Reference Sheet—
West Central Mountains Electrical Plan (WCMEP) Update

2025-2026

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Purpose

The purpose of the West Central Mountains Electrical Plan (WCMEP) Update Community Advisory Committee (CAC) is to do the following:

- Update community goals and siting criteria for future transmission and substation electrical facility sites within the WCMEP study area.
- Select a single preferred option for future transmission and substation electrical facility sites in the WCMEP study area.
- Discuss 2025-26 WCMEP integration in local comprehensive plans.

The recommendation of this committee will be used as a starting point when additional infrastructure is required on Idaho Power's electrical system. The normal public process will still be followed.

Please share your unique perspectives throughout this process—we value your input.

Tentative Meeting Schedule

September: (*Two Meetings*) Generation, substations, transmission, 2014 WCMEP review, community goals and siting criteria, small-group mapping. *(Tentative third meeting) Finalize small-group mapping.*

November: *(One meeting)* Mapping consolidation. (*Tentative second meeting) Finalize mapping consolidation.*

January: *(One Meeting)* Review draft update, discuss comprehensive plan integration.

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Power Terms

- **Voltage** (kilovolts [kV])—The pressure that moves a current of electricity. One kV equals 1,000 volts.
- **Power** (megawatts [MW])—The rate at which work is performed. One MW equals 1,000,000 watts.
    - One MW can power 650 homes on an average day, but only about 300 homes on a peak day, which occurs in the heat of the summer.
    - One MW can power one to two large box stores.
- **Energy** (kilowatt-hours [kWh])—The amount of power used over time. A 100-watt light bulb on for 10 hours will consume this much energy:

$$\text{Energy} = 100\ \text{W} \times 10\ \text{hours} = 1{,}000\ \text{Wh} = 1\ \text{kWh}$$

- **Capacity** (MW) —The maximum amount of power an element of the power system can handle or produce. For example, in a freeway analogy, capacity is represented by the number of cars that can cross a line on a freeway at the same time, while energy is represented by the number of vehicles that cross the line over time. Capacity constraints can be alleviated by the following:
    - Decreasing the power required during peak hours (demand response)
    - Decreasing the power required with energy efficiency measures
    - Adding transmission lines, substations, and generators
- **Peak demand** (MW)—The amount of power used during a peak day in summer or winter.

Unit Summary Table

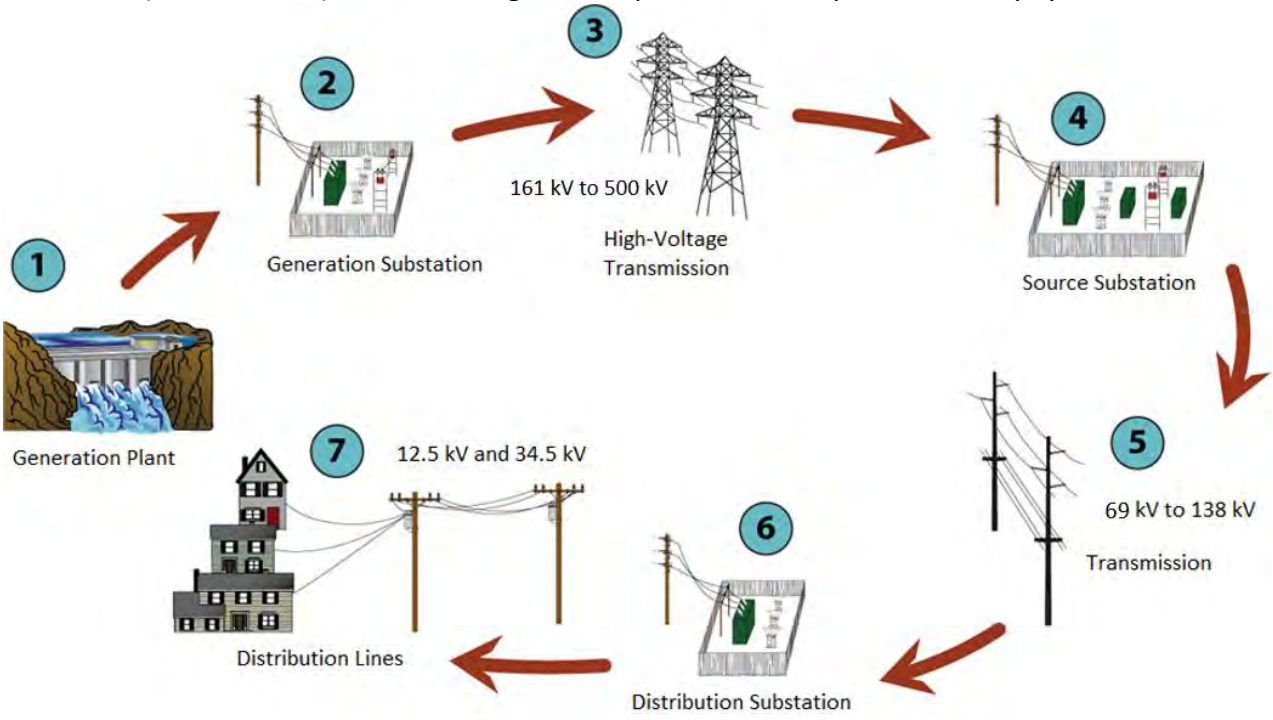
	Base Unit	Typical Unit
Voltage	Volt (V)	kilovolt (kV)*
Power	Watt (W)	megawatt (MW)**
Capacity	Watt (W)	megawatt (MW)**
Energy	Watt-hours (Wh)	kilowatt-hours (kWh)

*kilo = 1,000

**mega = 1,000,000

Power Delivery System

The electrical power delivery system is made of different elements. Power is drawn toward the load, as a mouse is drawn to cheese through a maze. The energy will find the path of least resistance (easiest route). The following are components of the power delivery system:



1. **Generation Plant**—Energy is produced by generators at power plants.

2. **Generation Substation**—The voltage is increased to make long-distance transmission more economical because the amount of energy loss due to resistance in the line is reduced.

3. **High-Voltage Transmission** (230 to 500 kilovolts [kV])—High-voltage transmission lines can transfer large amounts of power long distances. They are used to interconnect large cities and transfer power between states. The CAC will have the opportunity to review 230 kV high-voltage transmission lines that interconnect future source substations.

4. **Source Substation**—Transforms or converts high-voltage transmission voltage to lower voltage transmission to serve distribution substations located throughout communities. They use 5 to 10 acres.

5. **Transmission (**69 to 138 kV)—Transmission lines bring power to and interconnect distribution substations

6. **Distribution Substation**—Distribution substations are located throughout communities and are common in both urban and rural areas. They typically cover 2 to 3 acres. Substations are used to transform one voltage to another and protect and control power lines. They include transformers, circuit breakers, switches, support structures, and large metallic pipe called bus to connect the components together.

7. **Distribution Lines** (12.5 and 34.5 kV)—Distribution lines carry power from substations to homes and businesses. Because of the local nature and the quantity of distribution lines, they are out of the defined scope of the Eastern Treasure Valley Electrical Plan (ETVEP).

- **Underground Distribution**—34.5 kV distribution is typically overhead, but 12.5 kV distribution can be underground or overhead. Typically, installing underground distribution is more expensive than overhead distribution. The difference in cost is usually borne by the party that requests the underground line.

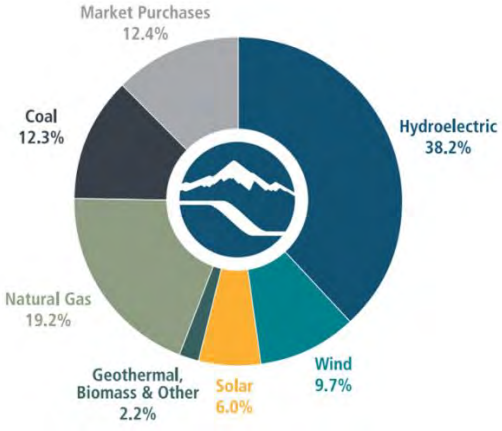
Generation Resources

Idaho Power's generation resources include the following. See Table 4.2 on page 46 of the company's 2025 Integrated Resource Plan (IRP) for a detailed list.

- Seventeen hydroelectric facilities along the Snake River and its tributaries. They vary in size. The Hells Canyon Complex (HCC) is the largest.
- Part ownership of two coal-fired generation plants.
- Three natural gas-fired plants.
- One small diesel generator (infrequently used).

Idaho Power also has many customer-owned generation resources feeding into our system, many of which reside in the West Central Mountains. These generation sources use transmission and distribution lines to deliver energy to our customers.

In 2024, 67.0% percent of Idaho Power's supply of electricity came from company-owned generation resources.



Alternative Resources

Energy Efficiency

Energy efficiency—Methods or appliances that assist in saving energy.

Examples include the following:

- Efficient appliances use less energy (e.g., LED bulbs and new appliances).
- Switching devices can save energy by controlling when other devices operate (e.g., smart switches that turn off the light when no one is in the room).
- Construction materials can reduce the amount of energy loss from homes (e.g., insulation).

Demand Response

Demand response (DR)—Programs designed to shift load from peak demand hours to when there is ample capacity. The goal is to delay or eliminate the need to build new generation resources. Net energy consumption may or may not be reduced.

Demand response programs can take different forms:

- Some programs incent customers to reduce energy usage during peak hours or shift the energy use to non-peak hours. An example is setting a timer on a dishwasher to delay operation.
- For other programs, customers agree beforehand to have certain loads switch off or cycle, as with irrigation pumps or air conditioners.

Current demand response programs include the following:

- **A/C Cool Credit**—Participating residential customers' air conditioners are cycled on and off, typically over a three-hour period.
- **Irrigation Peak Rewards**—Participating irrigation customers agree to have their irrigation pumps turned off when needed.
- **Flex Peak Program**—Some large commercial and industrial customers agree to use less energy during peak hours.

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Distributed Generation

Distributed generation—Small generators connected to the distribution system (e.g. Solar Generating Facility).

The East Treasure Valley has the following types of distributed generation:

- Biomass
- Hydro
- Solar
- Batteries (Future)

Market Purchases

Market purchases—Power purchased from the market by Idaho Power to augment its own generation.

Idaho Power purchases power from the market to augment its own generation.

- The cost is high when demand is high (middle of summer).
  - The cost is highest in late afternoon when Idaho Power's peak hits.
  - Sometimes we must purchase power from the southeast (Utah, Arizona, New Mexico). This power can be quite expensive.
- The cost is low when demand is low (spring and fall).
- In 2024, Idaho Power purchased about 33% of its energy on the market.

Notes:

Integrated Resource Plan (IRP)

Idaho Power's IRP examines the demand for energy over the next 20 years and the best ways to meet that demand for our customers. The plan is updated every two years. The 2025 IRP was submitted to the Idaho Public Utilities Commission and the Public Utility Commission of Oregon in September 2025.

The IRP describes the company's projected need for additional electricity and the resources necessary to meet that need while balancing reliability, environmental responsibility, efficiency, risk, and cost.

Idaho Power enlists the assistance of its customers in developing the IRP through an advisory council—the Integrated Resource Plan Advisory Council (IRPAC)—which consists of members of the environmental community, major industrial customers, irrigation representatives, state legislators, public utility commission representatives, and other interested parties. The IRPAC's responsibilities include the following:

- Representing the interests of Idaho Power's more than 600,000 customers
- Participating in open and active discussions of relevant issues
- Working with Idaho Power to develop ways to engage the public in the IRP process

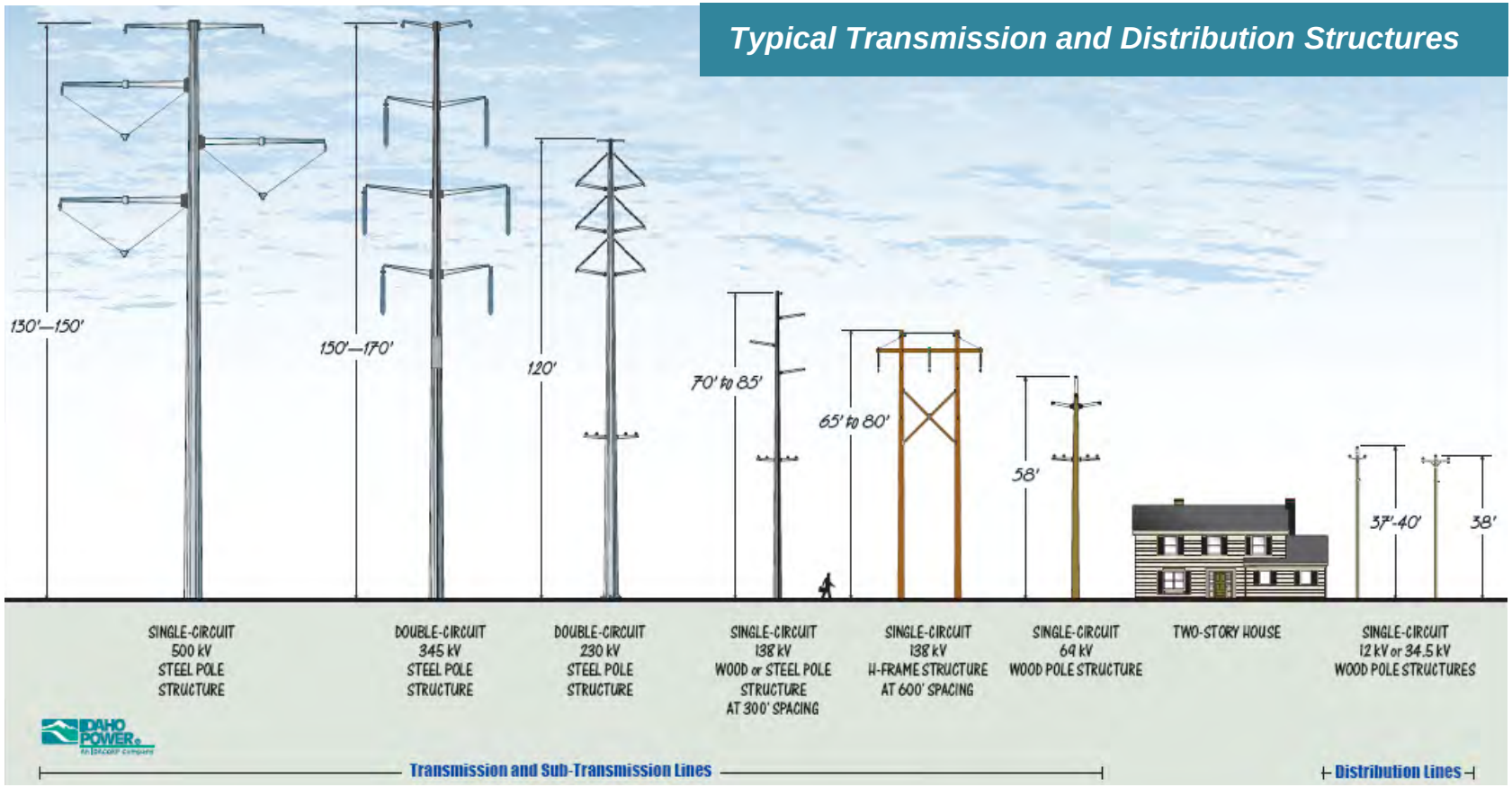
The IRPAC meets with Idaho Power regularly over a period of several months during the development of the company's IRP. These meetings are public. The current plan is now posted on Idaho Power's website (under Energy > Planning). The table below from the 2025 plan lists the plan's additional generation resources.

Table 11.1 Preferred Portfolio (*With 111(d) Bridger 3&4 NG*) resource selections

	Preferred Portfolio (MW)										
Year	Coal Exits	Conv. Gas	New Gas	Wind	Solar	4Hr	100Hr	Trans.	DR	EE Forecast	EE Bundles
2026	-134	261	0	0	125	250	0	0	0	18	0
2027	0	0	0	600	420	100	0	0	0	14	0
2028	0	0	0	0	100	200	0	B2H	0	15	0
2029	0	0	150	100	0	155	0	SWIP-N	10	16	0
2030	-350	350	300	0	100	0	0	0	0	16	0
2031	0	0	0	0	400	0	0	0	0	17	8
2032	0	0	0	0	200	0	0	0	0	17	0
2033	0	0	0	0	100	50	0	0	0	17	21
2034	0	0	0	0	0	0	0	0	0	16	6
2035	0	0	0	0	0	0	0	0	0	16	5
2036	0	0	0	0	0	0	0	0	0	16	5
2037	0	0	0	0	0	0	0	0	0	15	0
2038	0	0	0	0	0	0	0	0	0	14	0
2039	0	0	0	0	0	0	0	0	0	13	0
2040	0	0	0	0	0	5	0	0	0	12	0
2041	0	0	50	0	0	5	0	0	0	12	0
2042	0	0	0	0	0	5	0	0	10	11	3
2043	0	0	50	0	0	5	0	0	0	11	0
2044	0	0	0	0	0	55	0	0	0	11	7
2045	0	0	0	0	0	5	50	0	0	8	2
Subtotal[28]	-484	611	550	700	1,445	835	50		20	287	58
Total	**4,071**	**Portfolio Cost: $10,966M**									

Notes:

Transmission



Capacity, height, right-of-way requirements, and cost vary by voltage and construction. Typical values are as follows:

Voltage (kV)	Capacity (MW)	Typical Height (feet)	Right-of-Way (feet)	Cost (per mile)
500	1,500	150	160-250	$ 5M-$5.5M
230	500	100–120	60–120	$2M–$2.5M
138	200	65–85	50–100	$1M–$1.5M
69	70	58	50	$400k–$500k

Substations

Substations are used to transform one voltage to another and protect and control power lines. They include transformers, circuit breakers, switches, support structures, and large metallic pipe called bus to connect the components together.

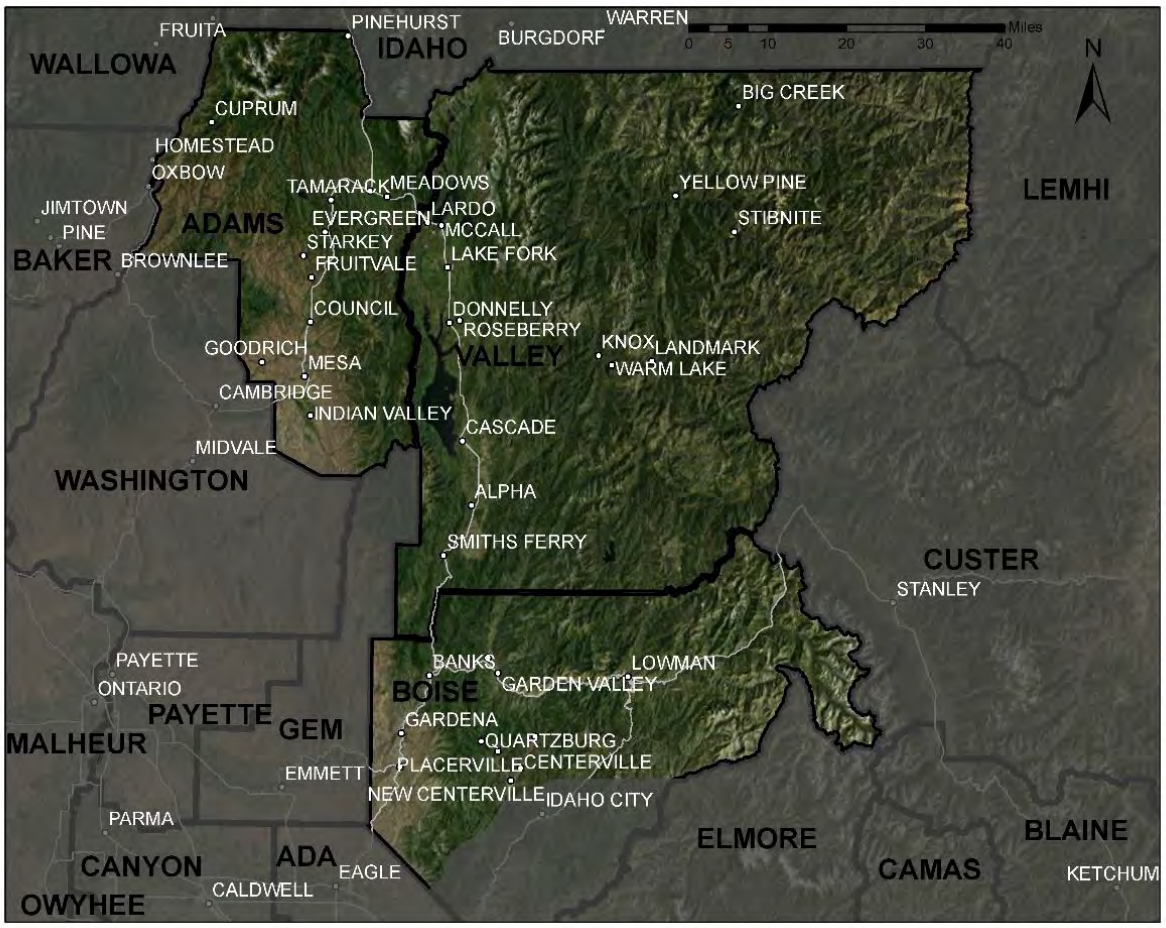
- **Source substation**—Converts high-voltage transmission lines (230 kilovolts [kV] and above) to lower voltages (69 to 138 kV). Acts as a power source for distribution substations.
- **Distribution substation**—Substations that serve local loads in urban and rural neighborhoods.

Substation Type	Capacity (MW)	Area (acres)	Cost
Source	200–600	5–10	$15M–$30M
Distribution	5–88	3–4	$11M–$13M

Notes:

2014 WCMEP

The 2014 West Central Mountains Electrical Plan Final Report is posted on Idaho Power's website (under Energy > Planning). The study area (shown below) encompasses all or part of three counties: Adams, Boise and Valley.



Original Spatial Load Forecast

- Defined the area (Idaho Power's service area).
- Determined property ownership—Assume private land will fill in and that public land will require very little electrical load.
- Assigned land use/zoning designations to all private land; land use/zoning maps were obtained from the county and city jurisdictions.
- Assigned a load density to land-use/zoning designations for all private land (= MW/mi^2).
- Used the private land and load density to determine the buildout load requirement for the area—**550 MW**

Buildout

Buildout is defined as the point in time when all available land is developed according to the land-use ordinances. Growth is driven by industry, transportation, and population, but is bounded by the amount of available land and water.

Buildout load by county:

County	2014 Load (MW)	Buildout Load (MW)
Adams	25	141
Boise	20	109
Valley	60	300
Total	**105**	**550**

Developed Community Goals and Siting Criteria

The CAC created goals that set forth criteria to guide their choices for the alternatives for siting transmission lines and substations. The 2014 Community Goals and Siting Criteria can be found in Appendix C.

Notes:

2014 Buildout Requirements

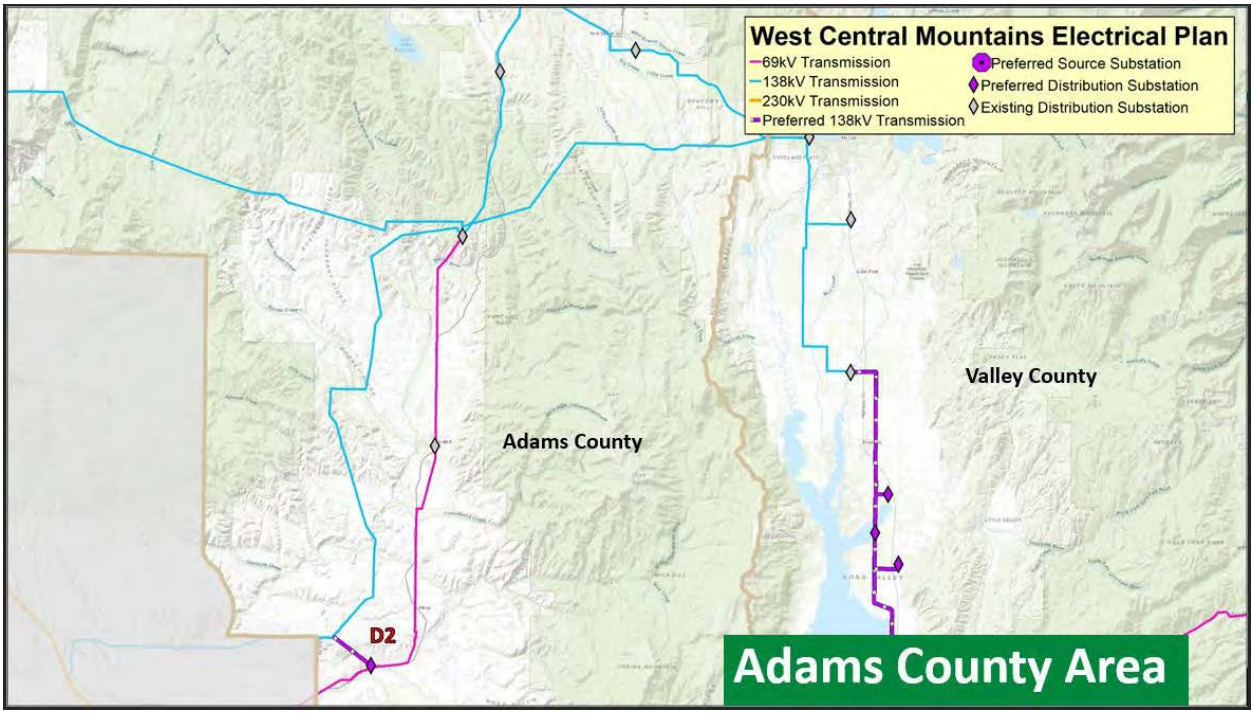
138 kV Requirements

Six distribution substations and connecting 138 kV transmission lines.

Study Areas

The 2014 WCMEP was divided into three areas: Adams County, Valley County, and Boise County.

Adams County Area



- **Distribution Substation 2** – The preferred location is in Indian Valley behind Alpine Market, just off Highway 95.

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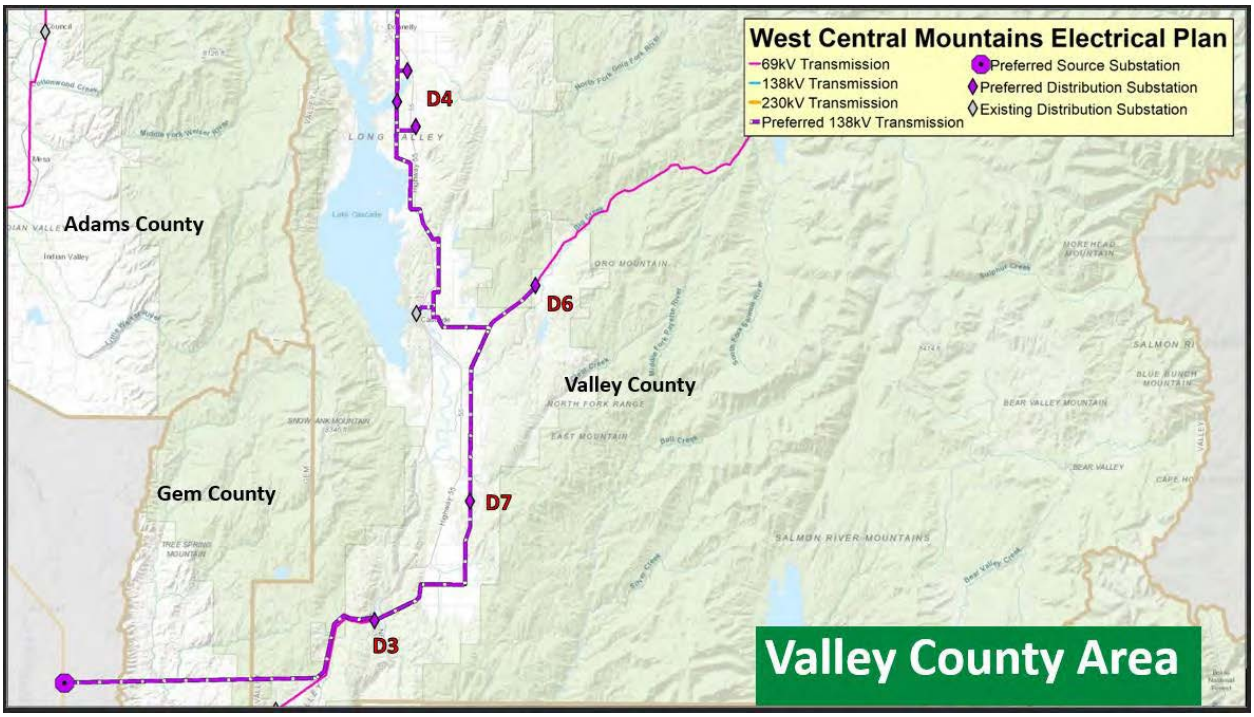
Valley County Area



- **Distribution Substation 3** – The preferred location is by Wellington Park near Smiths Ferry.
- **Distribution Substation 4**– The committee selected three Secondary Alternatives for this site. Secondary Alternative 1 is along the east side of Lake Cascade, along the existing 138kV line and adjacent to Old Highway 55. Secondary Alternative 2 is at the intersection of Loomis Lane and Highway 55. Secondary Alternative 3 is at a materials pit owned by ITD.
- **Distribution Substation 6** – The existing Scott Valley Substation was identified to be expanded.
- **Distribution Substation 7** – The preferred location is one mile north of Herrick Reservoir along the existing 69kV transmission corridor.

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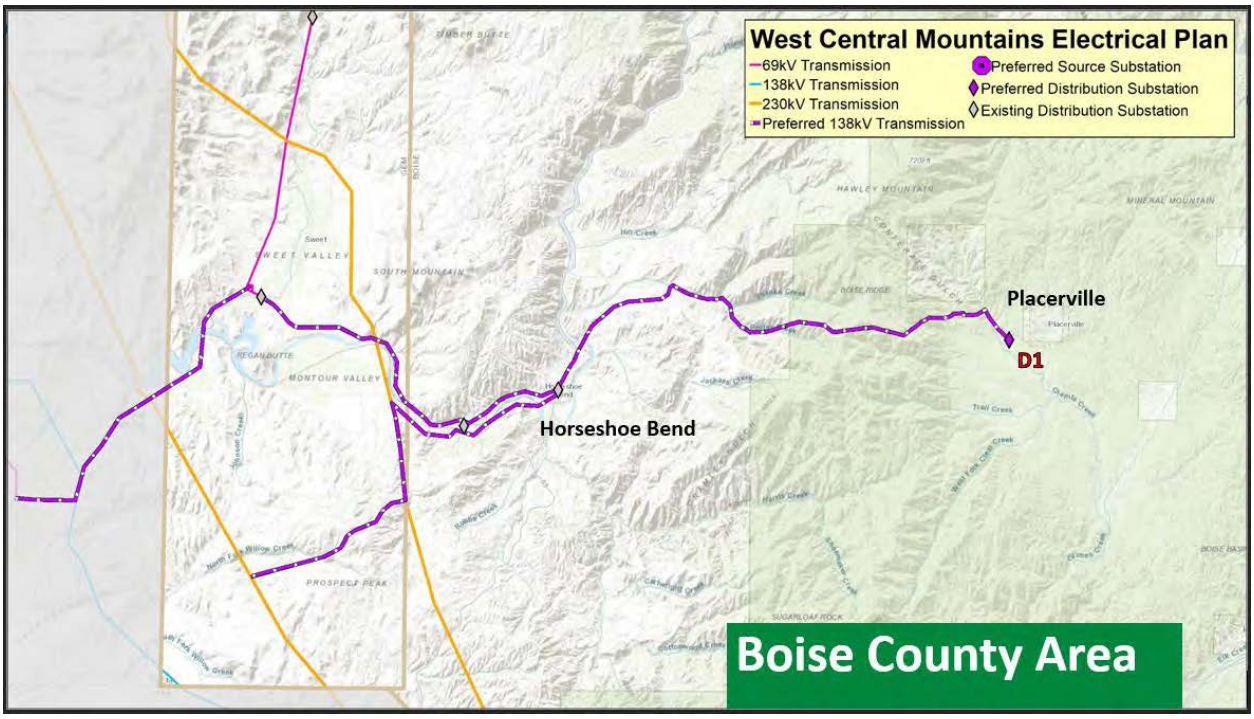
Boise County Area



- **Distribution Substation 1** – The preferred location is on private land about one mile west of Placerville, south of Granite Creek Road.

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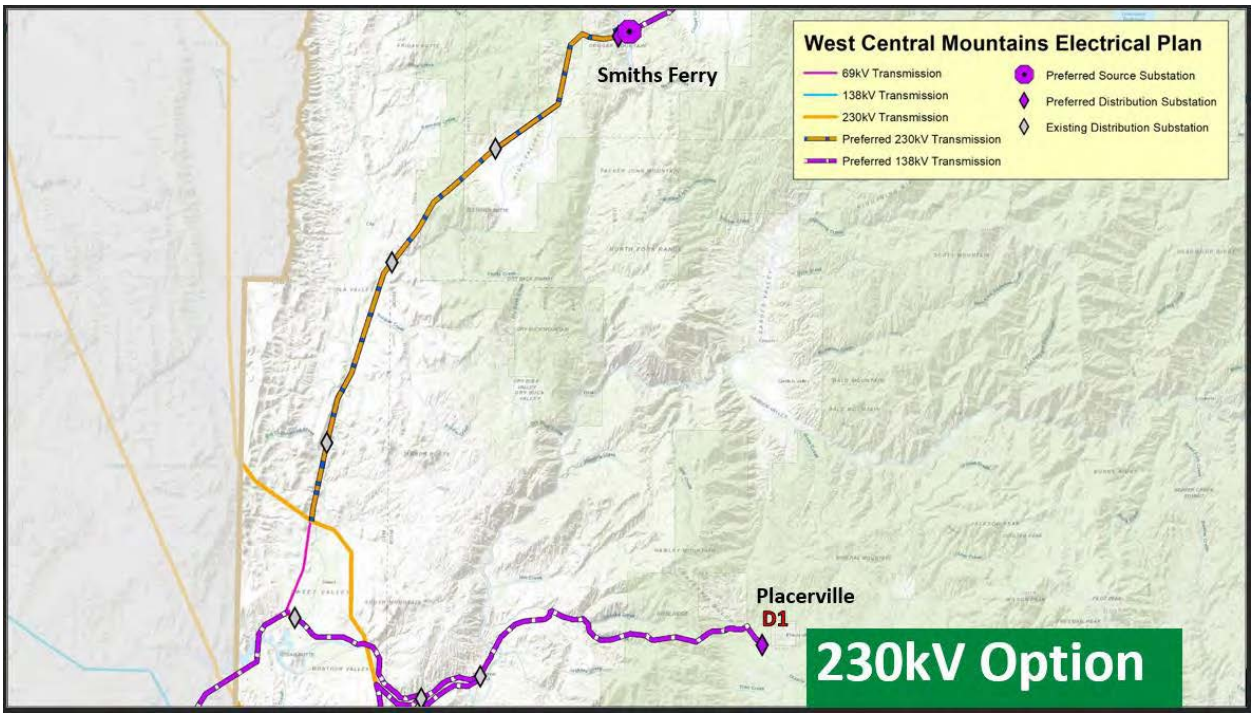
230kV Transmission Line Option



- **230kV Transmission Line Option** – The committee identified a Secondary Alternative 230kV transmission line route. The line connects to the 230kV Boise Bench to Brownlee line where it crosses the existing 69kV Montour to Cascade line. It follows the Montour to Cascade line route north the future D3 (Smiths Ferry) substation.

Notes:

Need to Update the WCMEP

The following drive the need to update the WCMEP:

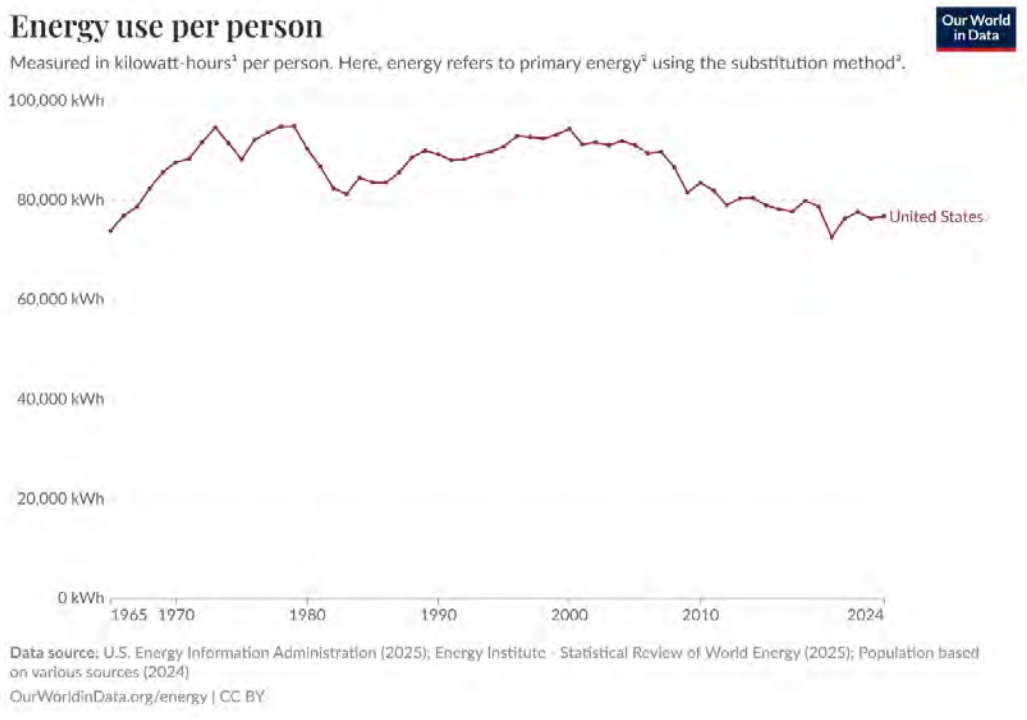
- Evolving community goals
- Changing future land use and zoning
- Growth not always occurring where and when it is anticipated

Buildout Considerations

Energy Use Per Customer Over Time

Energy efficiency, plug-in load and electrification affect average energy use in Idaho.

- **Energy efficiency** — New technologies lead to efficiency gains. An example is our migration away from halogen lighting to compact fluorescent lighting and now to LED lighting. Energy efficiency helps to bring down average energy use.
- **Plug-In Load** — As new technologies are commercialized and as prices drop, people tend to purchase more plug-in devices. An example is the trend from having one small television per household to having larger televisions in more rooms.
- **Electrification** —As time goes on, appliances like water heaters and home HVAC units are moving from natural gas powered to electric powered. Battery technologies becoming cheaper over time makes electric vehicles an increasingly affordable option. These transitions are expected to add additional load to the electrical grid over time.

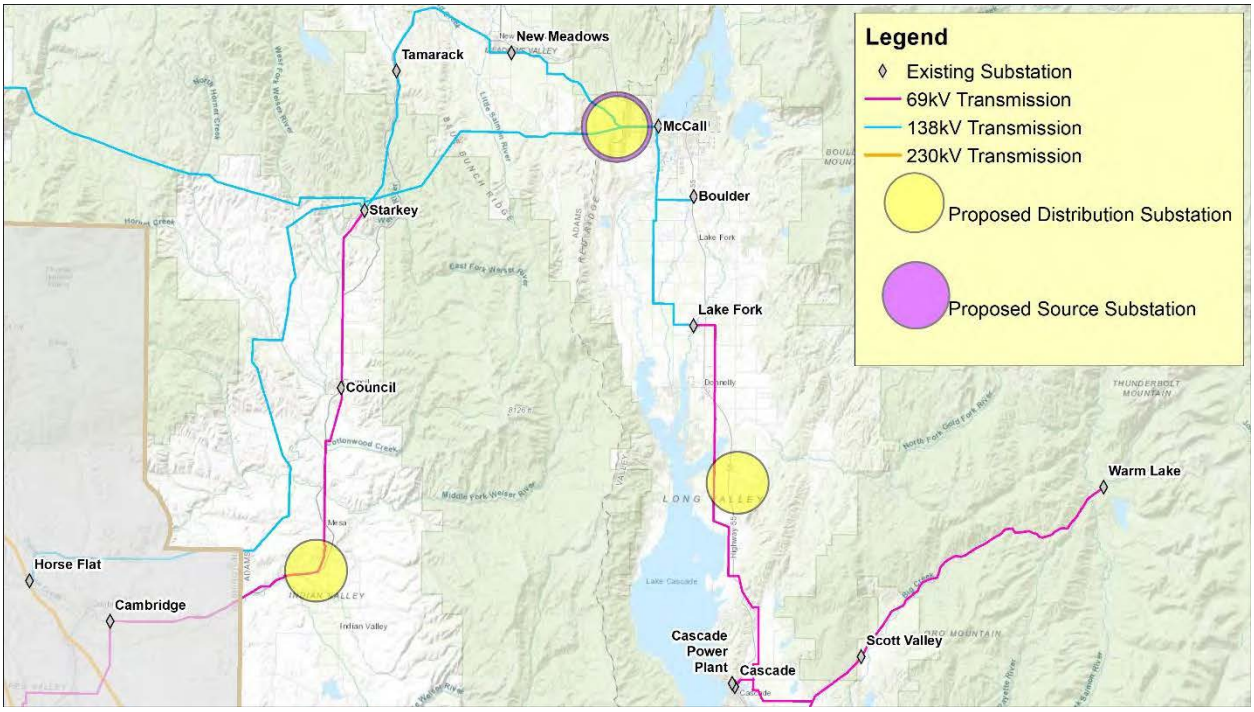


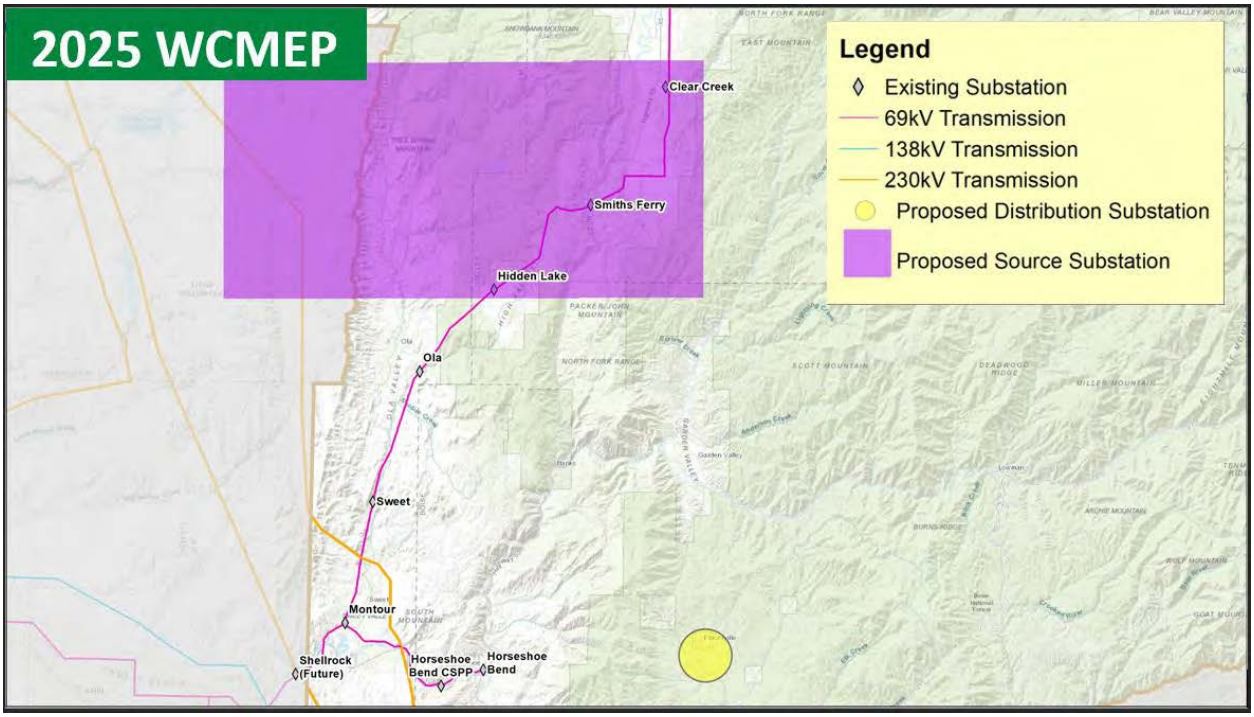
Results of the WCMEP Update

County	2014 WCMEP Buildout Load (MW)	2025 WCMEP Update Buildout Load (MW)
Adams	141	152
Boise	109	122
Gem	N/A	27
Valley	300	512
Total	550	813

- Buildout loads grew due to increased mixed use, commercial, and industrial zoning using updated future land-use and zoning data.
- The purpose of the 2025 WCMEP Update CAC will be to review the prior CAC's recommendations for source substations, distribution substations, and connecting 230 kV and 138 kV transmission lines and select a single preferred option for each substation and line route.
- The selection of the preferred option should be guided by the updated community goals and siting criteria.

2025 Substation Circles




2025 WCMEP
Legend
Existing Substation
69kV Transmission
138kV Transmission
230kV Transmission
Proposed Distribution Substation
Proposed Source Substation
Clear Creek
Smiths Ferry
Hidden Lake
Ola
Sweet
Montour
Shellrock (Future)
Horseshoe Bend CSPP
Horseshoe Bend

Notes:

Glossary

Buildout—The point in time when all available land is developed according to the land-use ordinances.

Capacity—The maximum amount of power an element of the power system can handle or produce. Measured in megawatts (MW).

Demand response (DR)—Programs designed to shift load from peak demand hours to when there is ample capacity. The goal is to delay or eliminate the need to build new generation resources.

Distributed generation—Small generators connected to the distribution system (e.g. wind turbine).

Distribution substation—Substations that serve local loads in urban and rural neighborhoods.

Energy—Amount of power used over time. Measured in kilowatt-hours (kWh).

Energy efficiency—Methods or appliances that assist in saving energy.

Kilovolt—Unit of measurement of voltage. 1 kV = 1,000 volts.

Load—Cumulative electrical demand from customers in an area.

Market purchases—Power purchased from the market by Idaho Power to augment its own generation.

Megawatt—Unit of measurement of power. 1 MW = 1,000,000 Watts.

Peak demand—The amount of power used during a peak day in summer or winter. Measured in megawatts (MW).

Power—The rate at which work is performed. Measured in megawatts (MW). One MW = 1,000,000 watts.

Source substation—Converts high-voltage transmission lines (230 kilovolts [kV] and above) to lower voltages (69 to 138 kV). Acts as a power source for distribution substations.

Substations—Substations are used to transform one voltage to another and protect and control power lines. They include transformers, circuit breakers, switches, support structures, and large metallic pipe, called bus, to connect the components.

Voltage—The pressure that moves a current of electricity. Measured in kilovolts (kV) for power lines. One kV = 1,000 volts.

WCMEP—West Central Mountains Electrical Plan

WTVEP—Western Treasure Valley Electrical Plan

Appendix A – 2014 WCMEP Executive Summary

Electricity—it lights our homes, runs our computers, cooks our food, and entertains our kids. It can be used to save a life, and it can ease our work. We don't often think about how much effort is put in every day to keep the electricity flowing and how much planning must take place to ensure electrical facilities are built when they are needed. The cost for electrical facilities is tremendous. The electric utility industry is one of the most—perhaps the most—capital-intensive industries in the United States (US).

The West Central Mountains' population and commercial base have grown over the past 20 years, and Idaho Power continually adds new infrastructure to meet the resulting electricity needs. Even with the economic recession that began in 2007, Idaho Power's existing customers continue to purchase devices that consume more and more energy on a per-capita basis. Although these devices are becoming more energy efficient, customers seem to have more of them. Industry, businesses, farms, and residences are becoming more dependent on a reliable supply of electricity with every passing year. Now in 2014, growth is picking up in this region, and new facilities will be needed to supply the energy new businesses and homes will need. It is important that Idaho Power takes a long-term view of the future and plans new generation, transmission, and substation facilities to serve their electrical need and fit the desires of the communities within which they reside.

Even though electricity has become a necessity to modern life, many people find electrical facilities visually and environmentally intrusive. Each new facility location needs to address safety, property owner concerns, jurisdictional siting requirements, environmental laws and regulations, and federal reliability standards. A long-term plan is necessary to ensure the transmission lines and substations are there when needed, and it is important to locate the facilities so they fit into a larger strategy to serve the area. This larger strategy or plan should accommodate the vision and perspective of local communities.

In August 2013, Idaho Power invited members of the West Central Mountains community to participate in a community advisory committee (the Committee) to help plan for the new electrical facilities that will provide for growth. The Committee, made up of local elected officials, city and county planning representatives, industrial representatives, community members, representatives from the Bureau of Land Management (BLM) and the forest service, the Idaho Department of Fish and Game (IDFG), and a representative from the Nez Perce Tribe, met monthly for a year. (The inside cover of this report shows a complete list of the Committee members.) Developed in concert with the Committee, the *West Central Mountains Electrical Plan* (the Plan) describes infrastructure improvements and additions needed to provide an adequate and dependable power supply far into the future. It provides a long-range (buildout) strategy to serve the electrical power needs of Idaho Power's customers in a region consisting of Valley, Boise, and Adams counties. The Committee did not address any high-voltage transmission external to the West Central Mountains that might be used to deliver energy to the area.

From 2010 through 2012, Idaho Power convened two additional community advisory committees to site buildout facilities for the Treasure Valley and named the plans the *Western Treasure Valley Electrical Plan* (WTVEP) and the *Eastern Treasure Valley Electrical Plan* (ETVEP). These plans laid out substation locations and transmission line routes in Ada, Elmore, Canyon, Payette, Washington, and Owyhee counties in Idaho and Malheur County in Oregon. The substation locations and transmission line routes identified by the WTVEP and the ETVEP were available to the Committee.

The Committee started its work in August 2013 with a general education session, followed in September with a bus tour of generation and transmission facilities, as well as the Rapid River Fish Hatchery. The following two months were devoted to providing the Committee background information relating to electrical power systems. Through these educational sessions, the Committee was introduced to the concepts of electrical power generation, transmission, substations, energy efficiency, and regulatory affairs. Additionally, the Committee was introduced to Idaho Power's electrical system from production to delivery.

Mapping Exercise

Using the information gained from the first four meetings and from the guiding principles and community criteria it developed, the Committee laid out proposed substation locations and transmission line routes to serve the West Central Mountains through buildout. The Committee identified many different alternatives for evaluation. Idaho Power staff provided technical analysis for each alternative to help the Committee further refine its choices. The Committee reached a consensus on preferred and acceptable secondary alternatives. A preferred alternative represents the committee's first choice for a substation location or transmission line route, while a secondary alternative represents the committee's recommendations for substation sites or transmission line routes if a preferred alternative cannot be obtained.

For the purposes of this report, the West Central Mountains is broken down into three sub-areas:

- Adams County Area—Includes the cities of Council and New Meadows.
- Valley County Area—Includes the cities of McCall, Cascade, and Donnelly.
- Boise County Area—Includes the cities of Horseshoe Bend, Placerville, Idaho City, and Smith's Ferry. (Though Smith's Ferry is part of Valley County, it makes sense electrically to include it with this area.)

In addition to the city areas described above, each sub-area includes public lands evaluated by the Committee.

Preferred Alternatives

The Committee's preferred alternatives to serve the West Central Mountains service area at buildout are shown in the following figures. The Committee produced a preferred alternative, eliminated "no go" alternatives, and identified remaining alternatives deemed acceptable if the preferred alternative becomes infeasible. The Committee generally recommended Idaho Power refer to their *Guiding Principles and Community Criteria* when siting any new facilities in the West Central Mountains.

For clarity, the West Central Mountains in the following drawings is split between Adams, Valley, and Boise counties. Further subdivisions are shown in the Committee's Preferred Alternatives section of this report and in Appendix D.

Adams County Area (Figure 1). The Committee's preferred alternatives for the Adams County area include a new distribution substation (D2) in the Indian Valley area and a 138-kV transmission line to interconnect the substation to existing transmission lines. A secondary location was indicated by the Committee if the first location is deemed infeasible. If a 138-kV line ROW cannot be obtained, a 69-kV source substation can be added to the existing Horse Flat Substation, and a 69-kV line can be added to connect the Horse Flat Substation to the Cambridge Substation.

No new high-voltage transmission lines (230 kV and above) were recommended by the Committee in this area.

Valley County Area (Figure 2). The Committee's preferred alternatives for the Valley County area include one preferred new distribution substation south of Cascade and four secondary substation locations, one south of Cascade and three between Cascade and Donnelly. The Committee also recommended upgrading the 69-kV transmission lines from the Lake Fork Substation south to Boise County.

No new source substations or high-voltage transmission lines (230 kV and above) were recommended by the Committee in this area.

Boise County Area (figures 3 and 4). The Committee's preferred alternatives for the Boise County area include two new distribution substations (Placerville [D1] and Smith's Ferry [D3]) and the associated 138-kilovolt (kV) transmission to interconnect and support them. A 138-kV line was chosen by the Committee to connect the proposed Placerville Substation with the existing Boise Bench Substation. One new 138-kV source substation is also recommended with a new 138-kV line to connect it to the existing system. A 230-kV line route through Gem County to the proposed location of the Smith's Ferry Substation (D3) is also an alternative.

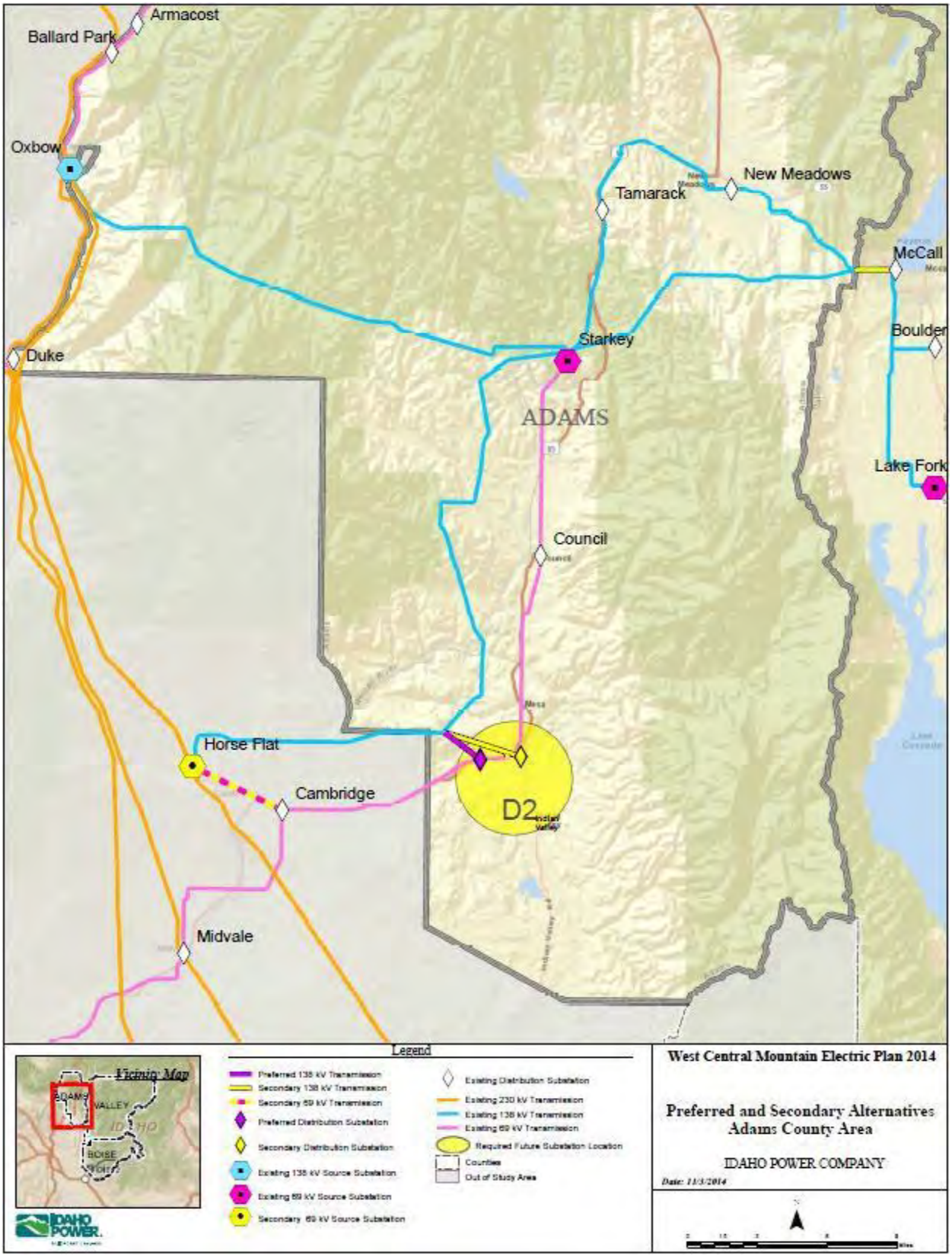


Figure 1: Preferred and secondary alternatives, Adams County area

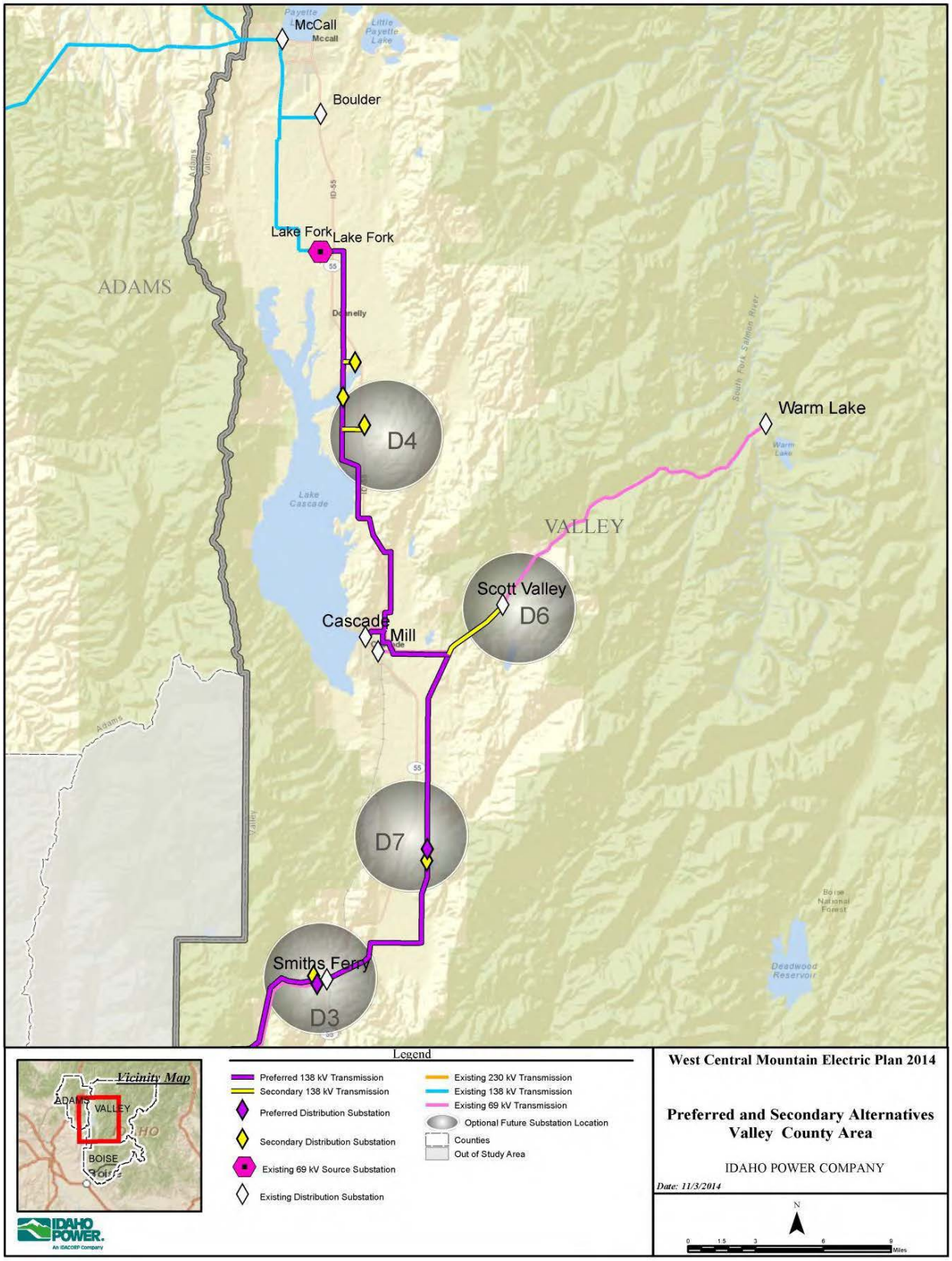


Figure 2: Preferred and secondary alternatives, Valley County area

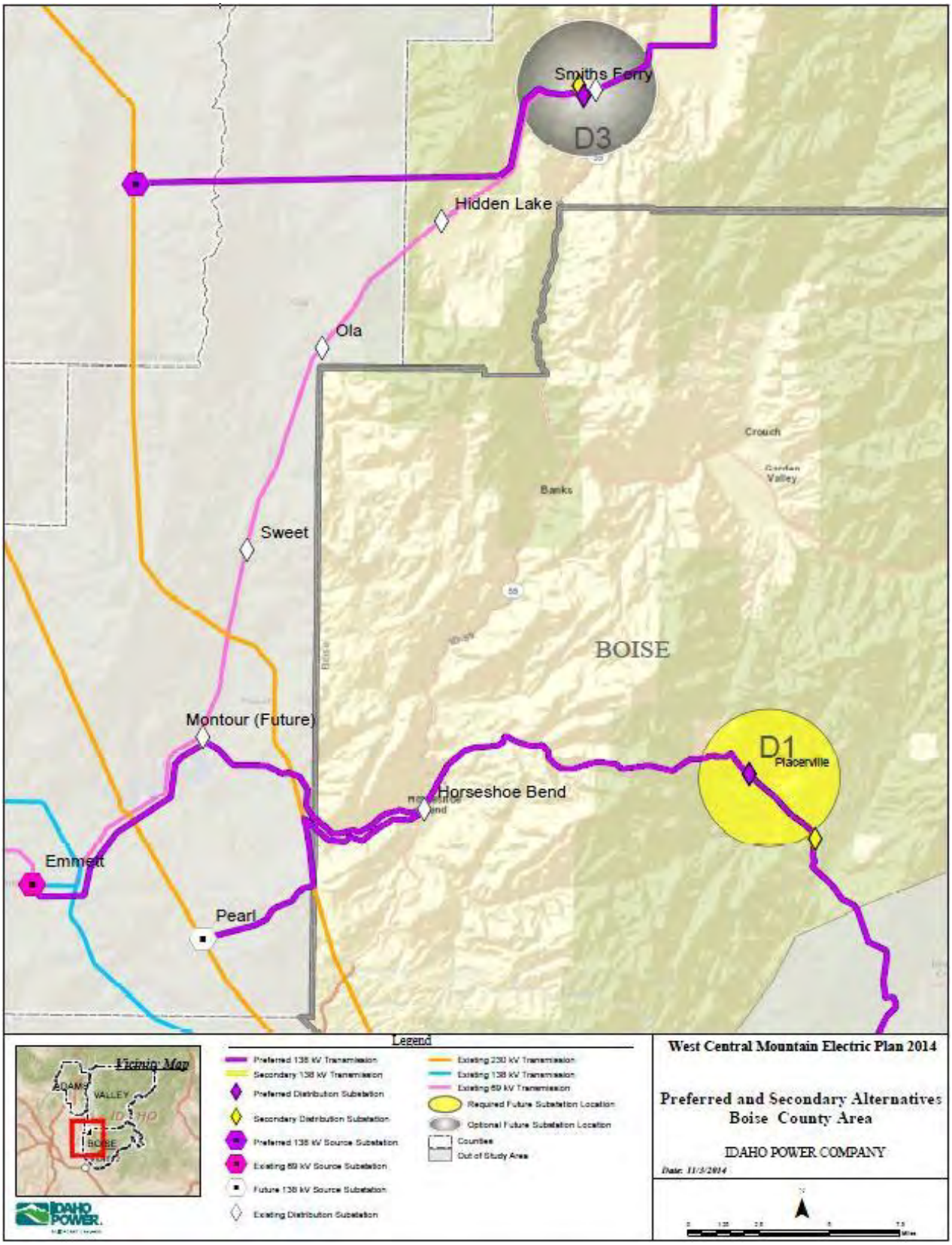


Figure 3: Preferred and secondary alternatives, Boise County area

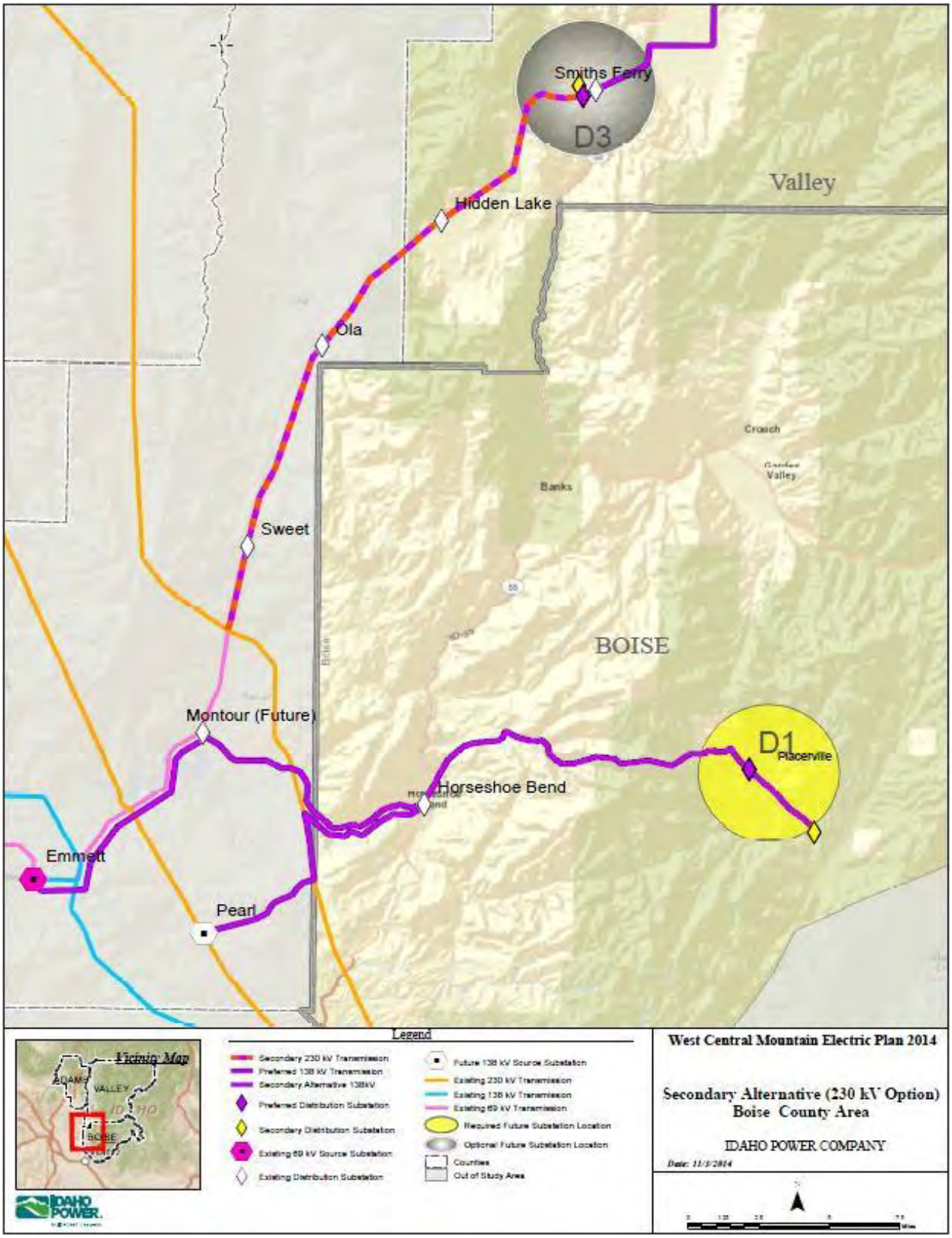


Figure 4: Secondary alternative (230-kV option), Boise County area

Not all facilities proposed by the Committee will be needed in the near term; facilities will be phased in based on load growth, reliability, system capacity, available budget, and Committee recommendations. If all or some parts of the preferred alternatives become unbuildable or unfeasible because of future constraints, the Committee identified secondary alternatives. Idaho Power will pursue the secondary alternatives as necessary to meet future electrical service requirements. Additionally, Idaho Power will make every effort to honor the Committee's *Guiding Principles and Community Criteria* when siting new infrastructure. Details for the preferred and secondary options are found in the body of this report in the Committee's Preferred Alternative section.

The Plan is conceptual and is the first step in planning for new and upgraded transmission lines and substations. Individual projects resulting from this plan will still require jurisdictional approval and will be subject to the public siting process. Before Idaho Power does any siting or places infrastructure, open houses and community meetings (for projects with significant local impact) may be held to provide information and gather input on specific proposed projects. Substations and transmission lines associated with this plan are subject to change due to land availability, jurisdictional objections, or other needs discovered during the project development phase. However, this first step will give the jurisdictions and citizens advance notice as to where high-voltage transmission facilities may be located and will allow the jurisdictions and citizens to plan accordingly. It is also Idaho Power's request that this plan be incorporated into jurisdictional comprehensive plans.

In preparing the Plan, Idaho Power has accounted for the anticipated effect energy efficiency will have on future electrical load in the West Central Mountains. Idaho Power is committed to reducing electrical load through the use of energy efficiency at all customer levels. Continued evaluation of energy efficiency, building standards, and distributed generation will influence when and which infrastructure changes will be required to meet customer loads in a safe and reliable manner. Appendix B of this report discusses the various energy efficiency programs offered by Idaho Power.

Future changes in technology may make some of these improvements unnecessary or delay their need. These types of shifts, however, are difficult to predict. Idaho Power will monitor these potential shifts, recognizing that external forces can force change. The Plan is flexible and will be maintained and kept viable through continued public involvement.

Idaho Power sincerely thanks every member of the Committee. The time and effort the Committee gave to this project will enable Idaho Power to go forward with plans to serve the West Central Mountains and gain public acceptance of the specific pieces that must, through further public collaboration, be put in place to make this plan a reality. This Plan is a result of the Committee's efforts and will serve as the basis for further studies to refine, stage, and request permitting for future infrastructure improvements in the West Central Mountains.

Appendix B - 2014 WCMEP Implementation Plan

The Plan is a long-term plan that 1) outlines the expected growth in electrical demand in the West Central Mountains region of Idaho Power's service area and 2) delineates the upgrades and additions to the power system needed to serve this growth. This Plan is the result of the Community Advisory Committee process where Idaho Power collected and incorporated the local community's vision and perspective in the earliest stages of the planning process. Creating this Plan is only the first step in building and maintaining a power system that meets the needs of Idaho Power customers in the area. Continued coordination between Idaho Power and the local community is critical when implementing this Plan. Three principle elements will be used to successfully implement the Plan:

1. Introduce the Plan to the public.
2. Integrate the Plan into local comprehensive plans.
3. Phase in the construction of the power system outlined in the Plan.

Introduce the Plan

The collaborative effort between Idaho Power and the Committee has culminated in a written plan to serve the West Central Mountains residents from now to buildout.

Idaho Power will present the WCMEP to the public throughout the West Central Mountains region. Activities will include:

1. Posting the draft and final WCMEP document on Idaho Power's website.
2. Including a feature article in Idaho Power's "Connections" newsletter about the company's efforts to involve the community in long-range planning processes.

Idaho Power will be available upon request to make presentations about the WCMEP process and why Idaho Power believes it is so important to work with local communities to plan for their future electrical needs.

Media Coverage

The media plays an important role in publicizing the West Central Mountains Electrical Plan. Idaho Power will coordinate with written, television, and radio news outlets as necessary to inform and appropriately involve the public throughout the plan implementation process. Idaho Power intends to provide information and resources to the media to distribute accurate information about the Plan. These resources will include the West Central Mountains Electrical Plan webpage, located at https://www.idahopower.com/energy-environment/energy/planning-and-electrical-projects/regional-electric-plans. This webpage contains a description of the community advisory process and details of the Plan, including a link to the final report and a contact person for more information. As requested, Idaho Power staff will also be available for interviews by the media throughout the implementation process.

Local Integration of the Plan

The Plan is designed to be a road map for Idaho Power when planning and building the future power system in the West Central Mountains and to assist local governments in their planning processes. Local planning and zoning commissioners, county commissioners, and city planners are encouraged to be familiar with the Plan and to integrate it into their comprehensive plans. This will help ensure the Plan is a relevant, useful part of local area planning. The potential conflict between new residential or commercial developments and the required power system infrastructure can be minimized by planning for future transmission lines and substations and showing their proposed locations in local comprehensive plans as appropriate.

System Implementation

The recommendations of the Plan cover sufficient infrastructure improvements to the Idaho Power system to deliver power for the area's projected load at buildout. Individual projects will be designed and constructed when needed based on future load growth and reliability requirements. As the need for each project nears, Idaho Power will proceed through a detailed design, siting, and permitting process. The recommendations included in this Plan define the optimal location to start the siting process for each project in the West Central Mountains. The current zoning ordinances, land-use restrictions, and availability of the property or ROW will be included in the siting analysis for each project.

The Plan is only the first step in the power system planning process. Idaho Power endeavors to keep the public informed and involved throughout each project's development. The public siting process is adjusted as needed to fit the local community needs and the unique technical and regulatory requirements of each project. Comments from local residents and business owners in the general vicinity of specific projects are gathered through public open houses, as necessary. All concerns and recommendations from citizens and jurisdictional representatives will be addressed and considered in choosing the final site or ROW. Final transmission line routes and substation locations are subject to obtaining required permits, easements, and ROWs.

Although a schedule for implementation is listed below, the final implementation of the Plan is dependent on several factors, including the following:

- Load growth rates (resulting from population changes, energy use characteristics, and technology changes)
- Reliability requirements
- Transmission line and transformer capacities (adequacy)
- Budget
- Committee recommendations

The following is a timeline of Idaho Power's recommended near-term implementation plan:

0–10 Years (see yellow legend items in Figure 34)

- Upgrade Boulder Substation facilities. This upgrade will increase the distribution capacity of the Boulder Substation and provide relief to the McCall Substation.
- Upgrade the Montour Substation facilities. This upgrade will add new distribution facilities at the Montour Substation and serve the Montour and Sweet areas currently served from the Horseshoe Bend Substation.
- Rebuild portions of the 69-kV line from the Emmett station to the Montour Substation. The transmission line will be rebuilt to 138-kV construction standards but will continue to operate at the current 69-kV voltage. While this upgrade is located in Gem County, it directly relates to the Plan.
- Rebuild portions of the 69-kV line from the Cambridge Substation to the Starkey Substation. This line serves the cities of Cambridge and Council. While some of this upgrade is located in Washington County, it directly relates to the Plan.

10–20 Years (see green legend item in Figure 34)

- Upgrade Montour Substation facilities. This upgrade will add 138 kV to 69-kV transformation capacity at the Montour Substation and allow the line from the Emmett Substation to the Montour station to operate at 138 kV.

Appendix C - 2014 WCMEP Guiding Principles and Community Criteria

As a first step in determining the feasibility of individual transmission line routes and substation locations, the Committee members created a *Guiding Principles and Community Criteria* document that set forth various measurable and non-measurable principles to guide their choices for the alternatives they would develop.

- Guiding principles are key themes that serve as a foundation for making decisions concerning the West Central Mountains electrical system.

- Community criteria were used more specifically for locating transmission lines and substations by providing land-use characteristics that are either more favorable or less favorable to electrical infrastructure siting.

The effort to define guiding principles and community criteria began in October 2013, when the Committee separated into small groups facilitated by consultant Rosemary Brennan Curtin, Inc., (RBCI) to discuss issues important to Committee members when planning to meet the West Central Mountains' future energy needs. The small groups were asked to discuss the following questions:

- What are the principles important to you when siting future transmission lines and substations?

- Where should future transmission lines and substations be sited in your community?

- Are there areas in your community to avoid when siting future transmission lines and substations?

The issues recorded during the small groups' discussions were refined and synthesized by RBCI staff and formatted to fit into the *Guiding Principles and Community Criteria* format. The Committee used *Guiding Principles and Community Criteria* when they developed the proposed siting alternatives. The *Guiding Principles and Community Criteria* represent the Committee's instructions and desires for Idaho Power in implementing the Plan and serving the communities in the West Central Mountains.

If the Committee's preferred substation and transmission line locations as shown in the Committee's Preferred Alternatives section of this report cannot be obtained, Idaho Power will use the Committee's *Guiding Principles and Community Criteria* for siting transmission lines and substations in the West Central Mountains.

The final guiding principles were divided into seven categories (listed in no particular order):

1) Promote economic development.
    a) Support and sustain economic development.
    b) Incorporate the *Valley County Economic Development Plan* in planning efforts.
    c) Support existing businesses, property rights, and land uses (e.g., historic sites, industries).
    d) Consider how future infrastructure could adversely affect high-value resources, recreational sites, or other facilities.
    e) Respect private property (i.e., some property owners may want transmission lines on their land, but others may not).
    f) Avoid the use of eminent domain on private land.
2) Work with local jurisdictions.
    a) Comply with federal and local land-use plans and ordinances.
    b) Coordinate with federal, state, and local planning activities.
3) Be aware of environmentally sensitive areas.
    a) Protect the environment and preserve open space, viewsheds, and wildlife.
4) Consider community character.
    a) As infrastructure is built, ensure substations and transmission lines fit into the local environment.
5) Continue to meet power needs and prepare for future unknowns.
    a) Ensure electrical infrastructure has the ability to meet current and future needs of the area.
    b) Support localized generation and promote the possibility of self-sustaining electrical generation in Valley County.
6) Improve reliability and redundancy of the West Central Mountains electrical system.
    a) Integrate the Plan with the whole Northwest grid system.
    b) Make transmission lines and substations accessible for repair and

maintenance (especially in winter).

7) Be as efficient as possible.

a) Upgrade existing electrical infrastructure when possible.

b) Collocate with other utilities when feasible.

Areas to Site Electrical Infrastructure	Areas to Avoid Siting Electrical Infrastructure
Industrial areas	Waterways (rivers/lakes/springs)
Existing energy/power corridors (with the exception of existing subdivisions)	Viewsheds from the valley floor
Near like land use	Residential areas
In appropriate railroad ROW (i.e., not in Rails-to-Trails)	Parks
Industrial corridors	Recreation areas (winter and summer)
Consolidated along one side of travel corridors, Forest Service/fire roads, county roads, and state highway ROWs not within a designated Scenic Byway	Designated Scenic Byways and corridors in Boise, Valley, and Adams counties
Near areas where future development is planned	Sensitive wildlife areas and corridors
Lots at intersections, except in very visible areas (for substations)	Schools
Set back far enough away from roadways to not pose a safety hazard and to leave room for future widening and growth	Land under cultivation (includes both pasture and farmland)
Previously developed areas (e.g., old ROWs and easements)	Minimize river crossings
	Riparian conservation areas
	Airport zones
	Ridgelines
	Aesthetic areas near private land
	Natural scenery
	Close to lake fronts or boat fronts
	Irrigation canals
	Wetlands

Notes: