Meeting No. 2
Reference Guide

2025-2026

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MEETING NO. 2 REFERENCE GUIDE—WEST CENTRAL MOUNTAINS ELECTRICAL PLAN (WCMEP) UPDATE

Mapping Requirements

2025 WCMEP Update Required Electrical Infrastructure at Buildout

- Two Source Substations
  - At least one high voltage transmission line connection per source substation
- 4 Distribution Substations
  - 138 kV transmission lines connecting distribution substations to source substations or another distribution substation

In-Scope Line Voltages

- High voltage transmission lines: 230 kV
- Transmission lines: 138 kV

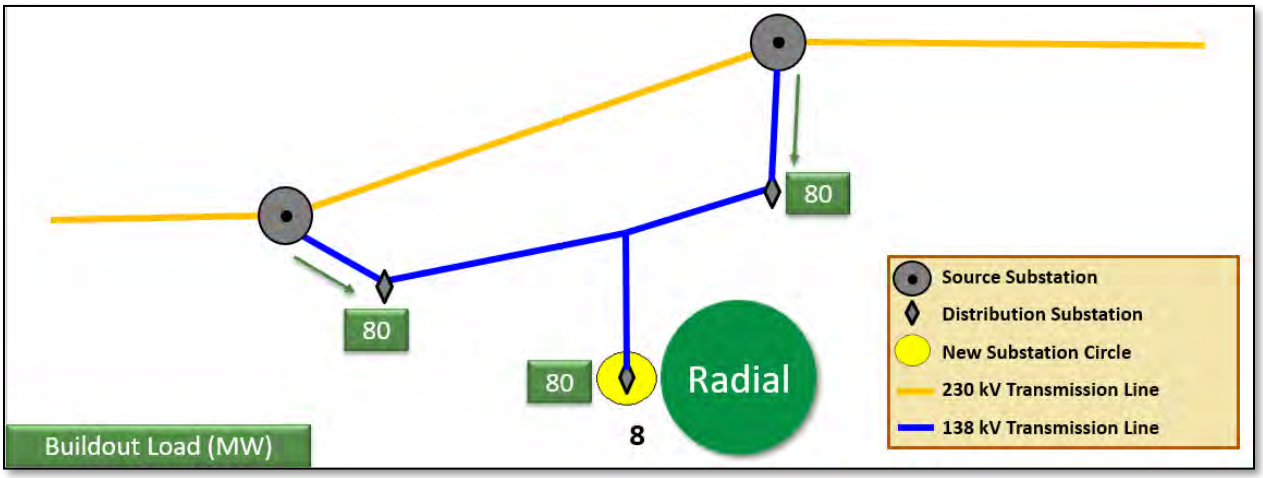
Out-of-Scope Line Voltages

- 500 kV high voltage transmission lines
- 69 kV transmission lines
- 12.5 kV–34.5 kV distribution lines

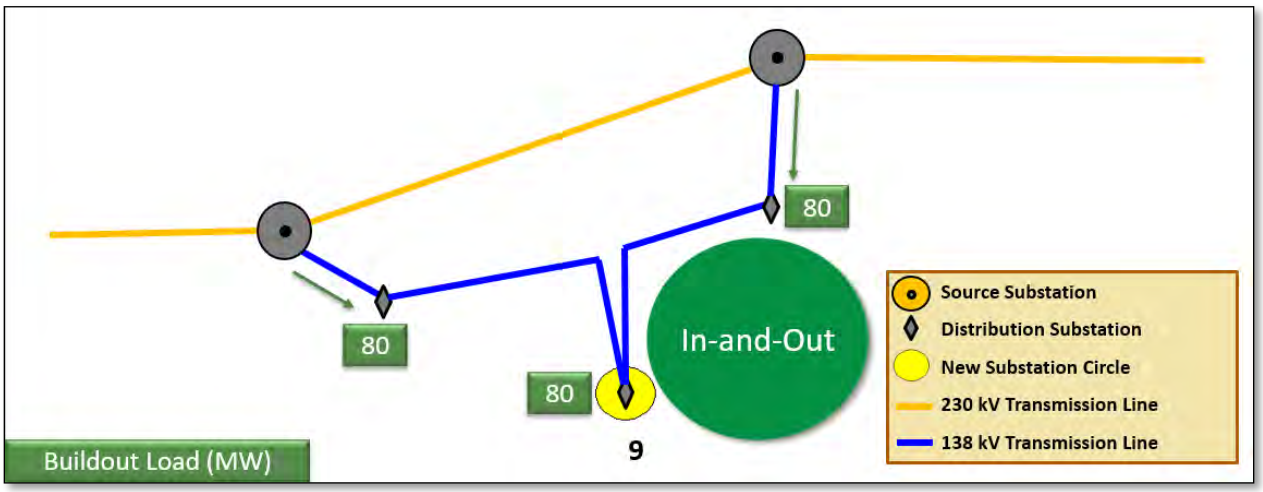
Notes

Distribution Substation Connections

- **Radial** — A substation connected to a single transmission line. Radial connections have a lower cost, smaller footprint and lower reliability than other options.



- **In-and-Out** — One transmission line entering a substation and a second transmission line leaving a substation. In-and-out connections are more expensive, but result in higher reliability. The in-and-out can be built as a double circuit transmission line on a single set of poles or as two separate lines.

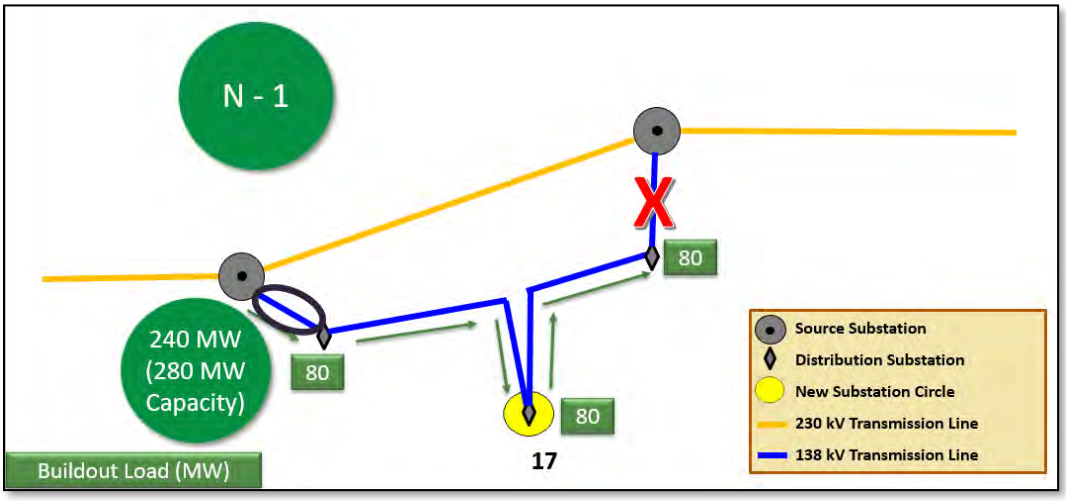


Reliability Criteria

(N-1) Criteria:

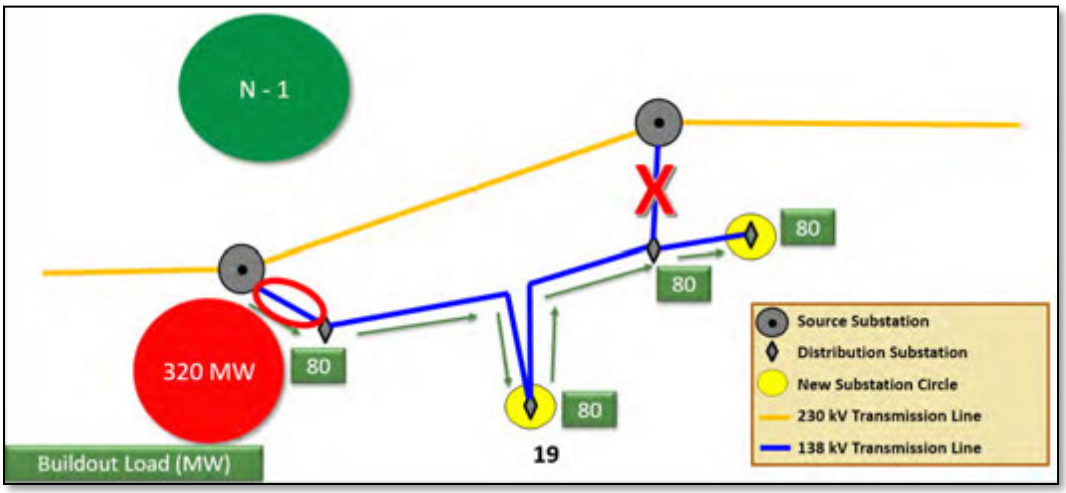
- 'N' stands for 'normal' and represents the system operating in a normal configuration
- (N - 1) indicates that the system is operating normally, but with the removal of a single transmission line or transformer

Example of Acceptable N - 1 Scenario



While 138 kV transmission lines typically have a capacity 200 MW, the sections of transmission lines that connect to the source substations can be rebuilt with larger conductor so that they have a capacity of 280 MW.

Example of an Unacceptable N - 1 Scenario



In this scenario, the section of transmission line circled in red would exceed the capacity of the larger conductor which has a rating of 280 MW.

Appendix D — Mapping Handout

Mapping Reference — WCMEP Update 2025

Committee Mapping Goal: Propose a single preferred site for each future source substation, distribution substation, and connecting transmission lines. Identified alternative sites will also be helpful.

Step 1: Review and confirm or adjust the 2014 WCMEP proposed **source substation** site

- **Smiths Ferry Area** Source Substation
  - The 2014 WCMEP Committee provided a preferred location in Washington County and an alternate location near Smiths Ferry.

Step 2: Propose sites for new **source substation**

- **West McCall Area** Source Substation
  - Idaho Power owns 4 acres of land in the area of the proposed distribution substation 4.
  - Idaho Power will need 5-10 acres of land for this source substation.

Step 3: Confirm or propose at least one **high voltage transmission line route** to each source substation

Step 4: Confirm or adjust 2014 WCMEP **distribution substation** sites

- Distribution Substation 1 (Placerville Area)
- Distribution Substation 2 (Indian Valley Area)
- Distribution Substation 3 (Donnelly Area)

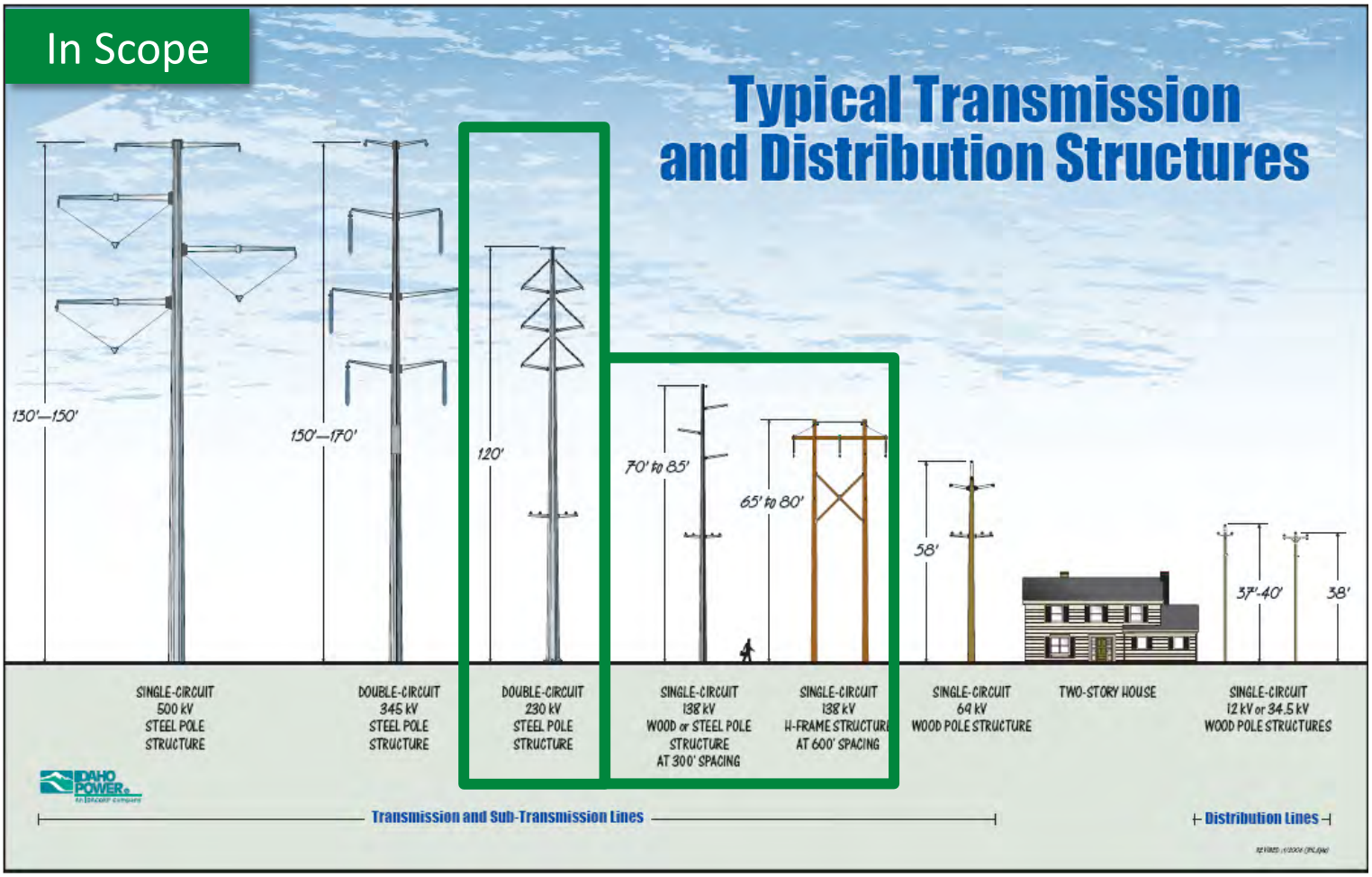
Step 5: Propose site for new **distribution substation**

- Distribution Substation 4 (West McCall Area)

Step 6: Confirm or propose **138 kV transmission line routes** connecting distribution substations to either a source substation or another distribution substation.

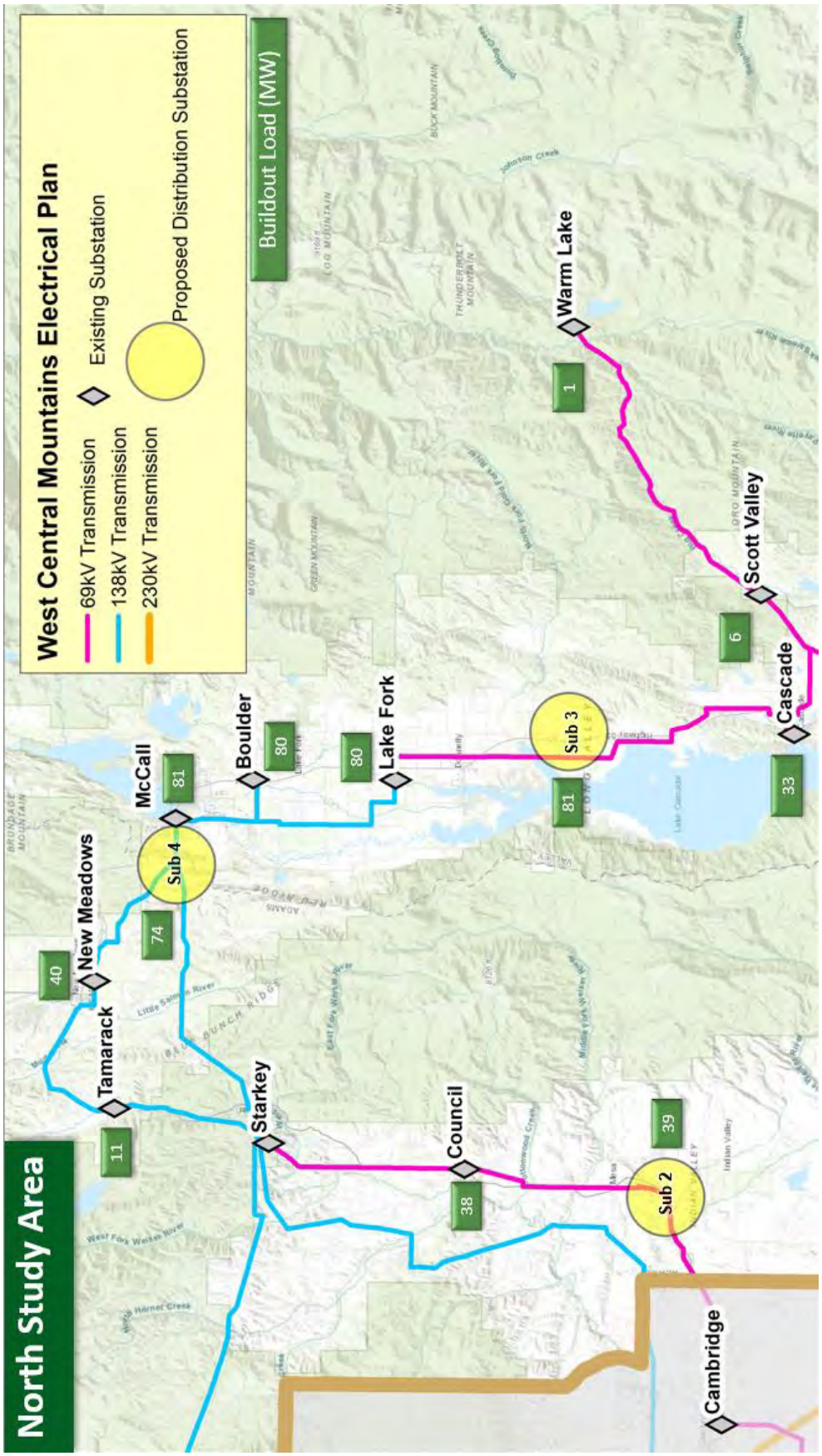
Step 7: Propose the following required **138 kV transmission line routes**

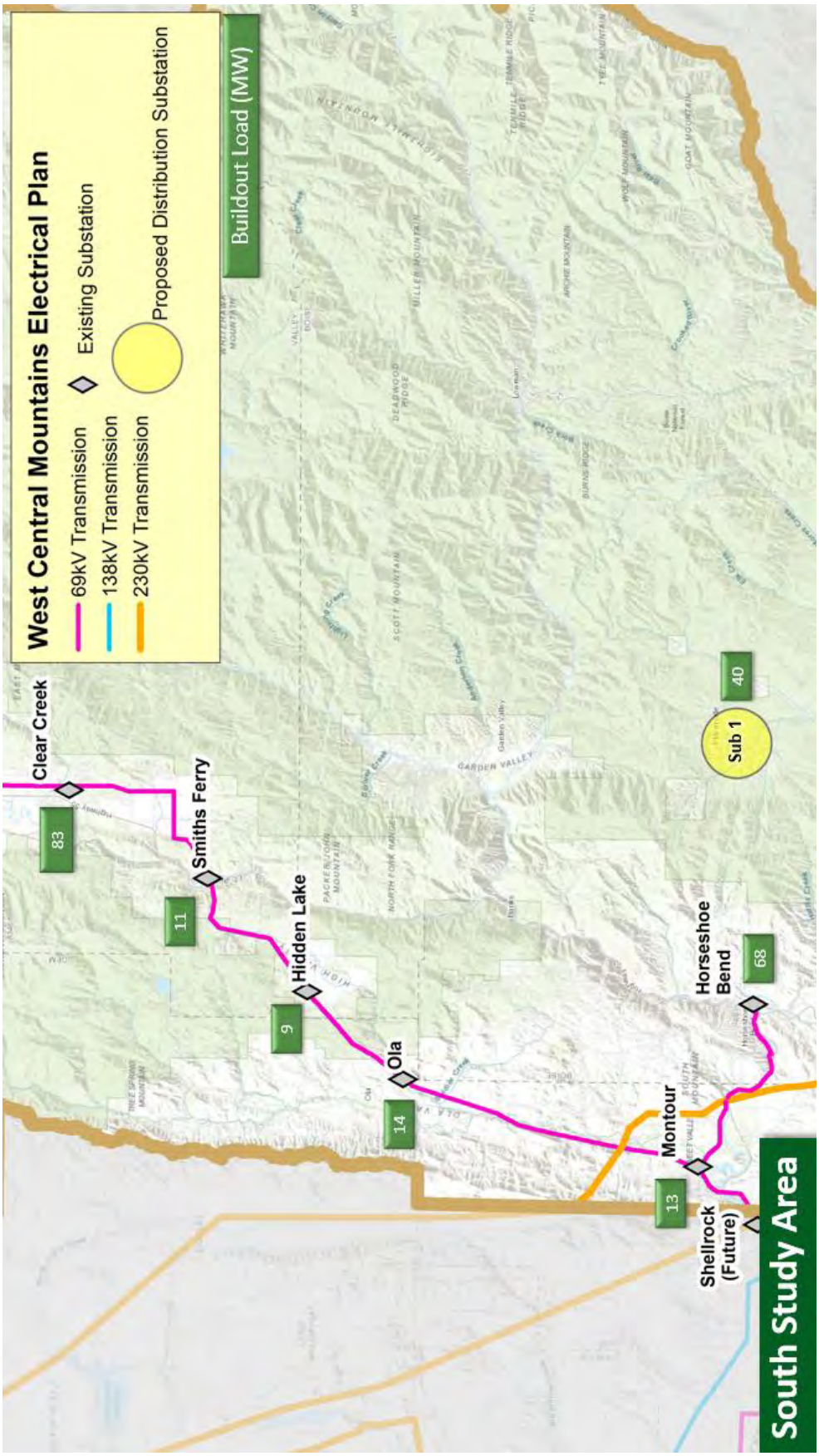
- Additional line from Horse Flat to Starkey
- Additional line from McCall area to Boulder or Lake Fork



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

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


West Central Mountains Electrical Plan
69kV Transmission
138kV Transmission
230kV Transmission
Existing Substation
Proposed Distribution Substation
Buildout Load (MW)
North Study Area
Cambridge
Starkey
Tamarack
New Meadows
McCall
Boulder
Lake Fork
Council
Warm Lake
Scott Valley
Cascade
Sub 2
Sub 3
Sub 4
11
40
74
81
80
80
38
39
81
33
6
1


West Central Mountains Electrical Plan
69kV Transmission
138kV Transmission
230kV Transmission
Existing Substation
Proposed Distribution Substation
Buildout Load (MW)
Clear Creek
83
Smiths Ferry
11
Hidden Lake
9
Ola
14
Montour
13
Shellrock (Future)
Horseshoe Bend
68
Sub 1
40
South Study Area