# WESTERN CENTRAL MOUNTAINS
## ELECTRICAL PLAN

# Welcome

Jim Burdick
Engineering Leader
Idaho Power

# Today's Agenda

| | |
|---|---|
| 10:00 a.m. | Welcome |
| 10:05 a.m. | Community goals and siting criteria |
| 10:15 a.m. | Substation connections and reliability criteria |
| 10:45 a.m. | Small group mapping |
| 12:00 p.m. | Lunch |
| 12:30 a.m. | Small group mapping |
| 2:50 p.m. | Next steps and wrap up |
| 3:00 p.m. | Adjourn |

# WESTERN CENTRAL MOUNTAINS
## ELECTRICAL PLAN

# Community Goals And Siting Criteria

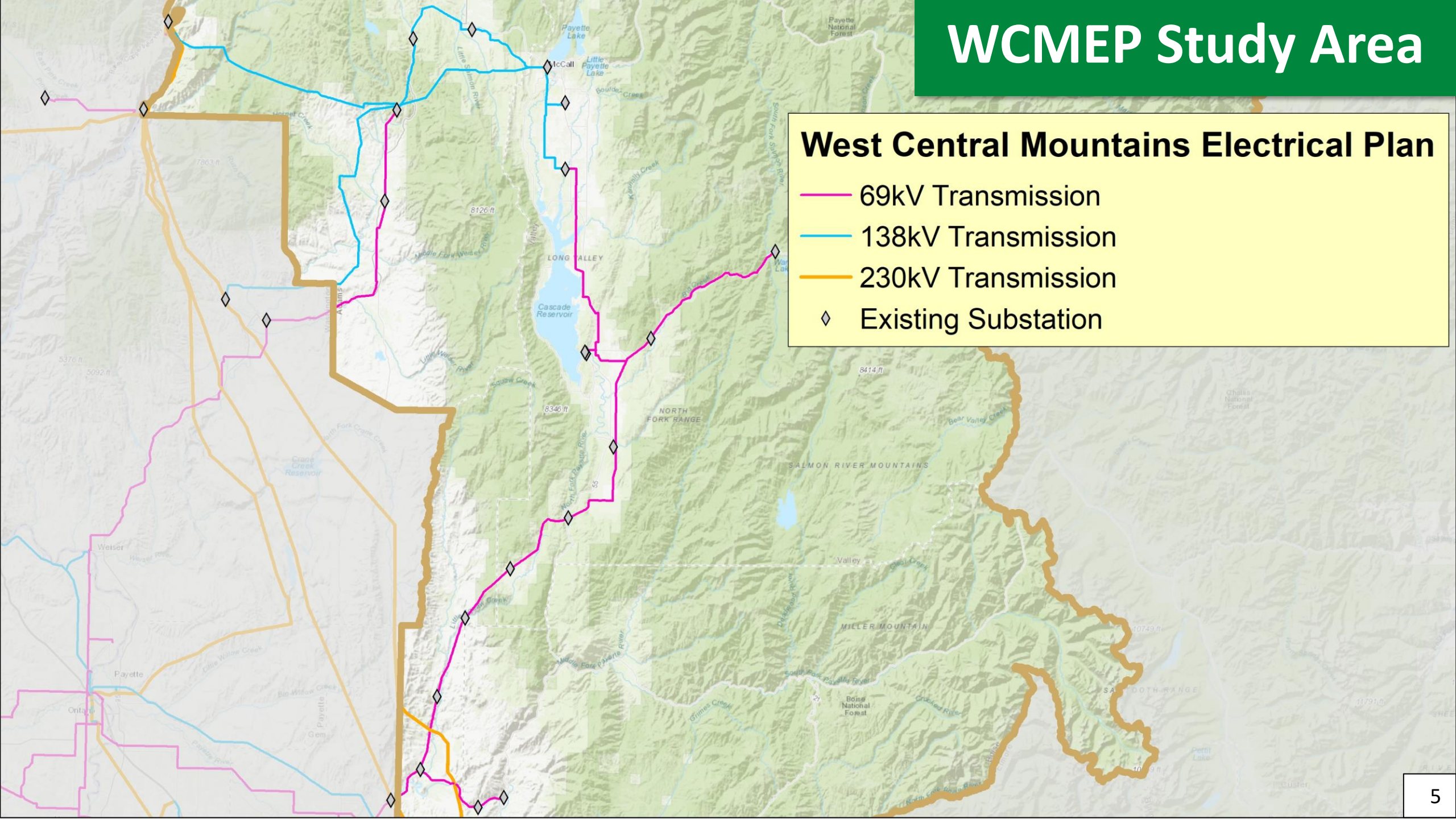
Jim Burdick
Engineering Leader
Idaho Power

# WESTERN CENTRAL MOUNTAINS
## ELECTRICAL PLAN

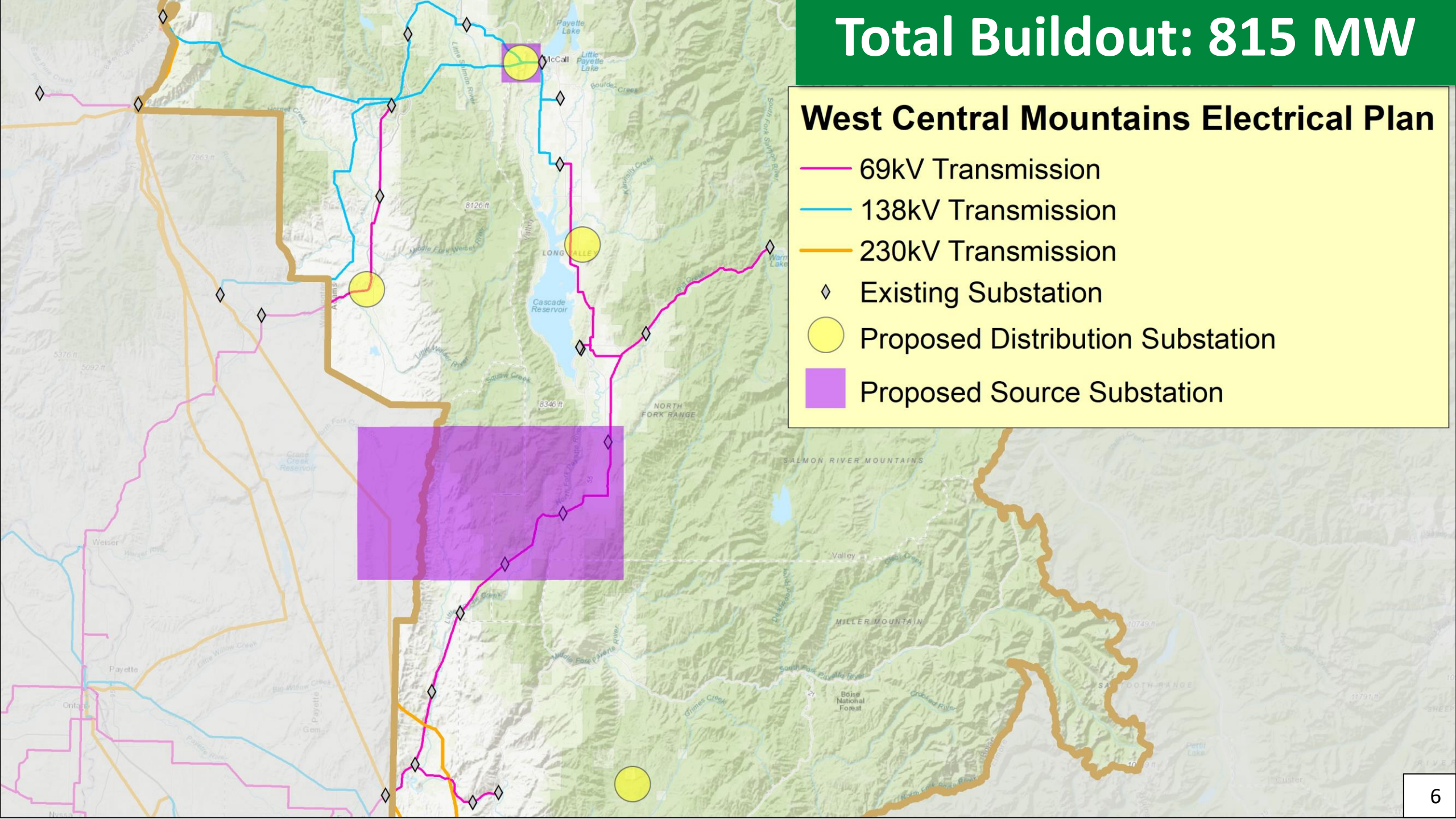
# Reliability and Mapping

Ted Solem
Senior Engineer
Idaho Power

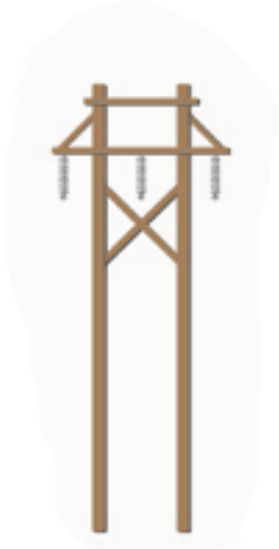
# WCMEP Study Area



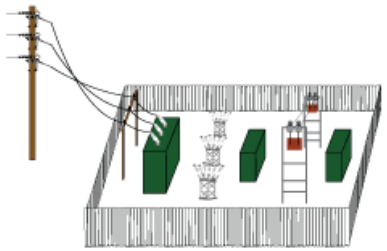
# Total Buildout: 815 MW



# 2025 WCMEP Update Buildout Requirements

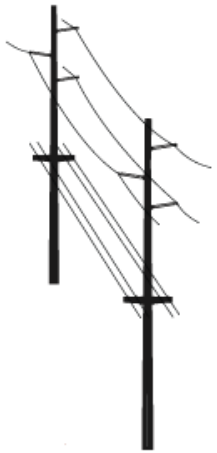


High Voltage Transmission

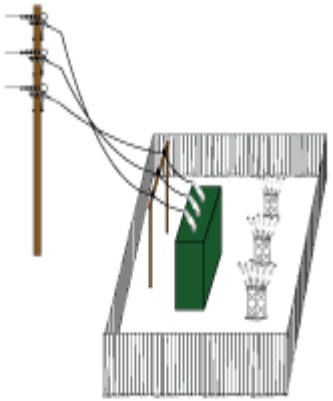


Source Substations

Two New Source Substations



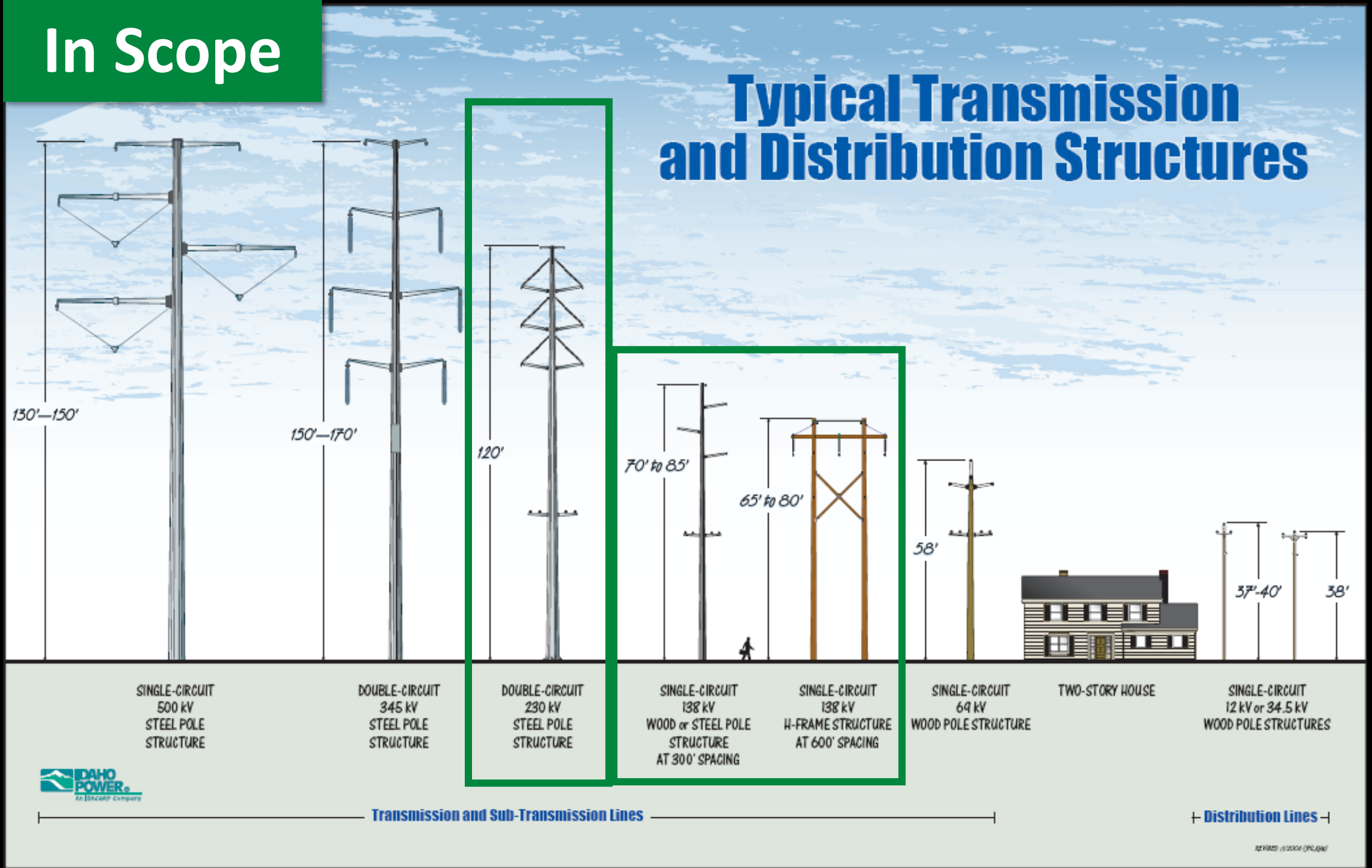
138 kV Transmission



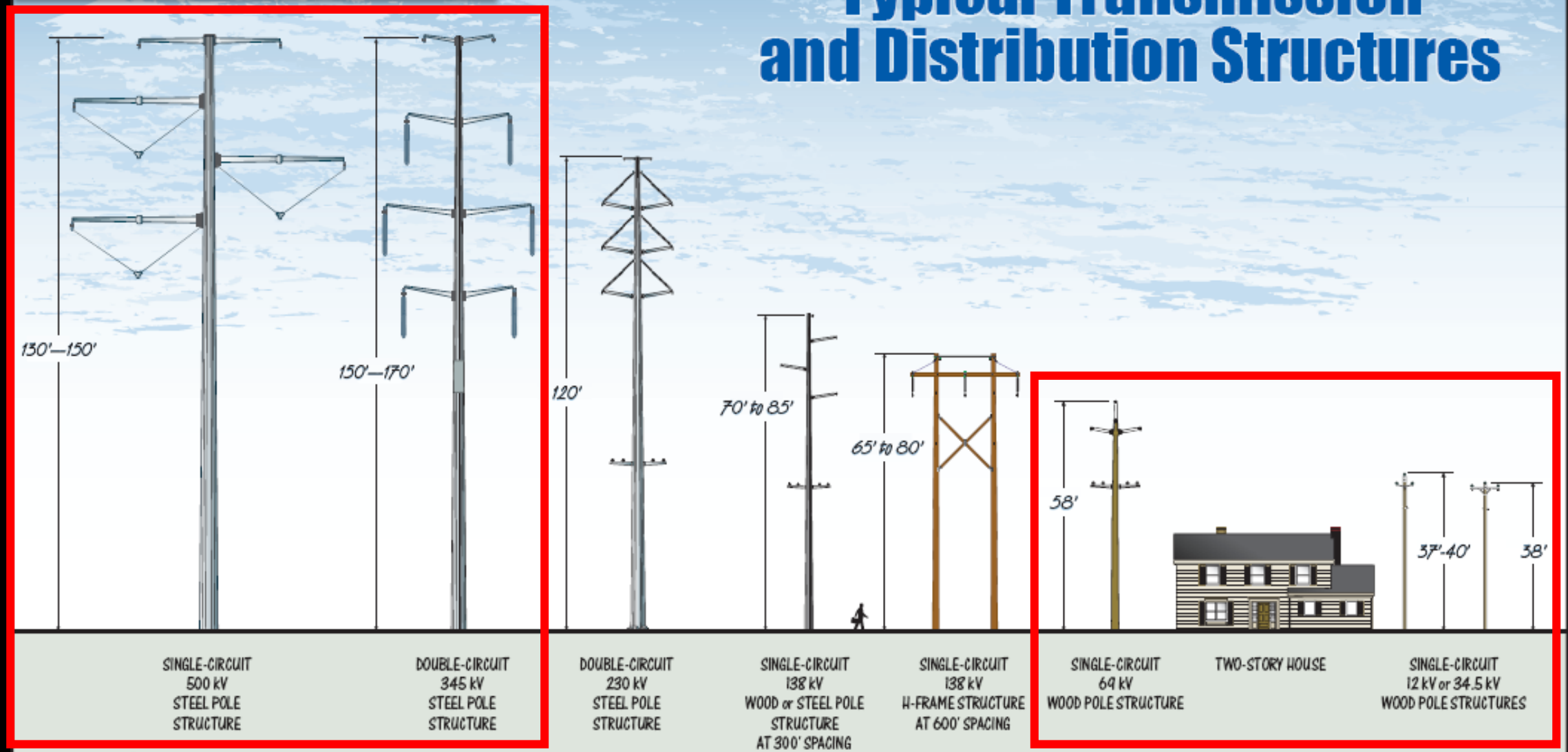
Distribution Substations

4 New Distribution Substations

# In Scope


Typical Transmission and Distribution Structures
130'–150'
150'–170'
120'
70' to 85'
65' to 80'
58'
37'-40'
38'
SINGLE-CIRCUIT 500 kV STEEL POLE STRUCTURE
DOUBLE-CIRCUIT 345 kV STEEL POLE STRUCTURE
DOUBLE-CIRCUIT 230 kV STEEL POLE STRUCTURE
SINGLE-CIRCUIT 138 kV WOOD or STEEL POLE STRUCTURE AT 300' SPACING
SINGLE-CIRCUIT 138 kV H-FRAME STRUCTURE AT 600' SPACING
SINGLE-CIRCUIT 69 kV WOOD POLE STRUCTURE
TWO-STORY HOUSE
SINGLE-CIRCUIT 12 kV or 34.5 kV WOOD POLE STRUCTURES
IDAHO POWER
Transmission and Sub-Transmission Lines
Distribution Lines

# Out of Scope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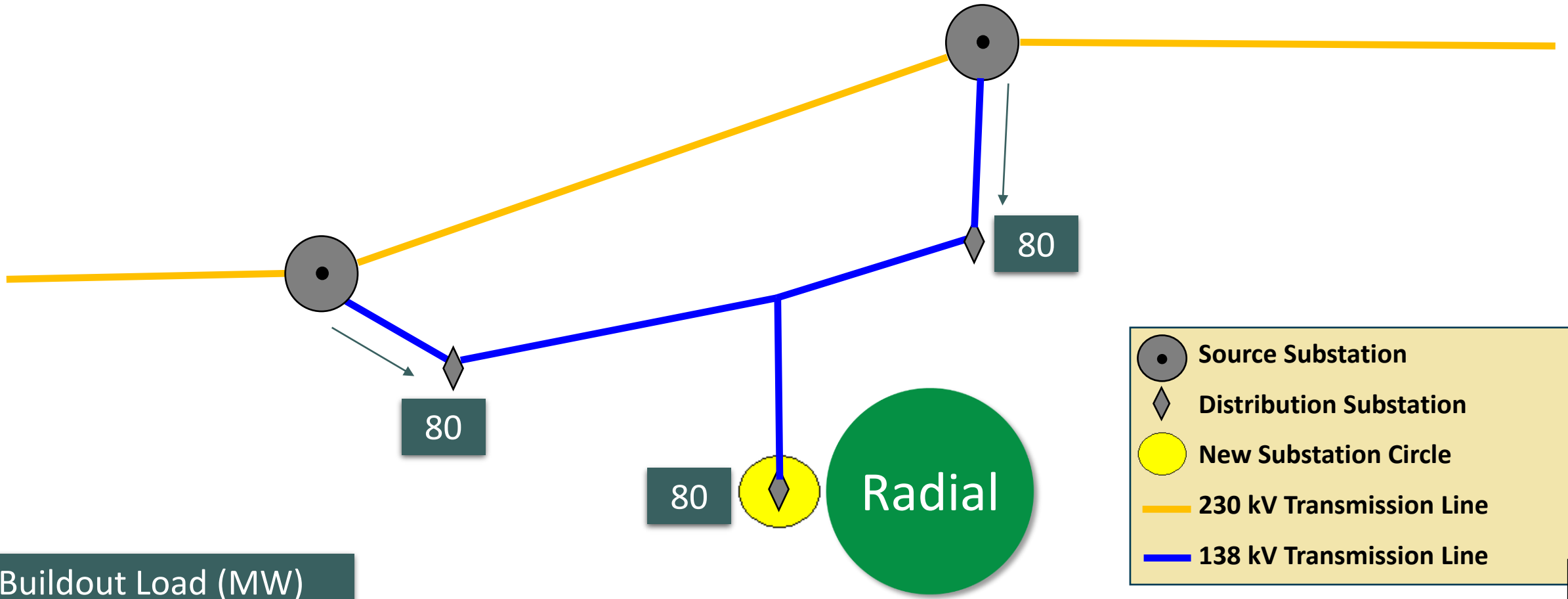
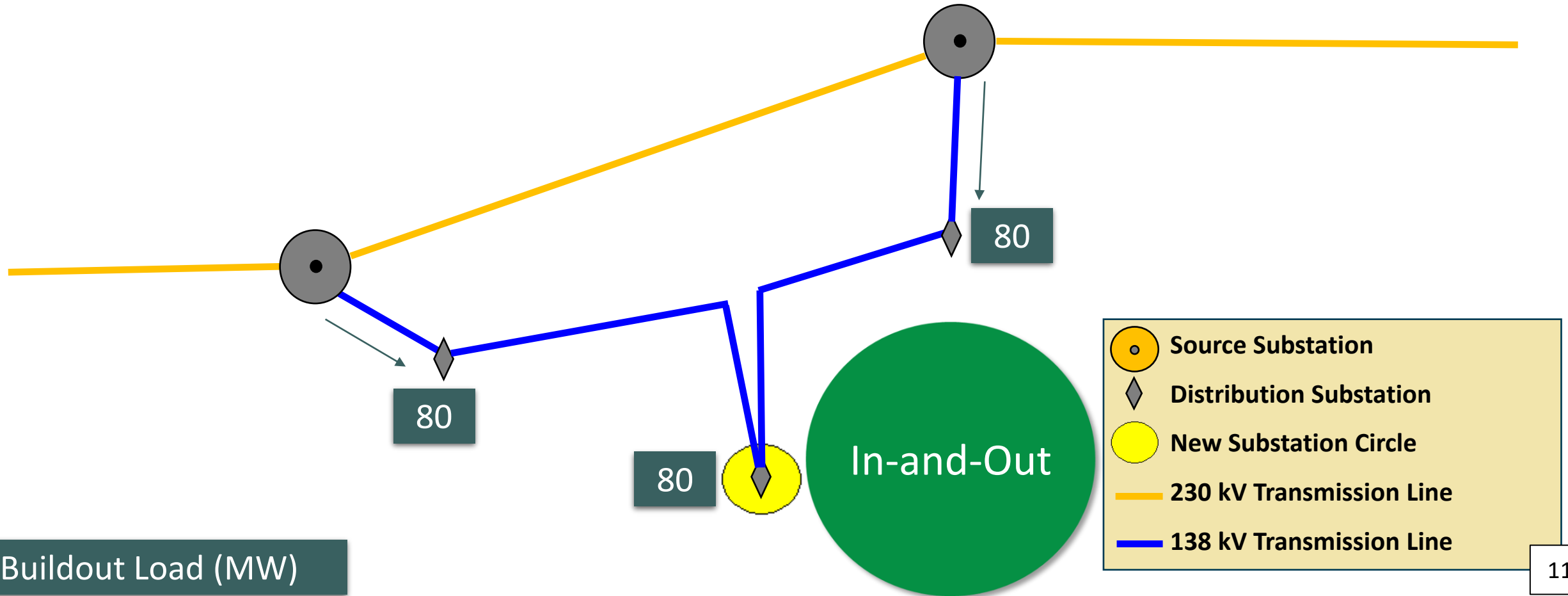
IDAHO POWER
Transmission and Sub-Transmission Lines
Distribution Lines

# Substation Connections




Buildout Load (MW)

# Substation Connections

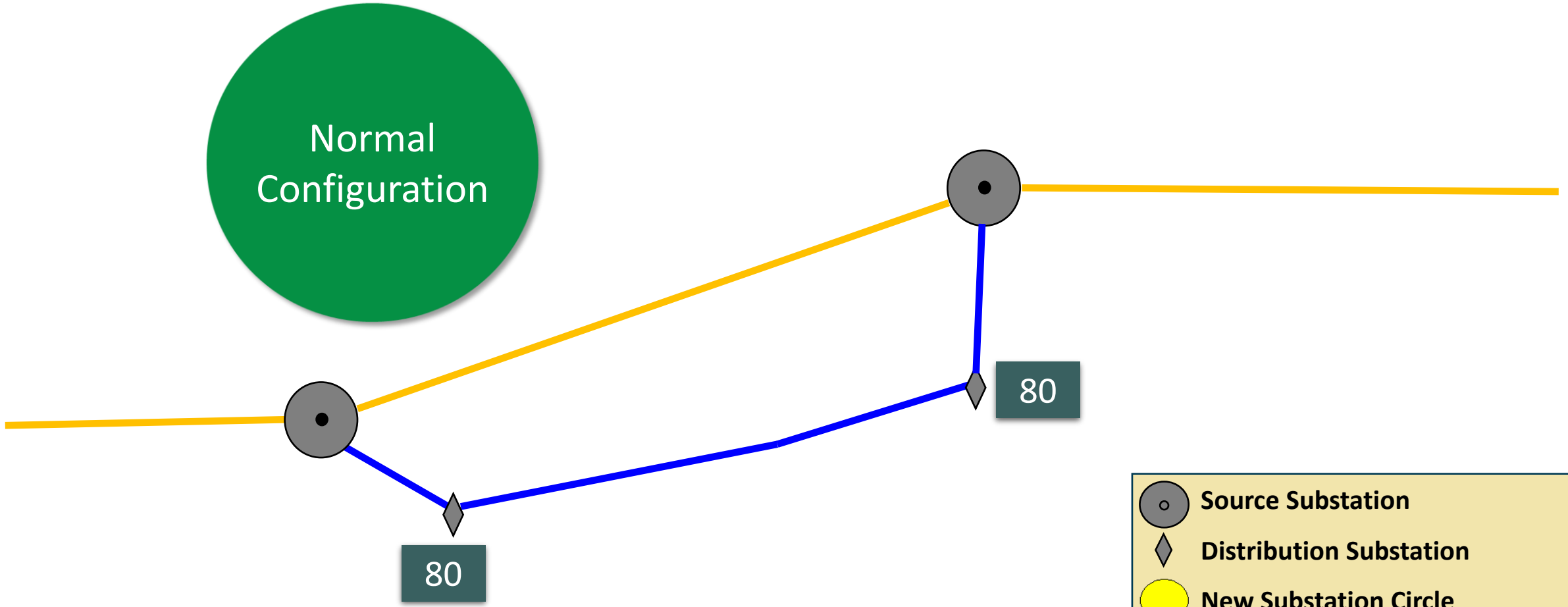



Buildout Load (MW)

# (N-1) Reliability Criteria

- ‘N’ stands for ‘normal’
- (N - 1) indicates the system is operating normally, but with the removal of a single transmission line or transformer
- Used to minimize impact to customers
  - Frequency
  - Duration
  - Number of customers

# Reliability Example




Buildout Load (MW)

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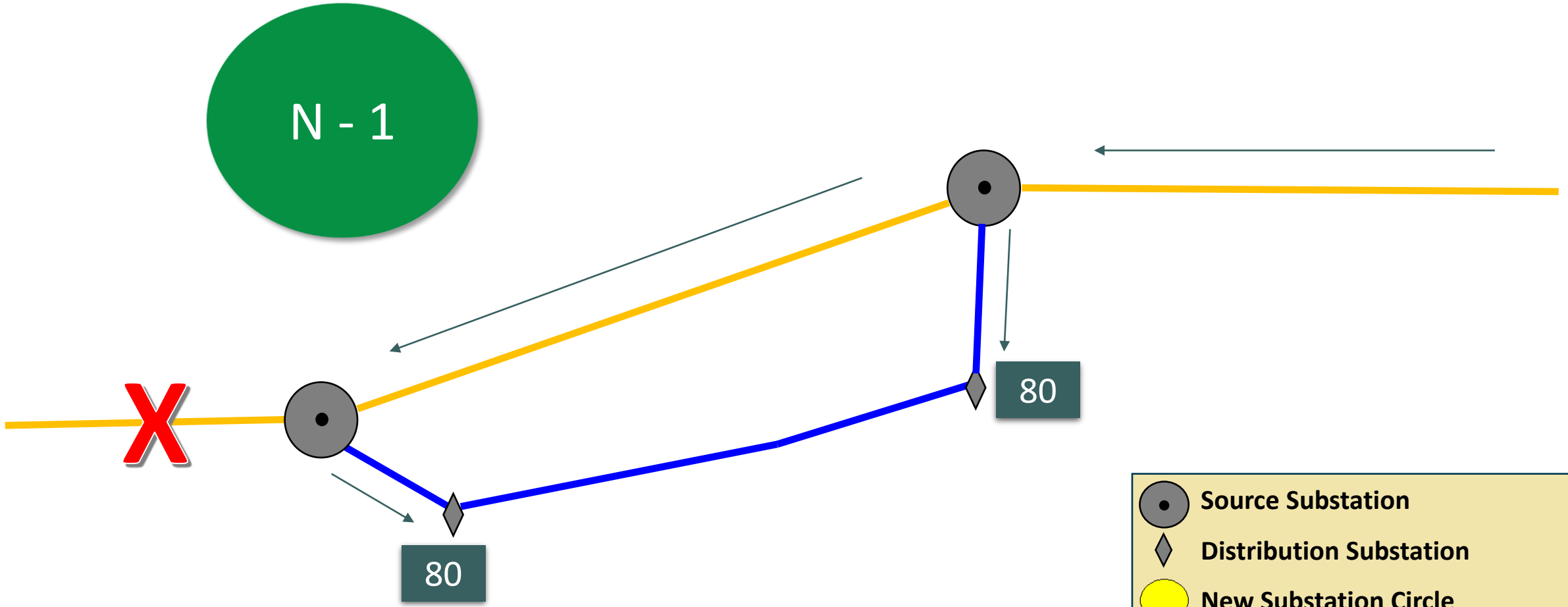
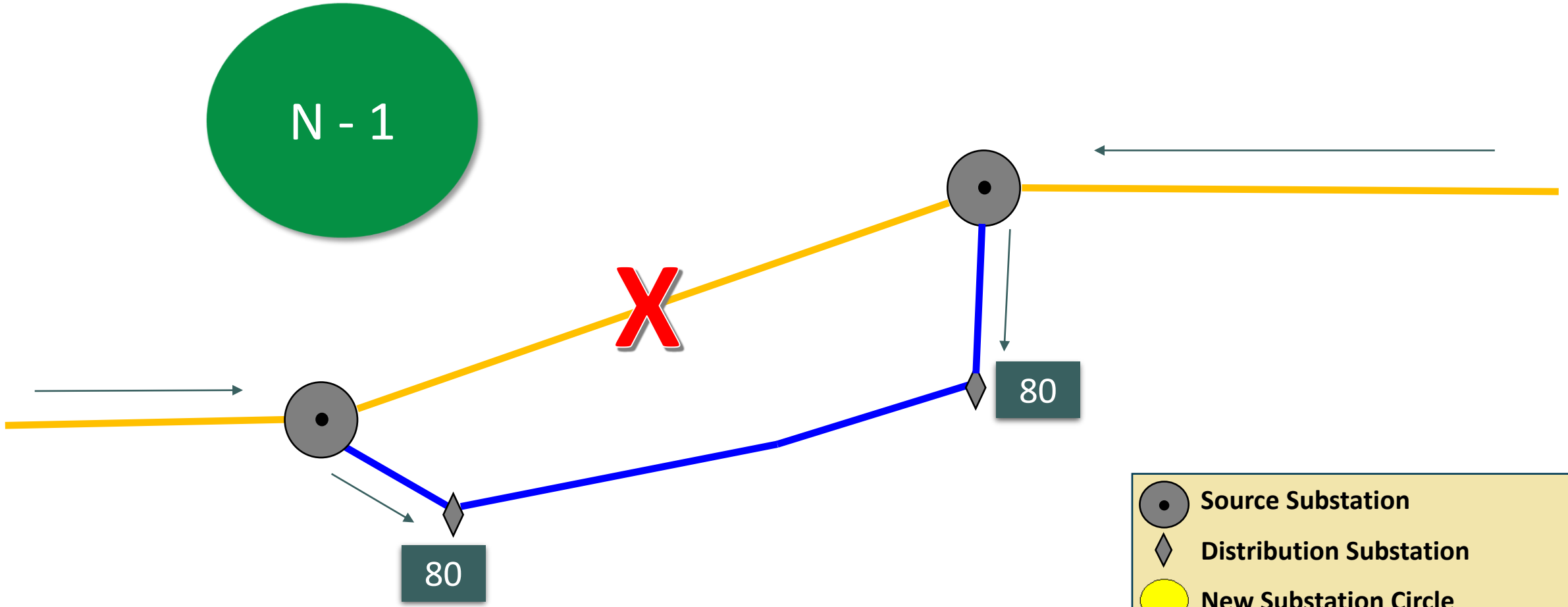


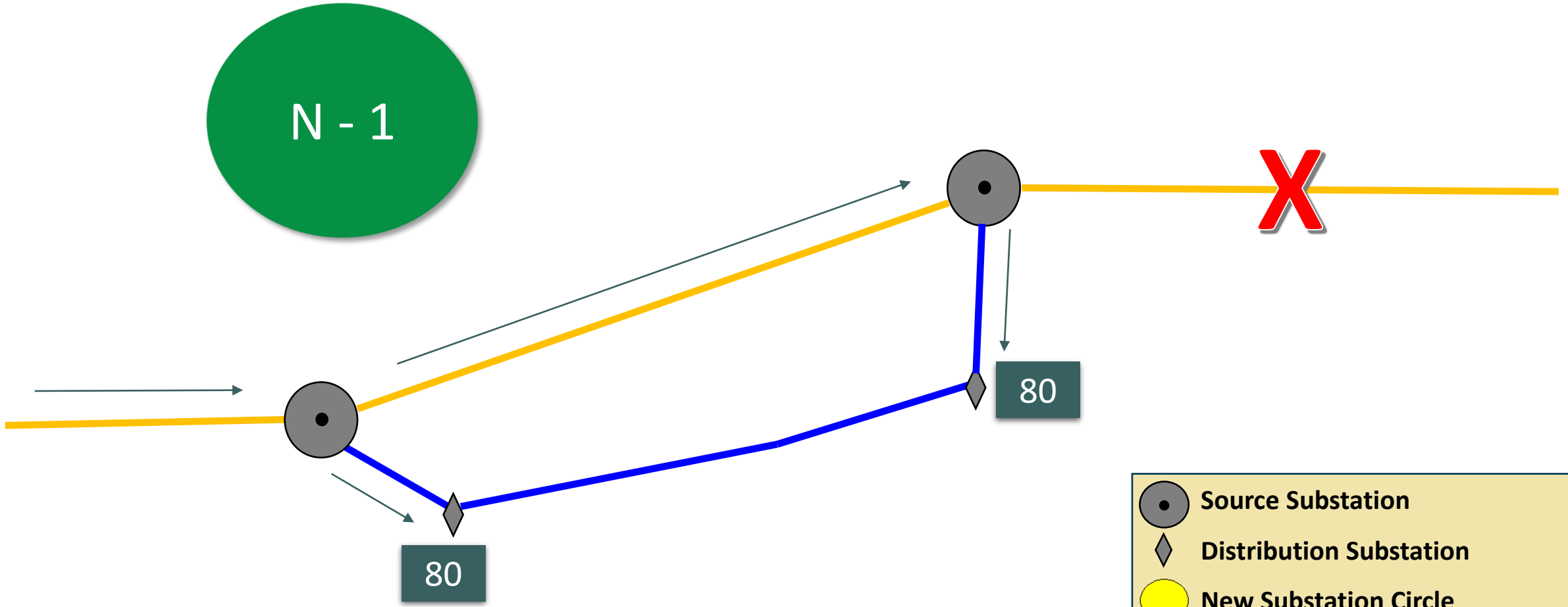

Buildout Load (MW)

# Reliability Example




Buildout Load (MW)

# Reliability Example




Buildout Load (MW)

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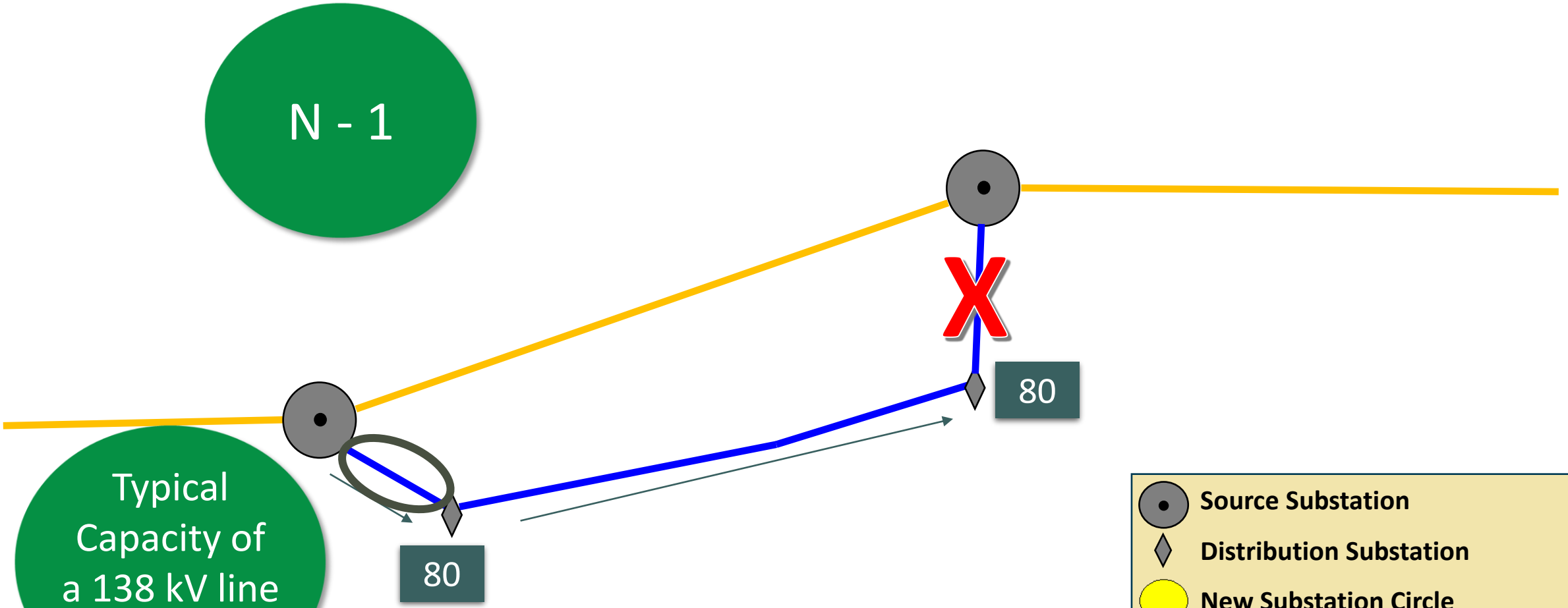
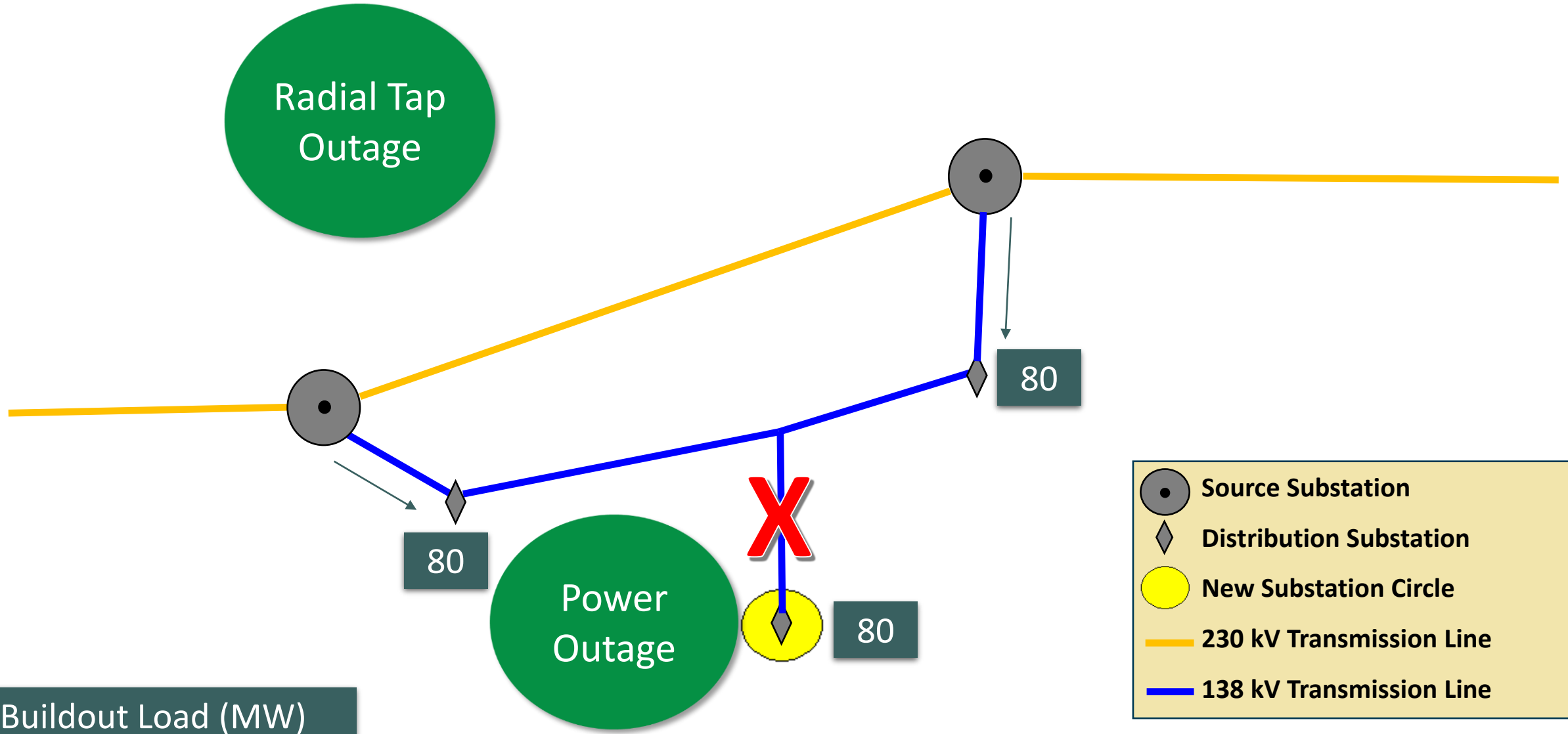


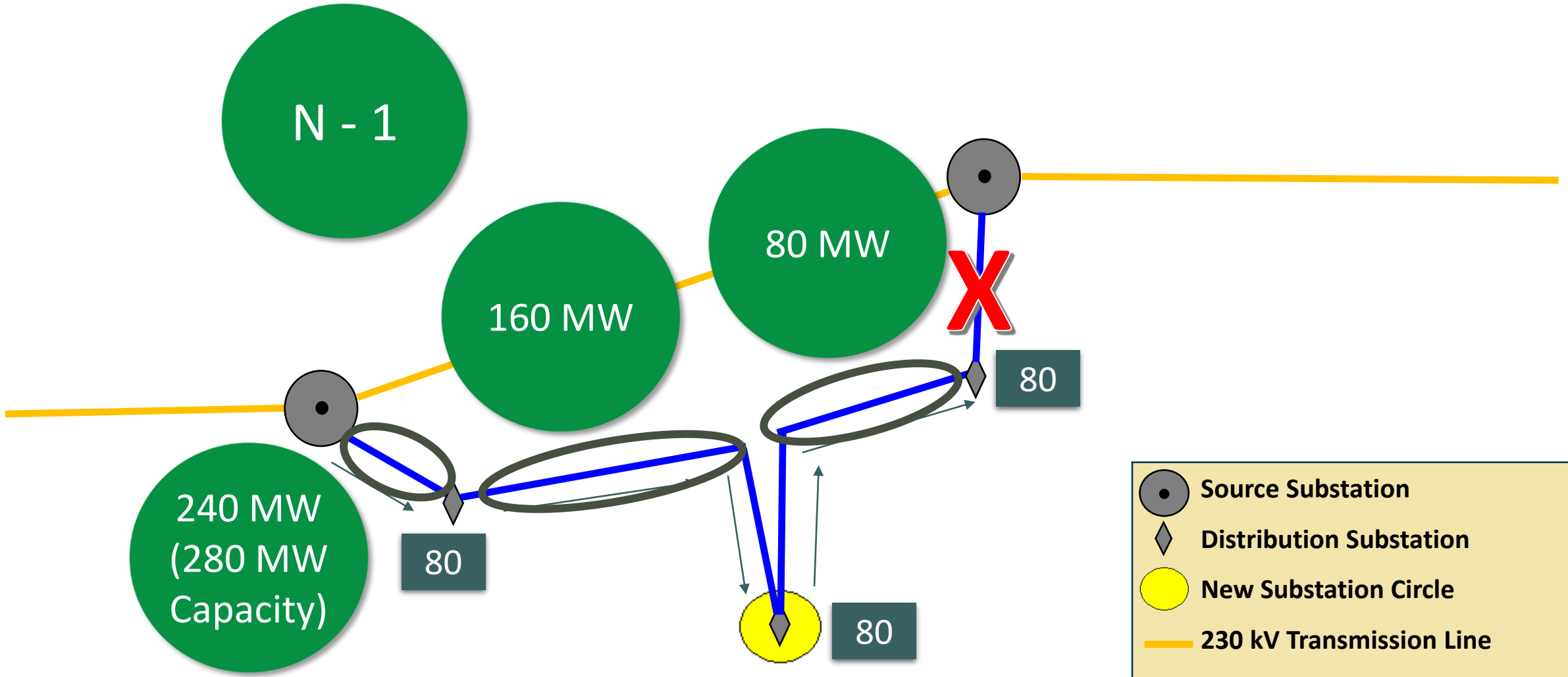

Buildout Load (MW)

# Reliability Example



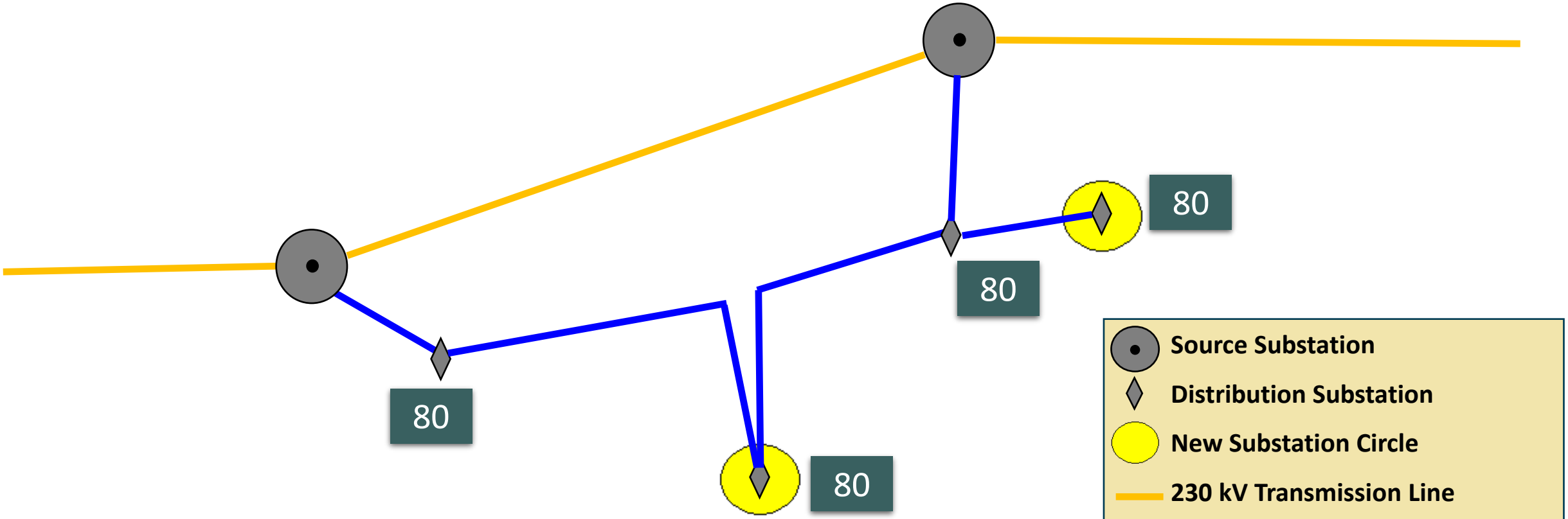

Buildout Load (MW)

# Reliability Example



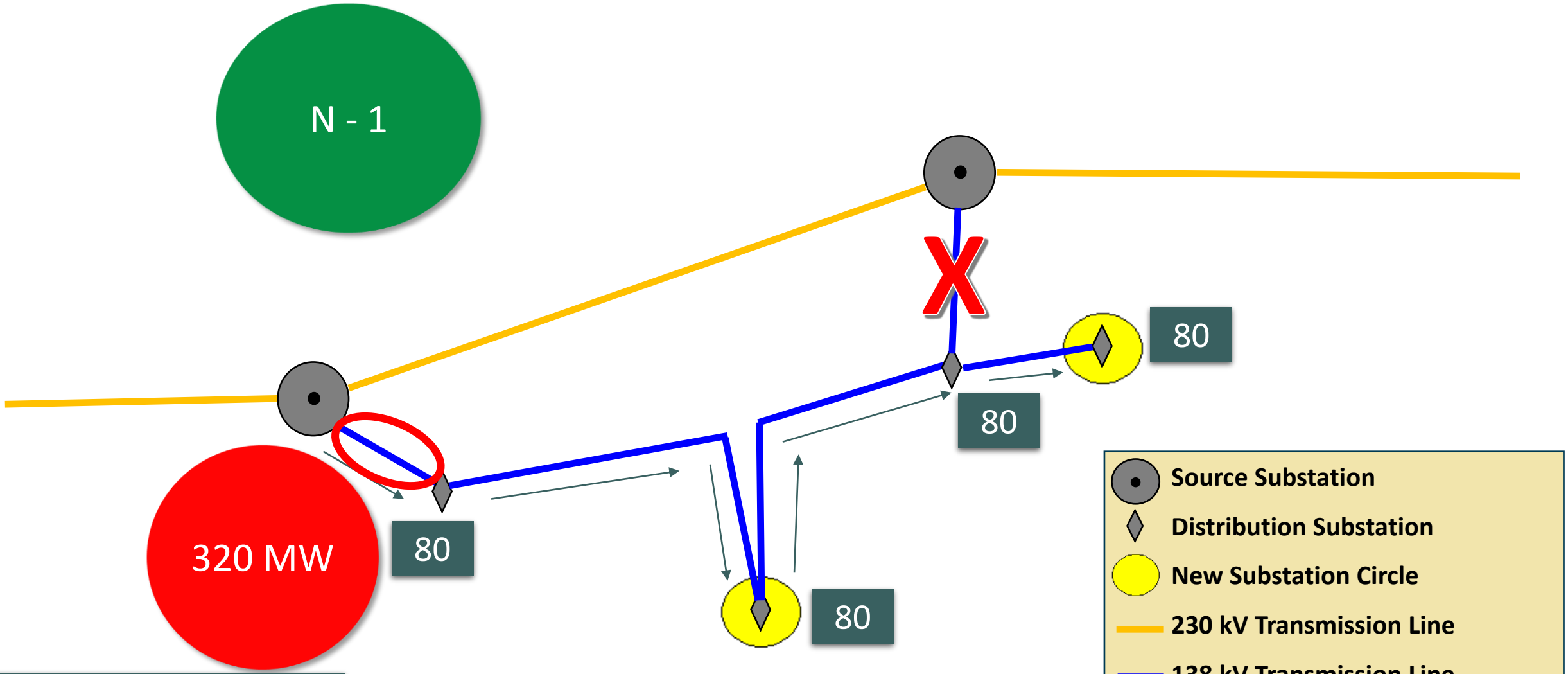

Buildout Load (MW)

# Mapping Example




Buildout Load (MW)

# Mapping Example



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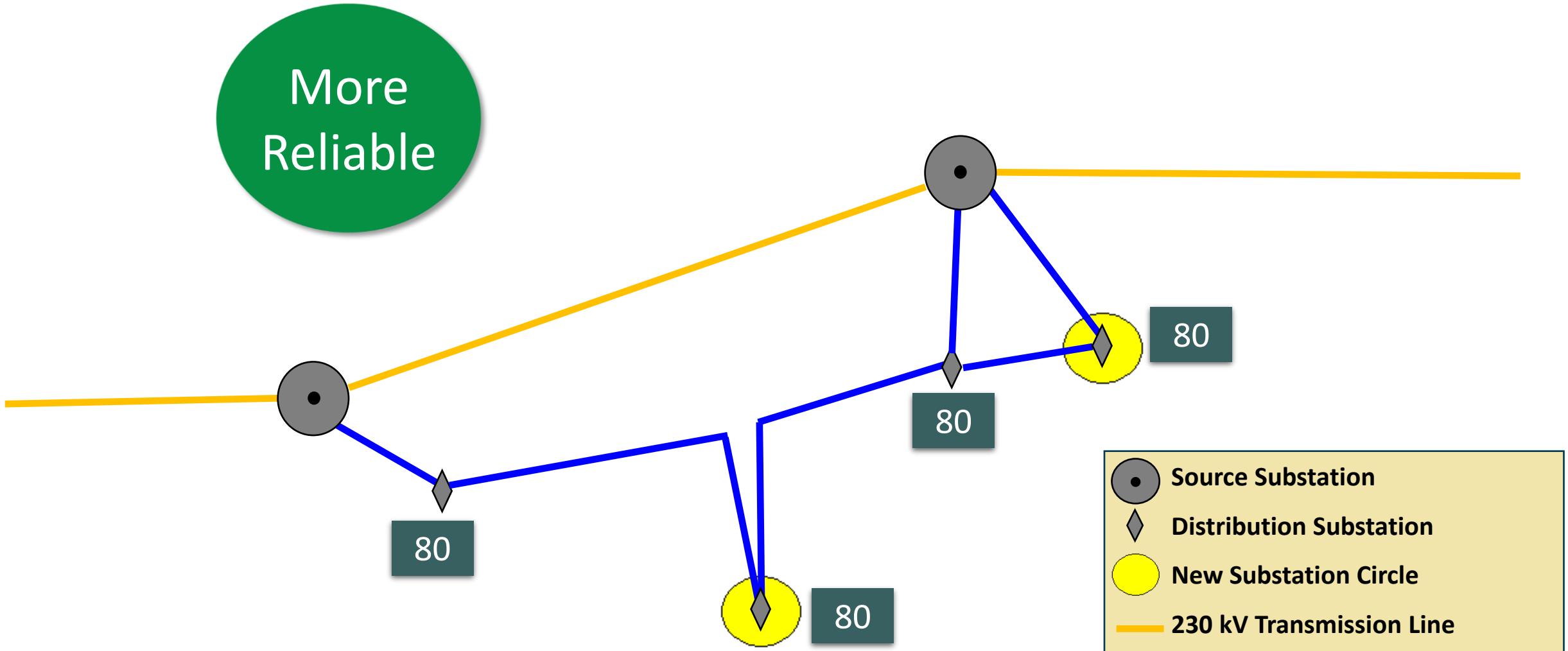
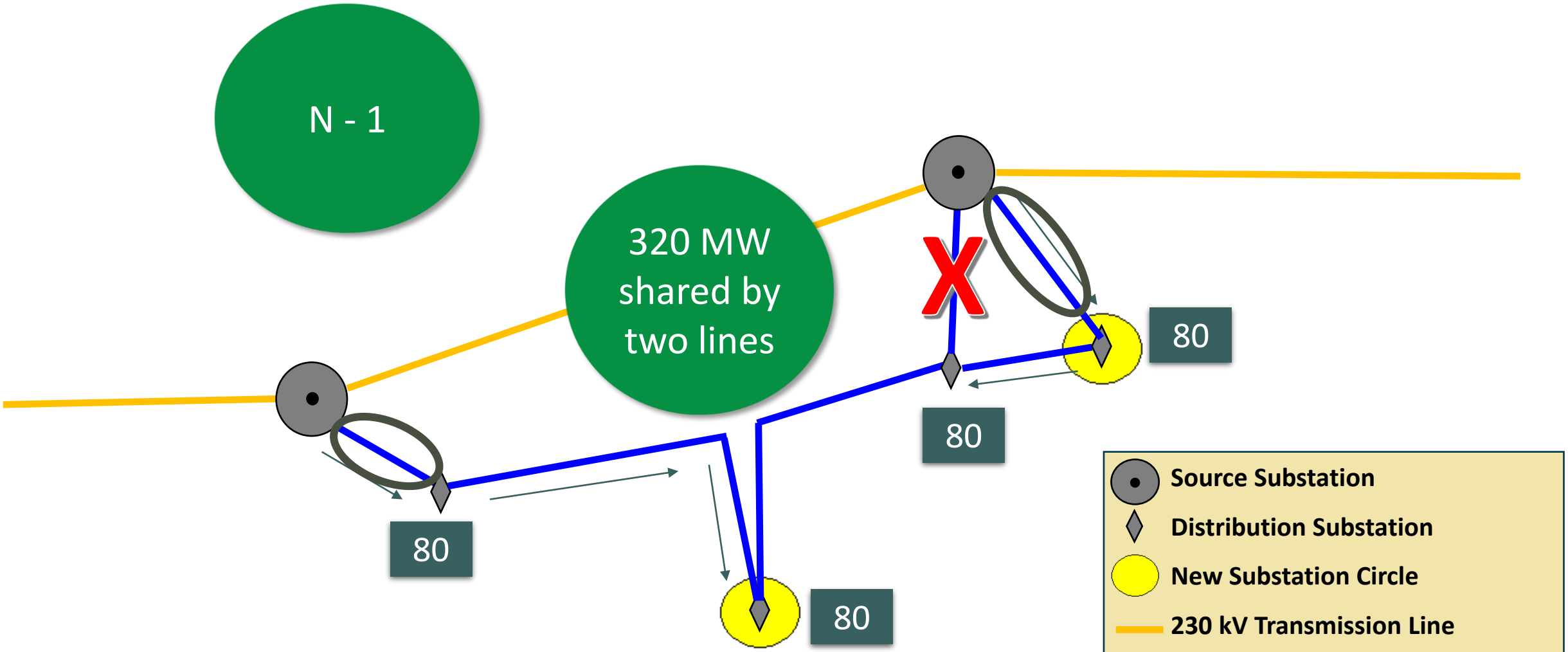
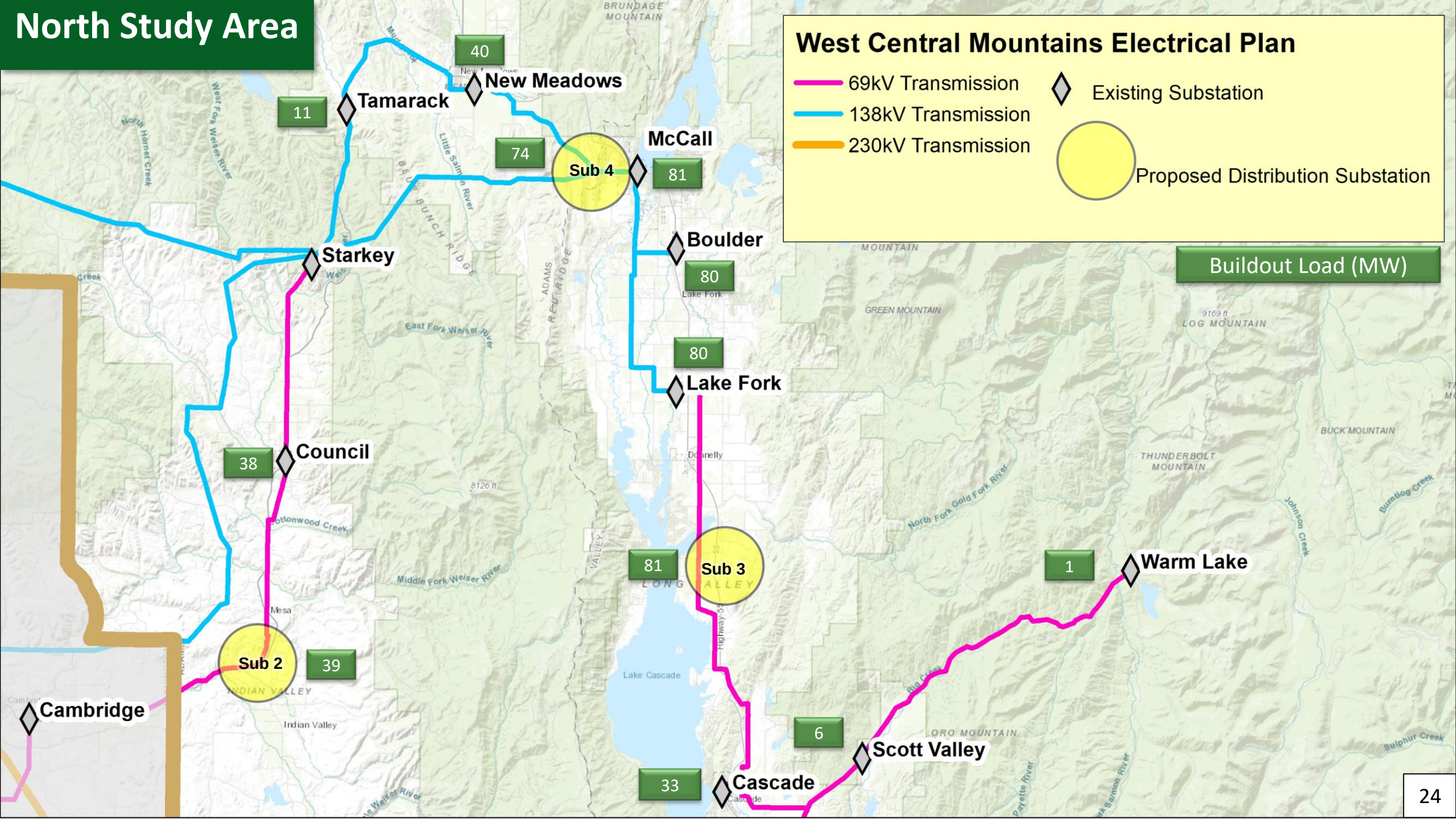


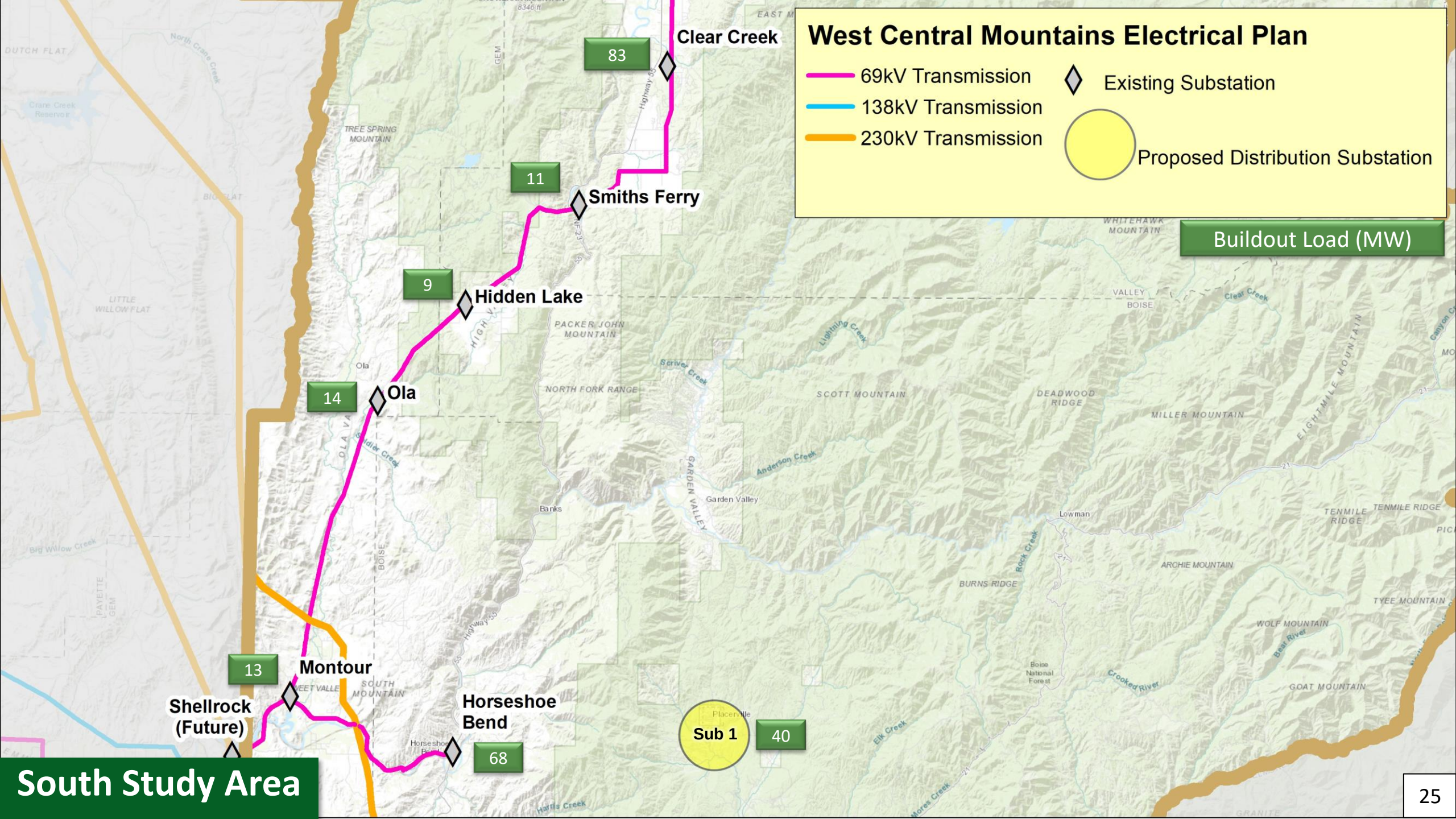
# Mapping Example




Buildout Load (MW)

# North Study Area




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

# Mapping Orientation

- See Appendix D in the WCMEP Update 2025 Binders

# Committee Mapping Goal

- Propose a single preferred site for each future source substation, distribution substation and connecting transmission lines
  - Identify alternative sites

# Mapping Step 1

- Review and confirm or adjust proposed **source substation** sites
  - Smiths Ferry area source substation

# Mapping Step 2

- Propose sites for new **source substation**
  - West McCall area source substation

# Mapping Step 3

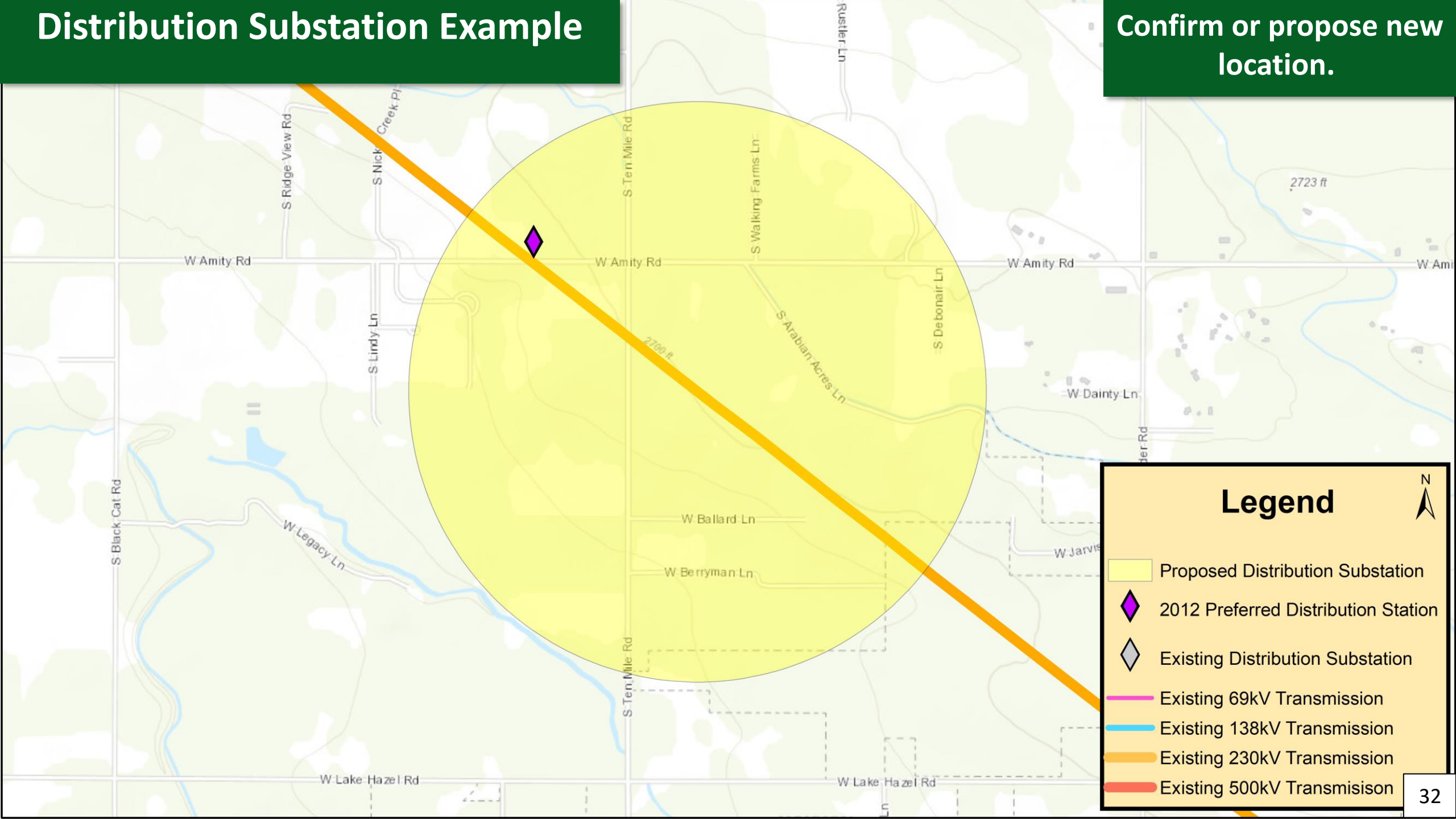
- Confirm or propose **high voltage (230kV) transmission line** routes to each source substation.

# Mapping Step 4

- Confirm or adjust 2014 WCMEP **distribution substation** sites.
  - 3 substation locations to confirm or revise.

# Distribution Substation Example

**Confirm or propose new location.**

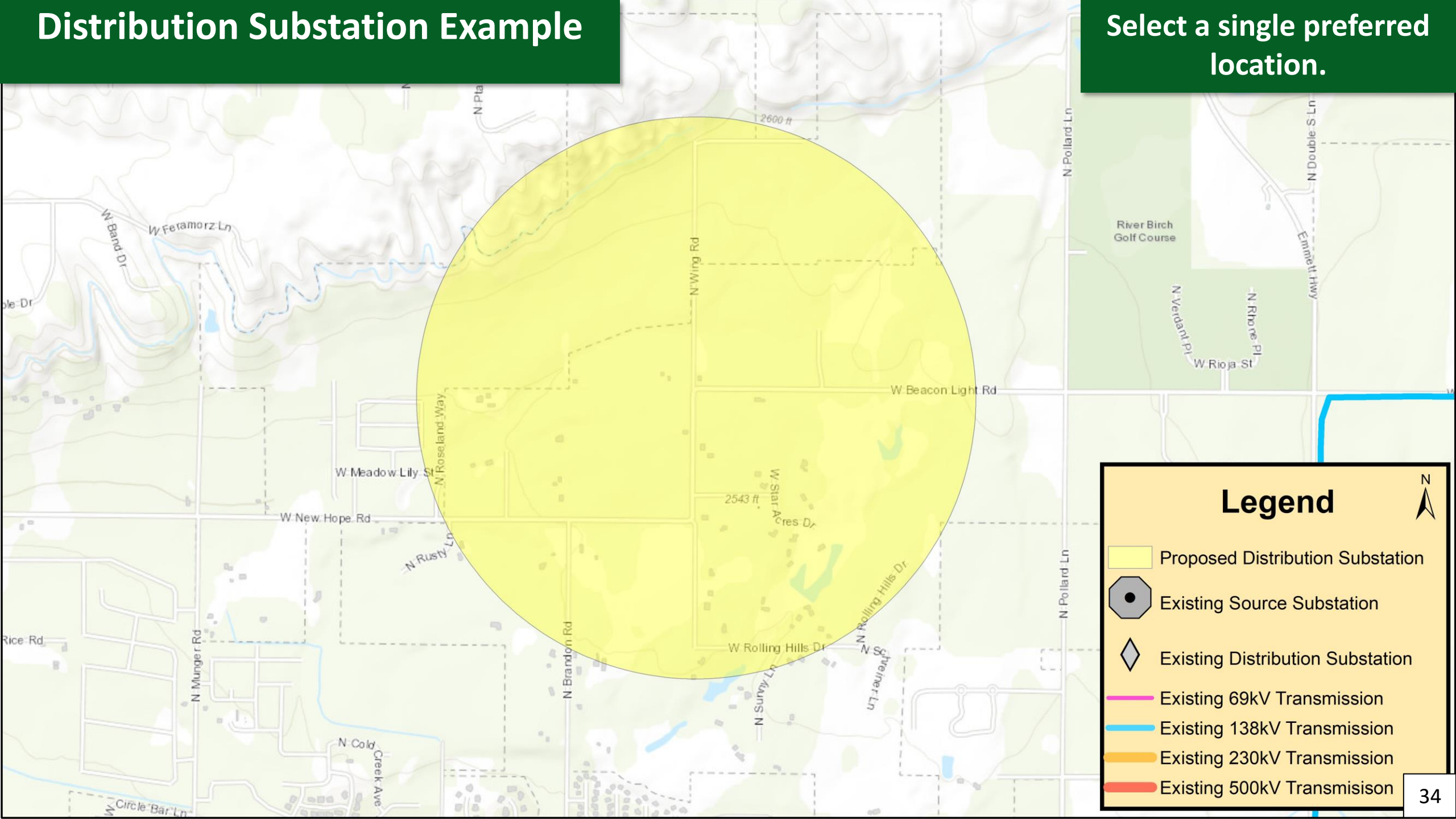


# Mapping Step 5

- Propose sites for new **distribution substation**
  - 1 substation circle to identify preferred locations.

# Distribution Substation Example

**Select a single preferred location.**



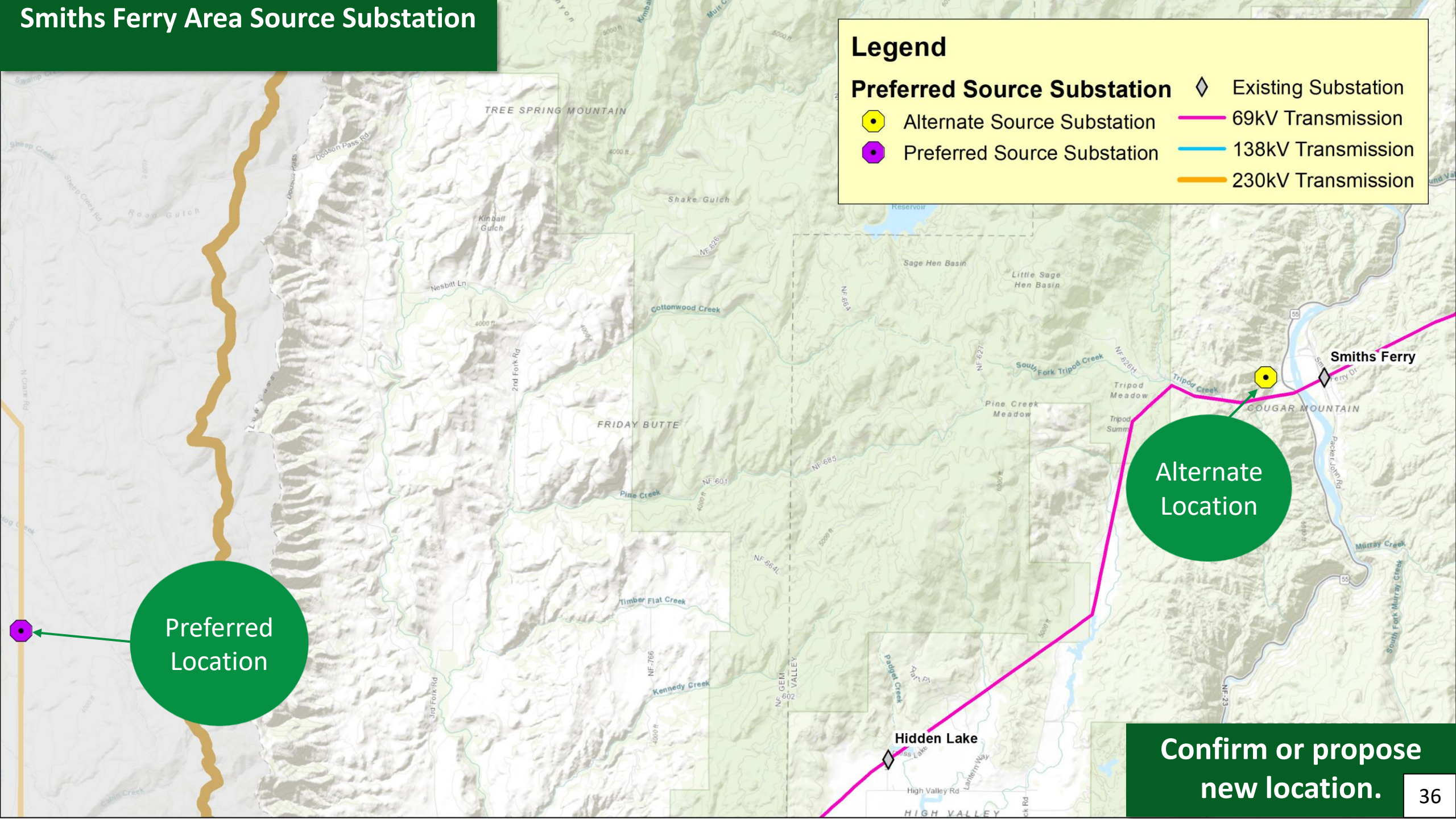

## Legend

- Proposed Distribution Substation
- Existing Source Substation
- Existing Distribution Substation
- Existing 69kV Transmission
- Existing 138kV Transmission
- Existing 230kV Transmission
- Existing 500kV Transmisison

# Mapping Step 6

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

# Smiths Ferry Area Source Substation




**Confirm or propose new location.**

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## ELECTRICAL PLAN

# Mapping Orientation

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# Next Steps

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