

PSCo Senate Bill 100

Transmission Study Group

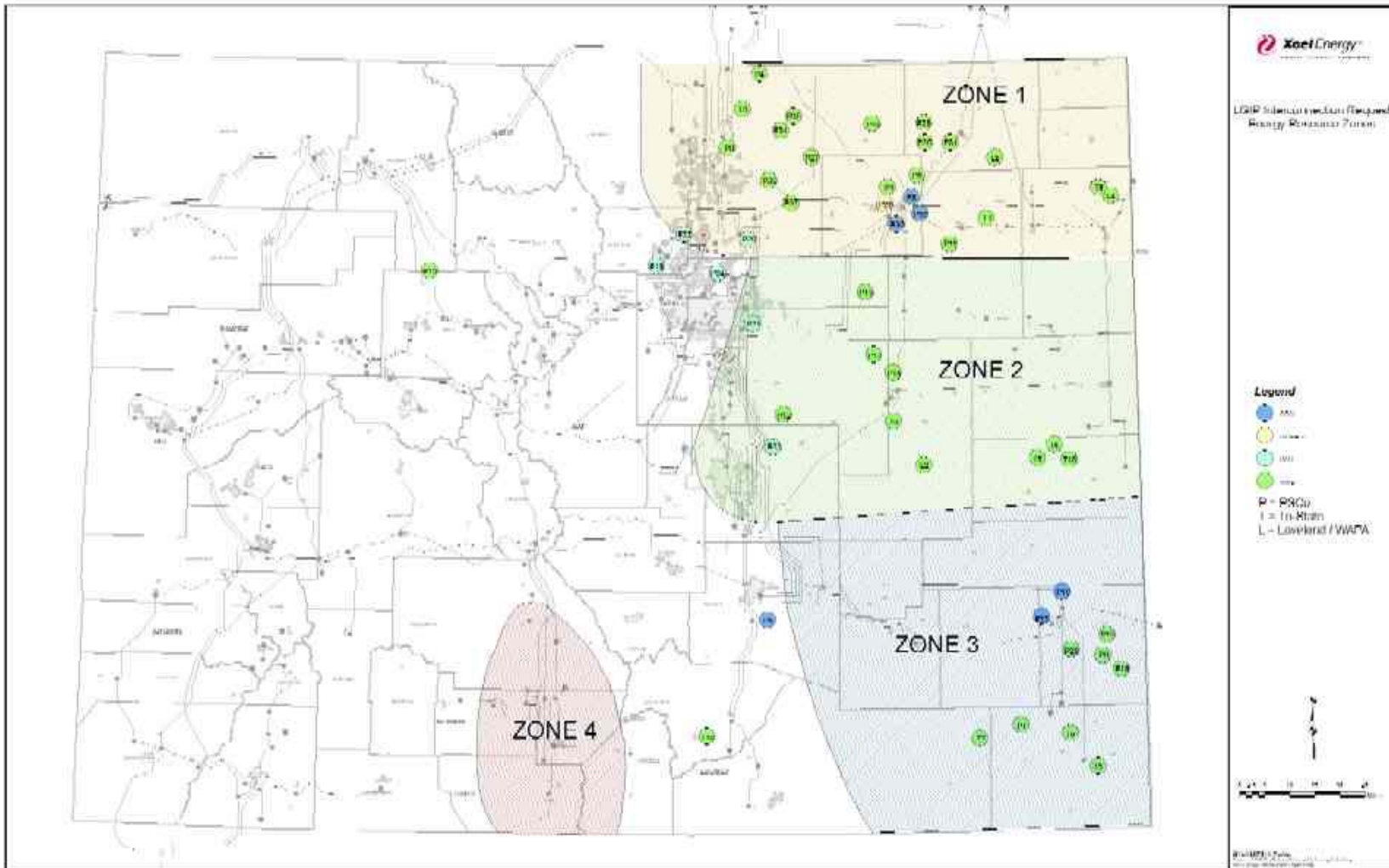
June 14, 2007

Senate Bill 100 Transmission Study Group

Transmission Study Team Goals

- ◆ Discuss preliminary transmission plans for each energy resource zone
- ◆ Discuss approximate MW levels of injection for each plan
- ◆ Get input on the proposed transmission plans/input on new plans
- ◆ Decide final list of study plans (July 1st 2007)
- ◆ Perform stand alone technical studies plus cost estimates and project schedules for each zone

Senate Bill 100 Energy Resource Zones



Senate Bill 100 Transmission Plan Zone 1

- ◆ PSCo Transmission Planning will perform system studies for the four energy resource zones identified

Zone 1 (Northeast Colorado)

- ◆ **Pawnee Region:** (A) Transmission plan to add additional Available Transmission Capacity (ATC)
 - ◆ (A) Upgrade the existing 230 kV Pawnee – Quincy - Smoky Hill – Daniels Park, and Pawnee – Daniels Park lines to 637 MVA.
 - ◆ **Cost: \$1.54 million** **Time Frame: 9 months**
 - ◆ (B) Transmission plan for a 345 kV switchyard at Pawnee.
 - ◆ **Cost: \$102 million** **Time Frame: 65 months**

Transmission Plan Zone 1 – Pawnee Region

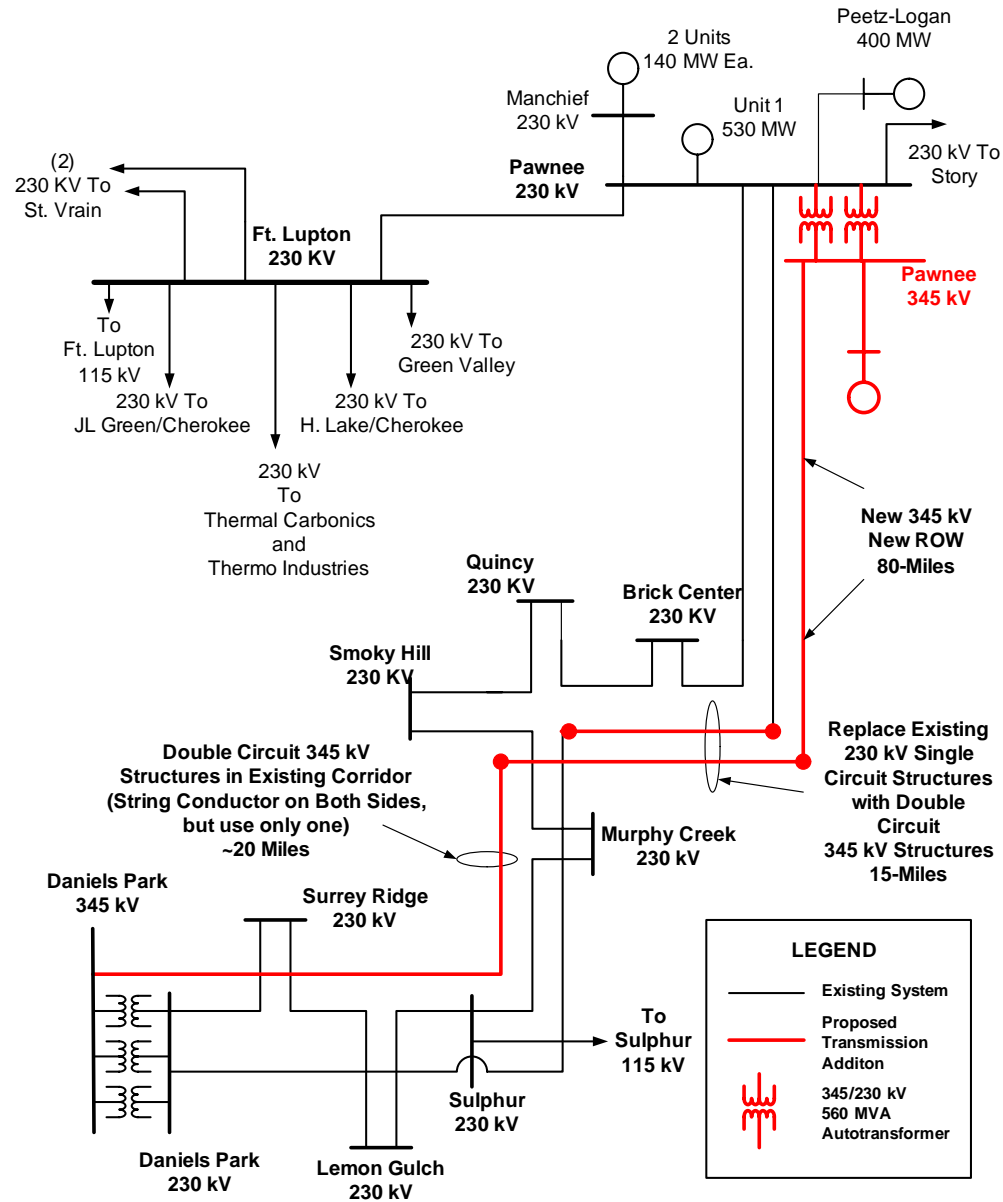


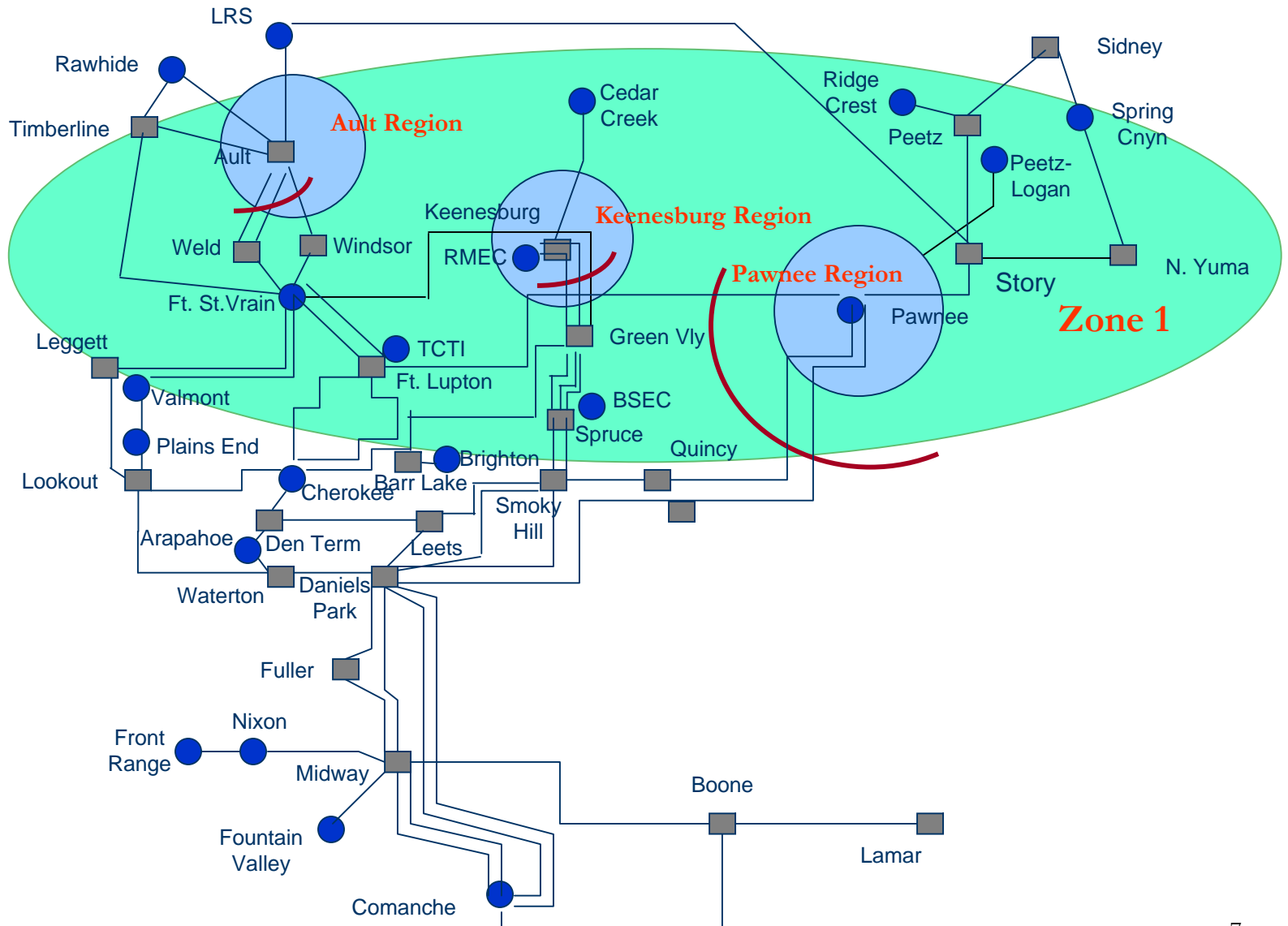
Figure 1- Transmission Network with Recommended Upgrades for Pawnee Region

Senate Bill 100 Transmission Plan Zone 1

Zone 1 (Northeast Colorado – cont.)

- ◆ **Keenesburg Region:** Network upgrade requirements are presently being studied for injection into Keenesburg 230 kV. Ongoing studies include GI-2007-5 and GI-2007-6. Studies being coordinated with WAPA, PRPA and Tri-State.
- ◆ **Ault Region:** In process of evaluating the need for additional ATC to accommodate new alternatives of 300 MW (GI-2007-3, 2010) and additional 300 MW (GI-2007-4, 2013) injection into Ault area. Studies being coordinated with WAPA, PRPA and Tri-State.

Transmission Plan: Zone 1 (NE Colorado)



Senate Bill 100 Transmission Plan Zones 2&3

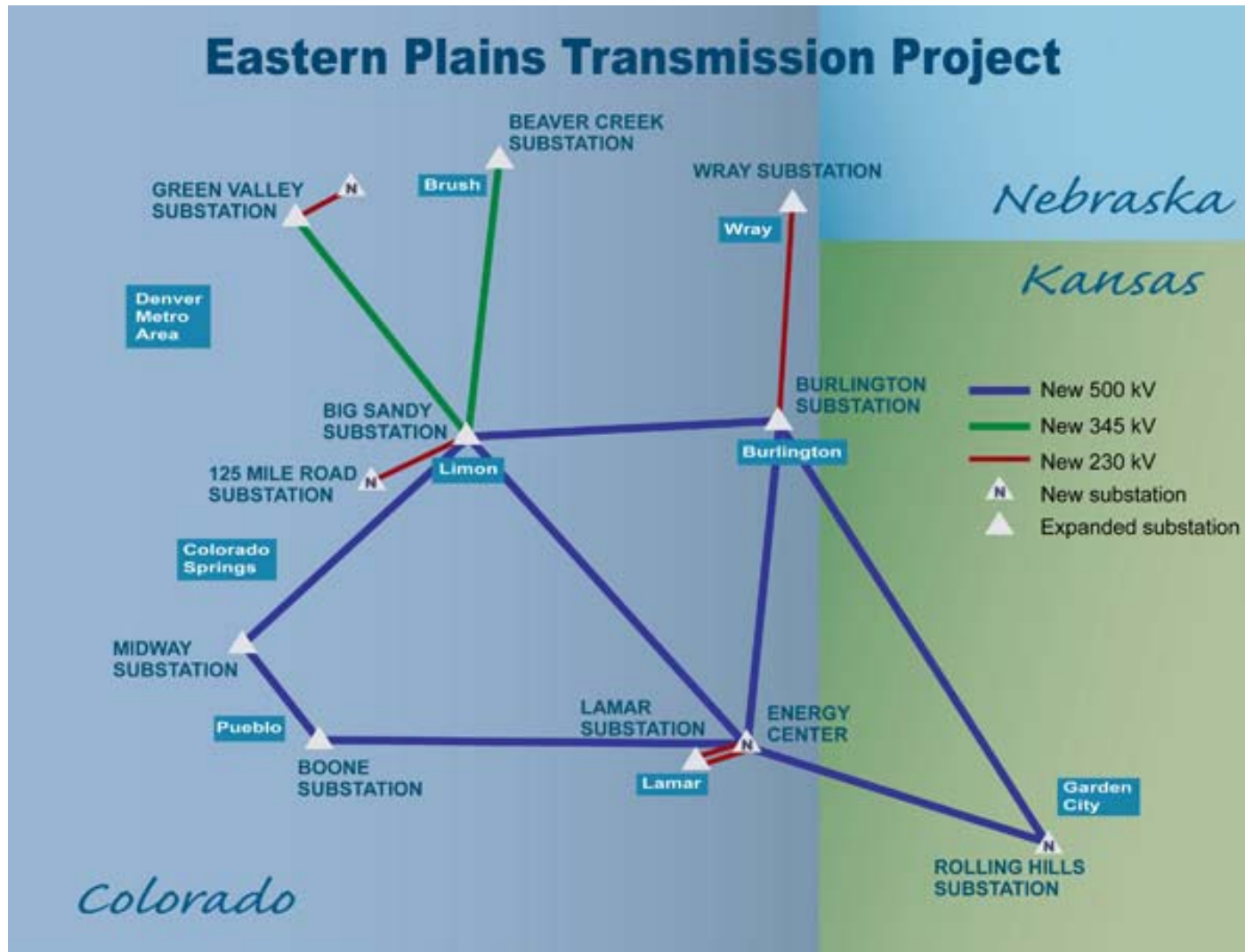
Zone 2 (East Central Colorado)

- ◆ Evaluate and incorporate the transmission study of the planned Eastern Plains Transmission Project (EPTP). Discuss status of project with Tri-State and WAPA.
- ◆ Evaluate Brick Center Substation for injection of generation

Zone 3 (South East Colorado)

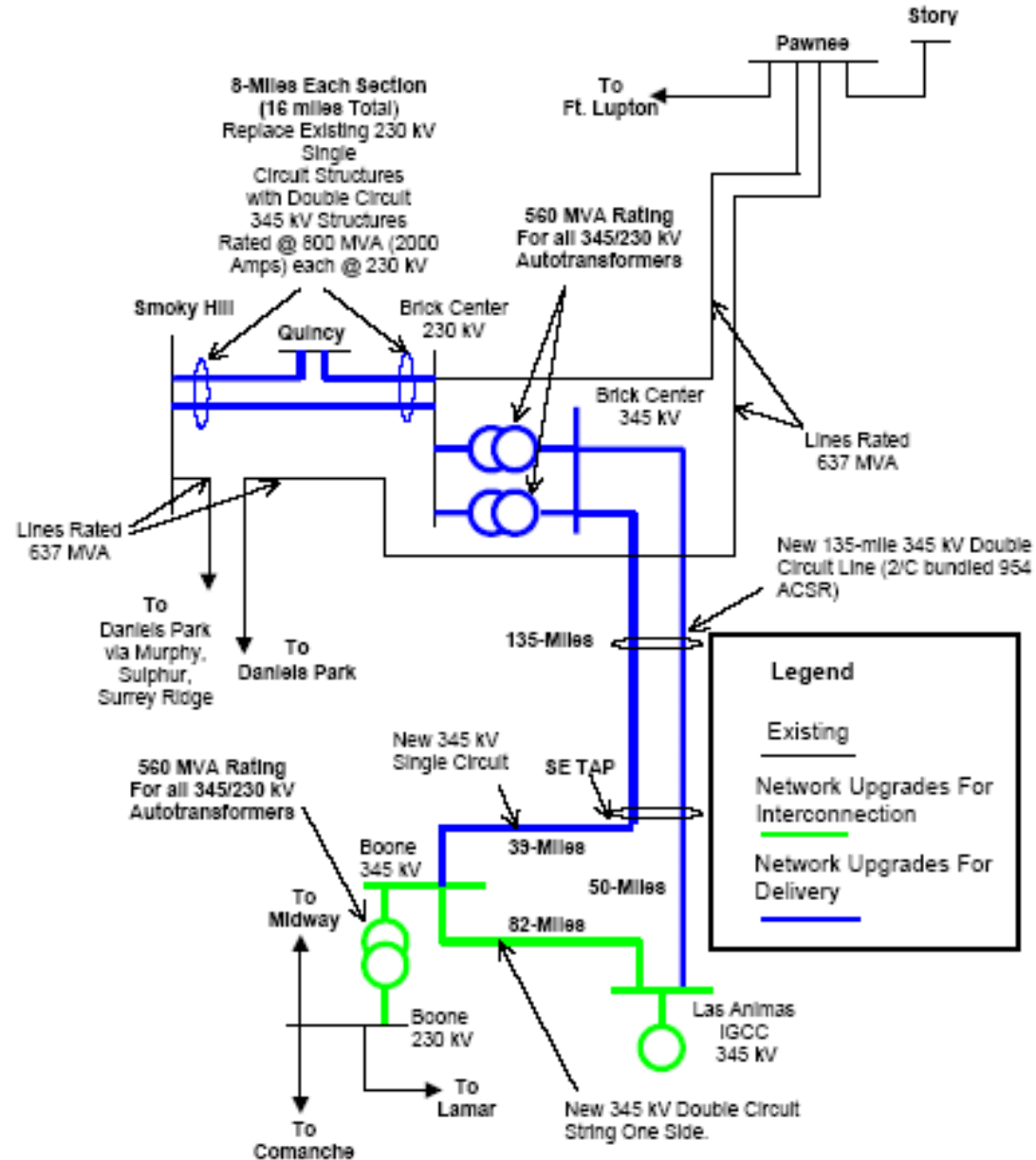
- ◆ Boone/Las Animas Region: Utilize the transmission study of the Generator Interconnection Request 2007-2 for a 675 MW unit near Las Animas. Stand alone project without EPTP.
 - ◆ **Cost: \$288 million** **Time Frame: 77 months**
- ◆ Lamar Region: Transmission Plan to add addition ATC to relieve the current constraint from the South East area though Boone and into Denver Metro area.

Transmission Study Plan: Zone 2

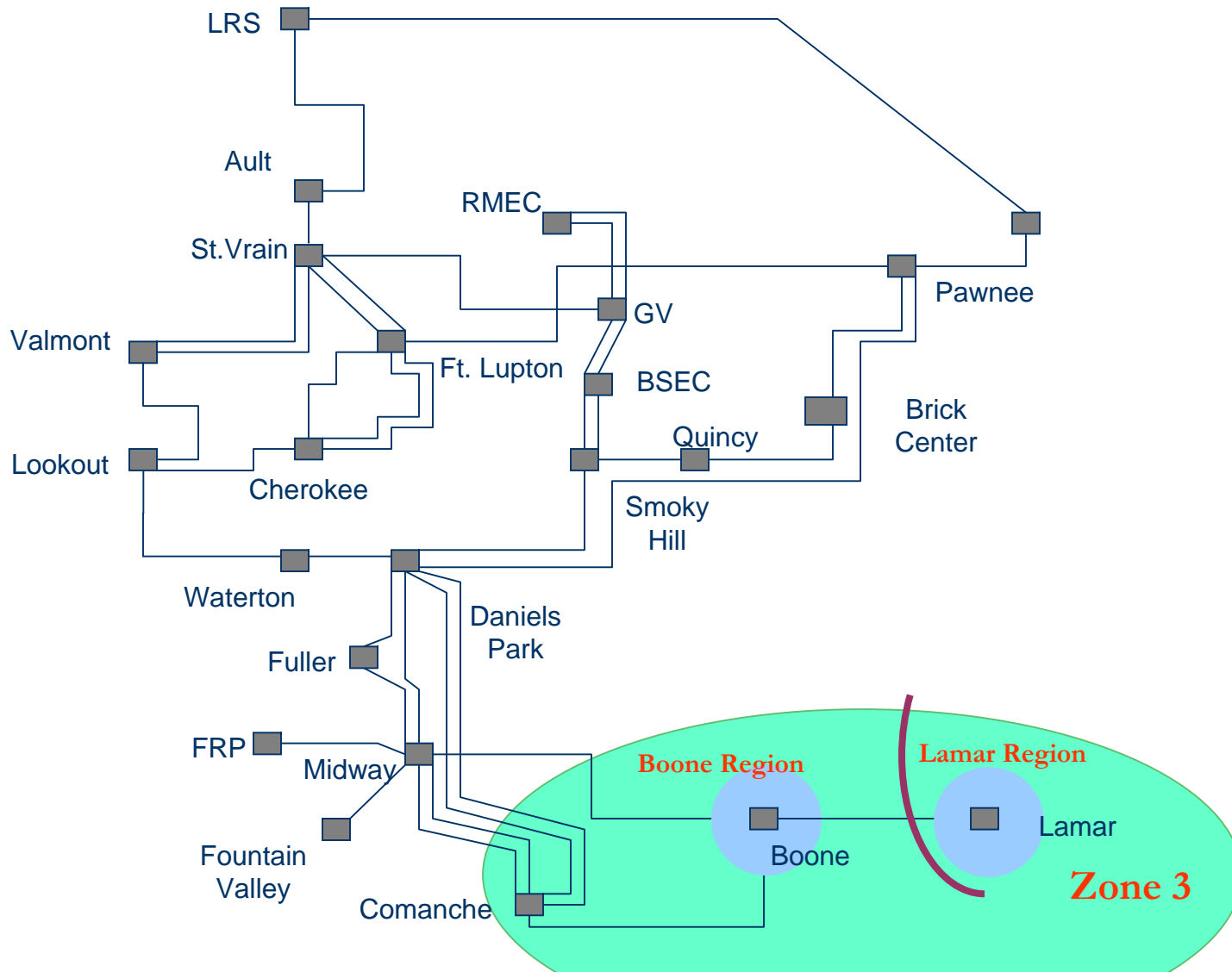


Transmission Plan Zone 3 – Boone Region

Figure 2- Transmission Network with Recommended Upgrades for Boone/Las Animas Region



Transmission Study Plan: Zone 3



Senate Bill 100 Transmission Plan Zone 4

Zone 4 (San Luis Valley - Colorado)

- ◆ Evaluate current system capacity of injection at San Luis Valley (SLV) substation with the existing Transmission System
 - ◆ Preliminary Studies show that generation at the SLV Substation can inject:
 - ◆ 175 MW for light load conditions (night, no irrigation load)
 - ◆ 200 MW for peak summer conditions (mid-afternoon, July , high irrigation loads)

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Questions?