so poses little risk of wildfire even though it is colored in red. Even so, the 3.1-mile segment (321-1) at the far east side of town had old poles and so was replaced in 2021.
Pinto (Beryl Area Map B8)	301	South to Pine Valley (Beryl Area Map B8 and B9)	This feeder crosses red and orange zones but has new poles and wire, except for a short 2.2-mile segment (301-1,) at the end of the Grass Valley tap to the east (map B9,) which has old poles and wire and so was replaced in 2022.

Flowell Area Substations and Feeders			
Substation	Feeder	Description	Analysis
Anderson Sub (Flowell Area Map F3)	401	OH to Meadow (Flowell Area Map F3)	This feeder serves mostly irrigated, cultivated land, and so poses very negligible fire risk.
	402	OH to Flowell South End (Flowell Area Map F3)	This feeder serves mostly irrigated, cultivated land, and so poses very negligible fire risk. In the middle of the feeder, as Little Black Rock Road crosses I-15, a 1.1-mile segment (402-1) crosses through an orange zone; this segment has old poles and so it is scheduled to be replaced in 2024. At the very southern end of the feeder a 2.4-mile segment (402-2) enters an orange zone, where the line has old poles and conductor and so it was replaced in 2021. And, at the eastern edge of the feeder there is a 0.8-mile segment (402-3) that has relatively new poles and conductor

			(2000) and so is slated only for closer ROW inspection ahead of each fire season.
	403	OH to Flowell North End (Normally Open) (Flowell Area Map F3)	This feeder, which is normally open and only serves as a backfeed to the Robison Substation, passes through mostly irrigated, cultivated land, and so poses very negligible fire risk.
	404	OH South to Kanosh (Flowell Area Map F3)	This brand new (2019) feeder serves mostly irrigated, cultivated land and so poses very negligible fire risk.
Robinson Sub (Flowell Area Map F2)	411	Transmission U.B. Flowell Road East (Flowell Area Map F2)	This feeder serves mostly irrigated, cultivated land and so poses very negligible fire risk. At the very northeastern end of the feeder there is a 1.8-mile segment (411-1) that enters a red zone, and the line has old poles and conductor and so was replaced in 2022. Also, at the north end of the feeder there is a 1.1-mile segment, (411-2) that crosses a red zone, with old poles and conductor, and so was replaced in 2023.
	412	OH on Flowell Road West (Flowell Area Map F2 and F1)	This feeder serves entirely irrigated, cultivated land and so poses very negligible fire risk.

Dixie and Arizona Area Substations and Feeders			
Substation	Feeder	Description	Analysis
Atkinville Substation (Dixie Area Map D3)	631	Transmission underbuild North & South (map D3)	New large (397MCM) ACSR conductor supported on steel transmission poles, underbuilding the transmission line.
	632	UG to Desert Color	Entirely underground feeder (map D3)
	633	UG to Auburn Hills	Entirely underground feeder (map D3)
	63 Bus 1	63T1 Bus (15kV)	Entirely contained within sub site
	63T1	63T1 Breaker (69kV)	Entirely contained within sub site
Atkinville Switch Yard (Dixie Area Map D3)	621	69kV To Beaver Dam Substation (maps D3, D2, and D1)	New (2011) transmission line with large (1272MCM) ACSR conductor supported on composite fiber and resin poles and transmission insulators.
Beaver Dam Sub (in AZ)	721	OH Underbuild to Littlefield	Relatively new ACSR conductor supported on wood transmission poles, underbuilding the transmission line.
	722	OH to Desert Springs	Relatively new OH distribution line in the State of AZ with wood poles and ACSR conductor.
	723	OH to Beaver Dam	Relatively new OH distribution line in the State of AZ with wood poles and ACSR conductor.
	724	UG North to Pioneer Rd	Entirely underground feeder

Bloomington Hills Sub (Dixie Area Map D3)	541	OH East 2800 South	New large (397MCM) ACSR conductor supported on steel transmission poles, underbuilding the transmission line. Normally open emergency backfeed.
	542	OH West River Road	New large (397MCM) ACSR conductor supported on steel transmission poles, underbuilding the transmission line.
	543	UG to Hills South	Entirely underground feeder
	544	UG to Hills North	Entirely underground feeder
	545	UG to Hills North	Entirely underground feeder
	546	UG to Hills South	Entirely underground feeder
	547	UG Tie line to Lytle Sub	Entirely underground feeder. Normally open emergency backfeed.
Bloomington Sub (Dixie Area Map D3)	561	OH South to South Bloomington	New large (397MCM) ACSR conductor supported on wood transmission poles, underbuilding the transmission line.
	562	UG to Man o' War Rd	Entirely underground feeder
	564	Underbuild to River Road	New large (397MCM) ACSR conductor supported on steel transmission poles, underbuilding the transmission line.
	566	OH North to Wal-Mart	New large (397MCM) ACSR conductor supported on new wood poles. There is one OH line segment that passes through a red zone as it crosses the Virgin River (see Dixie High Threat map 1) and that is also with large ACSR conductor and relatively new poles (1987.)
Bloomington Sub Line (Dixie Area map D3)	561-1	Port of Entry Recloser	Relatively new OH distribution line in the State of AZ with wood poles and ACSR conductor.
	561-2	Gypsum Mine Recloser (Feeds Seegmiller Mtn)	New OH distribution line in the State of AZ with wood poles and ACSR conductor.
Church Farm Sub (Dixie Area Map D3)	505	69kV to Quail Creek Hydro (Dixie Area map D3 and D4.)	The first half of this line, starting at the substation (map D3,) is a new transmission line with large (795MCM) ACSR conductor supported on steel transmission poles and transmission insulators. The second half of this transmission line, ending at the Quail Creek Hydro (map D4,) in Hurricane, is older (mid-1980's,) with wood poles and 4/0 AWG ACSR and was replaced in 2021.
	571	South on 3000 (1450 South Backup)	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	572	North Along 3000 East, West Side of Rd.	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.

	573	OH East on 1140 South	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	574	1450 South Underbuild Stone Cliff/River Hollow	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	575	North to Pine View Estates	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	576	UG East on 1140 South	Entirely underground feeder
Church Farm Sw. Yard (Dixie Area Map D3)	501-502	138kV Millcreek Generation	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators. There is one segment that passes through a red zone as it crosses the Virgin River (see Dixie High Threat map 3) and that is also with large ACSR conductor and steel poles (2005) and so poses negligible fire risk.
	501-503	138kV St George Sub	New transmission line with large (958ACCR) conductor supported on steel transmission poles and transmission insulators. There are two segments that pass through an orange zone, as it crosses the Desert Tortoise Reserve and then the Virgin River (see Dixie High Threat map 3) and those are also with large conductor and steel poles and so pose negligible fire risk.
	502-503	138kV Fort Pierce Sub	New transmission line with large (958ACCR) conductor supported on steel transmission poles and transmission insulators crosses only white areas on the map and so poses negligible fire risk.
Dixie Springs Sub (Dixie Area Map D4)	511	OH West	This feeder has a mix of overhead OH and UG distribution lines serving largely irrigated landscaped or irrigated cultivated rural areas inside the City of Hurricane and around the Sand Hollow Reservoir. The wildfire risk levels are determined to be relatively low.
	512	OH East	This feeder has a mix of overhead OH and UG distribution lines serving largely irrigated landscaped or irrigated cultivated rural areas inside the City of Hurricane and around the Sand Hollow Reservoir. The wildfire risk levels are determined to be relatively low.
	513	UG to SH Pump Station	Entirely underground feeder that never leaves the fenced area.
	514	OH South to Dixie Springs	This feeder is almost entirely underground and feeds the irrigated, landscaped subdivision of

			Dixie Springs and so poses a negligible risk of wildfire.
Fort Pierce Sub (Dixie Area Map D3)	551	OH North River Road Underbuild	New large (397MCM) ACSR conductor supported on steel transmission poles, underbuilding the transmission line, and so poses negligible fire risk.
	552	Commerce/N. River Rd & 3850 S.	This is a relatively new OH feeder with wood poles and ACSR conductor that serves in an industrial park where the properties are either cleared of vegetation or landscaped and so there is a low risk of wildfire.
	553	OH East to Armory	This is a relatively new OH feeder mostly underbuilt on the steel poles of the transmission line and with large ACSR conductor that serves in an industrial park where the properties are either cleared of vegetation or landscaped and so there is a low risk of wildfire.
	554	West Enterprise Dr.	This is a relatively new OH feeder with wood poles and ACSR conductor that serves in an industrial park where the properties are either cleared of vegetation or landscaped and so there is a low risk of wildfire.
	555	UG East to Old Dominion	Entirely underground feeder
	556	OH South River Road	New large (397MCM) ACSR conductor supported on steel transmission poles, underbuilding the transmission line and so poses negligible fire risk.
	555-1	OH To Airport	This is a relatively new OH distribution line with wood poles and ACSR conductor that was built in recent years to serve the new airport and crosses terrain colored yellow on the threat map, so it poses little wildfire risk.
	69-551	69kV River Road East to Breaker 505	New transmission line with large (795MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	69-552	69kV River Road West to Bloomington	New transmission line with large (795MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	69-553		New transmission line with large (795MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	69-554	69kV East to WB & DS Subs	New transmission line with large (795MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	69-BT	69kV Bus Tie Breaker	Entirely contained within sub site

	69-CS3	69kV CS3 Cap Bank	Entirely contained within sub site
	69-CS4	69kV CS4 Cap Bank	Entirely contained within sub site
	69-CS5	55T4 20 MVA Transformer	Entirely contained within sub site
	69-CS6	55T3 20 MVA Transformer	Entirely contained within sub site
Hughes Bench Line (in AZ)	703-1	Las Vegas Way South	Relatively new OH distribution line in the State of AZ with wood poles and ACSR conductor.
	703-2	Las Vegas Way West	Relatively new OH distribution line in the State of AZ with wood poles and ACSR conductor.
Hughes Bench Sub (in AZ)	701	OH to Desert Skies RV	Relatively new OH distribution line in the State of AZ with wood poles and ACSR conductor.
	703	OH to Scenic	Relatively new OH distribution line in the State of AZ with wood poles and ACSR conductor.
	704	OH to Hughes Bench	Relatively new OH distribution line in the State of AZ with wood poles and ACSR conductor.
Lytle Substation (Dixie Area Map D3)	641	UG North to St James	Entirely underground feeder
	642	UG North to Pintura	Entirely underground feeder
	643	UG East to 2800 South	Entirely underground feeder
	644	UG North to Condos	Entirely underground feeder
	64 Bus 1	64T1 Bus (15kV)	Entirely contained within sub site
	64T1	64T1 Breaker (69kV)	New transmission line with large (795MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
Majestic View Sub (Dixie Area Map D3)	6005	60T1 Breaker (69 kV)	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	6006	60T2 Breaker (69 kV)	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	6009	Majestic View 69 kV Bus	Entirely contained within sub site
	6010	Church Farm 69 kV Line	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	6011	Dixie Springs 69 kV Line	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.

	6012	North Bus 7.2 MVAR Cap Bank	Entirely contained within sub site
	6013	Fort Pierce 69 kV Line	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	6015	South Bus 7.2 MVAR Cap Bank	Entirely contained within sub site
	6001 & 6002	Church Farm 138 kV Line	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	6001 & 6003	Purgatory Flat 138 kV Line	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
	6001 & 6003	Majestic North Bus	Entirely contained within sub site
	6002 & 6004	Majestic South Bus	Entirely contained within sub site
	6003 & 6004	Fort Pierce 138 kV Line	New transmission line with large (1272MCM) ACSR conductor supported on steel transmission poles and transmission insulators and so poses negligible fire risk.
Seegmiller Sub (Dixie Area Map D3)	591	3000 East Underbuild North to W.F. Sub	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	592	3000 East Underbuild South	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	593	West to 2450 South Overhead	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	594	UG South to Crimson Ridge East	Entirely underground feeder
	595	UG South to Crimson Ridge West	Entirely underground feeder
	596	UG West to Little Valley Road	Entirely underground feeder
	59-15-BT	15kV Bus Tie	Entirely contained within sub site
Sun River Sub (Dixie Area Map D3)	581	UG West to Ironwood	Entirely underground feeder
	582	UG South to SR	Entirely underground feeder
	583	Bloomington Tie	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.

	584	UG West to the Enclave	Entirely underground feeder
	586	UG to Underbuild to Bloomington	This feeder starts with new large (397MCM) ACSR conductor supported on steel transmission poles, underbuilding the transmission line, where it crosses a red zone as the line crosses the Virgin River (see Dixie High Threat Areas map 1) and then goes mostly underground through Bloomington Country Club, except west of the wastewater plant where it goes overhead with new (2000) poles and ACSR conductor and so poses negligible fire risk.
Washington Bench Sub (Dixie Area Map D3)	531	Empty - Moved Load	Unused
	532	OH South Washington Fields Road	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	533	OH North to Indian Knolls	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	534	OH East Washington Dam Road	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	535	UG East Washington Dam Road	This feeder leaves the substation underground and then goes overhead along the Washington Dam Road, crossing a red zone that has a relatively low fire danger because it's a landscaped area, then crosses the Virgin River and enters another red zone (see Dixie High Treat Area map 4.) The OH lines through that orange/red zone are relatively new (2009) with new poles and ACSR, and so should pose little risk of fire.
	536	OH West to Indian Oaks	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
Washington Fields Sub (Dixie Area Map D3)	522	OH East to Stucki Farm	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	523	OH South Transmission Underbuild	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.
	524	OH 1450 South to River Road	This feeder serves mostly irrigated, landscaped property (marked in white on the maps) and so poses very negligible fire risk.

4.2 Fire Risk Drivers Related to the Service Area

The “Fire Risk” discussed in section 4.1 includes fuels, vegetation, terrain, and available fire suppression; UWRAP defines: “Wildfire Hazard Potential is closely related to the likelihood of an acre burning and is displayed in the Utah WRA. The Wildfire Hazard Potential combines the probability of an acre igniting (Fire Occurrence Density), the expected final fire size based on rate of spread in four weather percentile categories and the effectiveness of fire suppression resources. Since all areas in Utah have Wildfire Hazard Potential calculated consistently, it allows for comparison and ordination of areas across the entire state. For example, a high risk area in Eastern Utah is equivalent to a high risk area in Western Utah.” “Fire Risk” aggregates the threat with the effects, or monetary values associated with the fires (homes, structures, etc.); UWRAP defines: “Wildfire Risk represents the possibility of loss or harm occurring from a wildfire and is displayed in the Utah WRA by the Fire Risk Index. Wildfire Risk combines the likelihood of a fire occurring (Threat), with those areas of most concern that are adversely impacted by fire (Fire Effects), to derive a single overall measure called the Wildfire Risk Index. It 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. Since all areas in Utah have the Wildfire Risk Index calculated consistently, it allows for comparison and ordination of areas across the entire state.”

4.3 Key Risk Impacts

Ignitions caused by the aforementioned risk drivers have many possible outcomes. The list below outlines some of the worst-case scenarios, the prevention of which is the impetus for the development of this WFPP:

- Personal injuries or fatalities to the public, employees, and contractors
- Damage to public and/or private property
- Damage and loss of Dixie Power owned infrastructures and assets
- Impacts to reliability and operations
- Damage claims and litigation costs, as well as fines from governing bodies
- Damage to Dixie Power’s reputation and loss of public confidence

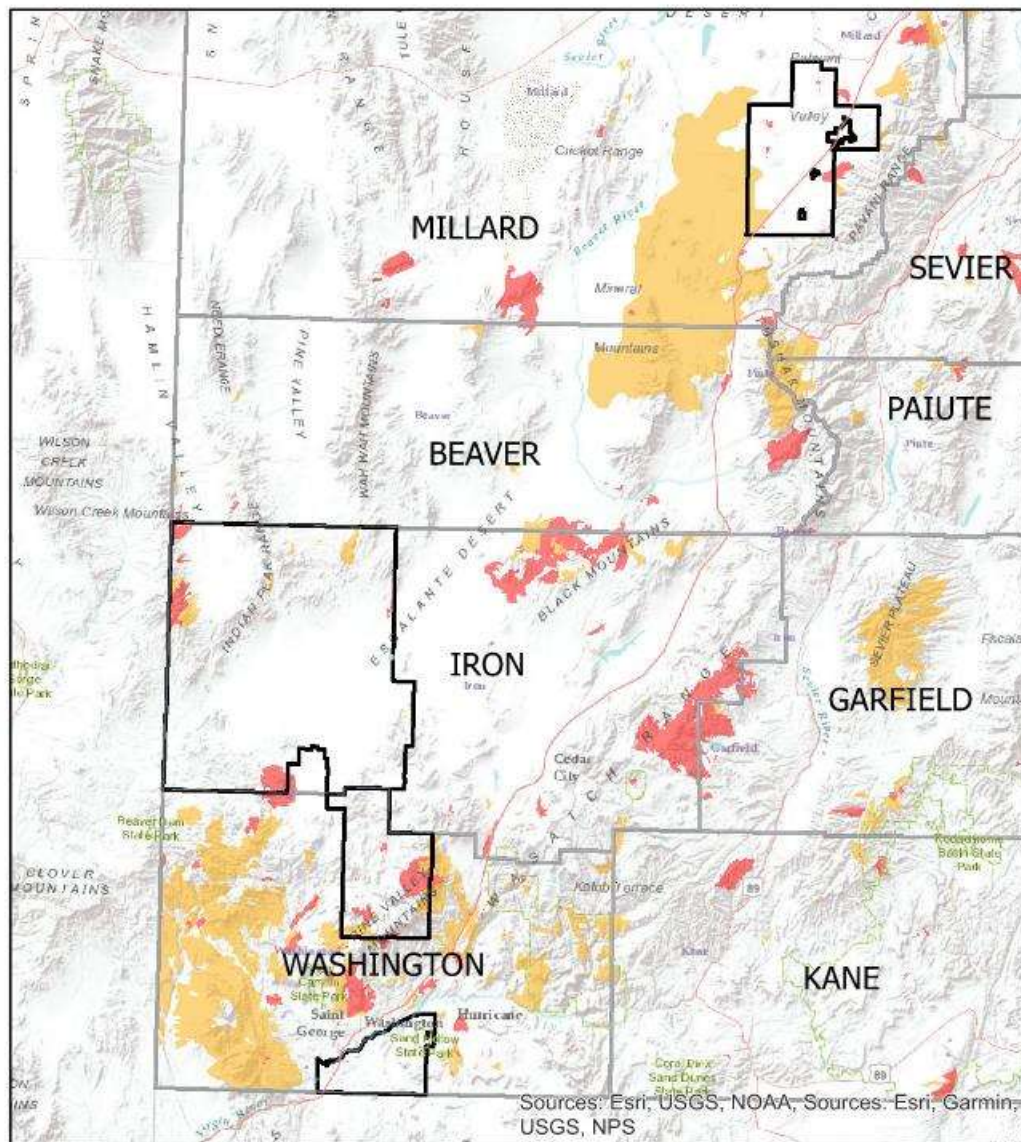
4.4 Wildfire History and Outlook

Dixie Power has had a direct experience with wildfire, back in June 2017, when the “North Fire” of unknown origin burned down a one-mile segment of Dixie Power’s overhead (OH) distribution line between the communities of Newcastle and Pine Valley; no dwellings or lives were lost in the wildfire, but electrical service was lost to the community of Pine Valley for thirty hours. Based on this experience, Dixie Power considers the line between Newcastle and Pine Valley to be of high risk. Since the occurrence of the North Fire, Dixie Power has completely replaced eight miles of OH line, the oldest section of the line, with the worst access, and which was completely closed off to the cooperative crews for the entire decade preceding the fire, of the approximately 25-mile overhead line, with new poles, crossarms, insulators, and wire, and shortened up the span lengths and opened up better access, all of which should reduce the risk of future wildfires on that line.

Historic wildfire perimeters in southern Utah from 2000-2021 are shown in the map in Figure 2 below.

In the Historical Wildfire Perimeters map, it can be seen that the majority of the fires in Washington and Iron counties have been located around the urban and suburban areas of Washington County and up the I-15 corridor and around the town of Pine Valley. For this very reason, the first two projects specified in the 2020-2023 plan were around and in the town of Pine Valley.

Figure 2. Historic Wildfire Perimeters 2000-2021



Historic Wildfire Perimeter Map

- Service Boundary
- Counties
- 2000-2010
- 2011-2021



4.4.1 Wildland Urban Interface

The United States Forest Service (USFS) defines the wildland urban interface (WUI) as a place where humans and their development meet or intermix with wildland fuel. Communities that are within 0.5 miles of the zone are included. According to the USDA Forest Service, the area considered WUI has expanded 61.5% in Utah from 1990 to 2010, with the number of homes increasing by 74%². There are now over 500,000 homes in Utah located in the WUI.

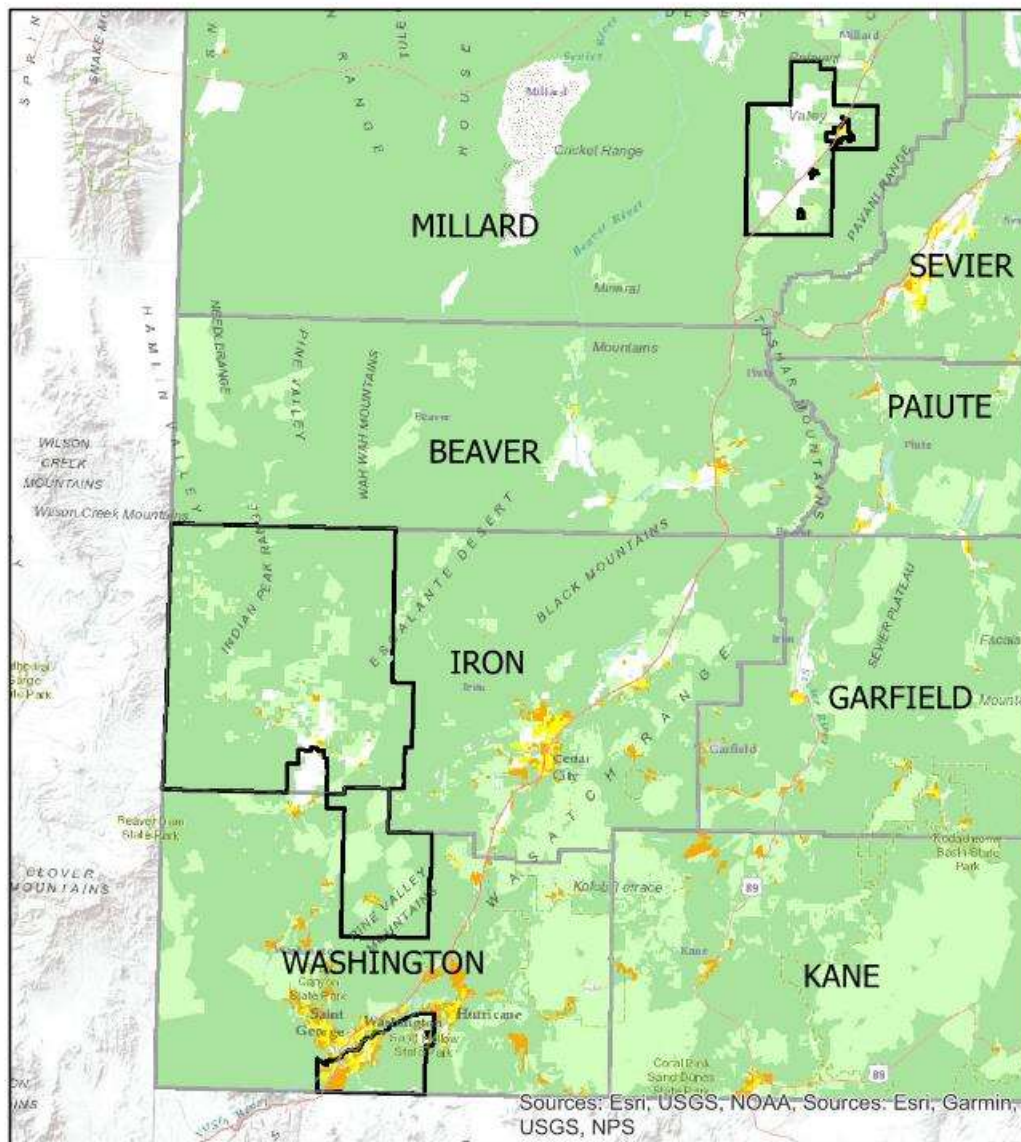
The WUI is composed of both interface and intermix communities. The distinction between these is based on the characteristics and distribution of houses and wildland vegetation across the landscape. Intermix WUI refers to areas where housing and wildland vegetation intermingle, while interface WUI refers to areas where housing is in the vicinity of a large area of dense wildland vegetation. Figure 2 illustrates the distribution of WUI areas in the service area.

The USFS has established five classes of WUI in its assessment:

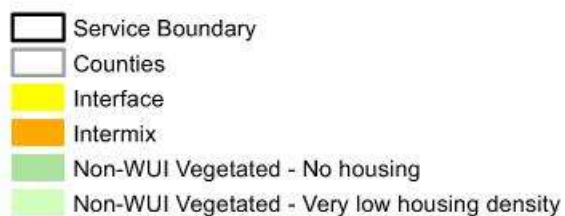
- **WUI Intermix:** Areas with ≥ 16 houses per square mile and ≥ 50 percent cover of wildland vegetation.
- **WUI Interface:** Areas with ≥ 16 houses per square mile and < 50 percent cover of vegetation located < 1.5 miles from an area ≥ 2 square miles in size that is ≥ 75 percent vegetated.
- **Non- WUI Vegetated (no housing):** Areas with ≥ 50 percent cover of wildland vegetation and no houses (e.g., protected areas, steep slopes, mountain tops).
- **Non-WUI (very low housing density):** Areas with ≥ 50 percent cover of wildland vegetation and < 16 houses per square mile (e.g., dispersed rural housing outside neighborhoods).

² https://www.nrs.fs.fed.us/data/wui/state_summary/

Figure 3. Wildland Urban Interface



Wildland Urban Interface Map



4.5 Fire Threat Assessment Mapping

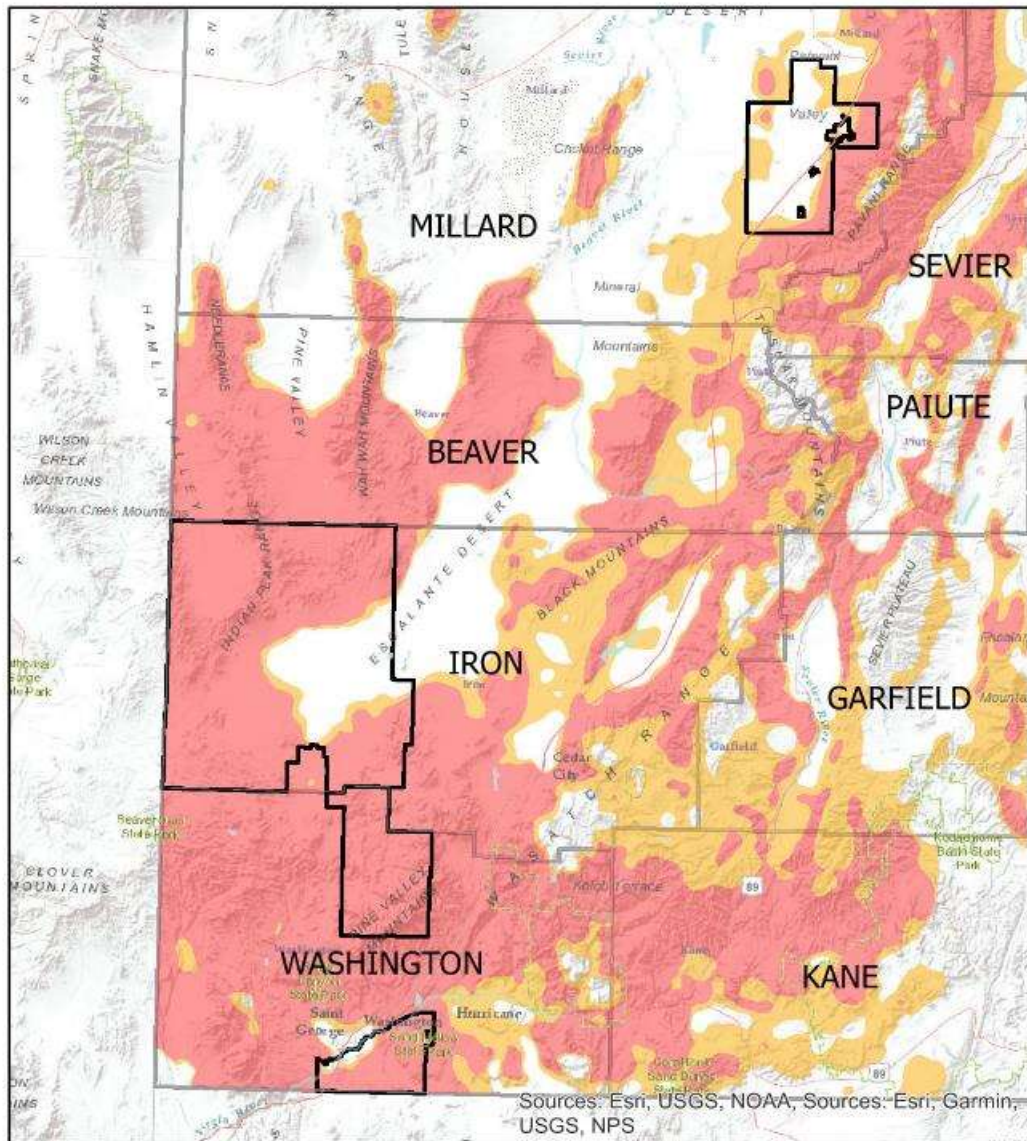
The Wildfire Hazard Potential (WHP) risk map is derived from a 270-meter resolution raster geospatial product created by the USDA/USFS/Fire Modeling Institute. The specific dataset used is the Wildfire Hazard Potential³ Version 2020, which is the third edition of the WHP product and depicts landscape conditions of the conterminous United States as of the end of 2014.

WHP was built upon spatial datasets of wildfire likelihood and fire intensity using the Large Fire Simulator (FSim), spatial fuels and vegetation data from Landfire 2014, and point locations of historic fire occurrence (ca. 1992-2015). The objective of the map was to depict relative potential for wildfire that would be difficult for suppression resources to contain and for long-term strategic fuels management planning. On its own, WHP is not an explicit map of wildfire threat or risk, but when paired with spatial data depicting highly valued resources and assets such as structures or powerlines, it can approximate relative wildfire risk to those specific resources and assets.

The data described here are derived from wildfire simulation modeling, and their exact accuracy cannot be measured. They are intended to be relative measures of wildfire risk for planning purposes.

³ Product citation: *Dillon, Gregory K. 2015. Wildfire Hazard Potential (WHP) for the conterminous United States (270-m GRID), version 2020 classified. 3rd Edition. Fort Collins, CO: Forest Service Research Data Archive. <https://doi.org/10.2737/RDS-2015-0047-3>*

Figure 4. Wildfire Hazard Potential



Wildfire Hazard Potential Map

- Service Boundary
- WHP_High
- WHP_Moderate
- Counties



5 Wildfire Prevention Strategy and Programs

5.1 Transmission and Distribution System Operational Practices

5.1.1 De-energization – Public Safety Power Shutoff

A Public Safety Power Shutoff (PSPS) preemptively de-energizes power lines during high wind events combined with hot and dry weather conditions. When considering de-energization, Dixie Power examines the impacts on fire response, water supply, public safety, and emergency communications.

Dixie Power considers the external risks and potential consequences of de-energization while striving to meet its main priority of protecting the communities and members we serve. They include:

- Potential loss of water supply to fight wildfires due to loss of production wells and pumping facilities.
- Negative impacts to emergency response and public safety due to disruptions to the internet and mobile phone service during periods of extended power outages.
- Loss of key community infrastructure and operational efficiency that occurs during power outages.
- Medical emergencies for members of the community requiring powered medical equipment or refrigerated medication. Additionally, the lack of air conditioning can negatively impact medically vulnerable populations.
- Negative impacts on medical facilities.
- Traffic congestion resulting from the public evacuation in de-energized areas can lengthen response times for emergency responders.
- Negative economic impacts from local businesses forced to close during an outage.
- The inability to open garage doors or motorized gates during a wildfire event can lead to injuries and fatalities.

The risks and potential consequences of initiating a PSPS are significant and extremely complex. Based on the above considerations, Dixie Power reserves the option of implementing a PSPS when conditions dictate. While Dixie Power believes the risks of implementing a PSPS far outweigh the chances of its electric overhead distribution system igniting a catastrophic wildfire, the PSPS provides a last resort tool and another mitigation option in a potential crisis.

On a case-by-case basis, Dixie Power has historically and will continue to consider de-energizing a portion of its system in response to a known public safety issue or response to a request from an outside emergency management/response agency. Any de-energizing of the lines is performed in coordination with key local partner agencies, however, the final determination is made by Dixie Power.

Dixie Power maintains in its customer database all members who rely on electricity for life-saving medical devices. However, Dixie Power can't guarantee an uninterrupted supply of electricity to its members, no matter how hard we try, and so recommends that members who

require an uninterrupted power supply install their own extra equipment to meet their particular needs. Having the electricity turned off for any reason, planned or unplanned, runs contrary to the cooperative's Mission Statement to provide reliable power. Even so, Dixie Power considered de-energizing OH distribution powerlines in the red or orange zones in the Wildland Fire Risk maps during the windy, hot, dry summer months as an option to reduce the risk of starting any wildland fires. However, due to the radial nature inherent in the rural distribution and transmission lines of rural electric cooperative service territories, that action would put whole communities out of service for prolonged periods of time, which would impact the public safety, first responder, and health and communication infrastructure, and inevitably lead to the deaths in those communities of those who are vulnerable and who rely on electrical service for medical devices and air conditioning in the summer, as tragically witnessed in the pre-emptive outages in California in the summer of 2019.

"Radial" powerlines are those that feed an area with electricity from only one direction and have no backfeed potential built in. For example, the community of Pine Valley, in the north of Washington County, is fed with a single OH distribution line from the community of Newcastle, in the south of Iron County. After the North Fire of 2017, the possibility to extend an alternate feed from the community of Central (four miles to the west of Pine Valley) was seriously studied and rights-of-way between the two communities were explored. At that time, it was determined that, if the interconnection with the neighboring utility (Rocky Mountain Power) could be accomplished, the line extension project costs calculated would be so high per resident of Pine Valley that the director elected to Dixie Power's board by the residents of Pine Valley made the motion to cancel the project study. This is a typical situation in long rural powerlines. Urban and suburban powerlines are typically fed in loops rather than radially, and so can be backfed in most emergency outage situations.

Given the inherently radial nature of rural powerlines illustrated above, and the necessity of maintaining the supply of electricity to communities, especially during the hot, dry summer months, and the impacts that losing electrical service has on public safety, first responders, and health and communications infrastructure, it is critical that Dixie Power be allowed access to all of their powerline rights-of-way, by all property owners and managers, both private and public. The cooperative must be allowed to operate, maintain, and clear vegetation to provide safe, reliable, and affordable electricity to all communities, and especially the vulnerable populations of those communities.

5.1.2 Recloser Operational Practices

To make its system more reliable, Dixie Power has installed reclosers and circuit breakers around its OH distribution system so that when faults occur the outage can be minimized and isolated. Dixie Power also considered as an option to prevent wildland fires putting all reclosers and circuit breakers on non-reclose settings to ensure that the power would go off and stay off in the case of any short circuit during the windy, hot, dry summer months. However, due to the radial nature inherent in the rural distribution and transmission lines of rural electric cooperative service territories, such action would put whole communities out of service for prolonged

periods of time, which would inevitably lead to the deaths in those communities of those who are vulnerable and who rely on electrical service for medical devices and air conditioning in the summer, as witnessed graphically in the pre-emptive outages in California in the summer of 2019.

Industry-wide experience has been that 70-80% of all faults are temporary in nature (see: Cooper Power System's *"Electrical Distribution System Protection"* 2005 edition, page 7) and that electrical service could be restored within seconds of interrupting the arc, which is the normal practice of almost all power companies in the United States. Thanks in large part to this practice of properly setting the recloser functions as part of a greater sectionalizing coordination scheme, as well as the vegetation management, and the design, construction, maintenance, and inspection practices described in the preceding sections, Dixie Power customers have enjoyed a 99.99% average reliability for over twenty years, on which they have rightfully come to expect and rely.

Even in light of the above analysis, and out of an overabundance of caution, in response to any sustained outage during the "dry summer months" of June through the end of September (or until the monsoon season, which often starts in July) operations crews will not replace and re-energize blown fuses until they have driven the line downstream from the fuse to ensure that there are no conductors on the ground or among any dry vegetation and thus avoid starting a wildland fire. Also, after any line recloser locks out, the line crew will try the recloser only once before driving the length of the circuit for the same reasons.

5.1.3 Situational Awareness

Situational assessment is the process by which current operating conditions are determined. Situational Awareness is the understanding of the working environment, which creates a foundation for successful decision making and the ability to predict how it might change due to various factors.

Dixie Power's System Operators rely on various resources to monitor evolving fire weather and climatological conditions that may lead to fire events. Sources for current and near-term wildland fire information include, but are not limited to the following:

- **Active Wildfires and Projects:** This map shows current Fire Danger Ratings, active large fires, and serves as a Comprehensive fire information dashboard. <https://utahfireinfo.gov/active-wildfires/>
- **National Significant Wildland Fire Potential Outlook:** These maps identify areas by month for the next four months with above, below, and near normal significant fire potential. <https://www.nifc.gov/nicc/predictive/outlooks/outlooks.htm>
- **National 7-Day Significant Fire Potential:** This map shows the Fire Potential for the next 7 days. <https://fsapps.nwcg.gov/psp/npsg/forecast/#/outlooks?state=map>
- **Fire Incident Information Center:** InciWeb is an interagency all-risk incident information management system. <https://inciweb.nwcg.gov/>

5.2 Infrastructure Inspections and Maintenance

Recognizing the hazards of equipment that operate high voltage lines, Dixie Power maintains a formal inspection and maintenance program for distribution, transmission, and substation equipment which plays an essential role in wildfire prevention. Dixie Power currently patrols its system regularly and is increasing the frequency of inspections in high-risk areas. Table 3 summarizes the inspection schedule for all assets, while the following sections outline inspection practices for the utility.

Dixie Power has followed the Rural Utilities Services (RUS, successor to the REA) standards for 75 years for powerline construction and operation, including line inspection and maintenance, which has kept the cooperative's powerlines almost completely uninvolved in wildland fires. These standards were developed by the RUS/USDA staff and/or their consultants and have applied to REA/RUS cooperatives since the original Rural Electrification Act of 1935 and are evaluated and updated regularly and more recently have been codified in the Code of Federal Regulations (CFR.) Specifically, see: "*REA Bulletin 161-3 Inspection and Maintenance of Distribution Lines*" requiring regular cooperative system inspections and testing, and which has been codified in 7CFR1793.21.

Table 5. Inspection Program Summary

ASSET CLASSIFICATION	INSPECTION TYPE	FREQUENCY
Transmission	Routine Safety Patrol Inspection	Annually
	Detailed Inspection	Every 3 years
	Wood Pole Test and Treatment	Every 10 years
	UAV Inspections	As needed
Overhead Distribution	Routine Safety Patrol Inspection	Annually
	Detailed Inspection	Every 3 years
	Wood Pole Test and Treatment	Every 10 years
Underground Distribution	Routine Safety Patrol Inspection	Every 3 years
Substation	Routine Inspection	Monthly
	Detailed Inspection	Annually
	Infrared Inspection	Annually

5.2.1 Definition of Inspection Levels

1. **Routine Safety Patrol Inspection:** A simple visual inspection of applicable utility equipment and structures designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.
2. **Detailed Inspection:** Individual pieces of equipment and structures are carefully examined visually and through use of routine diagnostic testing as appropriate. If practical and useful information can be gathered, equipment may be opened, and the condition rated and recorded.
3. **Intrusive Pole Inspection:** Inspections involving the movement of soil, taking samples of the wood pole for analysis, and/or using more sophisticated diagnostic tools beyond visual inspections. Chemical treatments are applied as needed.

5.2.2 Routine Safety Patrol Inspections

Every year Dixie Power line crews perform Routine Safety Patrol Inspections of the powerlines. This includes a simple visual inspection of applicable utility equipment and structures designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.

The following is a short listing of items to check while performing routine safety inspections:

- Low clearance of primary conductor, secondary wires, and service drops
- Excessive splicing
- Objects too close to electric lines
- Encroachments
- Physical damage to facilities
- Deterioration of facilities
- Bird nests

When a problem is detected via Routine Safety Patrol Inspection, the inspector creates a service order in the digital service order system, which is tied to the inspection software which is tied to the GIS, and the dedicated line maintenance crew finds it automatically added to their project queue.

5.2.3 Detailed Inspections of Transmission and Distribution Lines

Every year Dixie Power's line crews perform a Detailed Inspection on 33% of the overhead and 33% of the underground lines. Individual pieces of equipment and structures are carefully examined visually and through use of routine diagnostic testing as appropriate. If practical and useful information can be gathered, equipment may be opened, and the condition rated and recorded.

The field inspectors at Dixie Power are all linemen and so are very familiar with the construction standards and how the lines should look and therefore are readily capable of spotting any anomalies. They utilize smart devices (iPads or smart phones) that have powerline inspection software directly tied to the cooperative's GIS. The image below is a screen shot of the Pole Inspection Form from the smart device of a field inspector.

Verizon LTE 2:59 PM 92%

Cancel P3166 Pole Inspections Save

Inspected ☒

gs_facility_id
P3166

gs_height
35'

gs_class
6

Pole Condition
Good >

Cross Arm Condition
Good >

gs_comments >

Inspected By
kelving >

Date Inspected
Mar 18, 2020 at 11:20:33 AM

When a problem is detected via line or ROW inspection, the inspector creates a service order in the digital service order system, which is tied to the inspection software which is tied to the GIS, and the dedicated line maintenance crew finds it automatically added to their project queue. Of course, higher priority is assigned to projects that affect safety (including the potential to start fires) and near-term reliability. The inspections are also tracked in the cooperative's GIS software so that inspections do not overlap and so that segments of the powerlines are not overlooked. These inspections and resulting service orders are on-going and a permanent and ever-increasing part of every annual budget.

In addition to the minimum regulatory requirements from the RUS via the CFR, Dixie Power also follows the National Rural Electric Cooperative Association's (NRECA) more rigorous Rural

Electrification Safety Accreditation Program (RESAP) and has been accredited for safety by NRECA since 2006. This accreditation is renewed every three years after an extensive application and rigorous on-site inspection program. See Appendix E for the inspection rubric: "Section 17: Overhead & Underground Lines, Equipment, etc." Under this program Dixie Power has inspected and will continue to inspect, on an annual basis:

- 10% of all poles
- 33% of all pad mounted transformers
- 33% of all overhead lines
- 20% of all rights-of-way (ROW)

The progress of all system inspections is reported each month to the Dixie Power Board of Directors in their monthly board meeting.

Further, in addition to the preventive measures from on-going line inspections and maintenance, the cooperative employs SCADA (Supervisory, Control, And Data Acquisition) system monitoring of each feeder on a 24/7 basis. Through the cooperative's SCADA system, dispatchers can monitor the current and voltage readings and device operations on every substation feeder on the whole system. It has been the cooperative's experience that the SCADA system and dispatcher can detect and respond to and operate feeder devices and manage line faults sometimes in less than five minutes, and usually before the first customers can call on the phone. For permanent faults that require a line crew to respond, the SCADA dispatcher typically has the crew on the way before the first member phone calls arrive.

5.2.4 Wood Pole Testing and Treatment

To maintain Dixie Power's wood poles, a formal Wood Pole Assessment Plan was initiated with the goal to inspect 10% of the system each year. Wood pole inspections are carried out on a planned basis to determine whether they have degraded below National Electric Safety Code (NESC) design strength requirements with safety factors.

An engineering technician inspects and tests all poles on a cycle meeting the interval recommended in RUS Bulletin 1730B-121. Circuits are identified, mapped, and scheduled for inspection and testing using a digital wood inspection drill, the PD500 by IML Wood Testing Systems. The IML-RESI PowerDrill digitally presents the wood quality by measuring the drill's needle resistance through the core of the wood. With a digital wood inspection drill the measurements are easy to capture, display and analyze. The technician will quickly know whether the wooden measuring object is in a healthy or rotting condition by the measurement data the drill displays. Additionally, using the needle rather than a traditional drill bit, allows the inspector to accurately assess the pole without compromising the integrity of good poles. Poles suspected of deficiencies are subjected to intrusive inspection to determine and identify problems such as rot, decay, or insect damage. All poles that are older than 20 years are

subjected to intrusive inspection. Based on the results of the intrusive test, wood poles are then replaced as needed.

5.2.5 Substation Inspections

The Preventive Maintenance Plan provides for regular inspections of Dixie Power's substations on a monthly cycle. Qualified personnel will use prudent care while performing inspections following all required safety rules to protect themselves, other workers, the general public, and the system's reliability.

The substation inspection involves a thorough look at the system to confirm that there are no structural or mechanical deficiencies, hazards, or tree trimming requirements. Individual pieces of equipment and or structures receive careful visual examination and routine diagnostic tests as appropriate.

5.2.6 Prioritization of Repairs

Dixie Power considers and prioritizes maintenance work by assessing the most urgent needs. The inspector will document the overhead and underground systems' condition, recording defects, deterioration, violations, safety concerns, or any other factors requiring attention on the inspection records. The inspection shall focus on any hazards that could affect the system's integrity or the safety of line workers and the public.

Inspection data (overhead & underground) will be prioritized and issued as follows:

Priority # 1 – Immediate hazard: Conditions that may affect the integrity of the system or present a hazard to workers or the general public. Priority #1 tags will be responded to **immediately** and appropriate action taken until the hazardous condition is remedied.

Priority # 2 – Non-emergency repair condition: Conditions that require maintenance that can be scheduled to maintain the integrity of the system. Priority #2 tags will be prioritized by urgency and will be scheduled to have appropriate repairs made to correct the condition within two years where practicable. If the Priority Level 2 issue is located in a High Risk zone and poses a potential fire risk, correction of the deficiency will occur before the next fire season.

Priority # 3 – Non-emergency repair condition: Conditions that do not present a situation that could jeopardize the safety of the system, line workers and the general public. Priority #3 tags will be submitted by the inspector with the time interval recommended. In the judgment of the Work and Asset Management Department, work will be scheduled to be completed in the order of priority designated by the Area Crew Foreman.

5.3 Vegetation Management (VM)

5.3.1 Vegetation to Conductor Clearance

Dixie Power has an operational and management responsibility and is required by State and Federal Agencies to maintain the right of way, under or around its power lines. Dixie Power will meet the minimum standards for conductor clearances from vegetation to provide safety for the public and utility workers, reasonable service continuity and fire prevention.

Trees and tall brush cause a large proportion of the outages experienced by any overhead electric system. They also cause intermittent and recurring outages, observed as blinking and brown outs (voltage sags,) which decreases customer satisfaction. It is incumbent upon the cooperative to maintain cleared rights-of-way to maintain reliability and customer satisfaction, in addition to any wildland fire protection benefits. That Dixie Power has been successful in maintaining cleared rights-of-way is evidenced by the year-after-year gold standard reliability percentage of 99.99% as calculated in accordance with IEEE standards and on-going customer satisfaction ratings by the American Customer Satisfaction Index (ASCI) always between 88 and 92. To appreciate how high these customer satisfaction scores are relative to any other company, see: <https://www.theacsi.org/>.

Vegetation management (VM) operations are scheduled to ensure all lines are cleared of vegetation hazards on a yearly timeline. During tree trimming work, contractors aim to achieve the clearance specifications described below.

- **OH Distribution:** Ten horizontal feet from the conductor
- **Transmission:** Twenty horizontal feet from the conductor
- **Trees Under Conductors:** Trees that are under conductors should be removed.
- **Overhanging Branches:** Removed from conductor to sky on all overhead distribution and transmission lines.
- **Secondary Conductor:** Trees near open wire secondary are pruned to provide a minimum of ten feet of clearance.
- **Service Wire:** Branches that deflect or weigh heavily upon service or other secondary wires beyond the last Dixie Power pole are removed, but not pruned in their entirety without specific direction by Dixie Power operations
- **Pole Base:** A ten foot radius area around the base of all poles is cleared of vegetation that would prevent the pole from being safely accessed and climbed.

5.3.2 Vegetation Trimming Standards

Dixie Power has followed the RUS standards for almost 75 years for powerline construction and operation, including vegetation management. See *REA Bulletin 161-17* for prescribed on-going vegetation control practices for right-of-way maintenance for cooperatives. These standards were developed by the RUS/USDA staff and have applied to REA/RUS cooperatives since the original Rural Electrification Act of 1935 and are evaluated and updated regularly and have been codified in the CFR. For a drawing of the Right-of-Way clearing and maintenance required of

and by cooperatives, see *7 CFR Part 1728, "RUS Bulletin 1828F-804, Section M: Specifications for Right-of-Way Clearing for overhead distribution lines."* Also see *7CFR 1728, "RUS Bulletin 1828F-810 & 811"* for similar transmission line ROW clearing standards. See Appendix F of this document for the text and drawings of both the overhead distribution line and the transmission line vegetation management standards.

To assure continuously cleared rights-of-way Dixie Power requires access to rights-of-way from all landowners and land managers, including public and private (see Map of Land Ownership in Figure 5, below.) Both safety and reliability suffer when Dixie Power is unable to access their powerlines due to access closed by landowners and land managers, and so Dixie continually requests the required access to all their powerlines. Dixie Power contracts with a certified tree trimming contractor who follows a set cycle of the overhead lines to ensure that all trees are the prescribed distance away from the powerlines (see prescribed distances detailed in Appendix F.) Additionally, if any of the cooperative line or ROW inspectors, or any member of the public, report that a segment of powerline has encroaching trees, a service order is created and a corresponding work order is issued to the tree trimming contractor in addition to their normal trimming cycle. Vegetation management is a permanent and ever-expanding part of every annual budget.

Dixie Power's contractors follow American National Standards Institute (ANSI) A300 concepts and utility directional pruning, which supports proper pruning/tree health while achieving and maximizing the pruning cycle. The VM program was developed with RUS, ANSI A300, ANSI C2, National Electrical Safety Code (NESC), and FAC 003-4 standards in mind.

Work performed to the above guidelines provides reasonable service continuity, public safety, and guards against wildfire damage caused by supply conductors. Consideration is given to the impact of pruning on power line reliability, individual tree condition, and tree aesthetics.

5.3.3 VM Trimming and Inspection Schedule

Dixie Power personnel and contractors perform annual, ground-based inspections of tree conductor clearances and hazard tree identification for Dixie Power ROWs and easements. Dixie Power contracts full-time tree trimming crews for year-round vegetation management work. Dixie Power line crews also address vegetation concerns in response to service calls or field observations. Proactive maintenance during routine operations and prompt action during emergency events maintain system reliability, a safe work environment, and reduce fire danger. Any VM issues that cannot be immediately handled by the line crews are referred to the VM contractor for priority trimming. Scheduled patrols ensure all lines are inspected for vegetation hazards and systematically trimmed. On-going, year-round field patrols identify targeted areas for vegetation pruning or removal and ensure compliance with state and federal regulatory requirements.

5.3.4 Hazard Trees

A subset of Danger Trees⁴, A Hazard Tree is defined as any tree or portion of a tree that is dead, rotten, decayed, or diseased and which may fall into or onto the overhead lines or trees leaning toward transmission and distribution facilities. These trees are sometimes located beyond the easement or ROW. Any tree that is located outside of the ROW and is deemed a hazard tree will be removed or topped to make it safe for conductors.

A hazard tree will have one or more of the following characteristics:

- Dead or dying - all dead or dying trees along, or outside the Dixie Power right-of-way may be removed depending on the height of tree and the direction of the lean.
- Leaning trees - trees that have such a lean toward the right-of-way that they cannot be trimmed without removing the tops and slanting the tree back. Removal depends on height and species of the tree and direction of the lean.

5.3.5 Controlling Incompatible Vegetation

In addition to the annual patrols by Dixie Power field staff observing and reporting on incompatible uses and encroachments, Dixie Power make efforts to educate public and private landowners about incompatible vegetation that can pose risks if planted under or near conductors. Dixie Power's website under Service Standards provides guidance on approved landscape in all overhead power line easements. All development projects within incorporated city limits go through a review process by utility personnel. Notes are placed on approved plans to define that trees planted are the type that can only grow to a maximum height of 15'.

In addition to regular tree trimming and ROW clearing by a licensed, qualified, contractor, Dixie Power sends out individual linemen to each line fuse pole in known high-risk/dried grass locations to clear out the brush or any other potential fire hazard manually. Note: this does not include transformer fuses on overhead lines, which are very small and are of a different characteristic, which expel significantly less hot gas, and therefore are much less likely to be involved in any wildland fire events. This specific and targeted round of clearing is done each year in late April/early May, depending on the weather and precipitation. For a detailed explanation of how expulsion fuses function, see Expulsion Fuse in Appendix C.

Also, cooperative-owned properties that need to be completely clear of all vegetation, specifically substations and material yards, are sprayed annually on a pre-scheduled basis by a licensed, qualified contractor. The regular, annual application of herbicides on these areas meant to stay clear of all vegetation ensures that they indeed stay free of any combustible vegetable material. By keeping all substations clear of flammable vegetation, it has been observed that small wildland fires stop at the edge of the gravel skirt, typically ten feet out from each substation fence or wall. See photo following of a wildland fire that burned up to the edge of a substation gravel skirt near the Utah/Arizona border in June 2020.

⁴ As defined by ANSI 300 Part 7 standards



5.4 Wildfire Mitigation Construction

Furthermore, Dixie Power follows the REA/RUS design and construction standards as detailed in RUS bulletins and codified in the CFR. These design and construction standards are regularly reviewed and updated by RUS and/or their consultants and have as a fundamental design criteria public safety and fire prevention. By following the RUS design and construction standards, as well as a regular on-going line replacement program, Dixie Power has created an electrical system that is not only 99.99% reliable, as previously mentioned, but also safe, as evidenced by a longer than ten-year record of no lost time accidents and a very low Workers' Compensation Fund (WCF) experience modifier (e-mod) rate of 0.65.

Additionally, Dixie Power has been working to rebuild and improve the OH distribution lines throughout the Escalante Valley, where the majority of Dixie Power's OH distribution lines are found, at the rate of at least five miles per year for the past ten years and will continue each year into the future. In these rebuild/upgrade projects all of the existing wood poles have been replaced with new, larger wood poles (specifically 35 foot-class 5 and 40 foot-class 4,) new crossarms and insulators, with shorter spans between poles (reducing from greater than 500 foot spans to less than 400 foot spans,) and new, larger, more sturdy conductor (replacing old 8A-CWC and #6 copper with new 1/0 AWG ACSR or larger,) all of which should combine to

make each new segment not only more reliable, but also much more resilient and less likely to fail in extreme weather events, which should directly increase public safety and reduce the potential to start wildfires in those areas. Failing powerlines due to broken poles, crossarms, or wires have the potential to cause sparks if the energized parts come in contact with the ground, and longer spans can lead to lines slapping together in the wind which also has the potential to cause sparks, so everything that the power company can do to prevent the mechanical failure of powerlines not only improves safety and reliability, but also minimizes the risk of initiating a wildland fire.

In the Dixie area of the Dixie Power service territory, the cooperative has been removing OH distribution lines and replacing them with UG lines which are naturally less susceptible to cause or be damaged in the case of wildfires. This conversion from overhead to underground has been occurring as a natural consequence of development, as formerly rural agricultural areas around the cities of St George, Washington, and Hurricane are being subdivided into suburban residential areas and the new subdivisions choose to install underground lines for aesthetic reasons even though overhead is easier and less expensive for the cooperative to operate and maintain. To-date this conversion has resulted in a shift from 10:1 overhead to underground to a 1:4 overhead to underground distribution line ratio.

Substations, with their vegetation-free gravel yards (to protect against step and touch potentials during fault events,) are necessarily at low risk for initiating wildfires due to their lack of vegetation/fuel to sustain a fire. Additionally, as illustrated in the previous section, substation gravel yards extend ten feet out from all substation walls and fences, which helps prevent small wildland fires from entering the substation yard and involving the equipment located there.

5.4.1 Avian Protection Program

Dixie Power created and adopted an Avian Protection Plan in 2007 that is designed to protect animals from electrocution while minimizing power interruptions. The plan consists of Preventative, Reactive, and Proactive approach to manage bird/power line incidents on the system.

Dixie Power continues to follow the RUS construction standards for construction and maintenance of overhead power lines. Section P of the Construction Specifications for Raptor Protection contains the drawings for approved Raptor Safe spacing of live electrical contacts between phase and ground. All construction and maintenance of overhead power lines follow these standards.

5.5 Emerging Technologies

Dixie Power has specified, purchased, and installed special fuses to replace the standard expulsion fuses on the line taps on the high-risk OH distribution line, specifically between Newcastle and Pine Valley as detailed above. The new fuse type is Eaton's Cooper Power series ELF current-limiting dropout fuses and is designed to eliminate any potential for sparking from

the expulsion of hot gases in the operation of normal expulsion fuse links. See again Expulsion Fuse in Appendix C. These ELF fuses are relatively new, expensive, and in short supply with long lead times greater than one year due to very high demand from California, so they were deployed on one high-risk line segment as an experiment to determine their effectiveness. To date there have been no wildfires known to have been started by the expulsion of hot gasses from ordinary fuse links on the Dixie Power system, but these new ELF fuses have been deployed in the area designated by experience as having a higher-than-average risk of wildfire out of an overabundance of caution.

Dixie Power has initiated various pilot projects to explore new technologies and best management practices. These pilot projects will serve to evaluate the effectiveness of emerging technologies while controlling unwarranted expenditures on unproven methods. Dixie Power may elect to integrate these technologies or practices into its ongoing maintenance programs based on the outcomes. These technologies include, but are not limited to non-expulsion fuses, thermal imaging cameras, Dixie Power-owned weather stations, electronic reclosers, and fire protective coatings for wood poles.

6 Emergency Response

6.1 Preparedness and Response Planning

If a wildfire were to destroy a segment of Dixie Power's lines, as in the case of the North Fire in 2017, Dixie Power crews would await clearance from the fire incident commander and when the clearance was given the crews would immediately start reconstructing the damaged lines, upgrading the line as necessary. See: RUS Bulletin 1730B-2 Guide for Electric System Emergency Restoration Plan currently posted on-line in the Code of Federal Regulations. Dixie Power maintains a crew of linemen on-call 24/7 and can call in as many other linemen as needed in an emergency. Currently Dixie Power employs 37 linemen and an engineering staff of five, and so can respond to an emergency with the personnel required to rebuild powerlines after a disaster. In the case of the 2017 North Fire, power was restored to the community of Pine Valley within thirty hours. Additionally, Dixie Power has a mutual aid agreement in place with the other cooperatives in the Utah Rural Electric Cooperative Association and would have emergency access to additional personnel and equipment, as needed.

Dixie Power maintains a level of material inventory such that a five-mile section of overhead distribution line could be built at any time. Additionally, Dixie has a material supply alliance with Western United Electric supply, and they can bring in more material as needed from their stock in Denver, Colorado overnight. Dixie Power only utilizes, and Western United only stocks, materials approved by RUS; this means that large quantities could be brought to bear from any other cooperative material supplier anywhere in the country. This cooperative material supply chain is often brought to bear after tornados and hurricanes and ice storms in the parts of the country where those events are prone to happen.

Dixie Power maintains a very active presence on social media and energetically strives to keep its members notified during any outage or other interruption to the service of electricity. Dixie Power also runs continual radio ads to keep members informed of activities or other issues that affect the delivery of their power. Additionally, each member has access to a web-based map that shows all on-going outages on the Dixie Power system so they can determine whether or not they're affected and see an estimate of when the power should be restored.

The following replacement costs are used as Dixie Power evaluates the wildfire risk to its facilities:

- OH 1-phase 1/0AWG ACSR distribution line: \$72,500 per mile
- OH 3-phase 1/0AWG ACSR distribution line: \$100,000 per mile
- OH 3-phase 397MCM ACSR distribution line: \$186,000 per mile
- Distribution Substation: \$4,000,000
- OH 138/69kV transmission line: \$1,250,000 per mile

6.1.1 Emergency Management Communication and Coordination

The safety of Dixie Power personnel and the general public is always the first priority, so if a Dixie Power lineman were to discover an active fire involving or even near a cooperative powerline they are instructed to evacuate if necessary and then to phone:

- In case of emergency: 911
- In case of non-emergency:
 - In Washington County: 435-627-4301
 - In Iron County: 435-867-7550
 - In Millard County: 435-743-5302

All cooperative line vehicles are equipped with a two-way radio and each lineman is equipped with a cell phone, so the lineman can either call the appropriate number directly with his cell phone or use his radio to contact the dispatcher who would then place the phone call to the appropriate entity. In one area of the cooperative, in Pinto Canyon between Newcastle and Pine Valley, there is neither cell nor radio coverage; for that location the line crews working in that area will carry a satellite phone which has been used with success in the past.

If the fire fighters need sources of water for helicopter dipping, they will be directed to the following reservoirs (listed north to south) in or near the Dixie Power certificated area, in Millard, Iron, and Washington Counties:

- DMAD Reservoir, N 39°23'40.66" W 112°28'26.91"
- Gunnison Bend Reservoir, N39°20'57.65" W 112°36'54.02"
- Newcastle Reservoir, N37°38'58.02" W113°31'27.49"
- Enterprise Reservoir, N37°31'5.65" W113°51'55.87"
- Grass Valley Reservoir, N37°24'55.87" W113°29'51.26"
- Pine Valley Reservoir, N37°22'44.13" W113°28'30.27"
- Baker Reservoir, N37°22'39.38" W113°38'22.27"

- Upper Sand Cove Reservoir, N 37°18'7.30" W113°41'51.14"
- Gunlock Reservoir, N37°15'32.68" W113°46'28.33"
- Quail Creek Reservoir, N 37°11'19.33" W113°23'14.76"
- Sand Hollow Reservoir, N 37° 6'41.60" W 113°22'35.34"

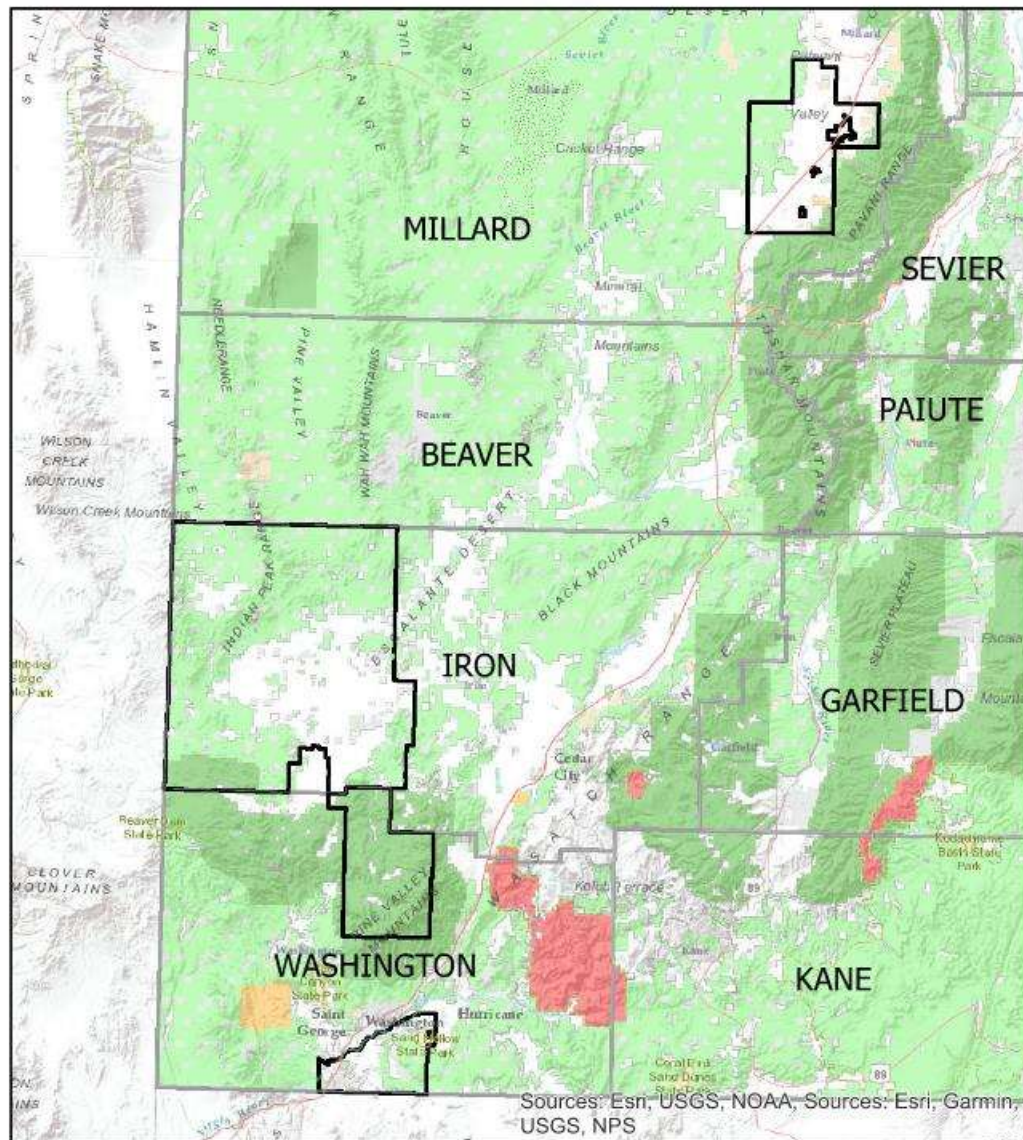
In addition to Dixie's powerlines, there is an external hazard that could create an additional level of urgency in the case of a wildland fire: the Kern River natural gas pipeline crosses Dixie's powerlines several times on the west side of I-15, for nearly the whole of Millard County, and again on the east side of Newcastle, in Iron County. In case of a wildfire near the gas pipeline, the pipeline operator will be contacted at: 800-272-4817

If a wildfire were to destroy a segment of Dixie Power's lines, as in the case of the North Fire in 2017, Dixie Power crews will await clearance from the fire incident commander and when the clearance is given the crews will immediately start reconstructing the damaged lines, upgrading the line as necessary. See: "RUS Bulletin 1730B-2 Guide for Electric System Emergency Restoration Plan."

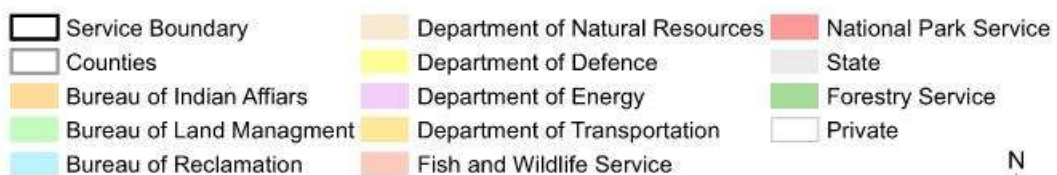
6.1.2 Jurisdictional Structure

In the map shown below, in **Figure 5. General Land Ownership**, the light green areas illustrate the amount of property in all three counties, Millard, Iron, and Washington, that is owned and operated by the U.S. Bureau of Land Management (BLM) or approximately 63% of the total. The area shaded in tan in the Millard County area, northeast of the town of Kanosh, is tribal reservation land, owned and operated by the local Tribal Council, or about 0.1%. The darker green area in the northern part of Washington County, in the Pine Valley area, is land owned and operated by the US Forest Service, about 25%. The yellow-shaded area in the Dixie Area of Washington County is the Sand Hollow State Park, about 1%. The gray areas, predominantly in the Dixie area, is owned by the State Institutional Trust Lands (SITLA), or about 11%. All of the remaining area on the map, the white area, is privately owned, or about 55%. In all of these jurisdictions Dixie Power coordinates with the property owner and operator in all cases of obtaining and maintaining powerline easements and rights-of-way.

Figure 5. General Land Ownership



General Land Ownership Map



6.1.3 Public Agency and Customer Communications for Outages

As much as one week, but a minimum of two days before, and again on the day of, any planned outage, as well as during any unplanned outage, Dixie Power communicates with any affected members using an Outage Management System (OMS), which sends out notifications to members via phone calls, using an Interactive Voice Response (IVR) system, or text message, or email, or using the Dixie Power app on the customers' own phones. Dixie also posts outage information on the cooperative website (www.DixiePower.com), complete with a map of the area affected by the outage (see: <https://www.dixiepower.com/outage-map/>.) Dixie Power also maintains an active Facebook page and responds to notices or inquiries that come in via social media.

6.1.4 Community Outreach

Dixie Power maintains an informative website (www.DixiePower.com) on which is placed a lot of important information, including the current Wildland Fire Protection Plan (see: <https://www.dixiepower.com/wildland-fire-protection-plan/>), service standards (see: <https://www.dixiepower.com/service-standards/>), a member reference manual (see: <https://www.dixiepower.com/forms/member-reference-manual/>), and an extensive video library (see: <https://vimeo.com/showcase/dixie-power-video-library>) with videos on many topics relevant to electricity in general and Dixie Power in specific. Dixie Power also contracts with a national organization to provide content for the website relating to electrical safety (see: <https://www.touchstoneenergy.com/safety>)

6.2 Restoration of Service

If an outside emergency management/emergency response agency requests a power shutdown, or if Dixie Power elects to de-energize segments of its system due to extreme weather, Dixie Power staff will patrol the affected portions of the system before the system can be re-energized. Suspect equipment or distribution lines that cannot immediately be patrolled will remain de-energized until Dixie Power staff can do so. Poles and structures damaged in a wildfire must be assessed and rebuilt as needed prior to re-energization. Periodic customer and media updates of restoration status prior to full restoration will be made.

6.2.1 Service Restoration Process

After a wide-spread outage, Dixie Power work crews take the following steps before restoring electrical service after a de-energization event. These measures intend to protect the worker, members, the public, and the system's reliability.

- **Patrol:** Crews patrol every de-energized line to ensure no hazards have affected the system during the outage. If an outage is due to wildfire or other natural disasters, as soon as it is deemed safe by the appropriate officials, crews inspect lines and equipment for damage, foreign contacts and estimate equipment needed for repair and restoration. Lines located in remote and rugged terrain with limited access may require additional time for inspection. Dixie Power personnel assist in clearing downed trees and limbs as needed.
- **Isolate:** Isolate the outage and restore power to areas not affected.

- **Repair:** After the initial assessment, Dixie Power engineering and operations personnel meet to plan the needed work. Rebuilding commences as soon as the affected areas become safe. Repair plans prioritize substations and transmission facilities, then distribution circuits serving the most critical infrastructure needs. While the goal to reenergize all areas is as soon as possible, emergency services, medical facilities, and utilities receive first consideration when resources are limited. Additional crew and equipment are dispatched as necessary.
- **Restore:** Periodic customer and media updates of restoration status before full restoration are posted on social media platforms and Dixie Power's website. After repairs are made, power is restored to homes and businesses as quickly as possible. Members, local news, and other agencies receive notification of restored electric service.

7 Performance Metrics and Monitoring

7.1 Plan Accountability

Dixie Power staff responsibility for plan implementation and general communications is described below:

- The Board of Directors makes policy decisions relative to the utility – they will be responsible for approving and adopting the Wildland Fire Protection Plan.
- The Chief Executive Officer (CEO) directs management staff responsible for Operations, Customer Service and Finance.
- The Chief Operating Officer (COO) supervises the Engineering Manager and engineering staff.
- The Operations Department Head is responsible for the overall execution of the WFPP. Operations personnel will be directed as to their roles and responsibilities in support of the plan.
- The COO, under the direction of the CEO, is responsible for communicating with public safety, media outlets, public agencies, first responders, local Office of Emergency Management, and health agencies during an emergency or planned maintenance outages.
- The CEO determines when and how to notify outside agencies in cases of wildfire emergency events.
- Dixie Power's COO will be responsible for monitoring and auditing the targets specified in the WFPP to confirm that the objectives of the WFPP are met, as well as the implementation of the plan in general.

7.2 Monitoring and Auditing of the WFPP

The WFPP will be reviewed annually for the purpose of updating the plan as needed to reflect knowledge gained in the preceding year and modified accordingly. Management will file with its governing authority an annual report detailing the electric cooperative's compliance with the wildland fire protection plan. A more formal review will be done every 3 years as required by Title 54, Chapter 24, Section 203. Updated plans will be submitted on or before October 1 of every third year after calendar year 2020.

7.2.1 Identifying Deficiencies in the WFPP

The COO will be responsible for ensuring that this WFPP meets all public agency guidelines to mitigate the risk of its assets becoming the source or contributing factor of a wildfire. Staff responsible for assigned mitigation areas have the role of vetting current procedures and recommending changes or enhancements to build upon the strategies in the WFPP. Either due to unforeseen circumstances, regulatory changes, emerging technologies or other rationales, deficiencies within the WFPP will be sought out and reported to the Board of Directors in the form of an updated WFPP on a yearly basis.

The COO or their designee will be responsible for spearheading discussions on addressing any plan deficiencies and collaborating on solutions when updating the WFPP. At any point in time when deficiencies are identified, the Supervisors or their delegates are responsible for making the appropriate policy adjustments. Dixie Power staff and qualified stakeholders are encouraged to bring any potential deficiencies to the attention of the COO. The COO, along with the appropriate staff, will evaluate each reported deficiency, and if determined to be valid, shall record the deficiency for further action.

7.3 Performance Metrics

Table 6. Performance Metrics

METRIC	RATIONAL	INDICATOR	MEASURE OF EFFECTIVENESS
Utility caused ignitions	Demonstrates the effectiveness of the plan	Count of events	Reduction or no material increase
Vegetation-caused Outage during fire season	Assess VM program work schedules/QC process	Count of events	Reduction or no material increase
Vegetation-caused ignition	Assess VM program work schedules/QC process	Count of events	Reduction or no material increase

7.4 Plan Approval Process

7.4.1 Coordination With State or Local Wildland Fire Protection Plans

A series of persons working within the appropriate federal, state, county, and local entities were contacted and consulted for their input to this Wildland Fire Protection Plan. This plan contains their input and suggestions. See following table.

Forestry, Fire and State Lands	Danon Hulet, Southwest Area Manager	435-592-0099, danonhulet@utah.gov
	John Schmidt, Wildland Urban Interface Coordinator	Cell: 435-590-0353, johnschmidt@utah.gov
	Adam Hyder, Fire Warden – Washington County	435-590-4715 adamheyder@utah.gov
	Ryan Riddle, Fire Warden – Iron County	435-590-4714, ryanriddle@utah.gov
	Jason Torgerson, Central Area Manager	435-201-7601 jtorgerson@utah.gov
	Fred Johnson, Central Area	(435)851-1546 fredjohnson@utah.gov
	Landon Rowley, Central Area	(435)979-0619 lsrowley@utah.gov
	Central Utah Regional Wildfire Protection Plan (RWPP)	https://digitallibrary.utah.gov/awweb/pdfopener?sid=A58D67F82930C1541295B92295085C2A&did=31609&fI=%2Fpublications%2Fdc017095.pdf#toolbar=0
Utah DNR	Wildfire Risk Assessment Portal	https://wildfirerisk.utah.gov/Map/Public/#map-themes
	Utah Fire Information	https://utahfireinfo.gov/contacts/
Bureau of Land Management, US Forest Service, National Park Service, Bureau of Indian Affairs, and the State of Utah Forestry, Fire and State Lands	Color Country Interagency Fire Center	https://gacc.nifc.gov/gbcc/dispatch/ut-cdc/about/
	Central Utah Interagency Fire Organization	https://gacc.nifc.gov/gbcc/dispatch/ut-rfc/index.htm
	List of agency contacts	https://gacc.nifc.gov/gbcc/dispatch/ut-cdc/centers/index.html
USDA US Forest Service (USFS)		https://www.fs.usda.gov/managing-land/fire/wildfirerisk
	Nicholas Glidden, Pine Valley ranger	435-652-3101, cell: 435-691-0769
	Kevin Greenhalgh, Dixie National Forest Fire Management Officer	435-865-3271 kevin.greenhalgh@usda.gov
	Robert R Lopez	robert.r.lopez@usda.gov

	Skeet Houston	skeet.houston@usda.gov
PacifiCorp/RMP	Chris Spencer, System Protection	801-220-5910 Christopher.spencer@pacificorp.com
Five County Association of Governments	Jason Whipple, Emergency Services Director	435-634-5734, Cell: 435-703-1431
	Southwest Utah Regional Wildfire Protection Plan (RWPP)	https://digitallibrary.utah.gov/awweb/pdfopener?sid=5E9863C90C26F8013A56FDBA0D29CA64&did=31613&file=%2Fpublications%2Fdc017099.pdf#toolbar=0
Federated Rural Electric Insurance Exchange, "Federated"	Phil Irwin, President & CEO	Conference Call
	Corey Parr, VP of Safety and Loss Prevention	
	Mike Mattix, VP of Reinsurance	
	Darrin Davenport, Safety Consultant	(913) 541-2993, cell: (913) 209-3656 DDavenport@federatedrural.com
Washington County	Tiffany Martineau, Community Wildfire Planner	435-634-5734, Cell: 435-319-9640, Tiffany.Martineau@washco.utah.gov
Iron County	George Colson, Iron County Emergency Management Coordinator	435-267-1740, https://www.ironcounty.net/contact/
	Iron County's Emergency Operations Plan	https://www.ironcounty.net/department/emergency-management/
Millard County	Public Safety	https://www.millardcounty.org/county-services/public-safety/
	Sheriff	https://www.millardsheriff.org
	Pam Smith, County Fire Warden	435-864-3998
Paiute Indian Tribe of Utah, Kanosh Band	Shane Parashonts, Tribal Administrator	435-586-1112 sparashonts@utahpaiutes.org

7.4.2 Public Comment

When this document was essentially complete, and had received and incorporated recommendations from the agencies in the table above, it was posted on the cooperative's website (see: www.DixiePower.com) for public comment before being filed with the Utah Public Service Commission. All relevant input from interested persons was included in the final version that is filed with the Utah Public Service Commission.

7.4.3 Third Party review

Dixie Power contracted with SWCA Environmental Consultants to provide an objective and informed Third Party Review of this document. Dixie Power received a detailed evaluation of this document and discussed each comment individually with the consultant. All the recommended changes and additions were incorporated into the final version of this Wildland Fire Protection Plan.

The template for this 2023 version of the Wildland Fire Protection Plan was provided by BKI Engineering, under contract with the Utah Rural Electric Cooperative Association and its members, in January 2023.

7.4.4 Board Presentation and Plan Adoption

A substantially completed version of this plan was presented to and approved by the Dixie Power Board of Directors on May 6, 2020. Annual updates were prepared, presented to the Board of Directors each December, in 2021 and 2022, and filed with the Utah Public Service Commission. This 2023 version of the Wildland Fire Protection Plan was presented to the Board of Directors for their approval on September 29, 2023.

7.4.5 Submittal to the Utah Utility Commission

Table 7. Commission Submittal Record

Version No.	Date of Approval	Date of Submittal to Commission
1.0	9/29/2023	9/29/2023

Appendix A: Plan and Mapping Disclaimers

WILDLAND FIRE PROTECTION PLAN DISCLAIMER

The information provided in this report was developed by Dixie Power staff and is intended for Dixie Power's internal planning purposes only. Dixie Power does not warrant the accuracy, reliability, or timeliness of any information in this report, and assumes no liability for any errors, omissions, or inaccuracies in the information provided. Dixie Power shall not be held liable for losses caused by using this information. Portions of the data may not reflect current conditions. Any person or entity who relies on any information obtained from this report does so at their own risk. This report is presented solely for internal use AS-IS by Dixie Power staff. Dixie Power makes no representations or guarantees expressed or implied regarding the accuracy or completeness of the report.

WFPP MAPPING DISCLAIMER

Maps in this report were created from multiple datasets from various, public, and private sector sources and may include utility Geographic Information System (GIS) data. The geographic information contained in the map(s) is not to be used as a "legal description" or for any purpose other than general planning and reference. Every effort has been made to ensure the accuracy of the map(s), but errors in source documents do occur and inherent mapping ambiguities are not shown.

Maps are for information purposes only and may not represent actual current conditions. End users assume all liabilities incurred by them, or third parties, as a result of their reliance on the information contained in the map(s). Dixie Power, including, without limitation, its employees, agents, representatives, officers, and directors, may not be held responsible or liable in any way for any information and/or data, or lack thereof, provided in the map(s). Information and/or data included in the map(s) is used solely at the discretion of the recipient.

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Appendix B: Code Citation

Title 54 Public Utilities

54-4-1. General jurisdiction (Effective 5/4/2022)

The commission is hereby vested with power and jurisdiction to supervise and regulate every public utility in this state, and to supervise all of the business of every such public utility in this state, and to do all things, whether herein specifically designated or in addition thereto, which are necessary or convenient in the exercise of such power and jurisdiction; provided, however, that the Department of Transportation shall have jurisdiction over safety functions of public utilities as granted by Subsections 54-4-15(1) through (3) and in Title 72, Transportation Code.

54-4-14. Safety regulation (Effective 5/4/2022)

The commission shall have power, by general or special orders, rules or regulations, or otherwise, to require every public utility to construct, maintain and operate its line, plant, system, equipment, apparatus, tracks and premises in such manner as to promote and safeguard the health and safety of its employees, passengers, customers and the public, and to this end to prescribe, among other things, the installation, use, maintenance and operation of appropriate safety or other devices or appliances including interlocking and other protective devices at grade crossings or junctions, and block or other system of signaling, and to establish uniform or other standards of construction and equipment, and to require the performance of any other acts which the health or safety of its employees, passengers, customers or the public may demand, provided, however, that the department of transportation shall have jurisdiction over safety functions of public utilities as granted by Subsections 54-4-15(1) through (3) and in Title 72, Transportation Code.

54-4-18 Electric, gas, and water service. The commission shall have power, after a hearing, to ascertain and fix just and reasonable standards, classifications, regulations, practices, measurements or service to be furnished, imposed, observed and followed by all electrical, gas and water corporations; to ascertain and fix adequate and serviceable standards for the measurement of quantity, quality, pressure, initial voltage or other conditions pertaining to the supply of the product, commodity or service furnished or rendered by any such public utility; to prescribe reasonable regulations for the examination and testing of such products, commodity or service, and for the measurement thereof; to establish reasonable rules, regulations, specifications and standards to secure the accuracy of all meters and appliances for measurements; and to provide for the examination and testing of any and all appliances used for the measurement of any product, commodity or service of any such public utility.
No Change Since 1953.

54-24-203 Wildland fire protection plan for an electric cooperative.

- (1) An electric cooperative shall prepare a wildland fire protection plan in accordance with the requirements of this chapter.
- (2) A wildland fire protection plan under Subsection [\(1\)](#) shall include:
 - (a) a description of areas within the service territory of the electric cooperative that may be subject to a heightened risk of wildland fire;
 - (b) a description of the procedures, standards, and time frames that the electric cooperative will use to inspect and operate its infrastructure;
 - (c) a description of the procedures and standards that the electric cooperative will use to perform vegetation management;
 - (d) a description of proposed modifications or upgrades to facilities and preventative programs that the electric cooperative will implement to reduce the risk of its electric facilities initiating a wildland fire;
 - (e) a description of procedures for de-energizing power lines and disabling reclosers to mitigate potential wildland fires, taking into consideration:
 - (i) the ability of the electric cooperative to reasonably access the proposed power line to be de-energized;
 - (ii) the balance of the risk of wildland fire with the need for continued supply of electricity to a community; and
 - (iii) any potential impact to public safety, first responders, and health and communication infrastructure;
 - (f) a description of the procedures the electric cooperative intends to use to restore its electrical system in the event of a wildland fire; and
 - (g) a description of potential consultation, if applicable, with state or local wildland fire protection plans.
- (3)
 - (a) An electric cooperative shall submit the wildland fire protection plan described in this section to its governing authority:
 - (i) on or before June 1, 2020; and
 - (ii) on or before October 1 of every third year after calendar year 2020.
 - (b) The governing authority shall:
 - (i) review the plan submitted under Subsection [\(3\)\(a\)](#); and
 - (ii) consider input from:
 - (A) the Division of Forestry, Fire, and State Lands created in Section [65A-1-4](#);

- (B) any other appropriate federal, state, or local entity that chooses to provide input; and
 - (C) other interested persons who choose to provide input.
- (c) The governing authority shall approve a wildland fire protection plan submitted under Subsection [\(3\)\(a\)](#) if the plan:
 - (i) is reasonable and in the interest of the electric cooperative members; and
 - (ii) appropriately balances the costs of implementing the plan with the risk of a potential wildland fire.
- (d) An electric cooperative shall file with the commission a wildland fire protection plan submitted and approved under this section.
- (4) An electric cooperative shall:
 - (a) file with its governing authority an annual report detailing the electric cooperative's compliance with the wildland fire protection plan; and
 - (b) file with the commission a copy of the annual compliance report described in Subsection [\(4\)\(a\)](#).
- (5) The commission shall make available for public inspection:
 - (a) a wildland fire protection plan filed under Subsection [\(3\)\(d\)](#); and
 - (b) an annual compliance report filed under Subsection [\(4\)\(b\)](#).

65A-3-4 Liability for causing wildland fires

- (1) As used in this section:
 - (a) "Electric cooperative" means the same as that term is defined in Section [54-24-102](#).
 - (b) "Electrical transmission wildland fire protection plan" means a wildland fire protection plan, as defined in Section [54-24-102](#), that is:
 - (i) prepared and submitted by a qualified utility and approved as provided in Section [54-24-201](#); or
 - (ii) prepared and submitted by an electric cooperative and approved as provided in Section [54-24-203](#).
 - (c) "Qualified utility" means the same as that term is defined in Section [54-17-801](#).

- (2) (a) Except as provided in Subsection [\(3\)](#), a person who negligently, recklessly, or intentionally causes or spreads a wildland fire shall be liable for the cost of suppressing that wildland fire, regardless of whether the fire begins on:
- (i) private land;
 - (ii) land owned by the state;
 - (iii) federal land; or
 - (iv) tribal land.
- (b) The conduct described in Subsection [\(2\)\(a\)](#) includes any negligent, reckless, or intentional conduct, and is not limited to conduct described in Section [65A-3-2](#).
- (3) In an action under this section to recover for property damage resulting from a wildland fire or to recover the cost of fire suppression resulting from a wildland fire, a qualified utility or electric cooperative may not be considered to have negligently caused a wildland fire if:
- (a) (i) the electrical transmission wildland fire protection plan of the qualified utility or electric cooperative identifies and addresses the cause of the wildland fire for fire mitigation purposes; and
 - (ii) at the origin of the wildland fire, the qualified utility or electric cooperative has completed the fire mitigation work identified in the electrical transmission wildland fire protection plan, including:
 - (A) inspection, maintenance, and repair activities;
 - (B) modifications or upgrades to facilities or construction of new facilities;
 - (C) vegetation management work; and
 - (D) preventative programs; or
 - (b) (i) the qualified utility or electric cooperative is denied or delayed access to a right-of-way on land owned by the state, a federal agency, or a tribal government after the qualified utility or electric cooperative requests access to the right-of-way to perform vegetation management or fire mitigation work in accordance with an electrical transmission wildland fire protection plan; and
 - (ii) the electrical transmission wildland fire protection plan identifies and addresses the cause of the wildland fire for fire mitigation purposes.
- (4) A person who incurs costs to suppress a wildland fire may bring an action under this section to recover those costs.

- (5) (a) A property owner who suffers damages resulting from a wildland fire may bring an action under this section to recover those damages.
- (b) An award for damages to real property resulting from a wildland fire, including the loss of vegetation, shall be the lesser of:
- (i) the cost to restore the real property to its pre-wildland fire condition; or
 - (ii) the difference between:
 - (A) the fair market value of the real property before the wildland fire; and
 - (B) the fair market value of the real property after the wildland fire.
- (6) A person who suffers damage from a wildland fire may pursue all other legal remedies in addition to seeking damages under Subsection [\(4\)](#) or [\(5\)](#).

Appendix C: Glossary for Dixie Power

- ASCI: American Customer Satisfaction Index is a private company that surveys customers of most large companies in the United States to calculate their level of satisfaction and ranks those customer satisfaction scores against other companies in the same sector. See: <https://www.theacsi.org/>.
- ACSR: Aluminum Conductor Steel Reinforced, stranded aluminum conductor wound around a steel core, also typically stranded. The aluminum strands provide conductivity and the steel strands provide strength.
- BLM: Bureau of Land Management, federal agency tasked with managing and disposing of public lands not within parks or forests or other similar reserves.
- Board of Directors: the official Governing Authority of the cooperative, elected by the membership of the cooperative to protect the interests of the members and recognized by the State of Utah and Public Service Commission.
- E-mod: Experience Modification Factor (E-Mod) is a premium modifier that reflects the loss experience of a policyholder compared with payroll exposure during the same time period. The modifier increases or decreases the current premium depending on how the actual exposure and losses, for the past three years, compares with expected losses for the same amount of exposure.
- Expulsion Fuse: "These devices operate on the "expulsion" principle by means of a fuse link and an arc-containing tube with a deionizing fiber liner. When the fusible element of the fuse link melts, the fiber liner melts, thereby emitting deionizing gases, which accumulate within the tube. The arc is stretched, compressed, and cooled within the tube, and gas escaping at the tube ends carries away a portion of the arc-sustaining particles. Reestablishment of the arc after current zero is reached is prevented by the deionizing gases, and by extreme gas pressure and turbulence, which increase the dielectric strength of the air gap in the tube. High-pressure gases then expel arc-supporting ions remaining in the tube." Electrical Distribution System Protection, Cooper Power Systems, 2005, page 53
- Faults: Any time a powerline is shorted out, creating an unintentional path to ground for electrical current. The magnitude of current in faults is typically many times that of the load current.
- Federated Insurance, Federated Rural Electric Insurance Exchange: a non-profit cooperatively owned liability insurance provider that only insures rural electric cooperatives, and so understands the specific needs of this sector of the electric utility industry. Federated provides annual courtesy inspection for cooperatives to help ensure that everyone stays within prudent utility practices.
- GIS: Geographic Information System is an electronic map that contains not only drawings of systems and boundaries but also contains attributes of those boundaries and systems.
- IEEE: The Institute of Electrical and Electronics Engineers (IEEE) is a professional association for electrical engineering and has created industry accepted global standards for

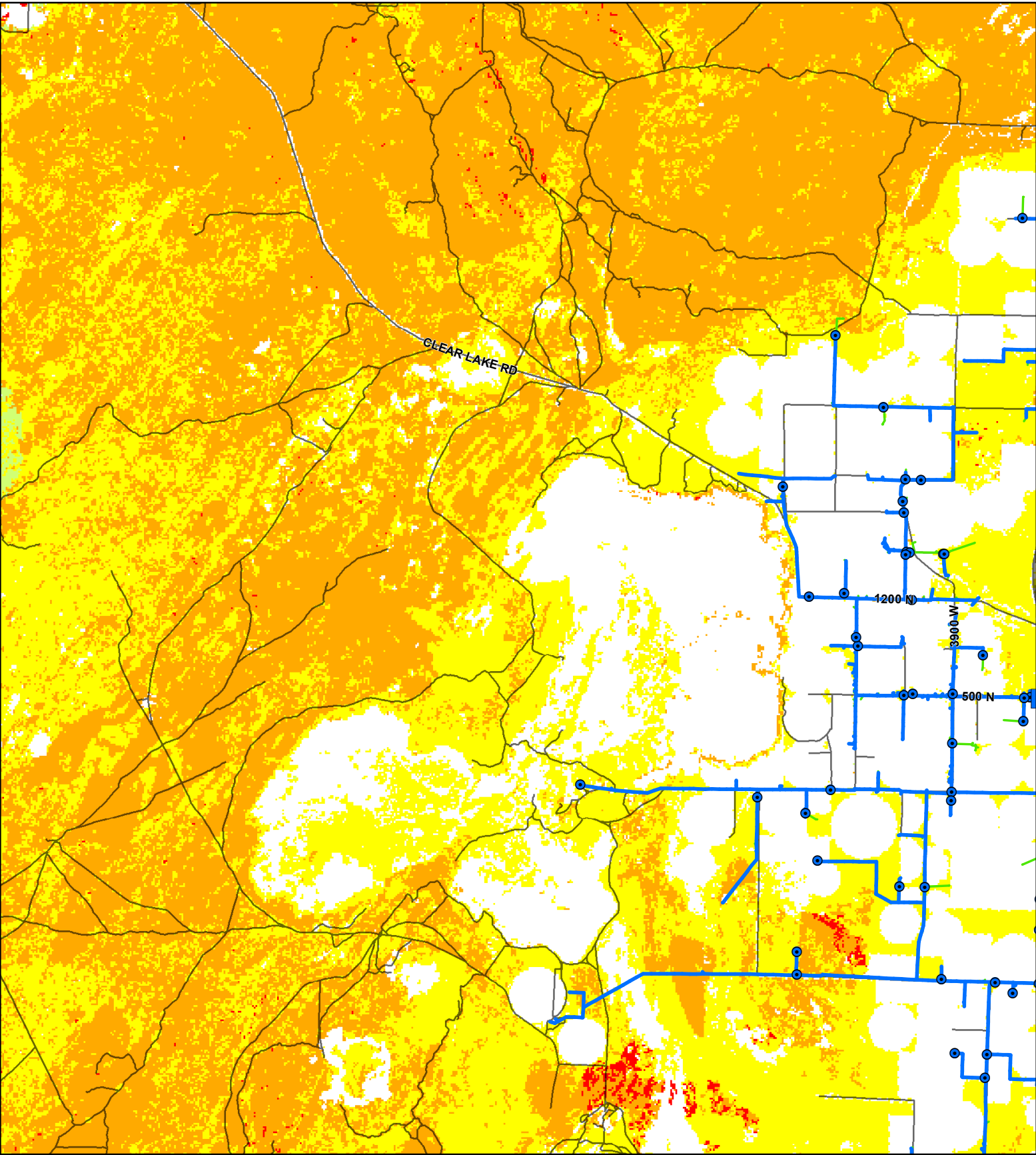
over a century with technical expertise and consensus of industry experts from all over the world.

- IVR: Interactive Voice Response system, integrates computer and telephony technology to create an automated system for callers to access information. Used for receiving a high volume of phone calls, as in the case of an outage of electrical service, or for sending a high volume of phone calls, as in the case of a planned outage of electrical service.
- kV: kilovolt, or one thousand volts, is a measure of voltage on electrical systems. k (lower case) = one thousand and V = volts.
- MCM: Thousands (M) of Circular Mils, measurement of diameter of conductor where one mil is one one-thousandth of an inch. Used in conductor sizes for wires larger than those described in the American Wire Gauge (AWG.)
- NRECA: The National Rural Electric Cooperative Association is the organization that represents the interests of the over 900 independent non-profit member-owned electric cooperatives in the United States. NRECA provides training, group insurance and retirement benefits, as well as technical advice.
- OMS: Outage Management System, is a computer system used by operators of electric distribution systems to assist in determining the location of outages using data from the GIS, SCADA, electronic meters, and phone calls, and the restoration of power.
- Overhead (OH) Distribution Lines: Bare metal power wires (typically ACSR in new lines) suspended in air via poles, crossarms, and insulators. OH distribution lines are favored in rural areas because they are significantly less expensive to build, operate, and maintain. Distribution voltages for Dixie Power are mostly 12.47kV with some 34.5kV and extend from substations to the services at homes, farms, and businesses.
- Rural Electrification Administration (REA): Predecessor to the RUS, the REA is a Federal Agency, under the USDA, that was created in 1935 to provide funding, regulations, and oversight for the one thousand rural electric cooperatives that serve 80% of the land mass in the United States.
- SCADA: Supervisory, Control, and Data Acquisition is a computerized monitoring system with which a dispatcher or operator can monitor or control the power system in the field from the office or dispatch center.
- Substations: Fenced areas of approximately one acre that contain devices to change voltage from transmission levels to distribution levels, as well as regulate the voltage on the distribution lines and interrupt the flow of current on distribution lines in the case of faults. The ground in substations is sterilized and covered in clean, dry gravel.
- Three-phase: abbreviated 3 Φ , typically when electrical current is carried over three separate conductors, all supported on the same pole and cross-arm.
- Transmission Lines: Bare metal power wires suspended in air via poles, crossarms, and insulators. Transmission lines carry power from the source of generation to the substations. Transmission voltages at Dixie Power are 34.5kV, 69kV, and 138kV. Transmission lines are necessarily overhead due to the level of insulation required for the higher voltages associated with transmission in order to cover longer distances.

- Underground (UG) Distribution Lines: Power wires covered in insulation and buried in the ground, typically inside conduit. UG distribution lines are significantly (five times) more expensive to build, operate, and maintain, and so are typically only used in urban or suburban area which tend to be more congested and concerned about the visual impacts from OH lines. Distribution voltages for Dixie Power are mostly 12.47kV with some 34.5kV and extend from substations to the services at homes, farms, and businesses.
- WCF: Worker's Compensation Fund of Utah provides workers compensation insurance for the work force in Utah and such has a vested interest in the safe work practices of the companies who are their customers. Premiums are set by industry and are modified for each individual company via e-mod, depending on that company's safety record.

Appendix D: Maps of Dixie Power's lines relative to areas of Wildfire Hazard Potential

WILDFIRE HAZARD POTENTIAL - FLOWELL AREA PAGE F1



-  Fuse

 Substation

 Overhead Powerline

 Underground Powerline
-  Line Comment

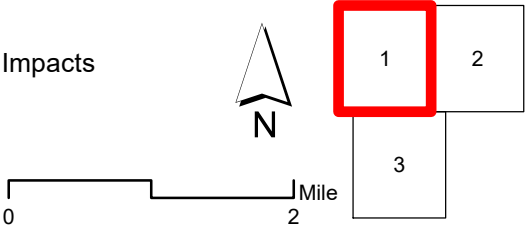
 Very High

 High

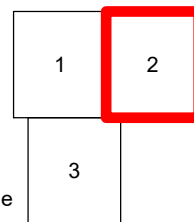
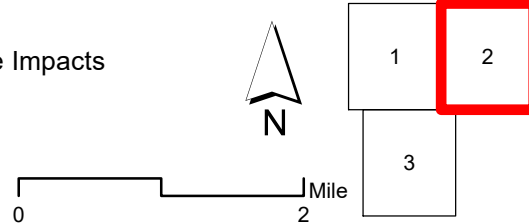
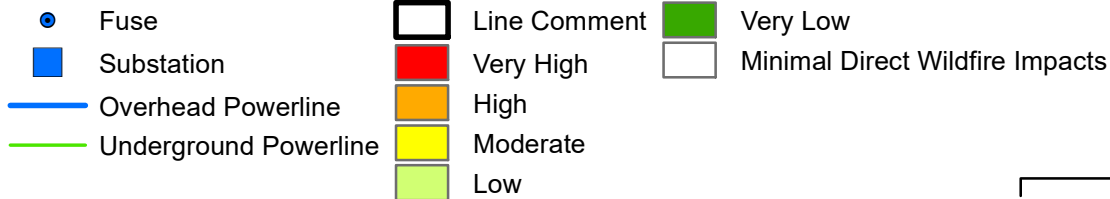
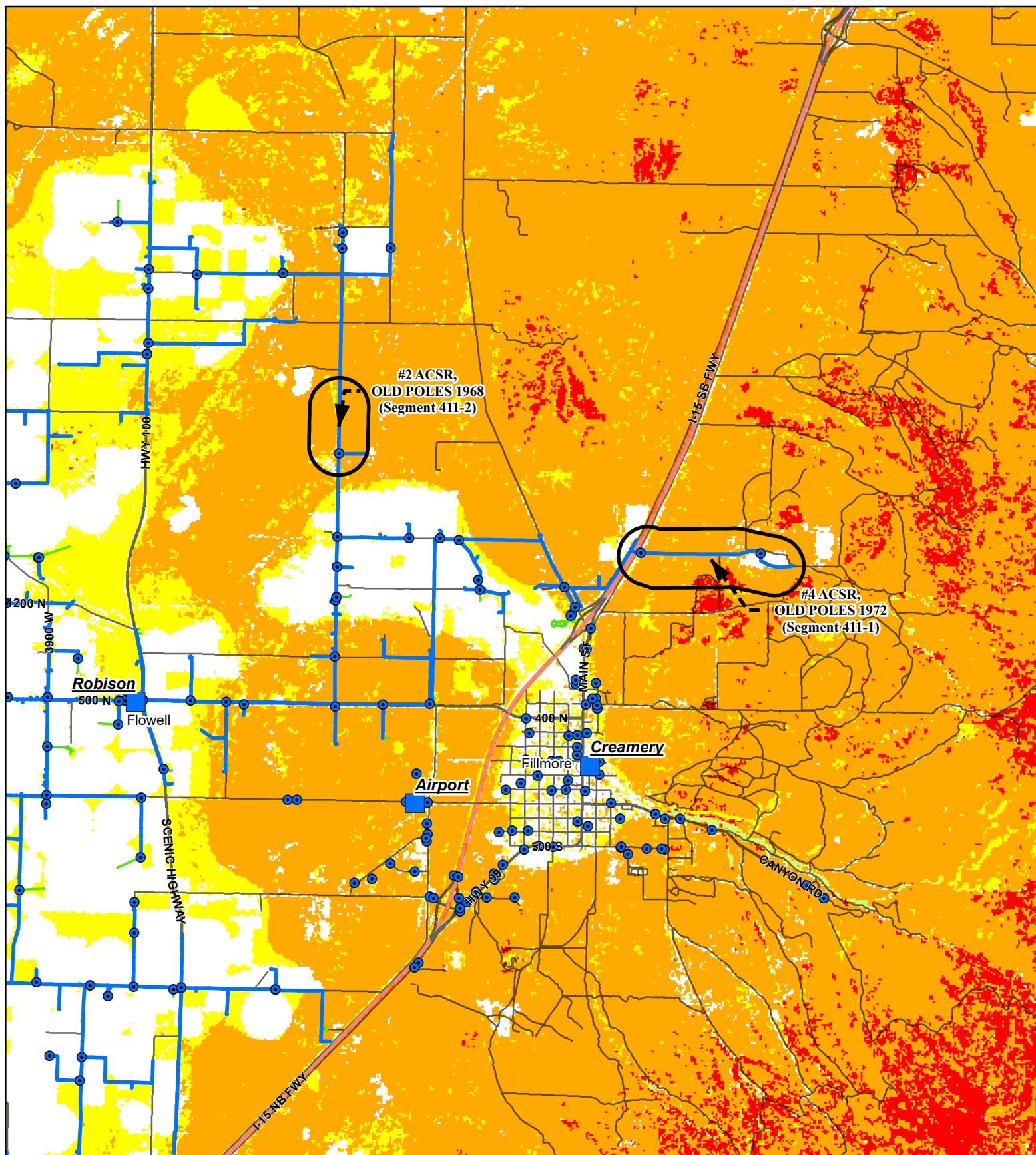
 Moderate

 Low
-  Very Low

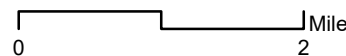
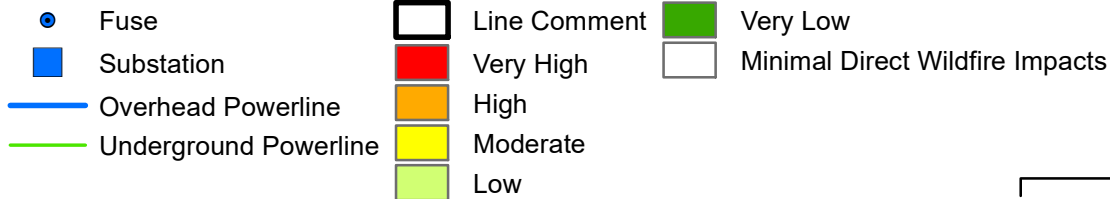
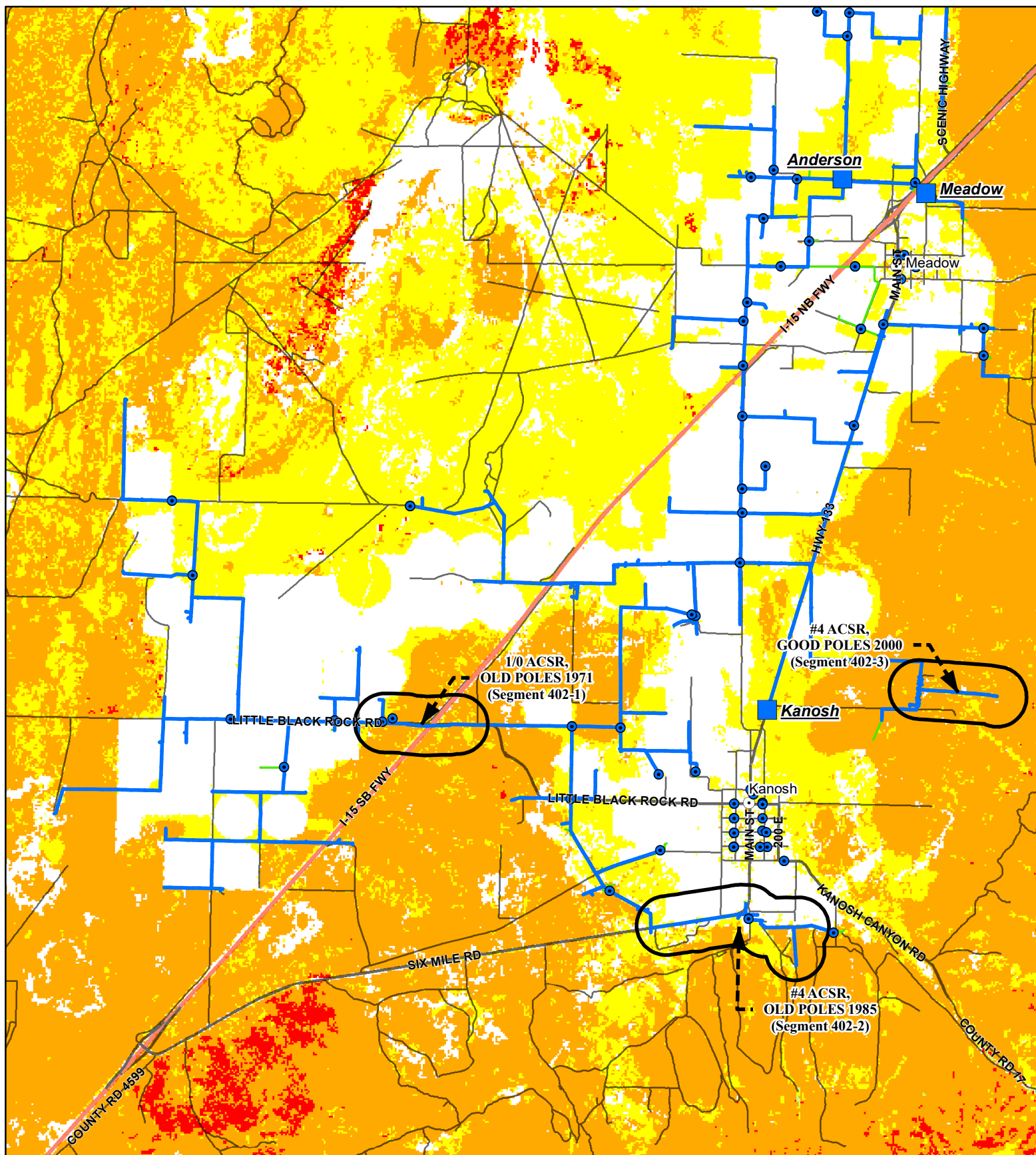
 Minimal Direct Wildfire Impacts



WILDFIRE HAZARD POTENTIAL - FLOWELL AREA PAGE F2

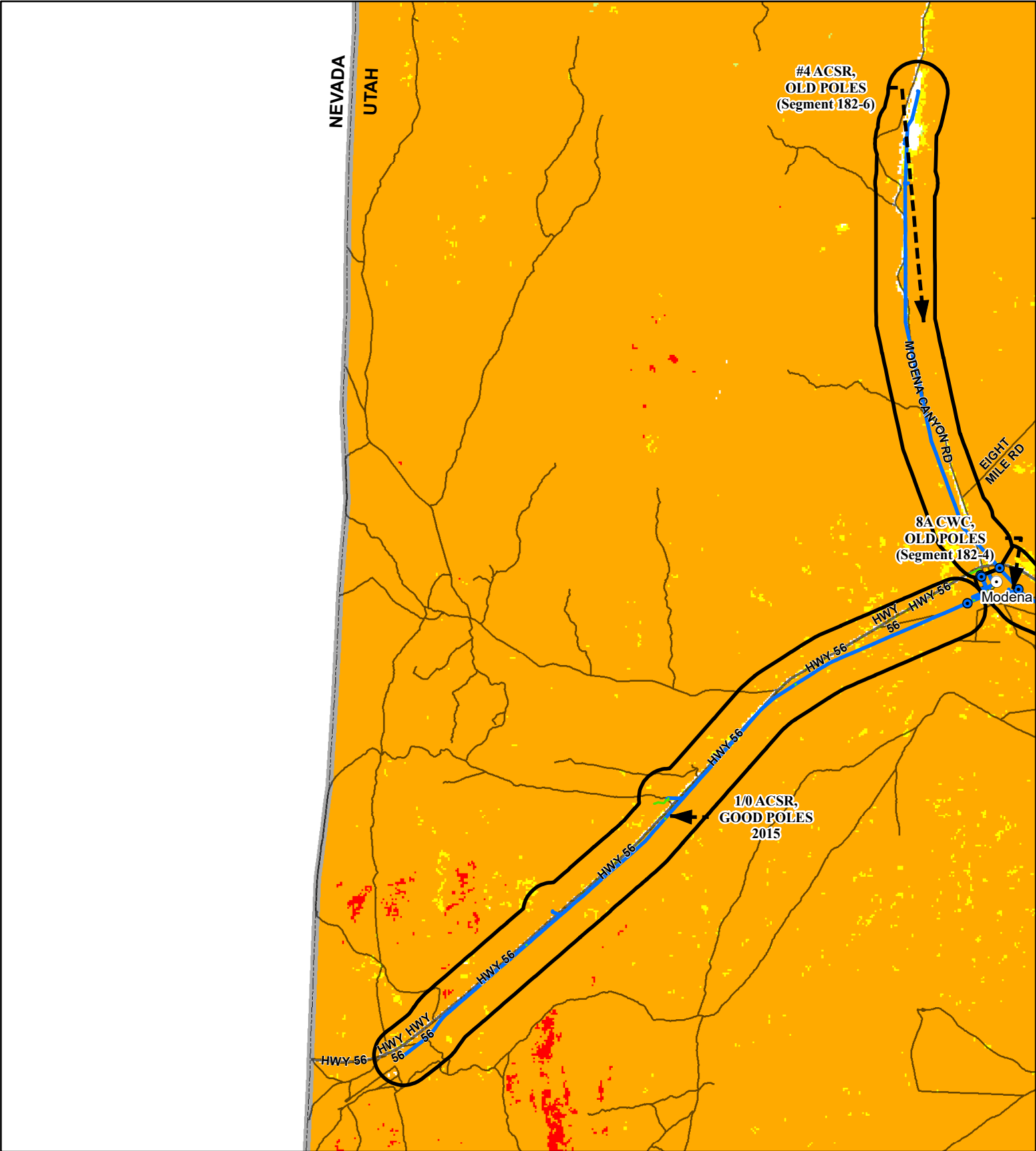


WILDFIRE HAZARD POTENTIAL - FLOWELL AREA PAGE F3

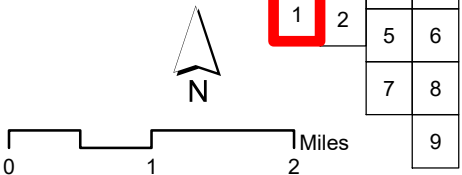


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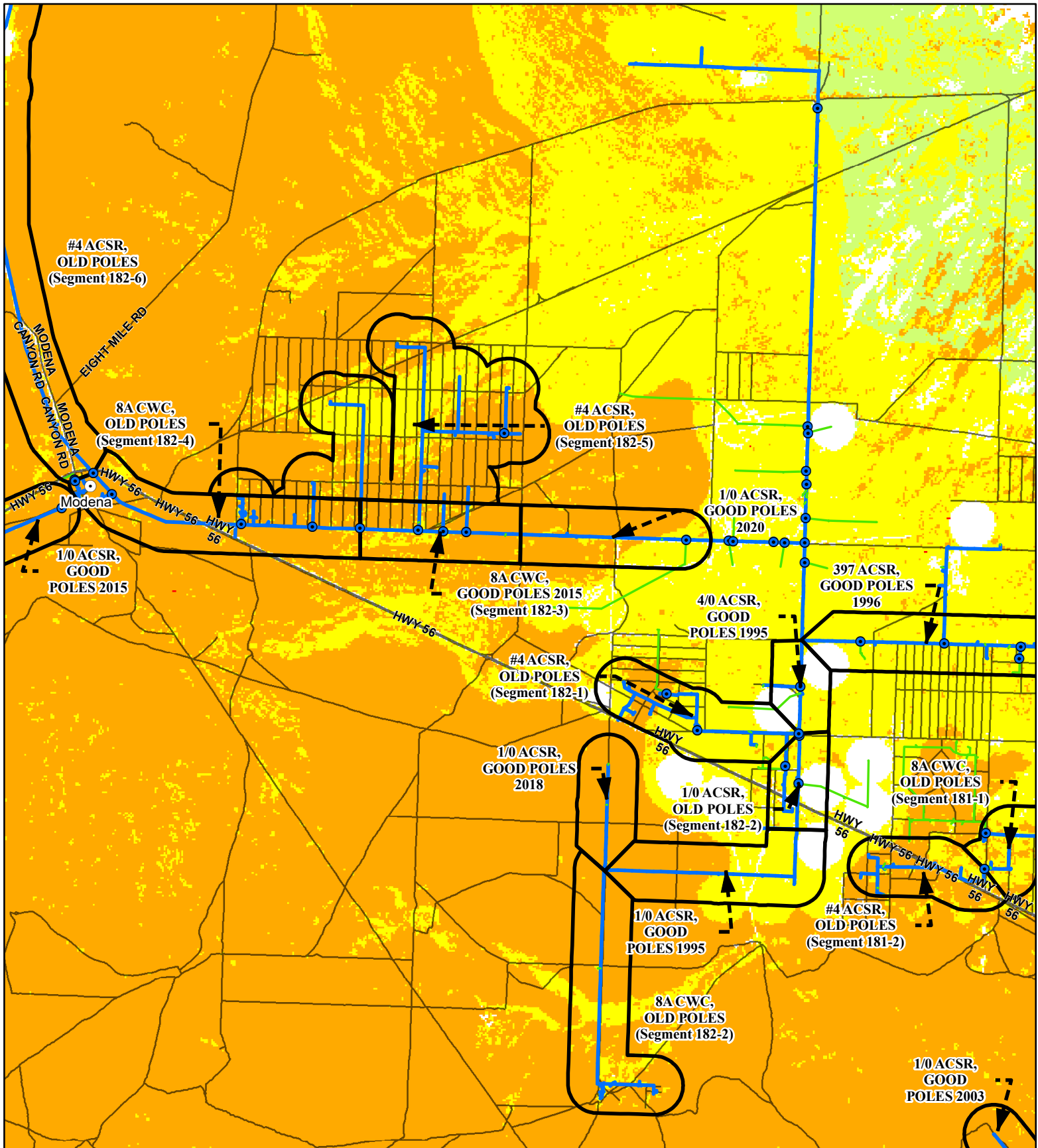
WILDFIRE HAZARD POTENTIAL - BERYL AREA PAGE B1



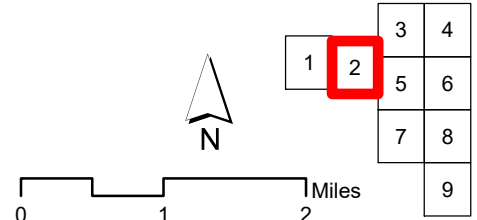
- Fuse
- Overhead Powerline
- Underground Powerline
- State Boundary
- Line Comment
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts



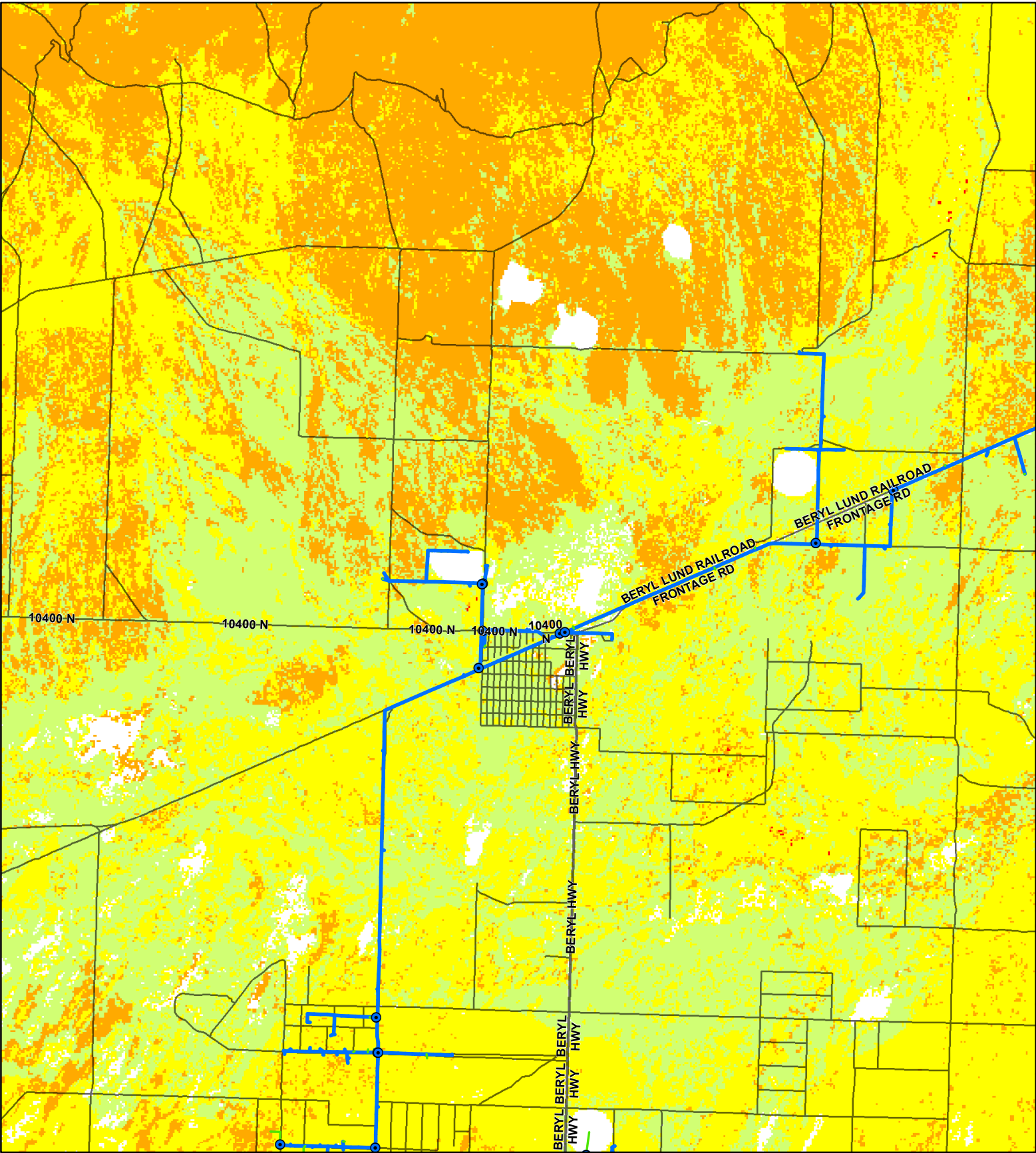
WILDFIRE HAZARD POTENTIAL - BERYL AREA PAGE B2



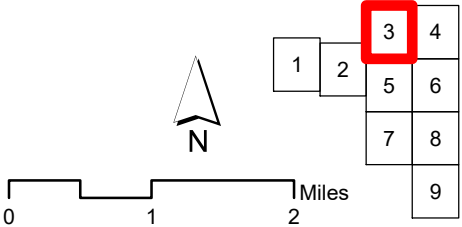
- Fuse
- Overhead Powerline
- Underground Powerline
- Line Comment
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts



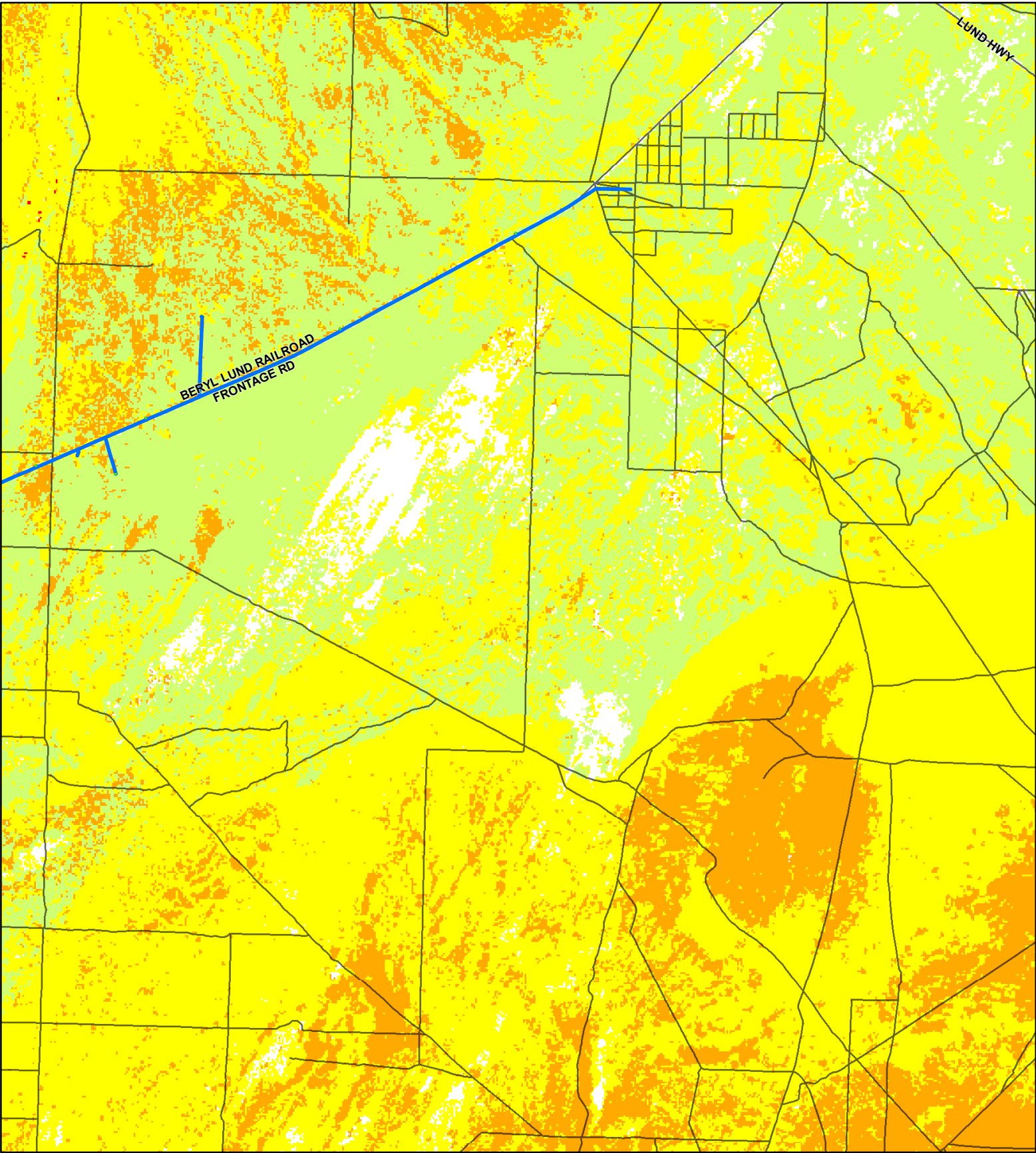
WILDFIRE HAZARD POTENTIAL - BERYL AREA PAGE B3



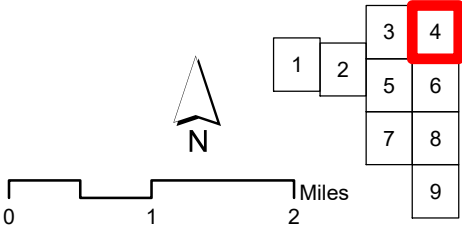
- Fuse
- Overhead Powerline
- Underground Powerline
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts



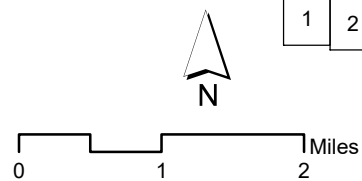
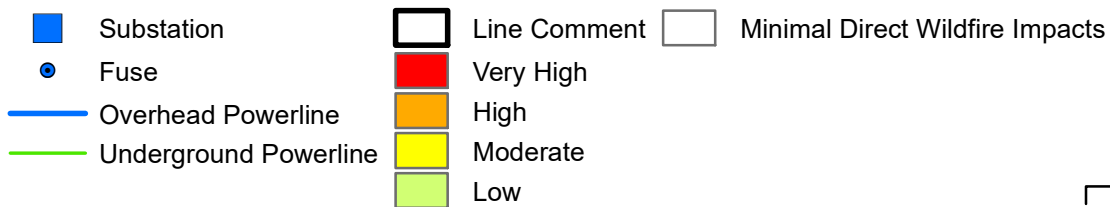
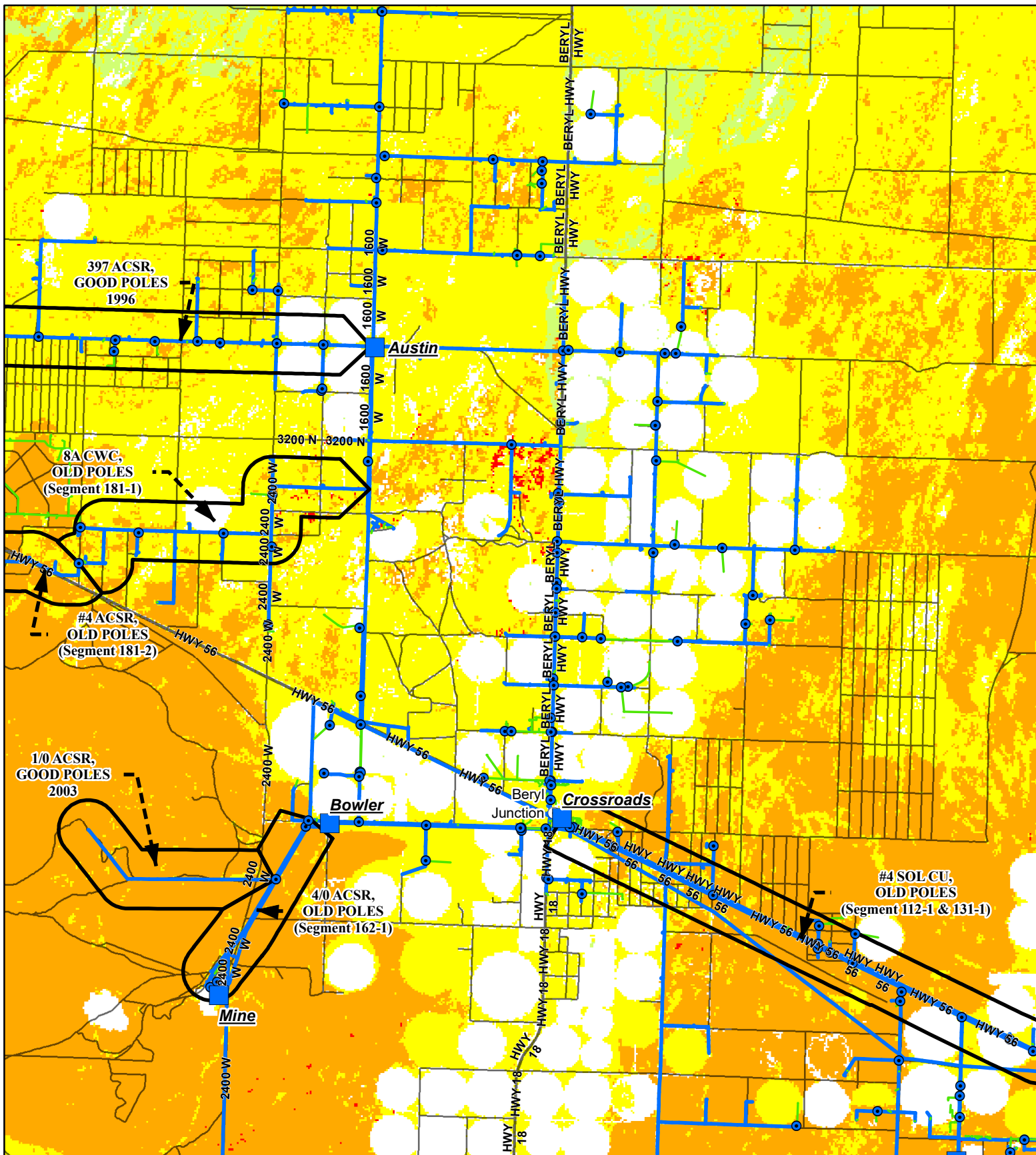
WILDFIRE HAZARD POTENTIAL - BERYL AREA PAGE B4



- Overhead Powerline
- Underground Powerline
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts



WILDFIRE HAZARD POTENTIAL - BERYL AREA PAGE B5

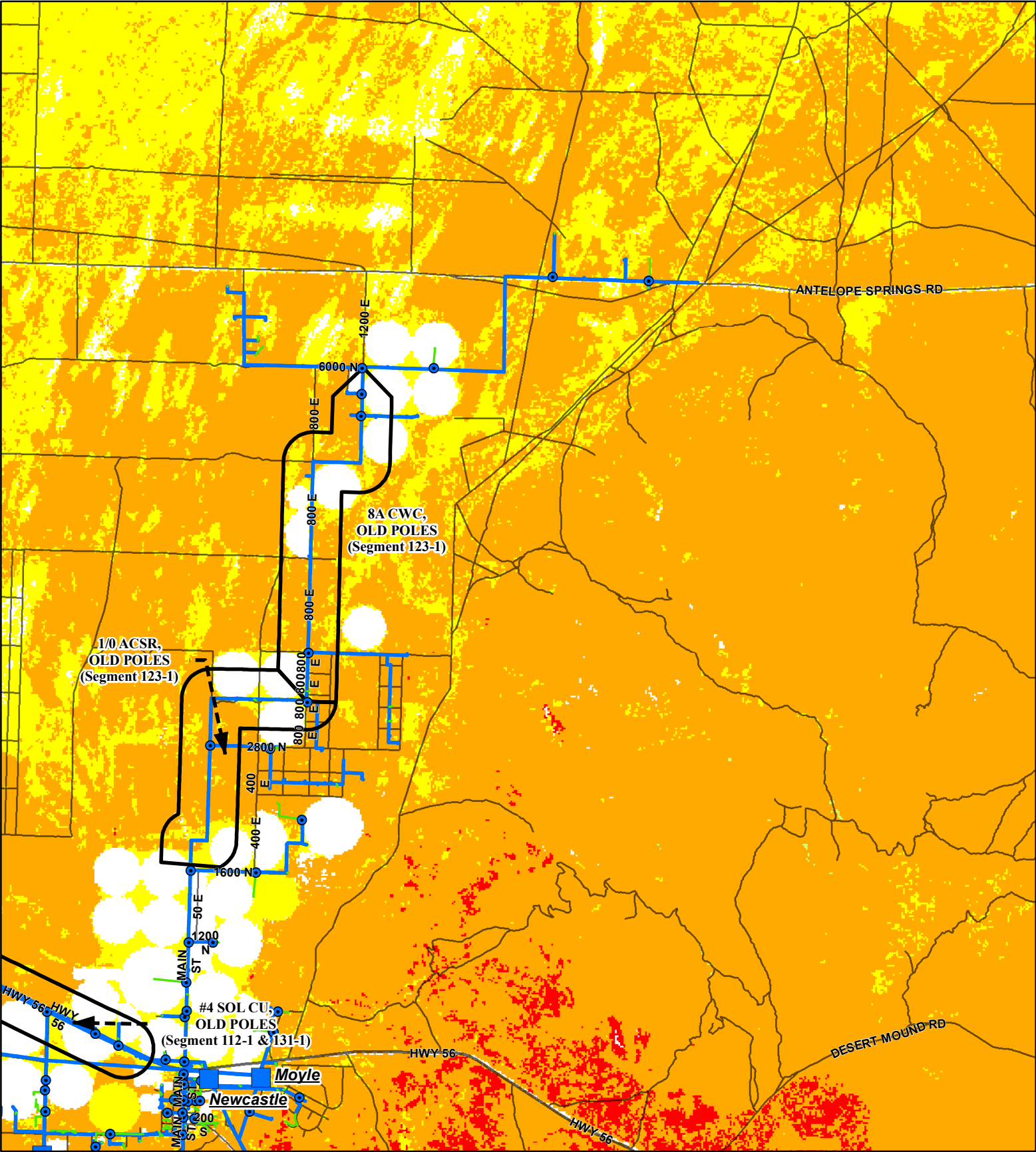


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		7	8

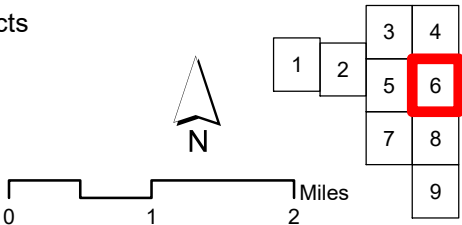
Miles

2

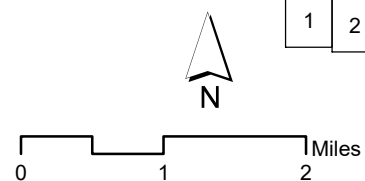
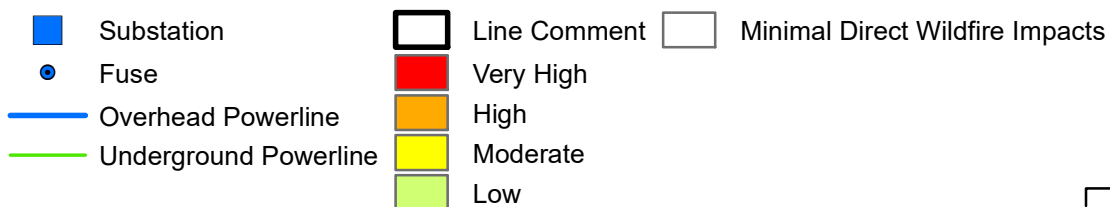
WILDFIRE HAZARD POTENTIAL - BERYL AREA PAGE B6



- Substation
- Fuse
- Overhead Powerline
- Underground Powerline
- Line Comment
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts

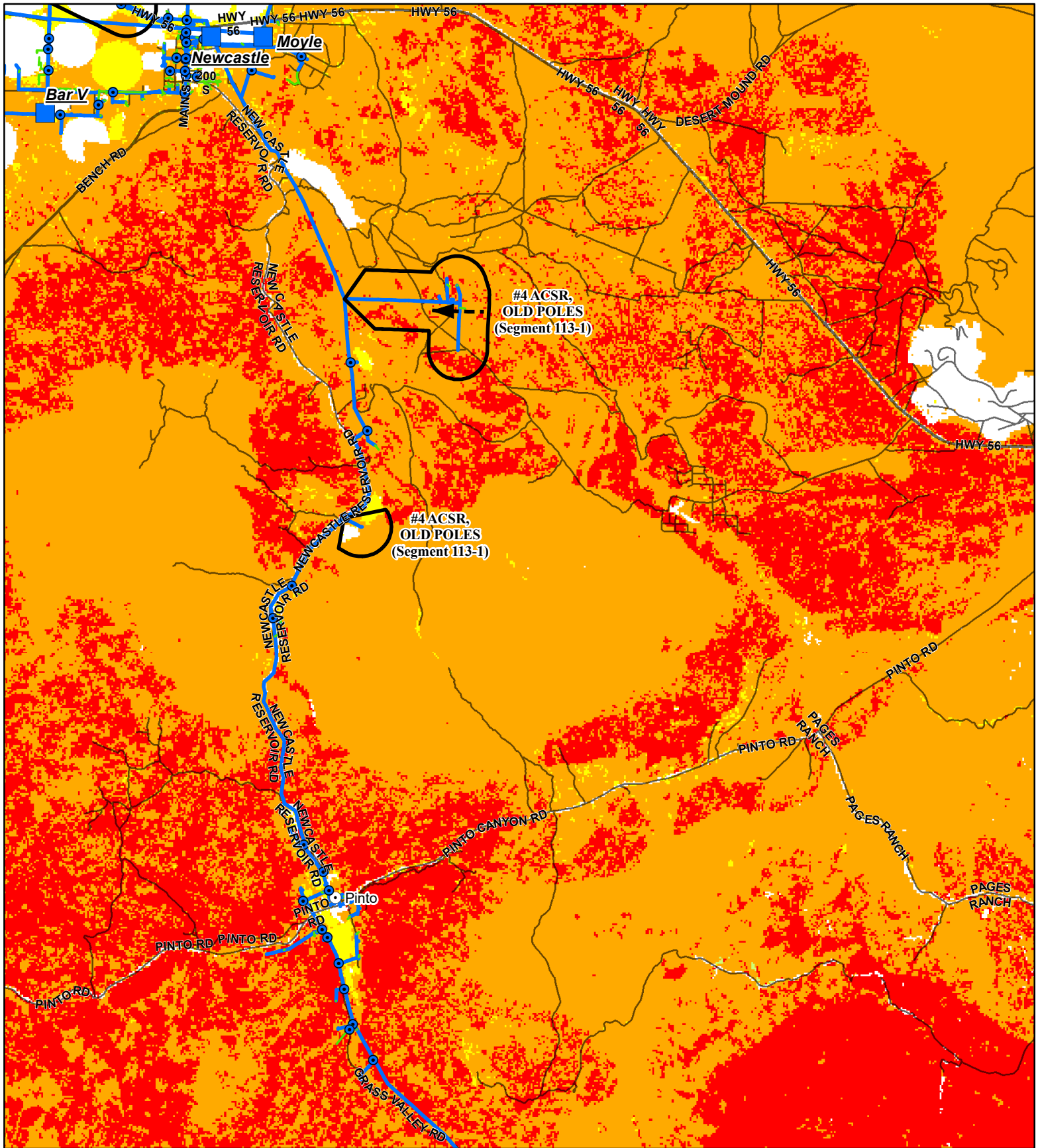


The map displays the 1/0 ACSR, GOOD POLES 2017 for Enterprise, Oregon. The power line route is shown in blue, with a specific section highlighted in black. The map includes a grid of streets and highways, with labels for Main St, Hwy 18, Bench Rd, and Pinto Rd. The background is a color-coded map showing terrain and land use.

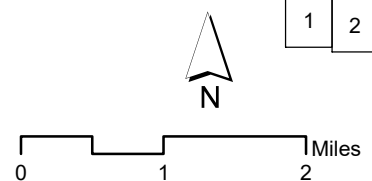


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		7	8
			9

WILDFIRE HAZARD POTENTIAL - BERYL AREA PAGE B8

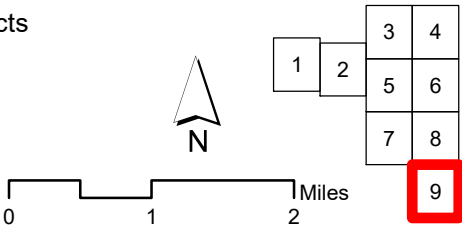
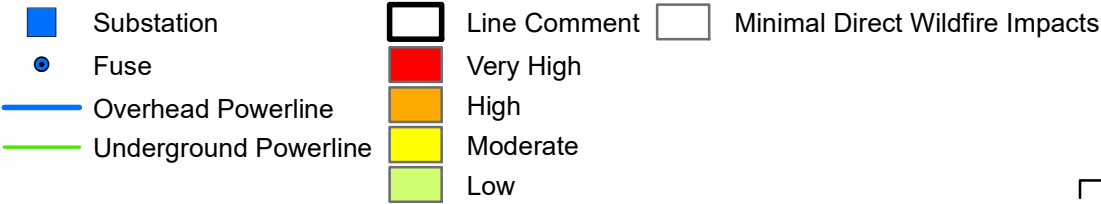
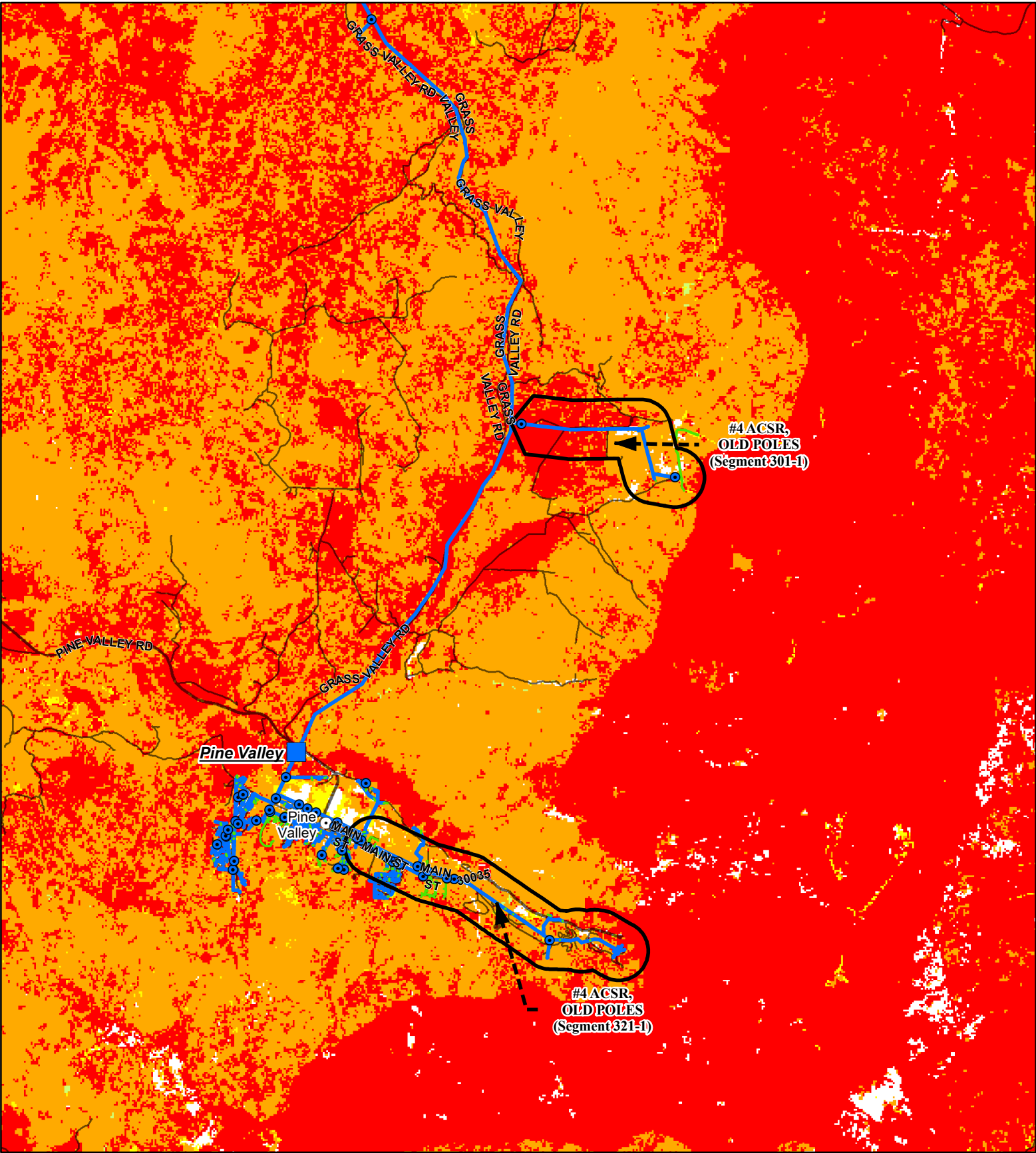


- Substation
- Fuse
- Overhead Powerline
- Underground Powerline
- Line Comment
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts

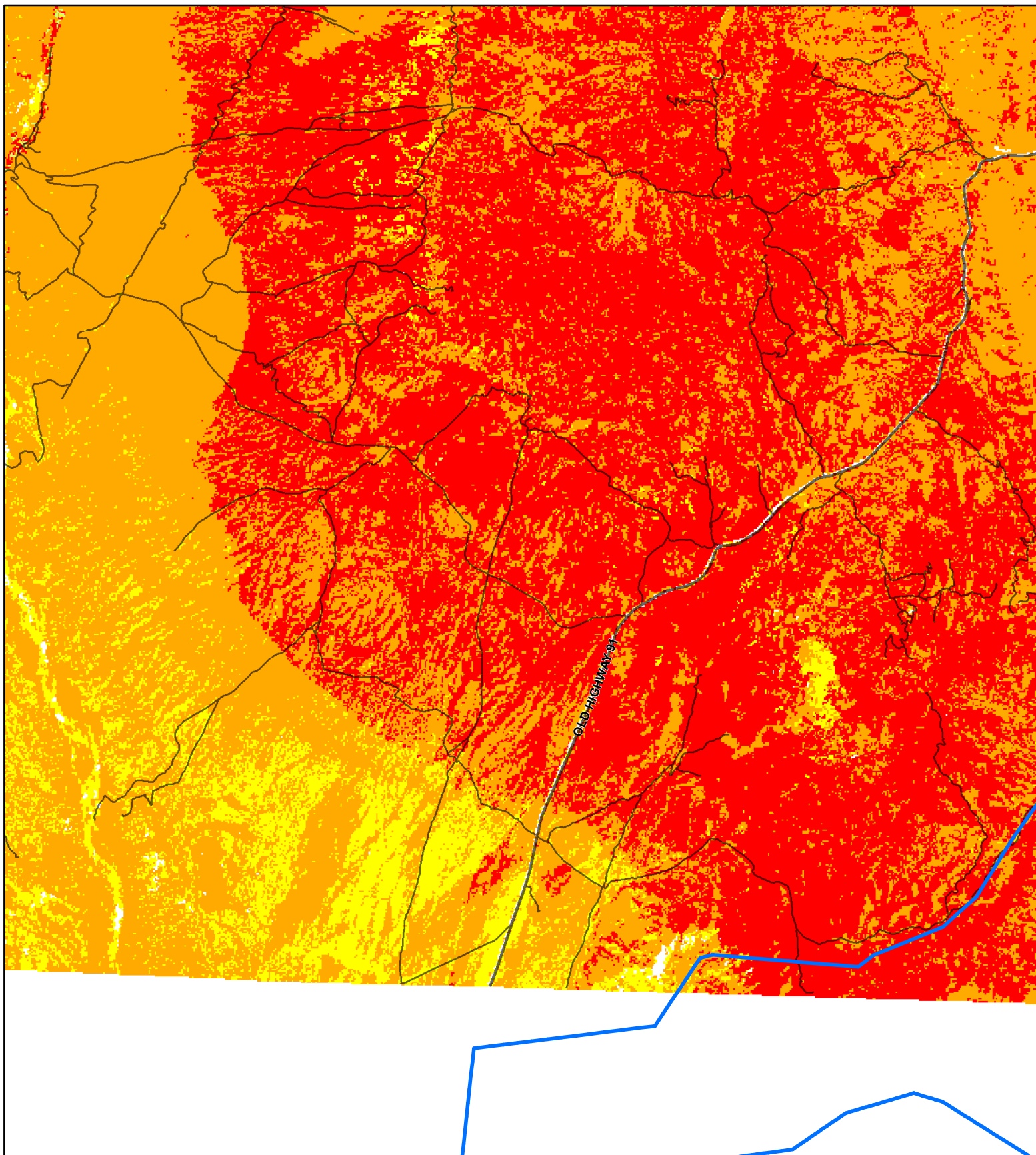


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1	2	5	6
		7	8
			9

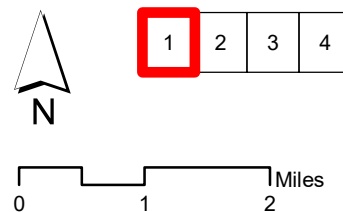
WILDFIRE HAZARD POTENTIAL - BERYL AREA PAGE B9



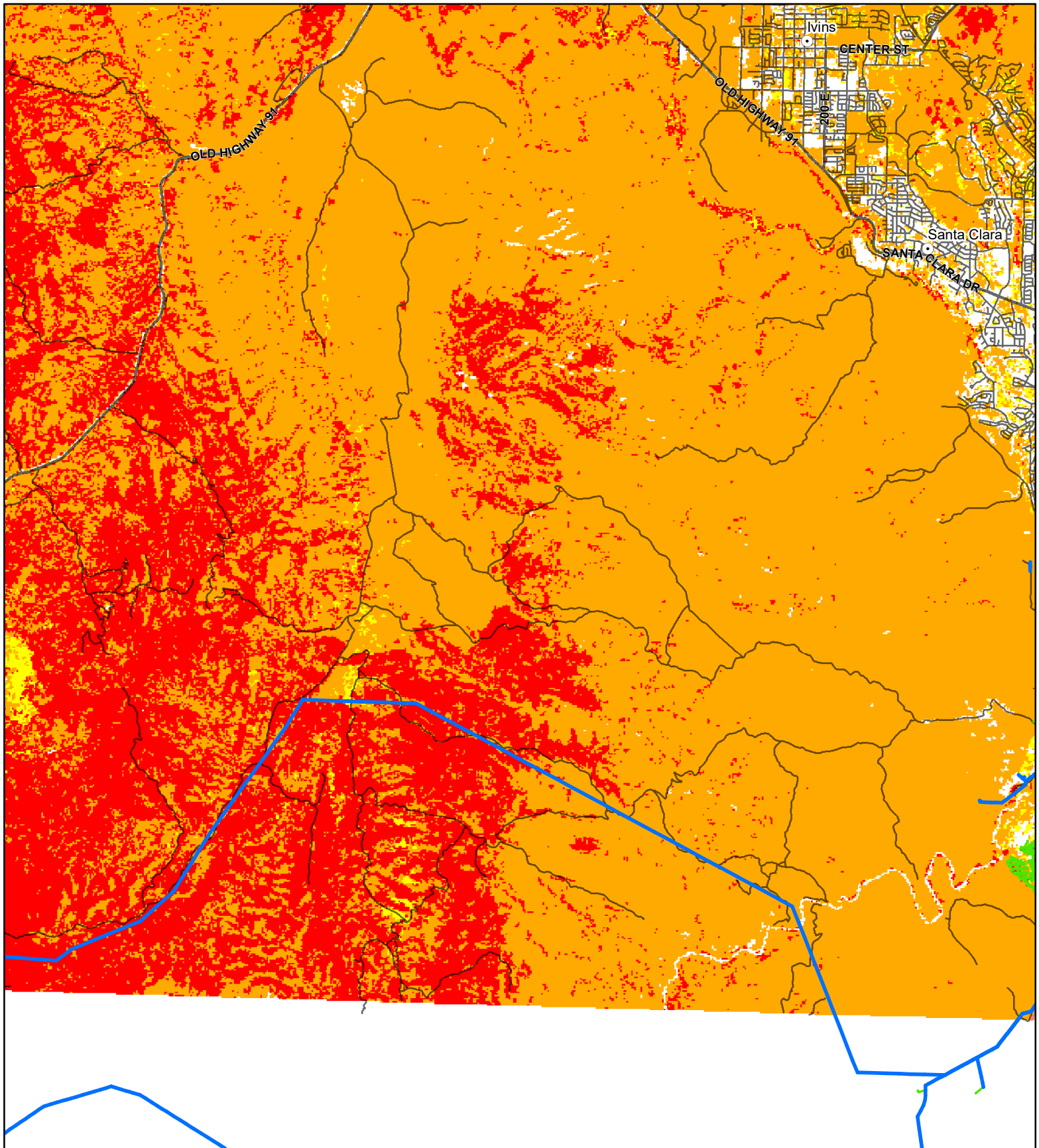
WILDFIRE HAZARD POTENTIAL - DIXIE AREA PAGE D1



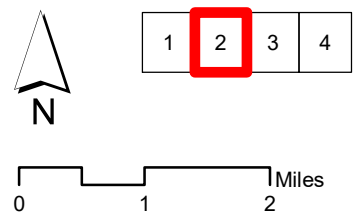
- Overhead Powerline
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts



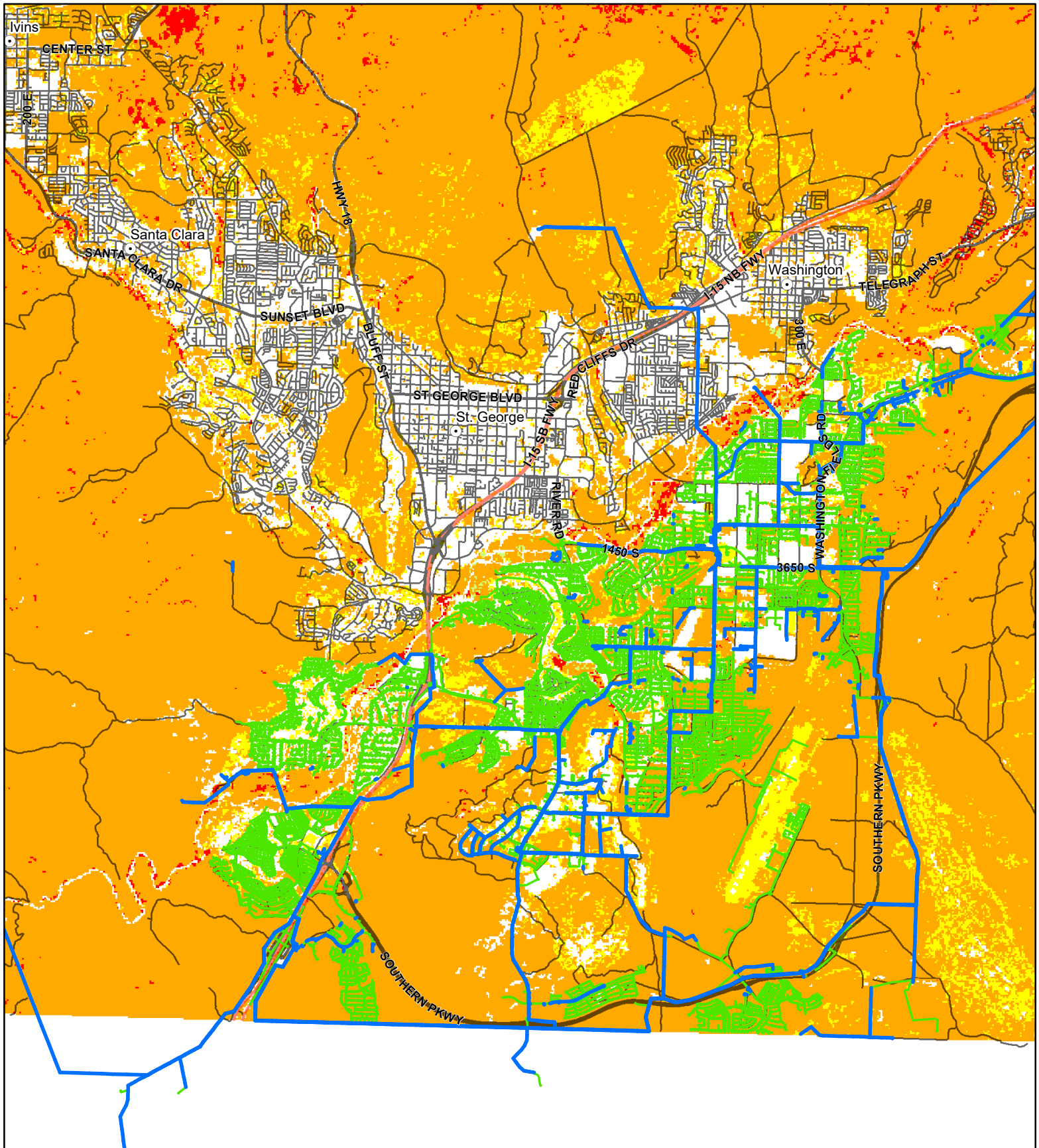
WILDFIRE HAZARD POTENTIAL - DIXIE AREA PAGE D2



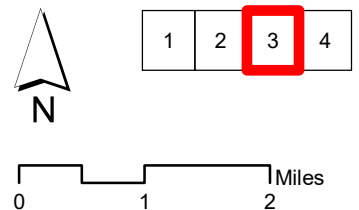
- Overhead Powerline
- Underground Powerline
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts



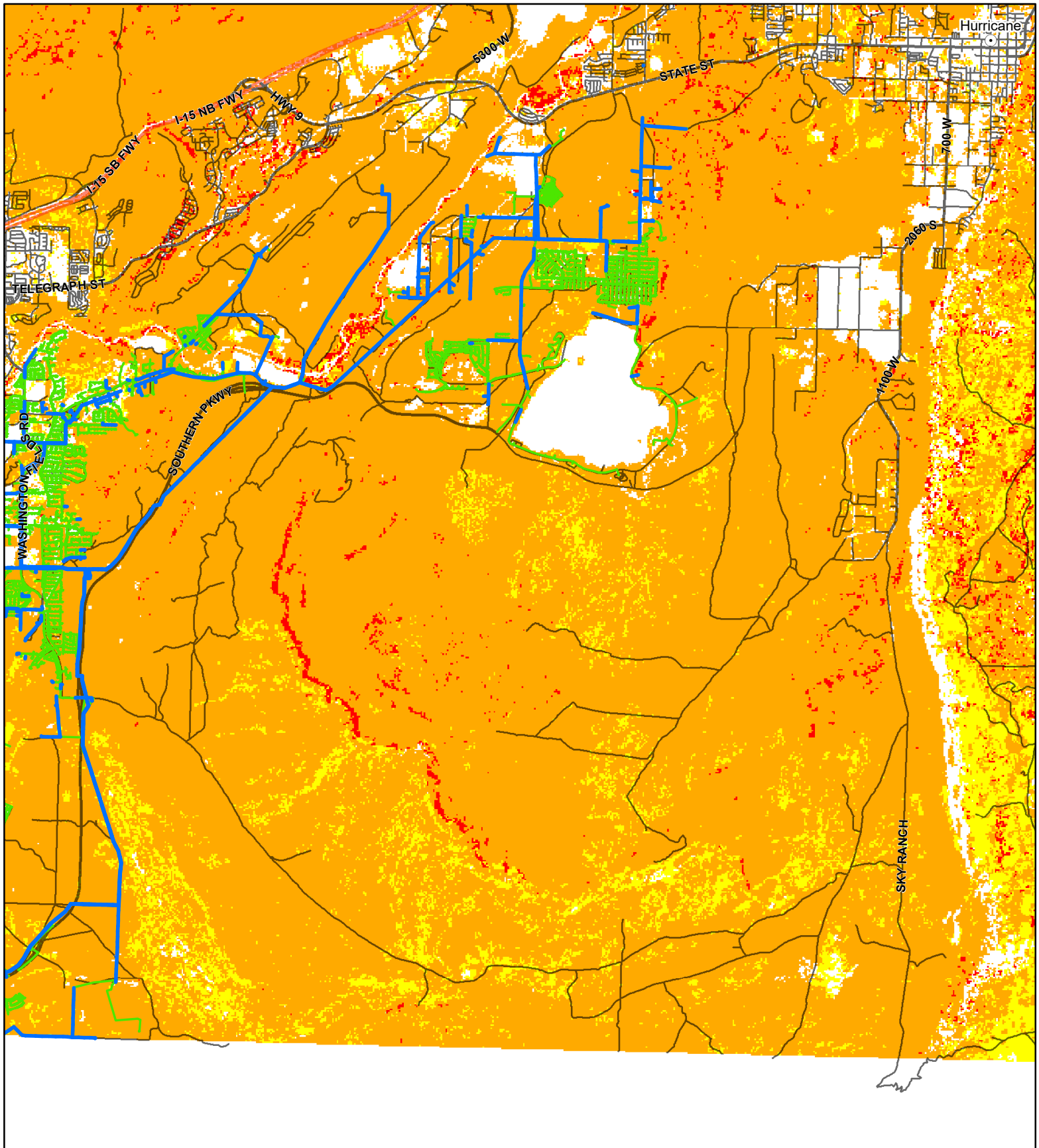
WILDFIRE HAZARD POTENTIAL - DIXIE AREA PAGE D3



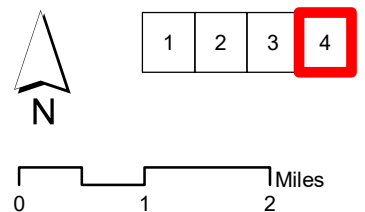
- Overhead Powerline
- Underground Powerline
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts



WILDFIRE HAZARD POTENTIAL - DIXIE AREA PAGE D4

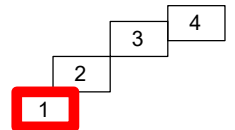
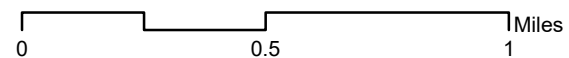
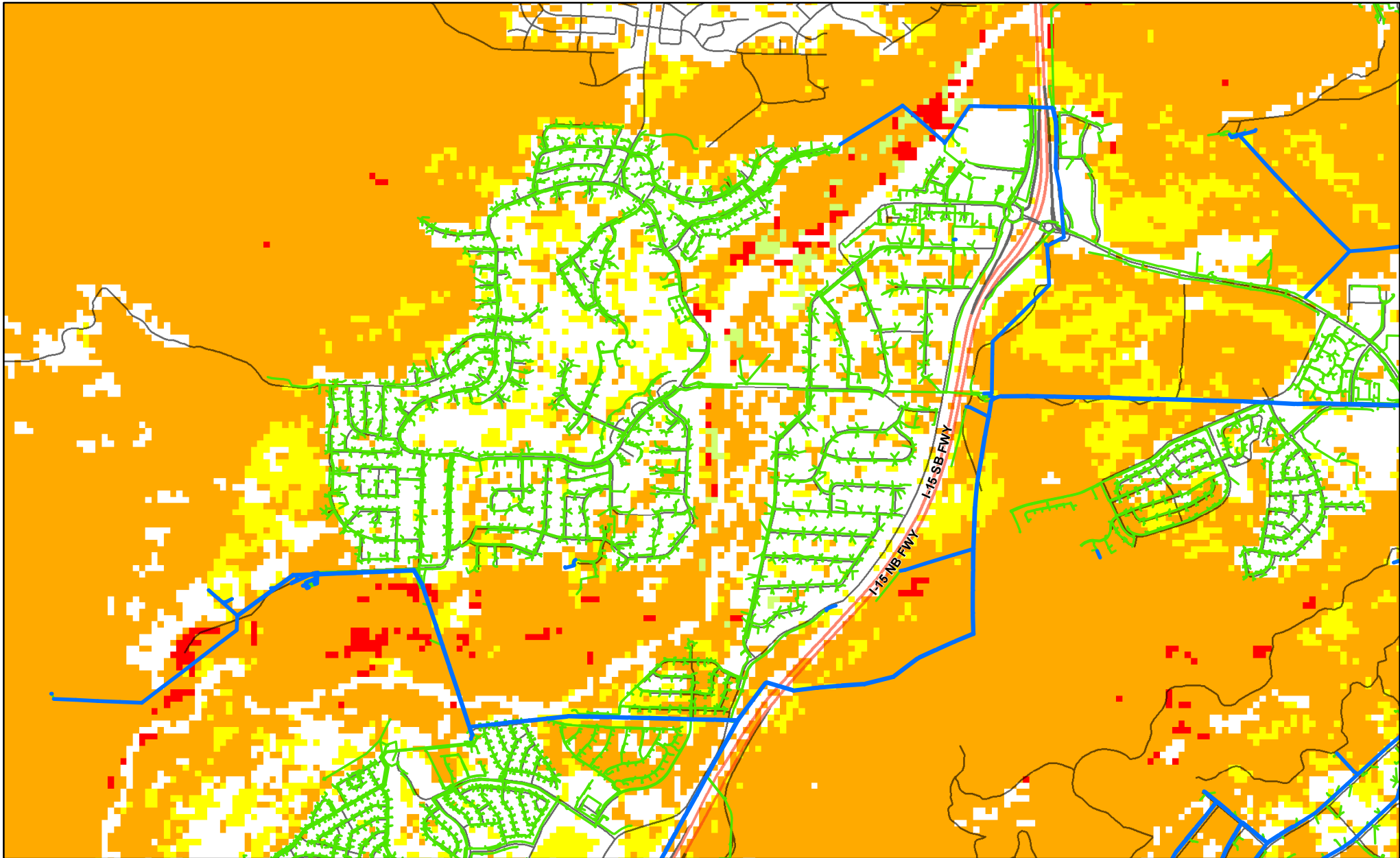


- Overhead Powerline
- Underground Powerline
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts

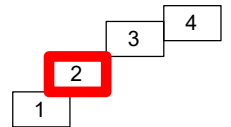
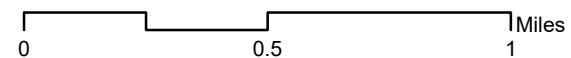
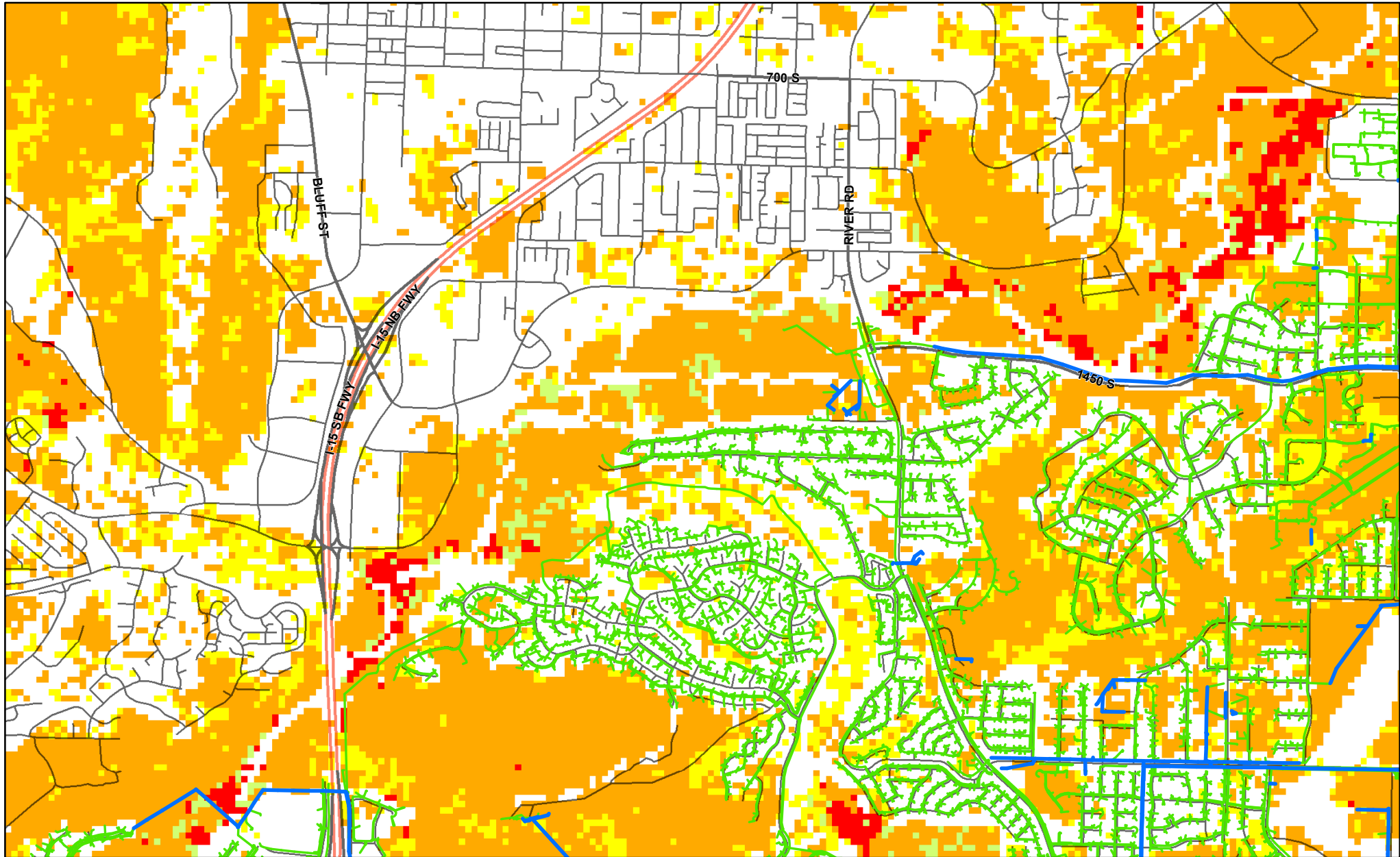


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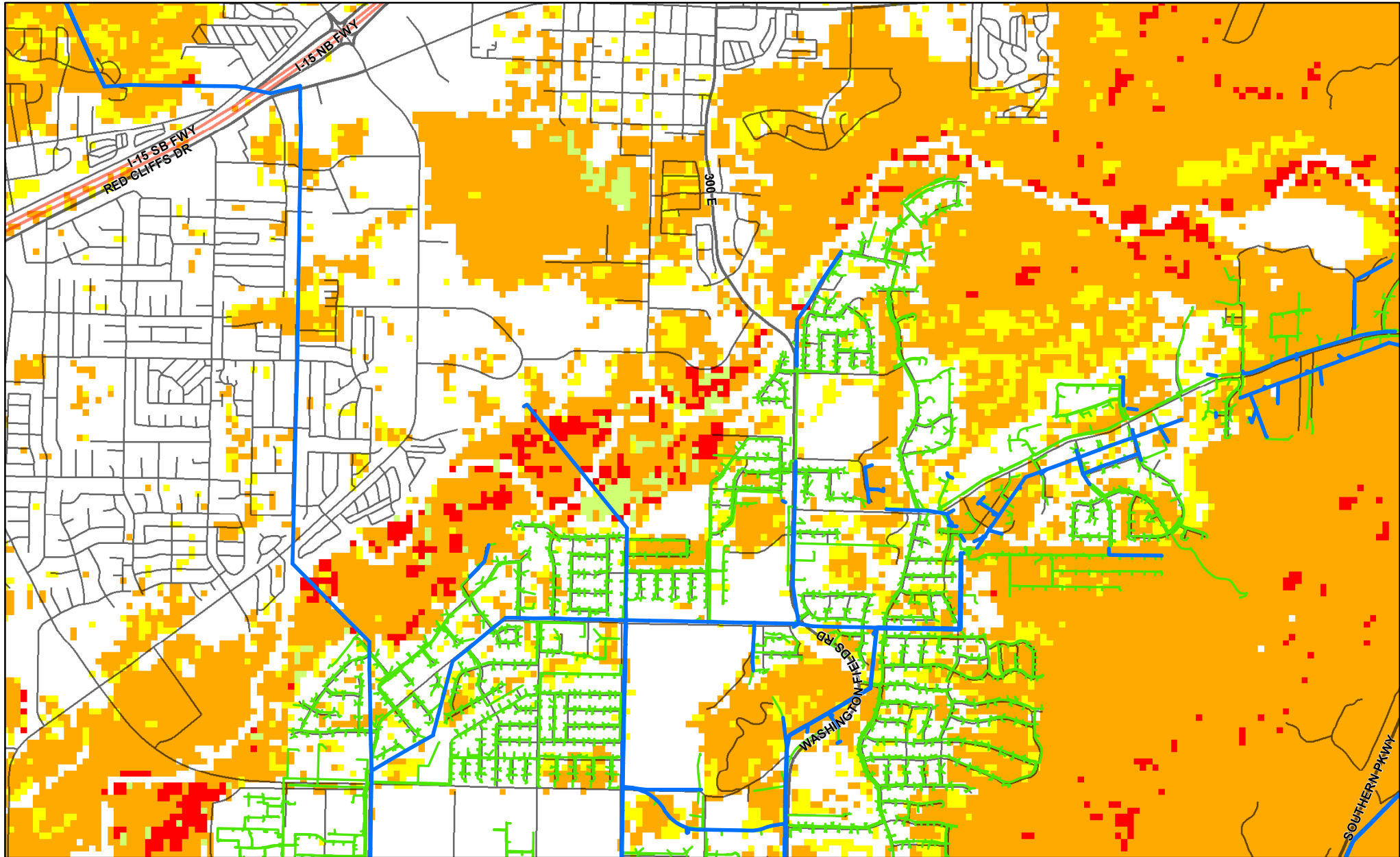
WILDFIRE HAZARD POTENTIAL - DIXIE HIGH THREAT AREAS PAGE 1



WILDFIRE HAZARD POTENTIAL - DIXIE HIGH THREAT AREAS PAGE 2



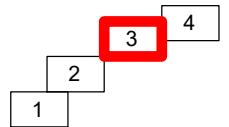
WILDFIRE HAZARD POTENTIAL - DIXIE HIGH THREAT AREAS PAGE 3



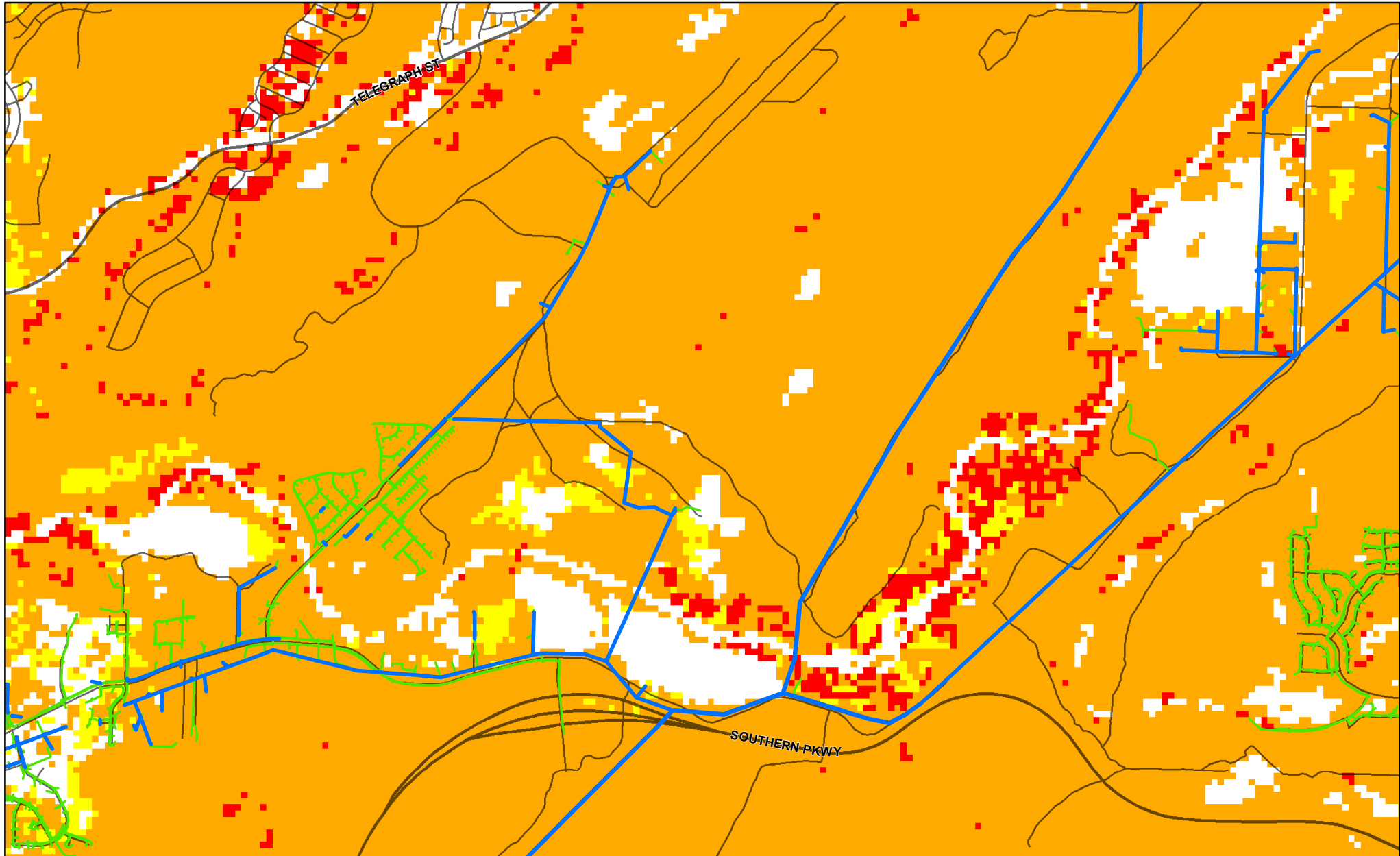
- Overhead Powerline
- Underground Powerline
- Very High
- High
- Moderate
- Low
- Minimal Direct Wildfire Impacts



0 0.5 1 Miles



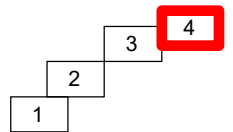
WILDFIRE HAZARD POTENTIAL - DIXIE HIGH THREAT AREAS PAGE 4



- Overhead Powerline
- Underground Powerline
- Very High
- High
- Moderate
- Minimal Direct Wildfire Impacts



0 0.5 1 Miles



Appendix E: Inspection Rubrics for RESAP Section 17: Overhead & Underground Lines, Equipment, etc.

Section 17: Overhead & Underground Lines, Equipment, etc.

1) Overhead and underground system circuit maps or files are available, and the master is updated every 3 months at a minimum.

Criteria:

- Procedures are in place for conveying system circuit changes to crews.
- System circuit maps or files are available in the maintenance and construction vehicles.
- Sufficient supplies of system circuit maps or pertinent sections are readily available for crews in case of emergency.
- Weekly updating of all electronic mapping information "evaluate as exceeds".

ref: NESC Section 442 Switching Control Procedures

- ☐ Exceeds Requirements
- ☐ Satisfies All Requirements
- ☐ Partially Satisfies Requirements
- ☐ Fails to Satisfy Requirements
- ☐ N/A

Comments:

2) Guy wires observed are in tension, and guys are marked for visibility.

ref: RUS BULLETIN 1724E-153 / NESC 217C

- ☐ Exceeds Requirements
- ☐ Satisfies All Requirements
- ☐ Partially Satisfies Requirements
- ☐ Fails to Satisfy Requirements
- ☐ N/A

Comments:

3) Observed construction and maintenance of lines and structures meet the applicable NESC standards and RUS specifications.

ref: NESC Section 214(A)(2); NESA Section 22 (Relations between various classes of line and equipment); NESC Section 23 (Clearances); RUS BULLETIN 1728F-804 / Bulletin 50-6

- ☐ Exceeds Requirements
- ☐ Satisfies All Requirements
- ☐ Partially Satisfies Requirements
- ☐ Fails to Satisfy Requirements
- ☐ N/A

Comments:

4) Right-of-ways observed are maintained and in good condition.

ref: NESC Section 218-A-1 (Vegetation Management)

- ☐ Exceeds Requirements
- ☐ Satisfies All Requirements
- ☐ Partially Satisfies Requirements
- ☐ Fails to Satisfy Requirements
- ☐ N/A

Comments:

5) UG riser installations observed meet applicable NESC, RUS specifications, and the following industry criteria.

Criteria:

- Cables are identified and tagged to correspond with the system's underground tagging and cable identification system.
- Riser installations are numbered or identified and consistent with the overall underground system.
- Riser installations have proper clearances and proper climbing space.

ref: NESC Section 36 (Risers); RUS Bulletin 50-6

- ☐ Exceeds Requirements
- ☐ Satisfies All Requirements
- ☐ Partially Satisfies Requirements

- ☐ Fails to Satisfy Requirements
☐ N/A

Comments:

6) UG transformers and enclosures are properly bolted and locked.
ref: NESC Section 381(G)(1)

- ☐ Exceeds Requirements
☐ Satisfies All Requirements
☐ Partially Satisfies Requirements
☐ Fails to Satisfy Requirements
☐ N/A

Comments:

7) Appropriate hazard identification signs are in place for underground transformers, cabinets, and enclosures.

Criteria:

- Permanent WARNING signs are displayed on outside of underground transformers and enclosures.
 - Permanent DANGER signs are on the inside of underground transformers and enclosures.
- ref: ANSI Z535 NESC 381(G)(2)

- ☐ Exceeds Requirements
☐ Satisfies All Requirements
☐ Partially Satisfies Requirements
☐ Fails to Satisfy Requirements
☐ N/A

Comments:

8) UG enclosures are marked with labels and cables and are labeled with suitable identification methods and/or durable tags to confirm the correct enclosure, to identify cables, to distinguish phases, etc., for utility worker safety during normal operation and troubleshooting activities.

Criteria:

- The identification information should match the same information shown on system maps.
- The identification method used should be durable and suitable for outside weather conditions.

ref: NESC Section 372 (Identification)

- ☐ Exceeds Requirements
- ☐ Satisfies All Requirements
- ☐ Partially Satisfies Requirements
- ☐ Fails to Satisfy Requirements
- ☐ N/A

Comments:

9) Underground facilities construction, maintenance, and clearances meet applicable NESC and RUS specifications.

Criteria:

- Enclosures are level and free of washouts, weeds, debris, and wildlife.
- Entrances to enclosures are unobstructed.

ref: NESC Section 311 (Installation and Maintenance); NESC Section 313(A)(2)

- ☐ Exceeds Requirements
- ☐ Satisfies All Requirements
- ☐ Partially Satisfies Requirements
- ☐ Fails to Satisfy Requirements
- ☐ N/A

Comments:

Section 17: Summary

The overall evaluation of the onsite field observation team for this section of the assessment is as follows:

Criteria

- Strong performance - Questions evaluated as exceeds or satisfies all requirements.
- Satisfactory performance - Questions evaluated as satisfies all requirements, could be a small number evaluated as exceeds.
- Generally satisfactory with minor areas for improvement - Questions evaluated as satisfies all or most requirements, improvement areas are minor.
- Key attention areas for improvement - Questions evaluated as partially satisfies or fails to satisfy requirements in important improvement areas.

☐ Strong Performance

☐ Satisfactory Performance

☐ Generally Satisfactory

☐ Key Attention Areas for Improvement

☐ N/A

Comments:

Appendix F: Right of Way and Vegetation Management Standards

7 CFR Part 1728: Bulletin 1728F-804 (overhead distribution line), Section M, Specifications for Right-Of-Way Clearing

The right-of-way shall be prepared by removing trees, clearing underbrush, and trimming trees so that the right-of-way is cleared close to the ground and to the width specified. However, low growing shrubs, which will not interfere with the operation or maintenance of the line, can be left undisturbed if so directed by the property owner. Slash may be chipped and blown on the right-of-way if so allowed. Trim, but do not remove shade, fruit, or ornamental trees unless otherwise authorized.

All trimming shall be done using good arboricultural practices.

The landowner's written permission is usually required prior to cutting trees outside of the right-of-way. Trim trees fronting each side of the right-of-way symmetrically unless otherwise specified. Remove dead trees beyond the right-of-way which would strike the line in falling. Also, either remove or top leaning trees beyond the right-of-way that would strike the line in falling.

7 CFR Part 1728: Bulletin 1728F-811, (Transmission Lines) Page 2-1

2. CLEARING

2.1 General Requirements

2.1.1 Clearing units specified may cover full width right-of-way clearing, selective clearing, tree topping, spraying of herbicides, or other forms of right-of-way preparation. Only those areas shown on the drawings or specified by the engineer shall be cleared in accordance with the applicable clearing units. Isolated ("danger") trees to be removed will be marked in the field by the engineer.

2.1.2 Only such vegetation should only be removed as necessary to permit construction, operation, and maintenance of the transmission line. Care must be taken to prevent denuding of ground cover and erosion of the soil.

2.2 Clearing Methods and Equipment

2.2.1 Unless otherwise specified, all timber to be cleared must be felled. The removal of brush must be in a manner so as to reduce the overall impact on the root structure of the ground cover.

2.2.2 Equipment must be in good repair and appropriate for the types of clearing specified.

2.2.3 When specified in the right of-way construction units, stumps left in place must be treated with a heavy application of an appropriate herbicide approved by the engineer. Chemical treatment of stumps must occur as soon as possible after cutting. The chemical application must be sufficient to saturate the entire above ground surface of the stump and cause a small amount to run down the sides and collect at the base to penetrate below the ground line into the roots. Any stumps showing resurgent growth prior to completion of line construction must be treated to kill all such growth

2.2.4 Chemical sprays or herbicides must only be used with the approval of the engineer, and only in areas so designated for their use. Herbicides must be applied in accordance with the manufacturer's recommendations and only by a licensed/certified applicator. The chemical sprays and herbicides must meet the environmental requirements of all governing agencies.

Spraying must be performed in such manner, at such pressure, and under such wind conditions that drift of spray material to adjacent plants, animals, or persons will be avoided.

Such application must not be made: a) when the ground is continuously frozen; b) adjacent to streams or other water bodies; c) when the ground is or may be flooded during the period in which the herbicide retains its toxicity; or d) in a marsh or other wetland.

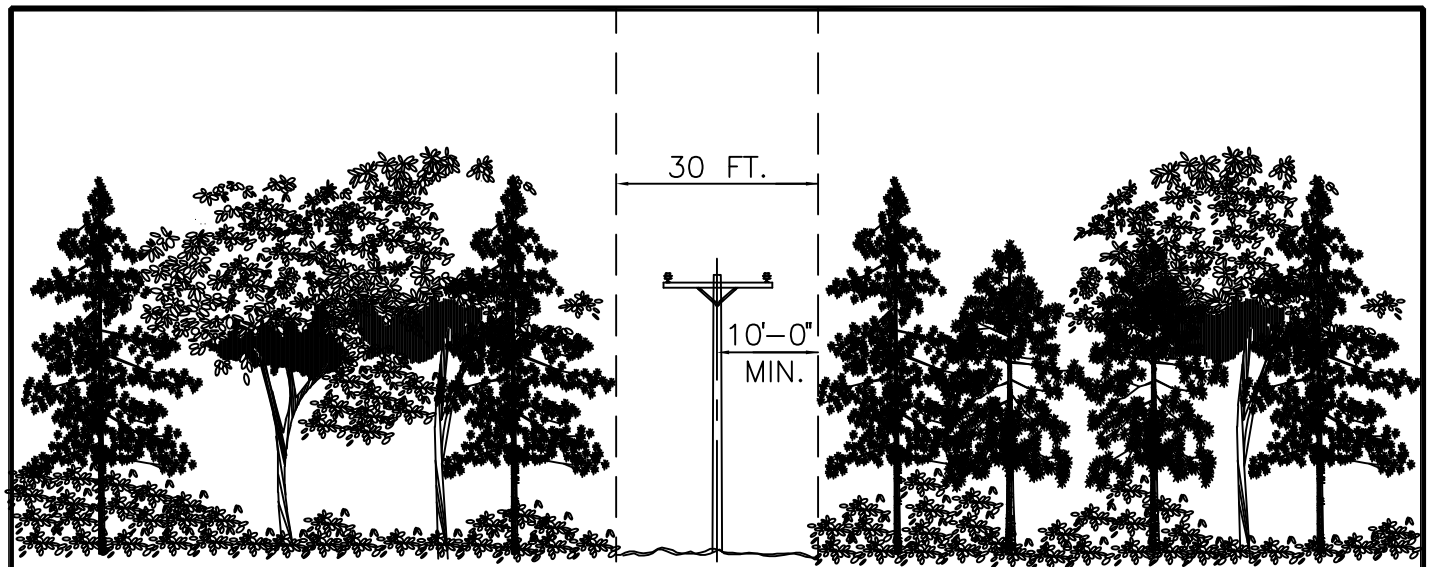
2.2.5 If required by the "Special Requirements" paragraph below, stumps must be removed.

2.2.6 The landowner's written permission must be received prior to cutting trees outside the right-of-way.

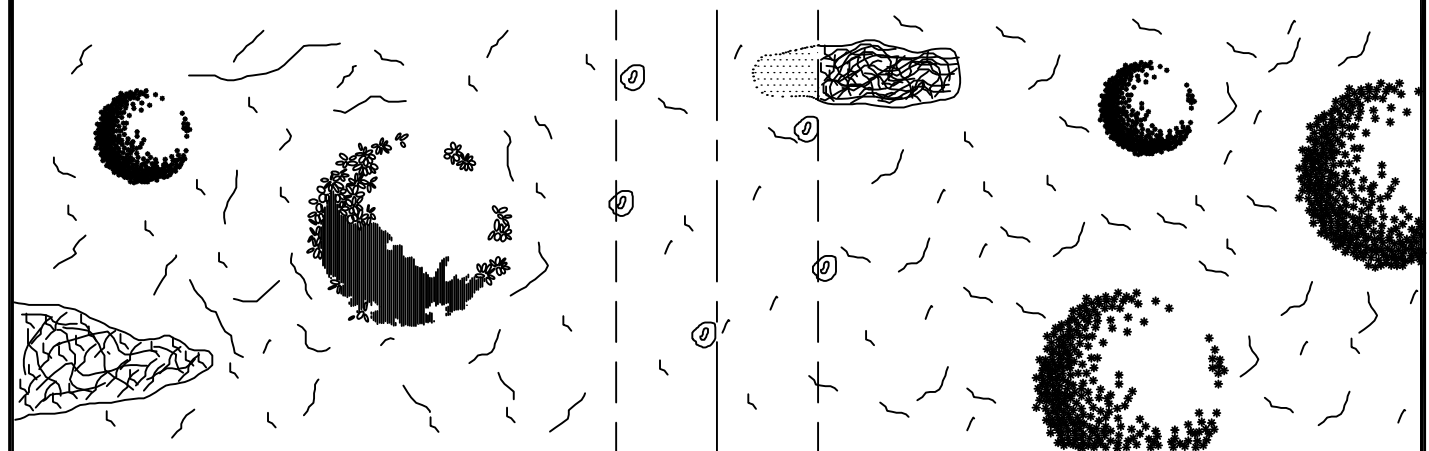
2.2.7 Disposal of trees, brush, branches, and refuse must be in accordance with the methods specified in the construction units.

2.2.8 Avoid clearing vegetation in riparian areas to the extent possible. A vegetative buffer zone should be left along creeks and streams to minimize siltation and sedimentation and prevent adverse impacts to riparian habitat.

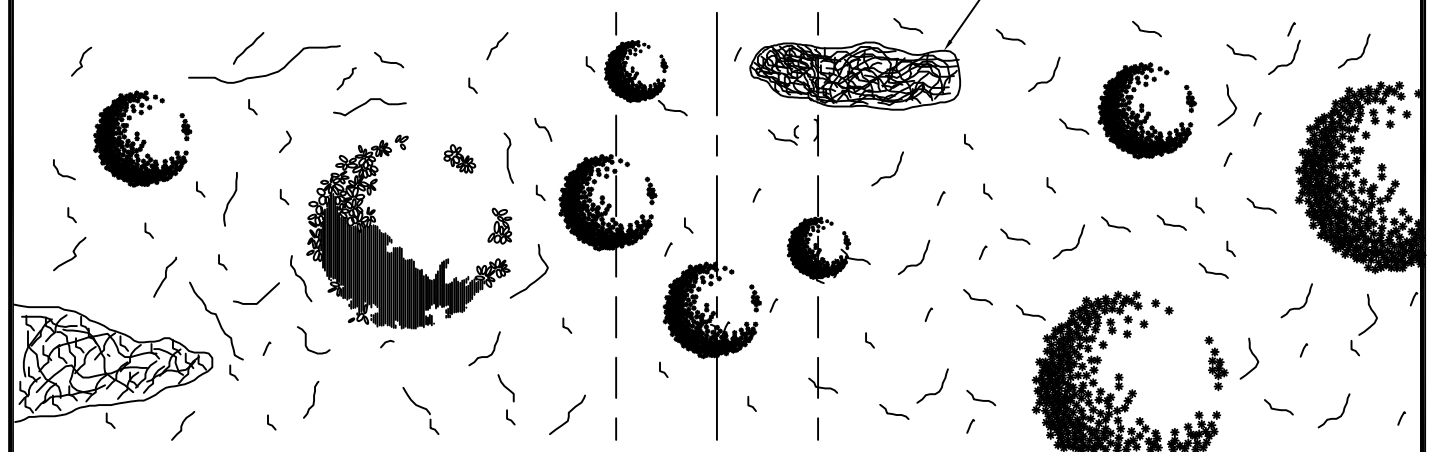
RUS Drawing M1.30G (R1)



ELEVATION



AFTER CLEARING



BEFORE CLEARING

NOTE:

Change suffix of drawing number to designate clearing width. (e.g. M1.30G specifies 30 foot wide clearing).

RIGHT-OF-WAY CLEARING GUIDE

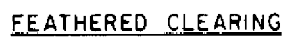
APRIL 2005

RUS

M1.30G
(R1)

RUS Drawing TM-12, Transmission ROW Clearing Guide

1. Engineer shall designate all danger trees which are to be removed or topped. The unit for clearing danger trees is "TM-13."
2. The unit for clearing right-of-way of specified width is "TM-15" or "TM-15(1)."



			TRANSMISSION ROW CLEARING			
			FEATHERED/CLEAR-CUT CLEARING			
					TM-1E 1E/1 12	