

Appendix F

2024 Rule 3627 Ten-Year Transmission Plan

Public Service Company of Colorado

Transmission Projects 2022-2034

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Ault-Cloverly 230/115 kV Transmission Project

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Build approximately 20 miles of new 230/115 kV transmission, two new substations, and upgrades to two existing substations to replace portions of Public Service's existing 44 kV transmission network in Weld County to increase reliability, load-serving capability, and generation interconnection capability in northern Colorado.

Type of Project: Transmission Line and Substations

Project Drivers: Reliability, load serving, and generation

Development Status: Under Construction

Voltage Class: 230/115 kV

Facility Rating: 220 MVA

Point of Origin/Location: Ault Substation (Western Area Power Administration)

Point of Termination: Cloverly Substation

Intermediate Points: Husky Substation and Collins Street (formerly Graham Creek) Substation

Length of Line (Miles): 20

Planning Study Status: Northern Greeley Area Transmission Plan System Impact Study Report was completed by CCPG Northeast Colorado ("NECO") Subcommittee on 2/3/2017, available at:
https://www.rmao.com/public/wtpp/Operating_Studies/02_03_17_Northern_Greeley_Final_Study_Report.pdf

Case Studied: 2026HS2

BAA Peak Summer/Winter Demand (MW): 9,103 Summer
N/A Winter

Study Generation Assumptions: Benchmark generation tables are available as Appendix D to the Northern Greeley Area Transmission Plan System Impact Study Report, linked above.

Estimated Cost (\$ millions): \$123.5

Schedule:

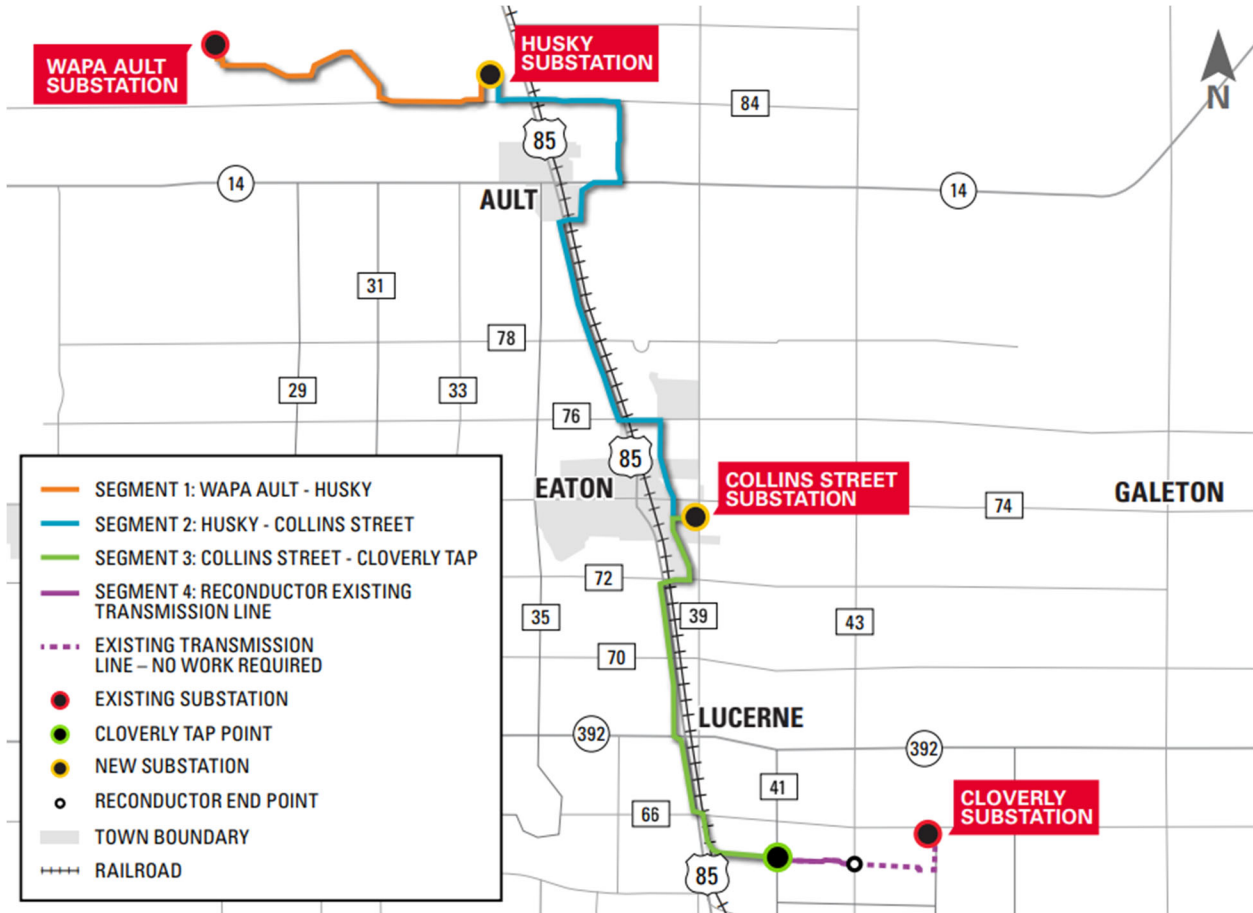
Construction Date: 2023

In-Service Date: 2024 (planned)

Regulatory Info: CPCN granted by Decision Nos. R18-0153 and C19-0080, Proceeding No. 17A-0146E

Contact Information:

Email: NorthernColorado@xcelenergy.com
Phone: 888-678-7640
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Avery Substation

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: New distribution substation located in Weld County to serve load growth in the Timnath area. The substation taps the Platte River Power Authority ("PRPA") Timberline - Carey 230kV transmission line.

Type of Project: Substation

Project Drivers: Reliability, load serving

Development Status: In Service

Voltage Class: 230 kV

Facility Rating: N/A

Point of Origin/Location: N/A

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): N/A

Planning Study Status: System Impact Study completed by PRPA on August 26, 2014, available at:
https://www.rmao.com/public/wtpp/Operating_Studies/Avery_Substation_Interconnection_Study_Report.pdf

Case Studied: 2023HS2

BAA Peak Summer/Winter Demand (MW): 10,511 Summer
N/A Winter

Study Generation Assumptions: Net generation values are listed in Exhibit 2 to the Avery Substation Interconnection Study Report linked above.

Estimated Cost (\$ millions): \$12.1

Schedule:

Construction Date: 2020

In-Service Date: 2022 (actual)

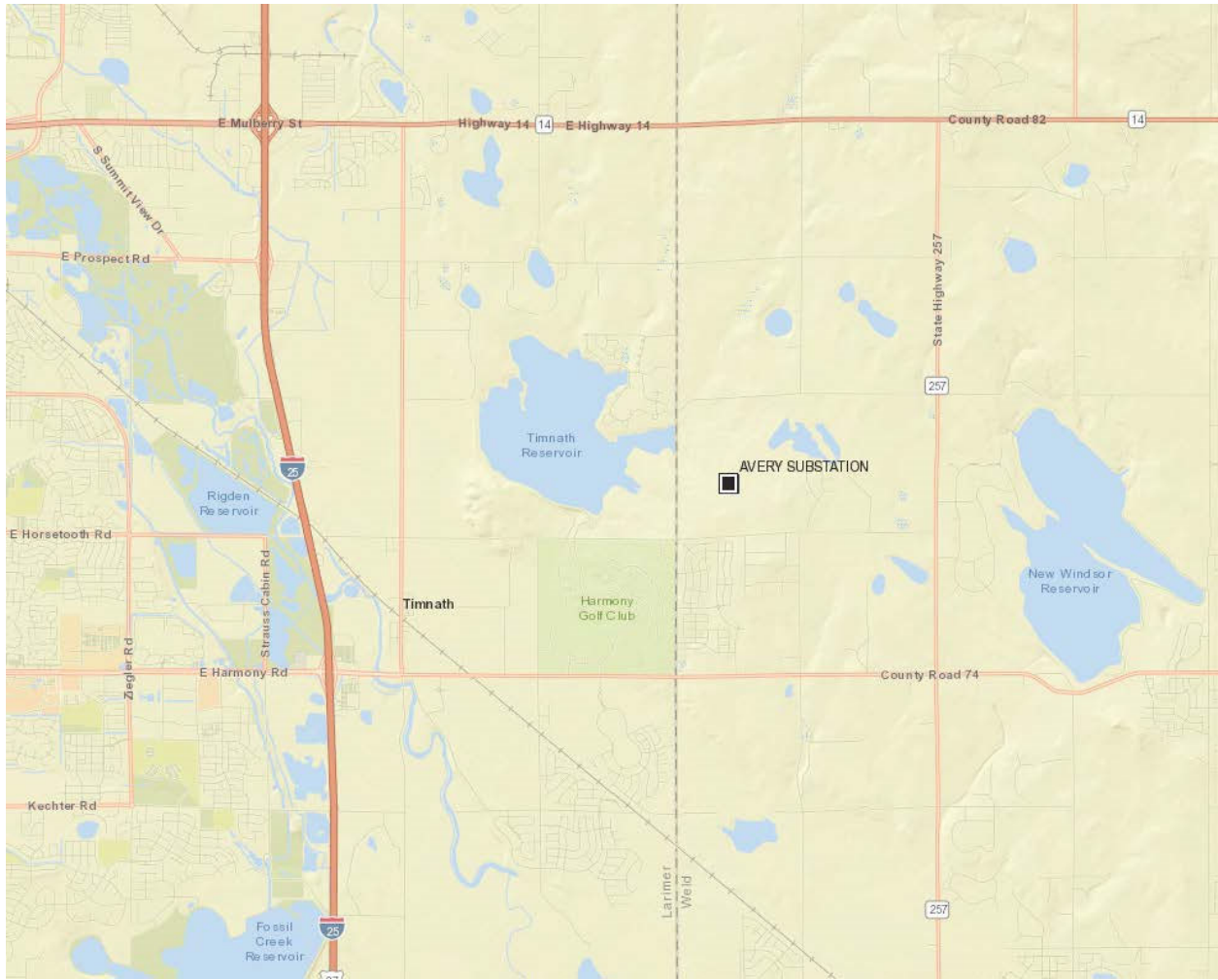
Regulatory Info: CPCN granted in Decision No. C15-0461 in Proceeding No. 15A-0159E.

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website: <http://www.transmission.xcelenergy.com/Projects/Colorado>



Avon-Gilman 115 kV Transmission Line

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: New 115 kV line between Avon and Gilman substations to improve the reliability of the Holy Cross Energy Association (“HCEA”) system. Also includes a new capacitor bank installation at Vail Substation. Line would be operated normally open, but used for emergency backup.

Type of Project: Transmission Line

Project Drivers: Reliability

Development Status: Planned

Voltage Class: 115 kV

Facility Rating: 159 MVA

Point of Origin/Location: Gilman Substation

Point of Termination: Avon Substation

Intermediate Points: N/A

Length of Line (Miles): 10

Planning Study Status: Capacity Bank Sizing Study completed by Public Service on 10/17/2022, available at:
https://www.rmao.com/public/wtpp/Operating_Studies/Vail_Cap_Bank_Study_Report_17OCT2022.pdf

Case Studied: 2033HS1, 2033HW1

BAA Peak Summer/Winter Demand (MW): 12,022 Summer
9,288 Winter

Study Generation Assumptions: Generation assumptions from the 2033HS1 and 2033HW1 cases were used for the study.

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: 2027

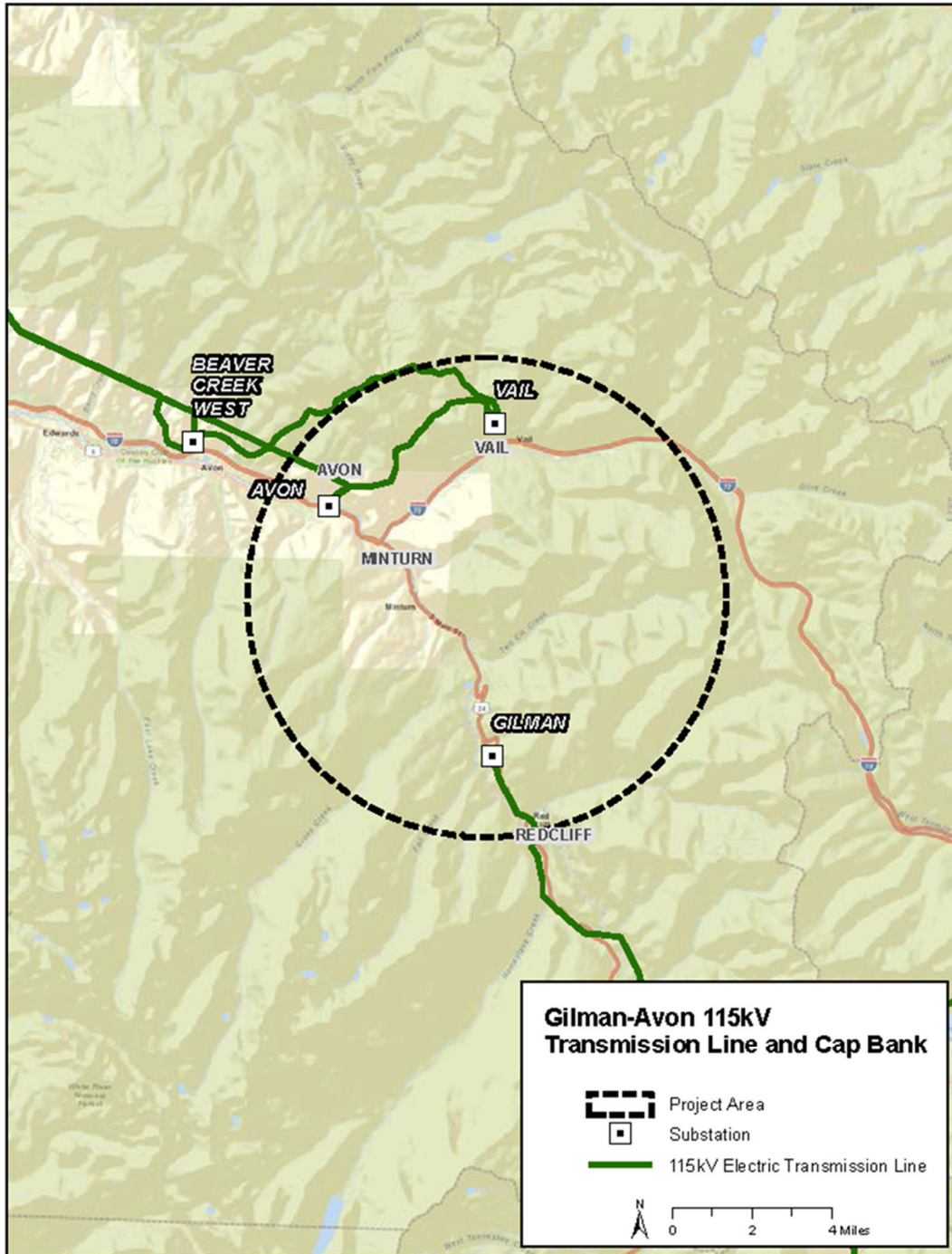
Regulatory Info: No CPCN required by Decision No. C15-0590, Proceeding No. 15M-0043E

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Bluestone Valley Substation – Phase II

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: The 230kV portion of the Bluestone Valley Substation project will include tapping the Rifle – Parachute 230 kV line and installing a 230/69 kV transformer to interconnect the 230 kV and 69 kV voltages to serve Public Service load and improve reliability for Grand Valley Power customers in the area.

Type of Project: Substation

Project Drivers: Reliability, load serving

Development Status: In Service

Voltage Class: 230 kV

Facility Rating: N/A

Point of Origin/Location: N/A

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): N/A

Planning Study Status: Bluestone Valley Substation 230 kV Expansion Reliability Study completed by Public Service on 12/4/2020, available at: https://www.rmao.com/public/wtpp/Operating_Studies/Bluestone_Valley_Sub_230_kV_Reliability_Study.pdf

Case Studied: 2024HS2

BAA Peak Summer/Winter Demand (MW): 8,455 Summer
N/A Winter

Study Generation Assumptions: Generation assumptions were derived from the 2024HS2 case and are discussed in the planning study report linked above.

Estimated Cost (\$ millions): \$18.6

Schedule:

Construction Date:

In-Service Date: 2023 (actual)

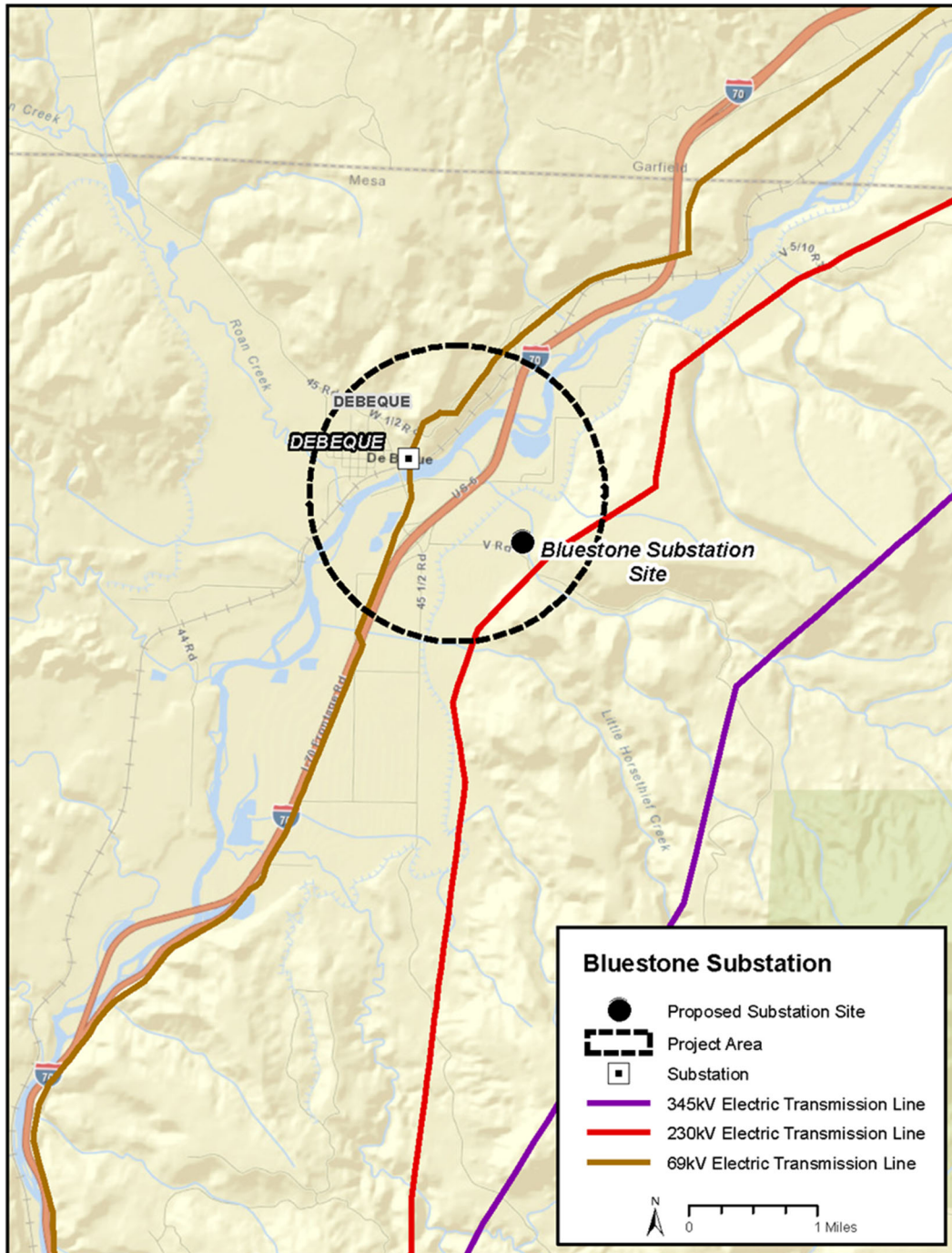
Regulatory Info: CPCN granted by Decision Nos. R18-0153 and C19-0080, Proceeding No. 17A-0146E

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Carbondale – Crystal Transmission

Project Sponsor: Public Service Company of Colorado

Additional Project Participants: Holy Cross Energy

Project Description and Purpose: New 115 kV transmission line between Carbondale and Crystal substations.

Type of Project: Transmission Line

Project Drivers: Load serving, reliability

Development Status: Conceptual

Voltage Class: 115 kV

Facility Rating: TBD

Point of Origin/Location: Carbondale Substation

Point of Termination: Crystal Substation

Intermediate Points: N/A

Length of Line (Miles): TBD

Planning Study Status: Planning study under development, not yet available.

Case Studied: 2026HW

BAA Peak Summer/Winter Demand (MW): N/A Summer
8,351 Winter

Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: TBD

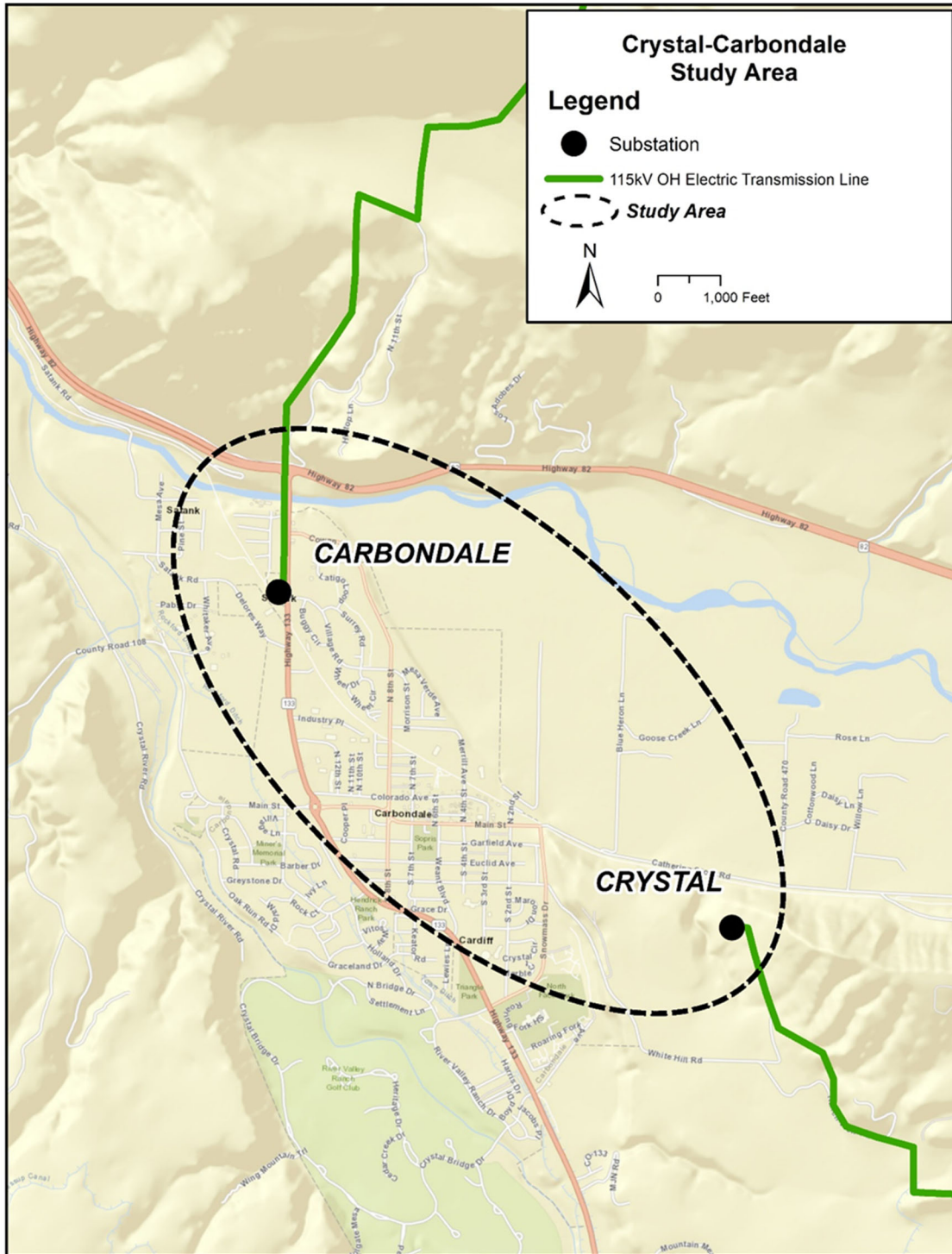
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website: <http://www.transmission.xcelenergy.com/Projects/Colorado>



CEPP Voltage/Reactive Support

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: A series of voltage control devices located at the Daniels Park, Harvest Mile, Missile Site, Pronghorn, and Shortgrass substations required to accommodate the Company's CEP portfolio of generation.

Type of Project: Substation

Project Drivers: Generation, Reliability

Development Status: In Service

Voltage Class: Various

Facility Rating: Daniels Park – 120 MVAR shunt capacitance, 120 MVAR capacitor

Harvest Mile – 240 MVAR shunt capacitance, two 120 MVAR capacitors

Missile Site – 360 MVAR shunt capacitance, three 120 MVAR capacitors

Pronghorn – +/- 150 MVAR STATCOM

Shortgrass – 60 MVAR shunt reactance, two 30 MVAR reactors

Point of Origin/Location: N/A

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): N/A

Planning Study Status: A planning report for the Missile Site Wind Area Reactive Power Study was completed on behalf of Public Service in June 2019, available at:
https://www.rmao.com/public/wtpp/Operating_Studies/CEPP_Voltage_Control_Missile_Site_Area_Study_June_2019.pdf

A planning report for the Comanche Flicker Mitigation Study was completed on behalf of Public Service on 8/9/2018, available at:
https://www.rmao.com/public/wtpp/Operating_Studies/CEPP_Voltage_Control_Comanche_Flicker_Study_August_2018.pdf

Case Studied: 2032HS

BAA Peak Summer/Winter Demand (MW): 11,405 Summer
N/A Winter

Study Generation Assumptions: The Missile Site Wind Area Reactive Power Study evaluated generation resources interconnected to the Rush Creek Gen Tie, including existing (600 MW Rush Creek) and approved (Bronco Plains and Cheyenne Ridge) generation. Base case assumptions and dispatch sensitivities are discussed in the study report.

The Comanche Flicker Mitigation Study tested three generation scenarios: (1) the retirement of Comanche Unit 1, (2) the retirement of Comanche Units 1 and 2, and (3) the retirements of Comanche Units 1 and 2, with Comanche Unit 3 offline.

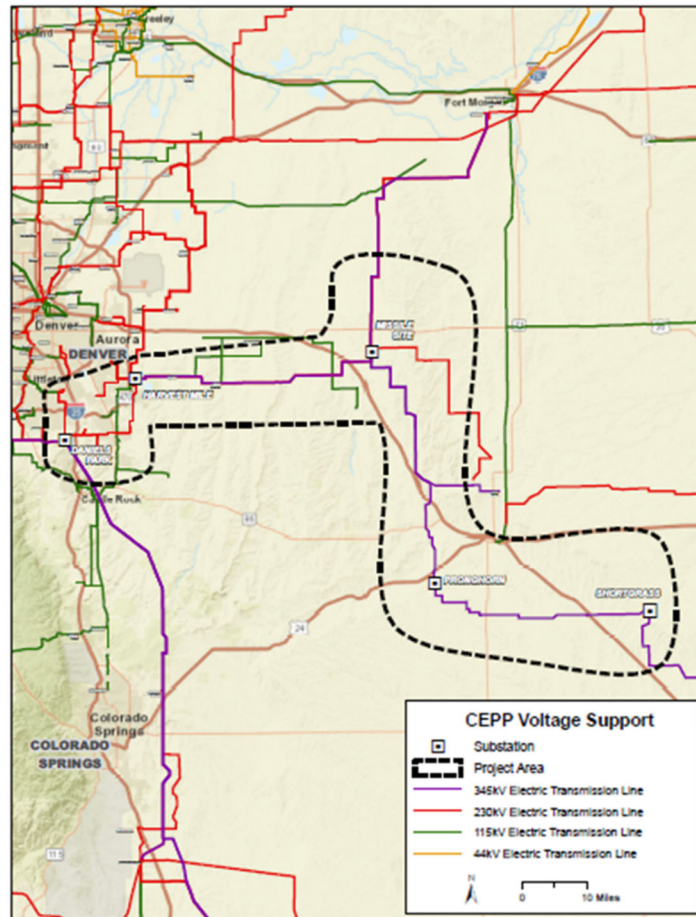
Estimated Cost (\$ millions): \$67.3 (actual)

Schedule:

Construction Date: Complete
In-Service Date: 2022 (actual)
Regulatory Info: CPCN granted by Decision No. C20-0648 in Consolidated Proceeding Nos. 19A-0728E and 20A-0063E.

Contact Information:

Email: PSCoPlanning@xcelenergy.com
Phone:
Website:



Colorado's Power Pathway

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Build approximately 550 miles of new 345 kV double circuit transmission lines, expand four existing substations, and construct three new substations to connect Front Range load centers to renewable resource rich areas in northeastern, eastern, and southeastern Colorado in anticipation of clean energy resources that Public Service will acquire through the 2021 ERP & CEP.

Type of Project: Transmission Line and Substations

Project Drivers: Generation, reliability

Development Status: Under Construction

Voltage Class: 345 kV

Facility Rating: 1725 MVA per circuit

Point of Origin/Location: Fort Saint Vrain Substation

Point of Termination: Harvest Mile Substation

Intermediate Points: Canal Crossing Substation, Pawnee Substation, Goose Creek Substation, May Valley Substation, Tundra Substation

Length of Line (Miles): 550

Planning Study Status: 80x30 Task Force Phase I Transmission Report completed by CCPG on 2/24/2021, available at:
https://www.rmao.com/public/wtpp/Operating_Studies/02_24_21_80x30_Task%20Force_Phase_I_Transmission_Report.pdf.

Case Studied: 2030HS1

BAA Peak Summer/Winter Demand (MW): 10,273 Summer
N/A Winter

Study Generation Assumptions: Benchmark generation tables are available as Appendix A to the Phase I Transmission Report for the CCPG 80x30 Task Force, linked above. In addition to existing or planned generation reflected in the benchmark model, the Pathway Project was studied with 3000 MW of new generic renewable dispatch and 3000 MW of existing renewable generation dispatch located in ERZs 1, 2, 3, and 5.

Estimated Cost (\$ millions): \$1,685

Schedule:

Construction Date: Began in 2023

In-Service Date: 2025-2027 (planned)

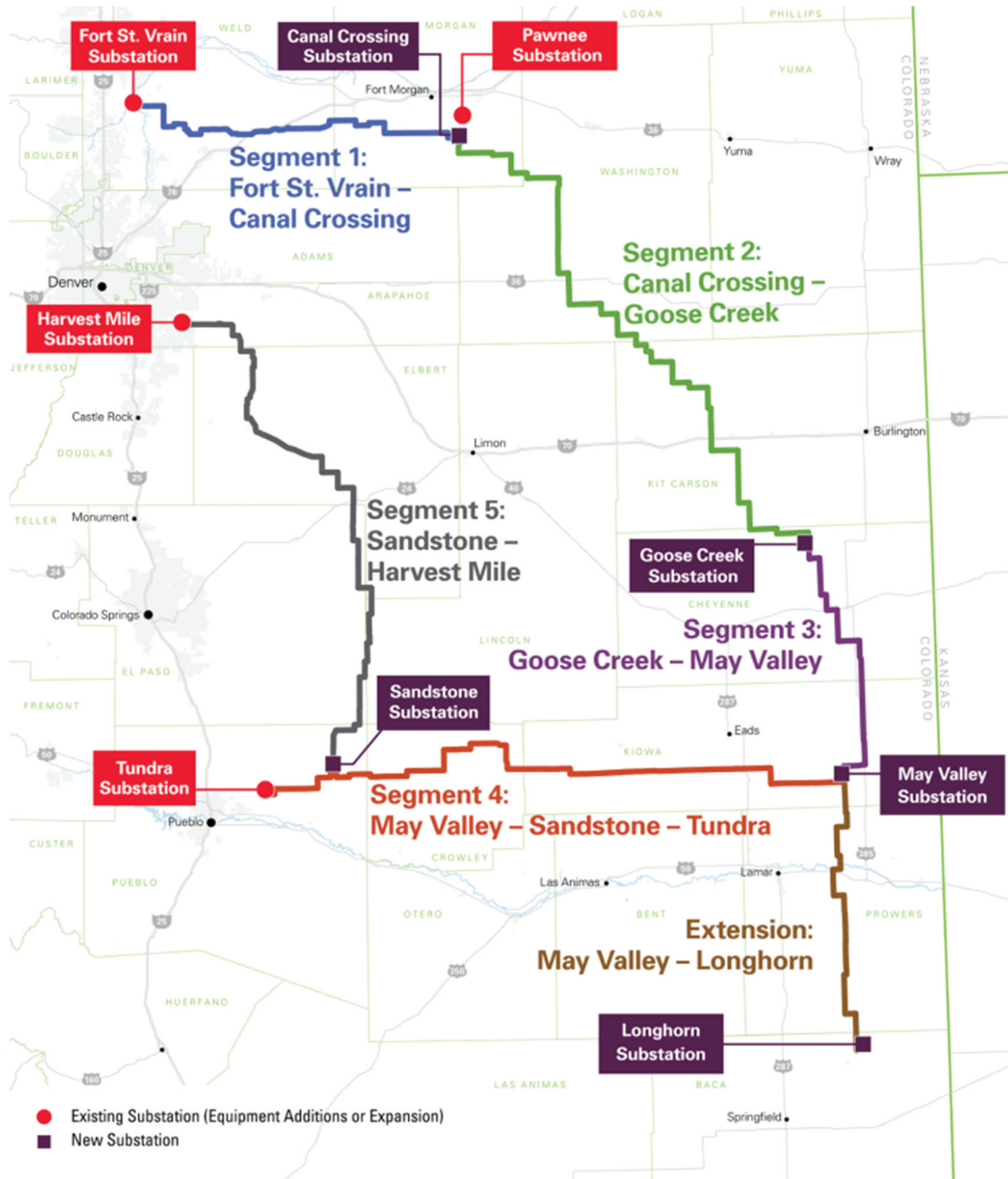
Regulatory Info: CPCN granted by Decision No. C22-0270, Proceeding No. 21A-0096E.

Contact Information:

Email: ColoradosPowerPathway@XcelEnergy.com

Phone: 855-858-9037

Website: <https://www.coloradospowerpathway.com/>



Colorado's Power Pathway May Valley – Longhorn Extension

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Construct approximately 90 miles of new double-circuit 345 kV transmission lines and a new substation in southeastern Colorado to connect renewable resources in far southeastern Colorado to the Colorado's Power Pathway Project.

Type of Project: Transmission Line and Substations

Project Drivers: Generation

Development Status: Conceptual

Voltage Class: 345 kV

Facility Rating: 1725 MVA

Point of Origin/Location: May Valley Substation

Point of Termination: Longhorn Substation

Intermediate Points: N/A

Length of Line (Miles): 90

Planning Study Status: 80x30 Task Force Phase I Transmission Report completed by CCPG on 2/24/2021, available at:
https://www.rmao.com/public/wtpp/Operating_Studies/02_24_21_80x30_Task%20Force_Phase_I_Transmission_Report.pdf.

Case Studied: 2030HS1

BAA Peak Summer/Winter Demand (MW): 10,273 Summer
N/A Winter

Study Generation Assumptions: Benchmark generation tables are available as Appendix A to the Phase I Transmission Report for the CCPG 80x30 Task Force, linked above. In addition to existing or planned generation reflected in the benchmark model, the Pathway Project was studied with 3000 MW of new generic renewable dispatch and 3000 MW of existing renewable generation dispatch located in ERZs 1, 2, 3, and 5.

Estimated Cost (\$ millions): TBD

Schedule:

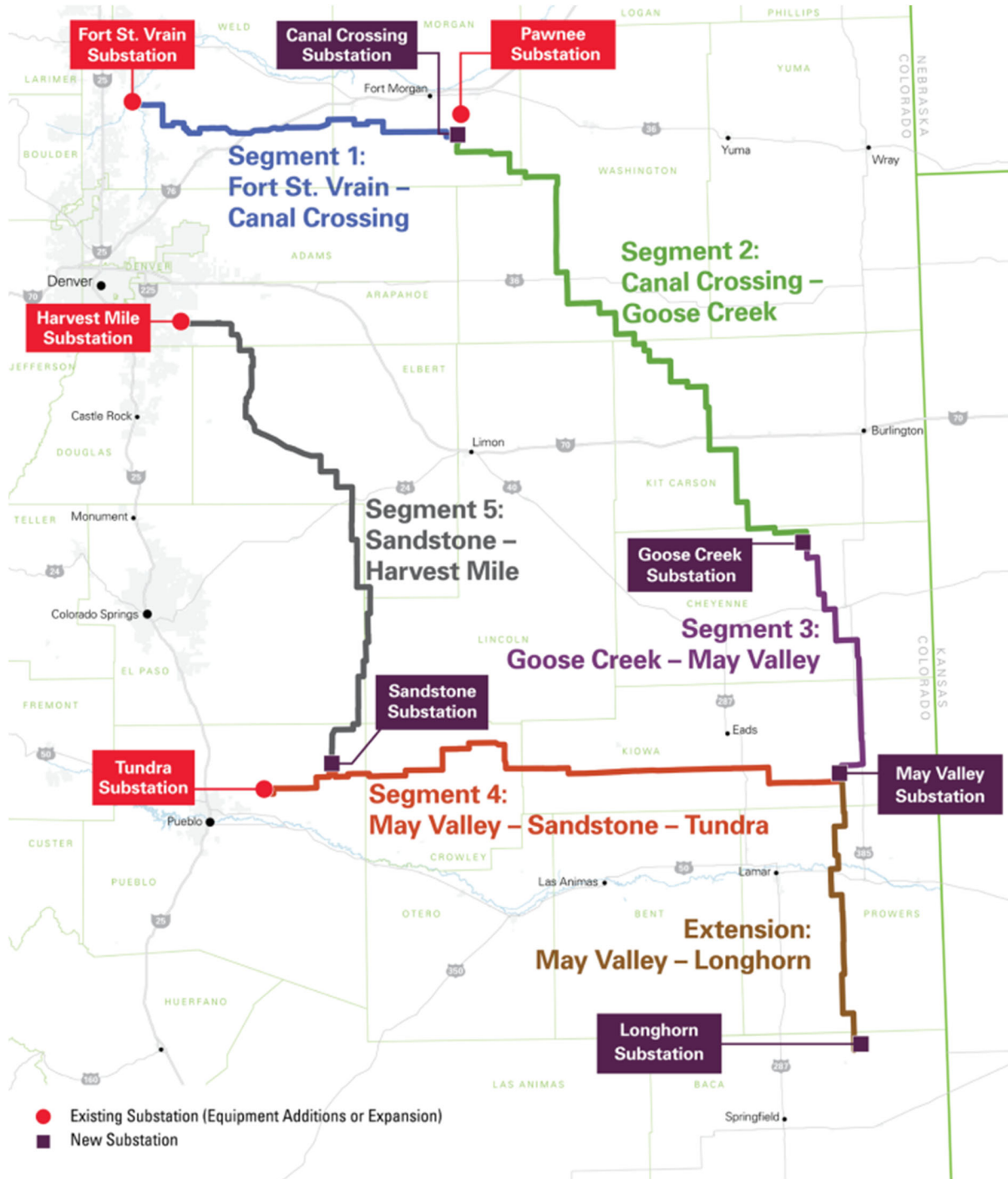
Construction Date: TBD

In-Service Date: TBD

Regulatory Info: Conditional CPCN granted by Decision No. C22-0270, Proceeding No. 21A-0096E. Not included in the approved resource portfolio by Decision No. C24-0052, Proceeding No. 21A-0141E.

Contact Information:

Email: ColoradosPowerPathway@XcelEnergy.com
Phone: 855-858-9037
Website: <https://www.coloradospowerpathway.com/>



Comanche Substation – Generation Interconnection (CEPP bid 077)

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Construction of interconnection facilities at the Comanche Switching Station to interconnect the 200 MW Sun Mountain solar project.

Type of Project: Substation

Project Drivers: Generation

Development Status: In Service

Voltage Class: 230 kV

Facility Rating: 575 MVA

Point of Origin/Location: Comanche Substation

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): 20

Planning Study Status: Provisional Interconnection Study Report for GI-2021-1 completed by Public Service on 7/9/2021, available at:
https://www.rmao.com/public/wtpp/Final_Studies/Provisional%20Study%20Report%20for%20PI-2021-1%20-%20final_7_9_2021.pdf

Case Studied: 2023HS2

BAA Peak Summer/Winter Demand (MW): 10,511 Summer
N/A Winter

Study Generation Assumptions: Base Case model includes existing Public Service and affected system generation, and also includes generators with approved transmission service as listed in Section 4.0 of the Interconnection Study Report linked above.

Estimated Cost (\$ millions): \$1.7 (actual)

Schedule:

Construction Date: 2022

In-Service Date: 2022 (actual)

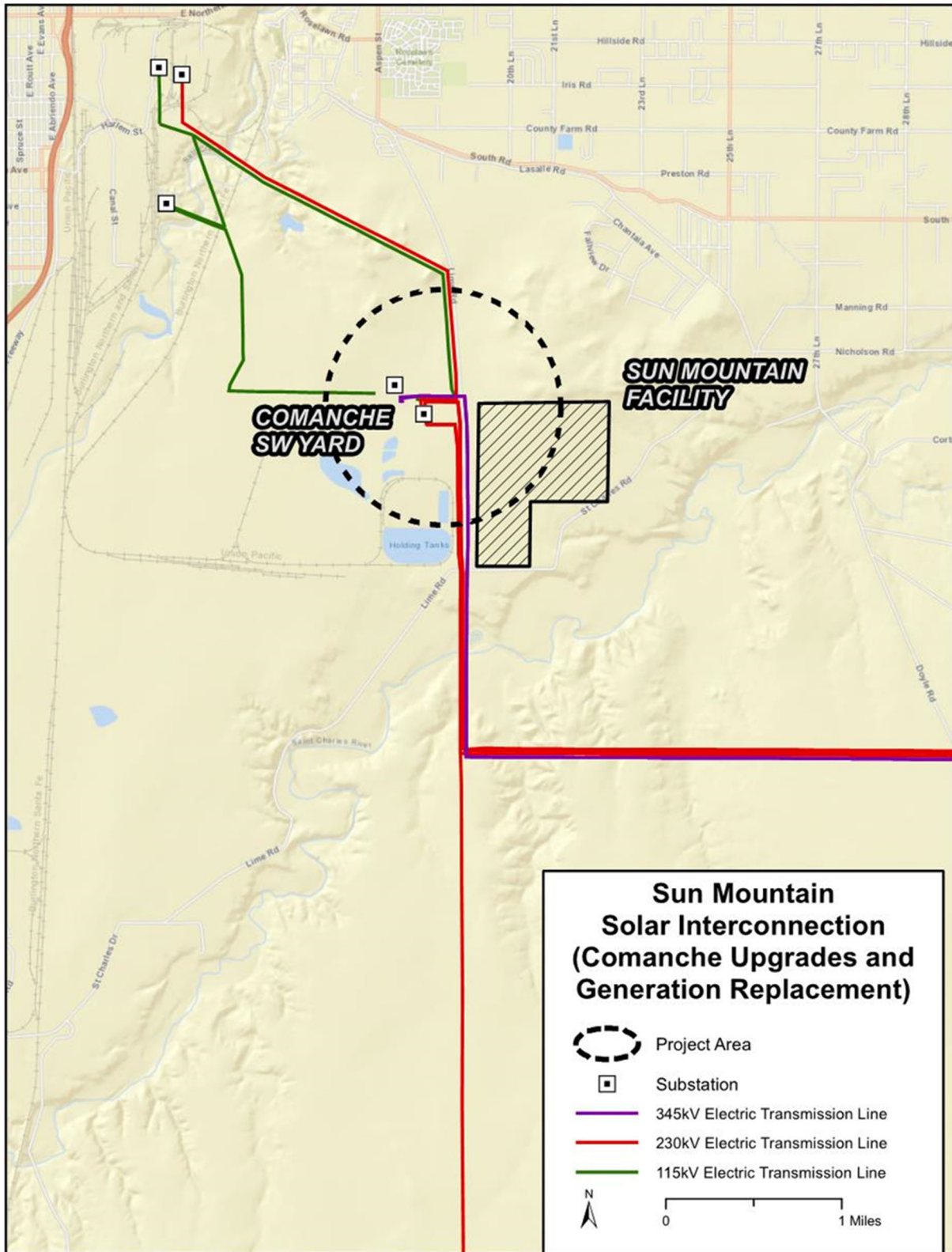
Regulatory Info: CPCN not required by Decision No. C23-0810, Proceeding No. 23M-0005E.

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Denver Metro Area Network Upgrades

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Upgrades, expansions, and construction of new transmission facilities in the Denver metro area to accommodate delivery of generation from the portfolio approved in Public Service’s 2021 ERP CEP, including: Greenwood Substation Bus Tie Uprate, Arapahoe 115 kV Bus Uprate and Second 230/115 kV Transformer, Chambers Third 230/115 kV Transformer, Daniels Park to Greenwood Circuit 5707 Uprate, Daniels Park to Greenwood Circuit 5111 Uprate, Phase Shifting Transformer on Missile Site to Daniels Park 345 kV Circuit 7109, 230 kV Circuit 5165 In and Out of Harvest Mile, New Double Circuit 230 kV Line from Harvest Mile – Chambers – Sandown –Cherokee, Tollgate Substation Load Shift, Uprate Substations on Circuit 5057 Cherokee and Lacombe, Havana to Chambers Circuits 9543 and 9544 Uprate, Malta to Poncha Junction Circuit 9255 Uprate, Daniels Park Fourth Transformer, Smoky Hill Third Transformer, Leetsdale to Harrison 115 kV Circuit 9955 Uprate, Capitol Hill to Denver Terminal 115 kV Circuit 9007 Uprate, Midway Substation 230 kV Bus Uprate, Midway Substation 230/115 kV Transformer Replacement, Cherokee to Broomfield 115 kV Circuits 9055/9558/9464 Uprate, and Leetsdale to University 115 kV Circuit 9338 Uprate.

Type of Project: Transmission Line and Substations
 Project Drivers: Reliability, load serving, and generation
 Development Status: Conceptual
 Voltage Class: Various
 Facility Rating: Various
 Point of Origin/Location: Various
 Point of Termination: Various
 Intermediate Points: Various
 Length of Line (Miles): TBD
 Planning Study Status: TBD - Planning study not developed at this time; study process expected to commence in early 2024.
 Case Studied: TBD
 BAA Peak Summer/Winter Demand (MW): TBD Summer
 N/A Winter
 Study Generation Assumptions: TBD

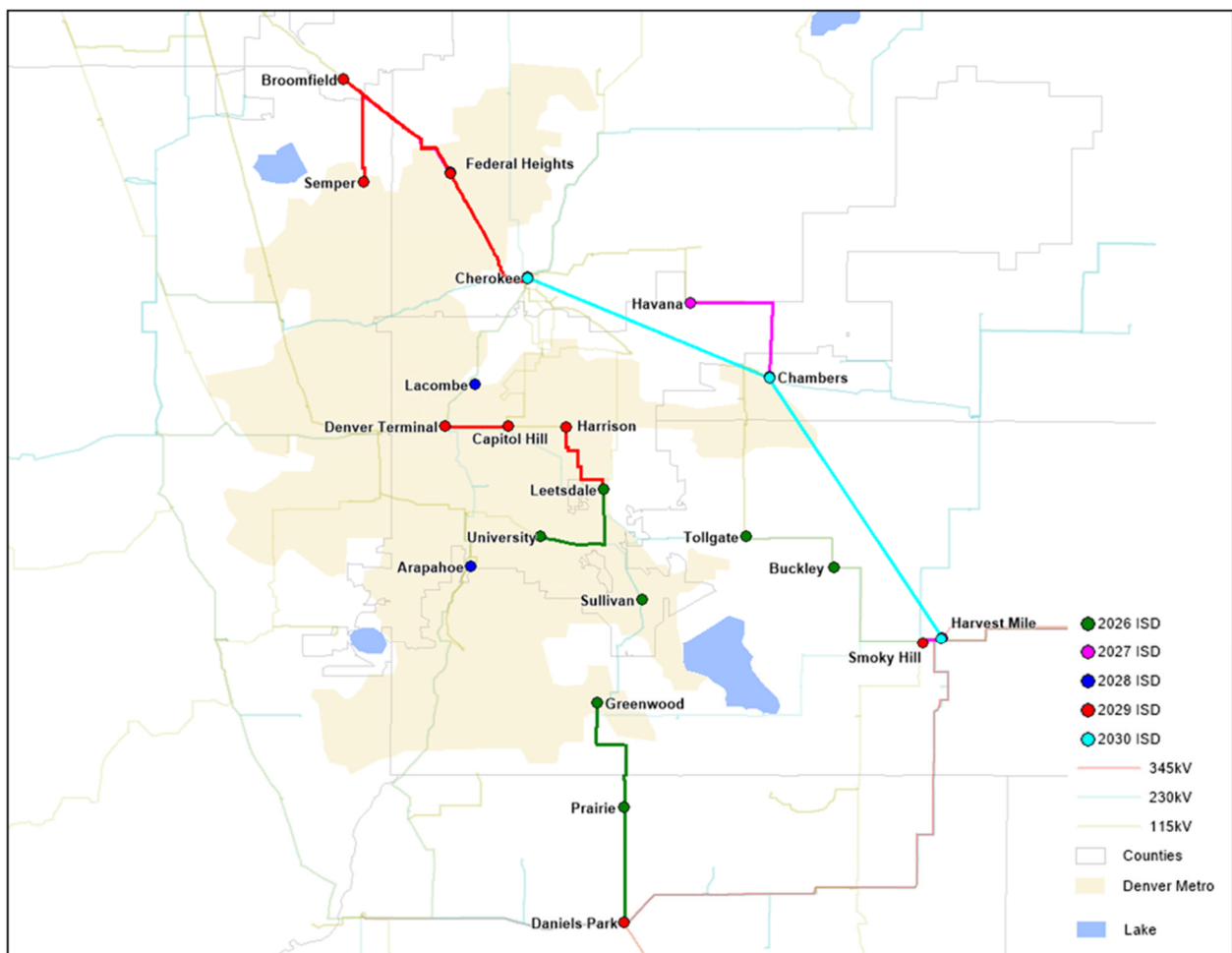
Estimated Cost (\$ millions): TBD

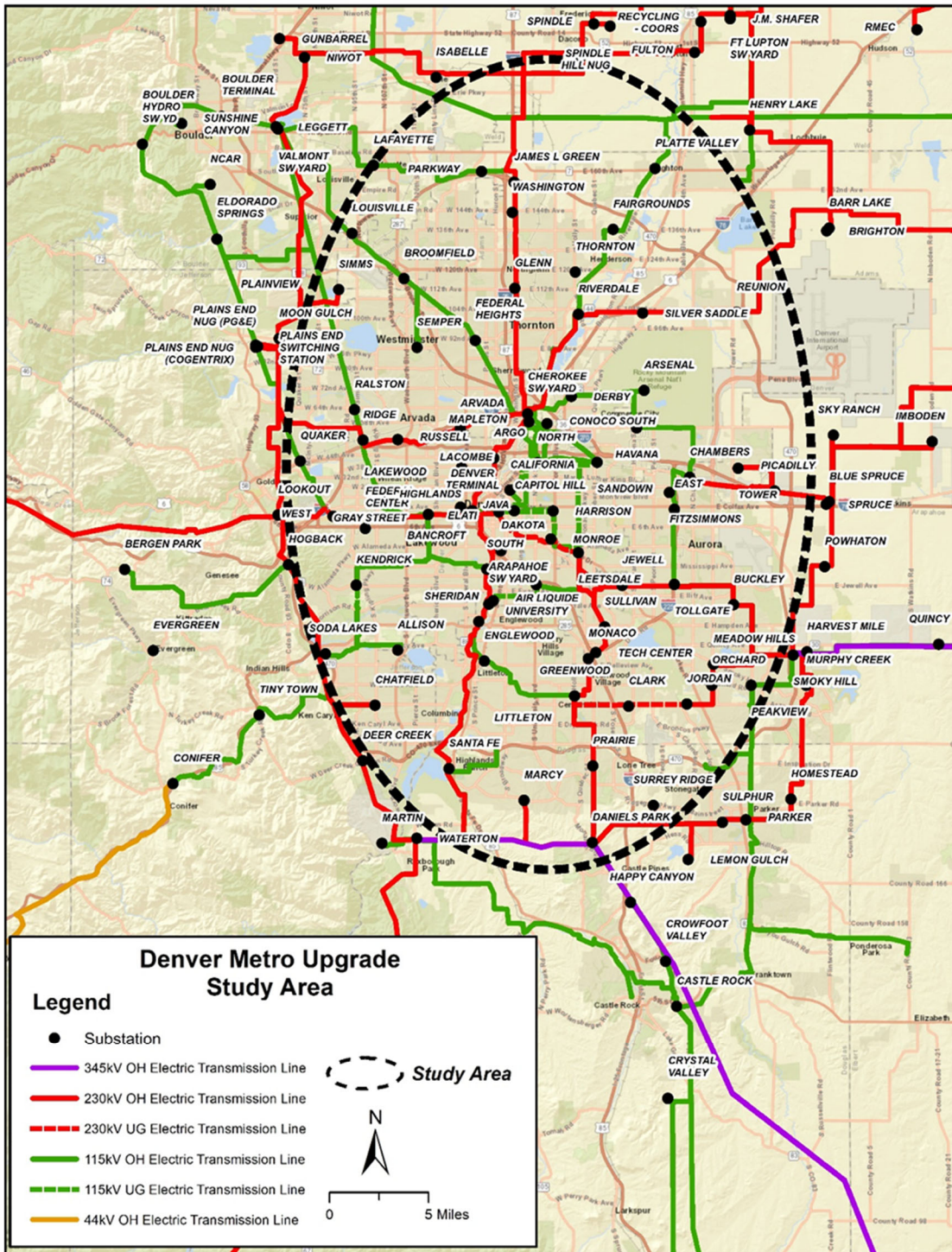
Schedule:

Construction Date: TBD
In-Service Date: TBD
Regulatory Info: CPCN required by Decision No. C24-0052, Proceeding No. 21A-0141E.

Contact Information:

Email: PSCoPlanning@xcelenergy.com
Phone:
Website:





Distribution Planning Substations

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Construct new substations to accommodate load growth on Public Service’s distribution system, including: Metro Water Recovery Substation, Poder Distribution Substation, Kestrel Substation, Barker Distribution Substation, Berkley Distribution Substation, Blue Spruce Distribution Substation, Dove Valley Distribution Substation, Gray Street Distribution Substation, Lowry Distribution Substation, Wilson Distribution Substation, Solterra Distribution Substation, New Castle Distribution Substation, North Sheridan Distribution Substation, Superior Distribution Substation, Sandy Creek Distribution Substation, and Wellington Distribution Substation.

Type of Project: Substations
 Project Drivers: Reliability, load serving
 Development Status: Various
 Voltage Class: Various
 Facility Rating: N/A
 Point of Origin/Location: Various
 Point of Termination: N/A
 Intermediate Points: N/A
 Length of Line (Miles): N/A
 Planning Study Status: N/A
 Case Studied: N/A
 BAA Peak Summer/Winter Demand (MW): N/A
 Study Generation Assumptions: N/A

Estimated Cost (\$ millions): Metro Water Recovery \$16 (fully customer funded)
 Poder \$5.9
 Kestrel \$28.1 (fully customer funded)
 All others TBD

Schedule:

Construction Date:
 In-Service Date: Metro Water Recovery: 2024
 Poder Distribution Substation: 2026
 Kestrel Substation: 2026

Barker Distribution Substation: 2027

All others: TBD

Regulatory Info:

Metro Water Recovery: No CPCN Required by Decision No. C23-0810, Proceeding No. 23M-0005E

Poder and Dove Valley: No CPCN Required by Decision No. C18-0843, Proceeding No. 18M-0005E

Kestrel: CPCN application pending in Proceeding No. 23A-0330E

Barker: No CPCN Required by Decision No. C10-0644, Proceeding No. 10M-206E. Reaffirmed by Decision No. C21-0437, Proceeding No. 21M-0005E.

All others TBD, no Commission determinations sought.

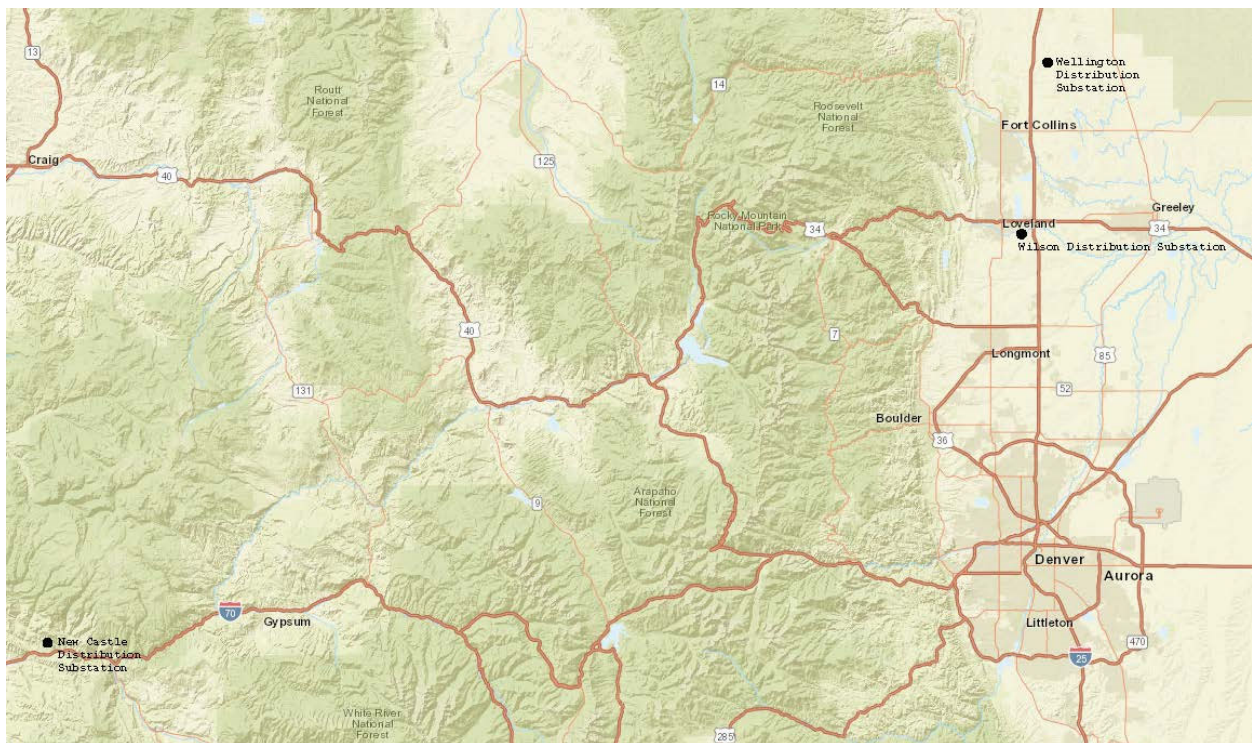
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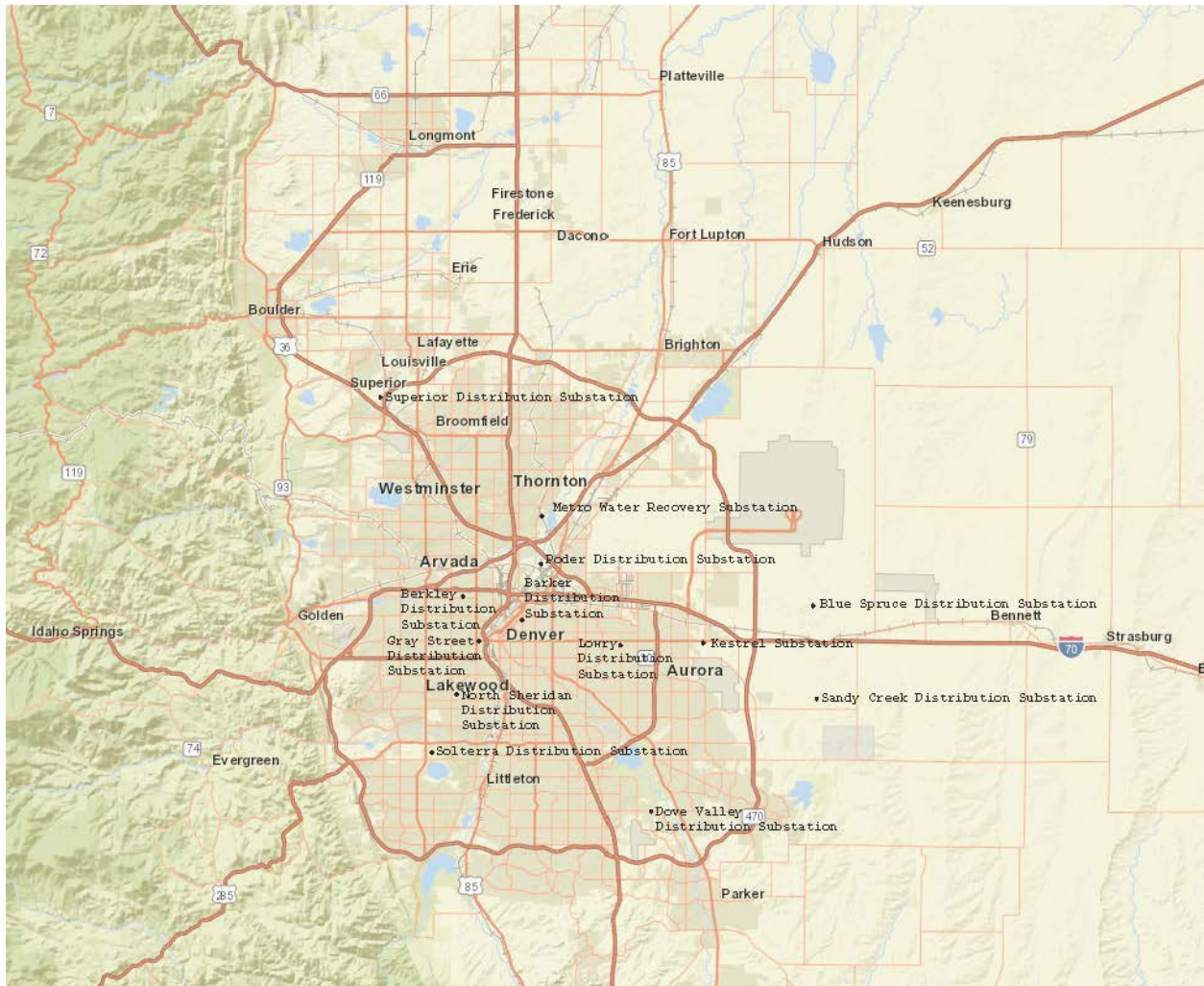
Email:

PSCoPlanning@xcelenergy.com

Phone:

Website:





Gateway South – Hayden Transmission

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Expand transmission in the northwest portion of the state to connect to the PacifiCorp Gateway South 500 kV Project.

Type of Project: Transmission Line

Project Drivers: Import/Export Capability

Development Status: Conceptual

Voltage Class: TBD

Facility Rating: TBD

Point of Origin/Location: TBD

Point of Termination: TBD

Intermediate Points: TBD

Length of Line (Miles): TBD

Planning Study Status: TBD - Planning study not developed at this time.

Case Studied: TBD

BAA Peak Summer/Winter Demand (MW): TBD

Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: TBD

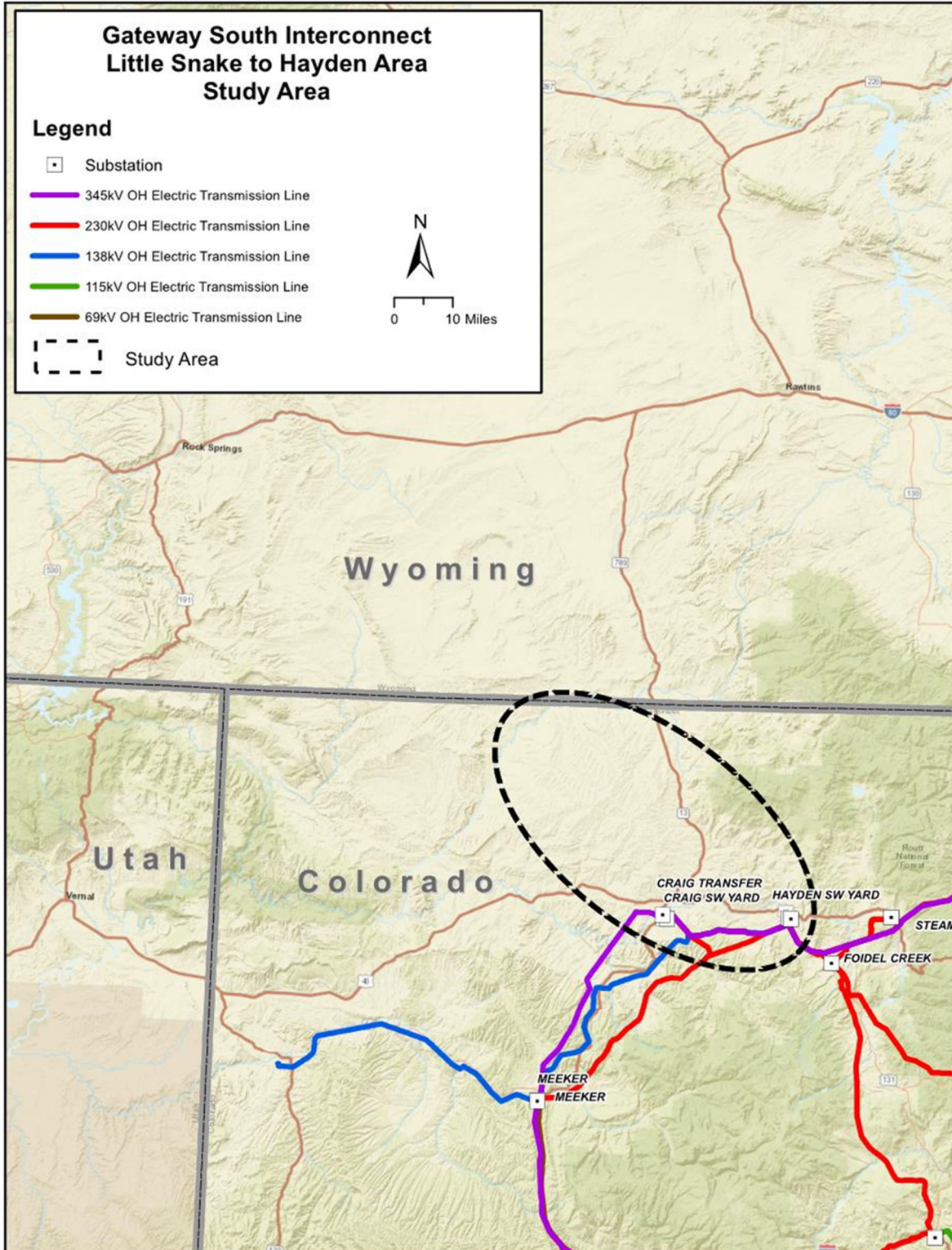
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Glenwood – Rifle 115 kV Transmission

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Upgrade the Glenwood Springs – Rifle 69 kV transmission line to 115 kV.

Type of Project: Transmission Line and Substations

Project Drivers: Reliability, load serving

Development Status: Conceptual

Voltage Class: 115 kV

Facility Rating: 248.6 MVA

Point of Origin/Location: Glenwood Springs Substation

Point of Termination: Rifle Substation

Intermediate Points: Mitchell Creek Substation and New Castle Substation

Length of Line (Miles): 26

Planning Study Status: TBD - Planning study not developed at this time.

Case Studied: TBD

BAA Peak Summer/Winter Demand (MW): TBD

Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: TBD

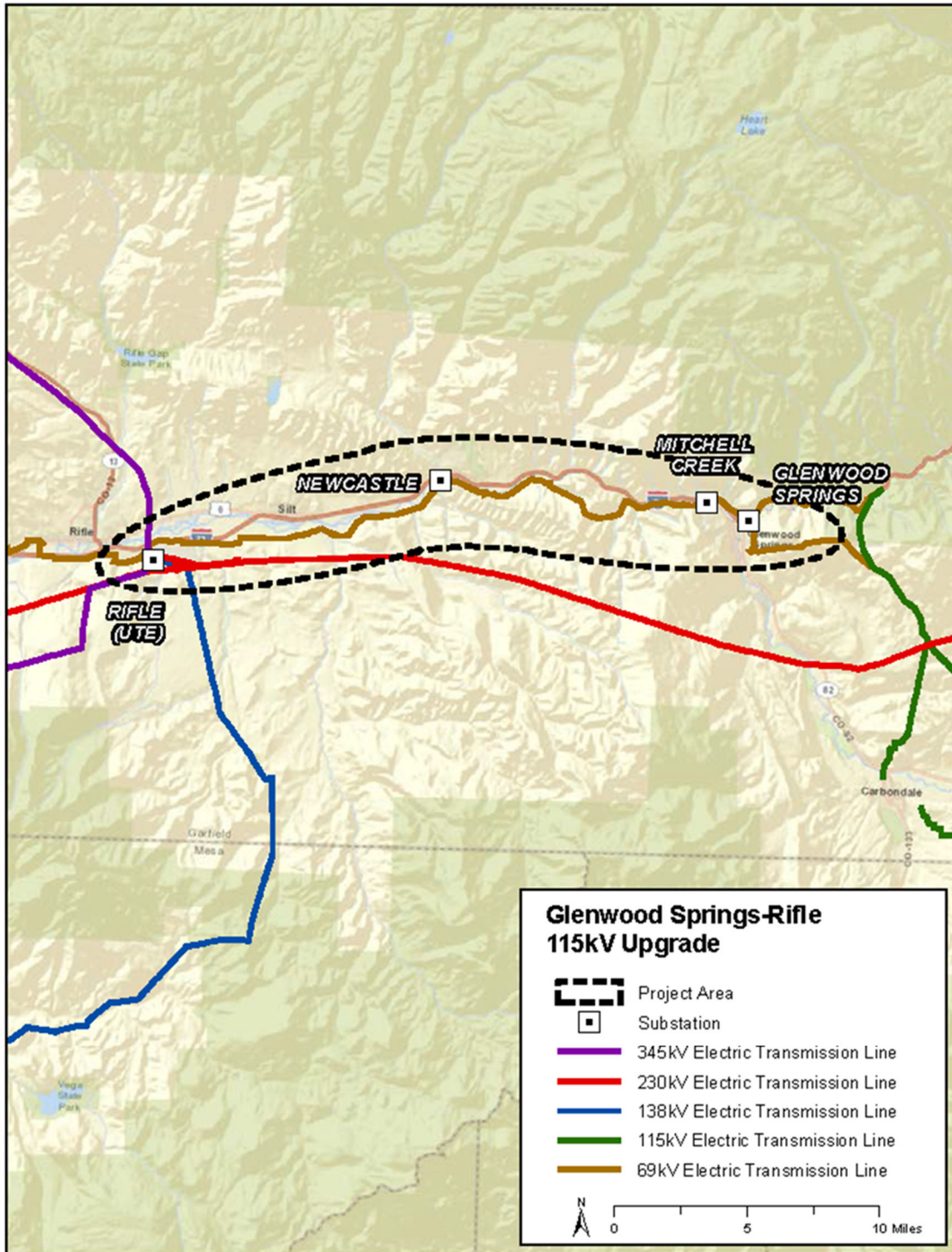
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Greenwood – Denver Terminal 230 kV Transmission Line

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Construct a new 230 kV transmission line between the existing Greenwood and Denver Terminal substation within existing right-of-way to accommodate the CEP generation portfolio and mitigate potential transmission system overloads.

Type of Project: Transmission Line

Project Drivers: Generation, Reliability

Development Status: In Service

Voltage Class: 230 kV

Facility Rating: 576 MVA

Point of Origin/Location: Greenwood Substation

Point of Termination: Denver Terminal Substation

Intermediate Points:

Length of Line (Miles): 15

Planning Study Status: Greenwood to Denver Terminal 230 kV Transmission Project System Impact Study completed by Public Service in February 2020, available at https://www.rmao.com/public/wtpp/Operating_Studies/Greenwood_to_Denver_Terminal_230kV_Transmission_Project_System_Impact_Study_Report.pdf.

Case Studied: 2025HS2

BAA Peak Summer/Winter Demand (MW): 8,738 Summer
N/A Winter

Study Generation Assumptions: Benchmark generation tables are included as Appendix A to the System Impact Study linked above. All existing generation and resources planned for the study horizon are included in the benchmark study case.

Estimated Cost (\$ millions): \$102.7

Schedule:

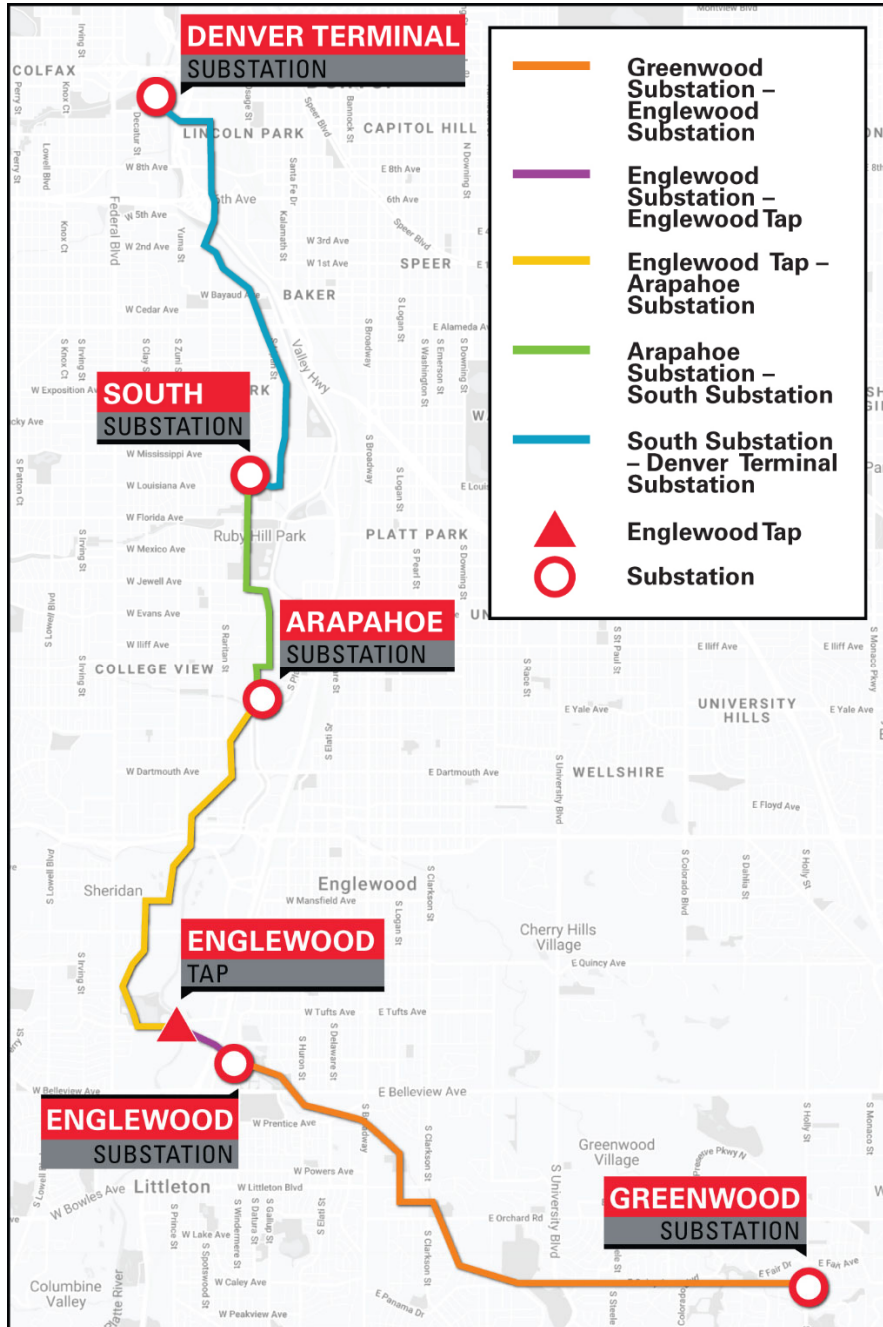
Construction Date:

In-Service Date: 2023 (actual)

Regulatory Info: CPCN granted by Decision No. C20-0648 in Consolidated Proceeding Nos. 19A-0728E and 20A-0063E.

Contact Information:

Email: GreenwoodDenverTerminal@xcelenergy.com
 Phone: 303-294-2726
 Website: <https://www.transmission.xcelenergy.com/Projects/Colorado/greenwood-denver-terminal>



Lamar DC Tie Replacement

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: The existing Lamar DC Tie is being evaluated for replacement due to several subsystems reaching or exceeding their expected useful life. As part of the replacement, Public Service is also evaluating opportunities to expand the capacity of the DC tie to take advantage of greater interregional connections and broader access to energy markets in the Eastern Interconnection.

Type of Project: Substation
Project Drivers: Import/Export Capability
Development Status: Conceptual
Voltage Class: TBD
Facility Rating: TBD
Point of Origin/Location: Lamar Substation
Point of Termination: N/A
Intermediate Points: N/A
Length of Line (Miles): N/A
Planning Study Status: TBD - Planning study not developed at this time; expected to be studied with CCPG and SPP planning region.
Case Studied: TBD
BAA Peak Summer/Winter Demand (MW): TBD Summer
TBD Winter
Study Generation Assumptions: TBD

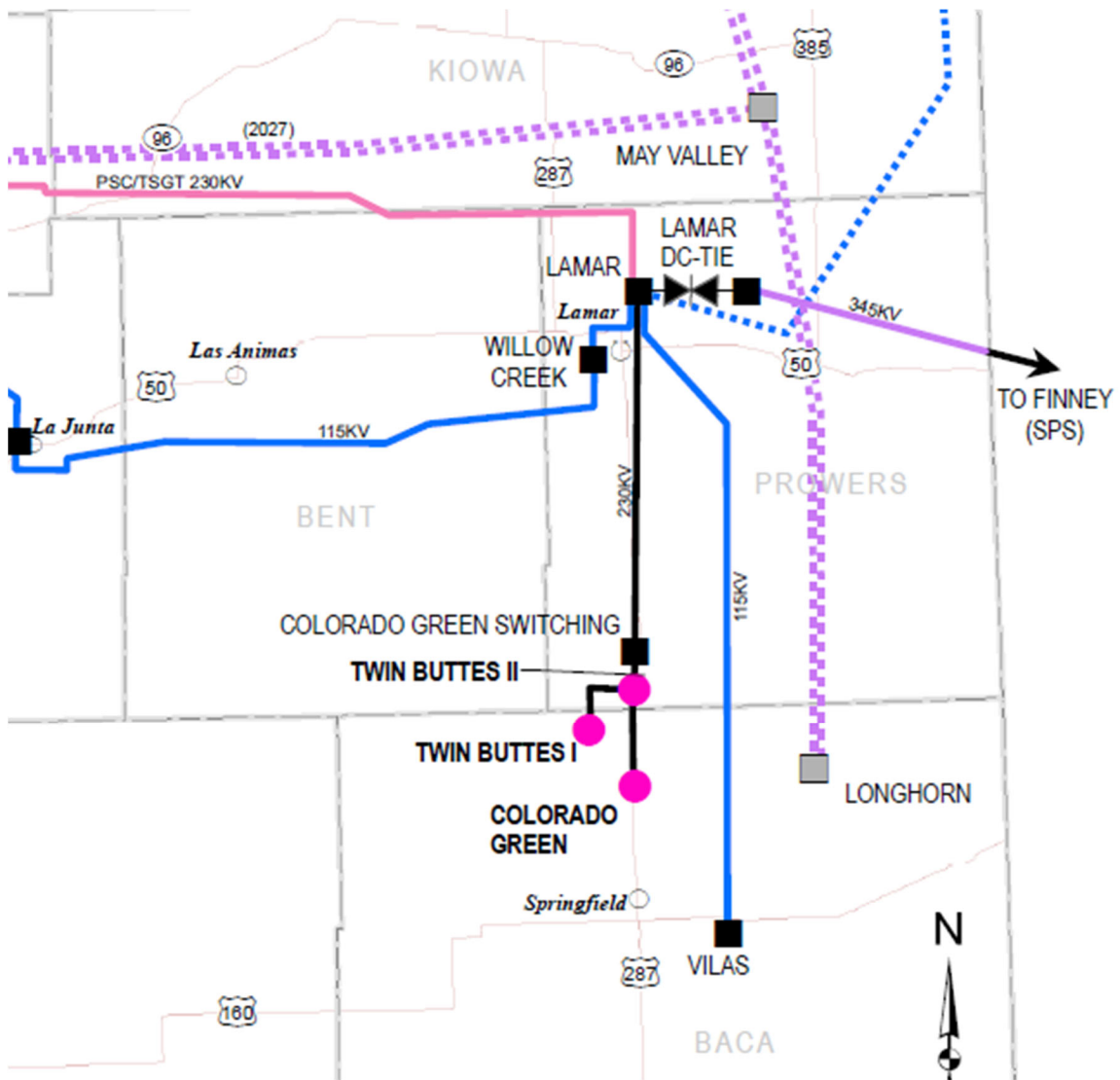
Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD
In-Service Date: TBD
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com
Phone:
Website:



Leetsdale – Elati 230 kV Circuit 5283 Underground Transmission Line Upgrade

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Build approximately 20 miles of new 230/115 kV transmission and three new substations to replace portions of Public Service’s existing 44 kV transmission network in Weld County to increase reliability, load-serving capability and resource interconnection capability in northern Colorado.

Type of Project: Transmission Line and Substations

Project Drivers: Reliability

Development Status: Conceptual

Voltage Class: 230 kV

Facility Rating: TBD

Point of Origin/Location: Leetsdale Substation

Point of Termination: Elati Substation

Intermediate Points: Monroe Substation

Length of Line (Miles): TBD

Planning Study Status: Planning study under development, not yet available.

Case Studied: TBD

BAA Peak Summer/Winter Demand (MW): TBD Summer
N/A Winter

Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: 2027

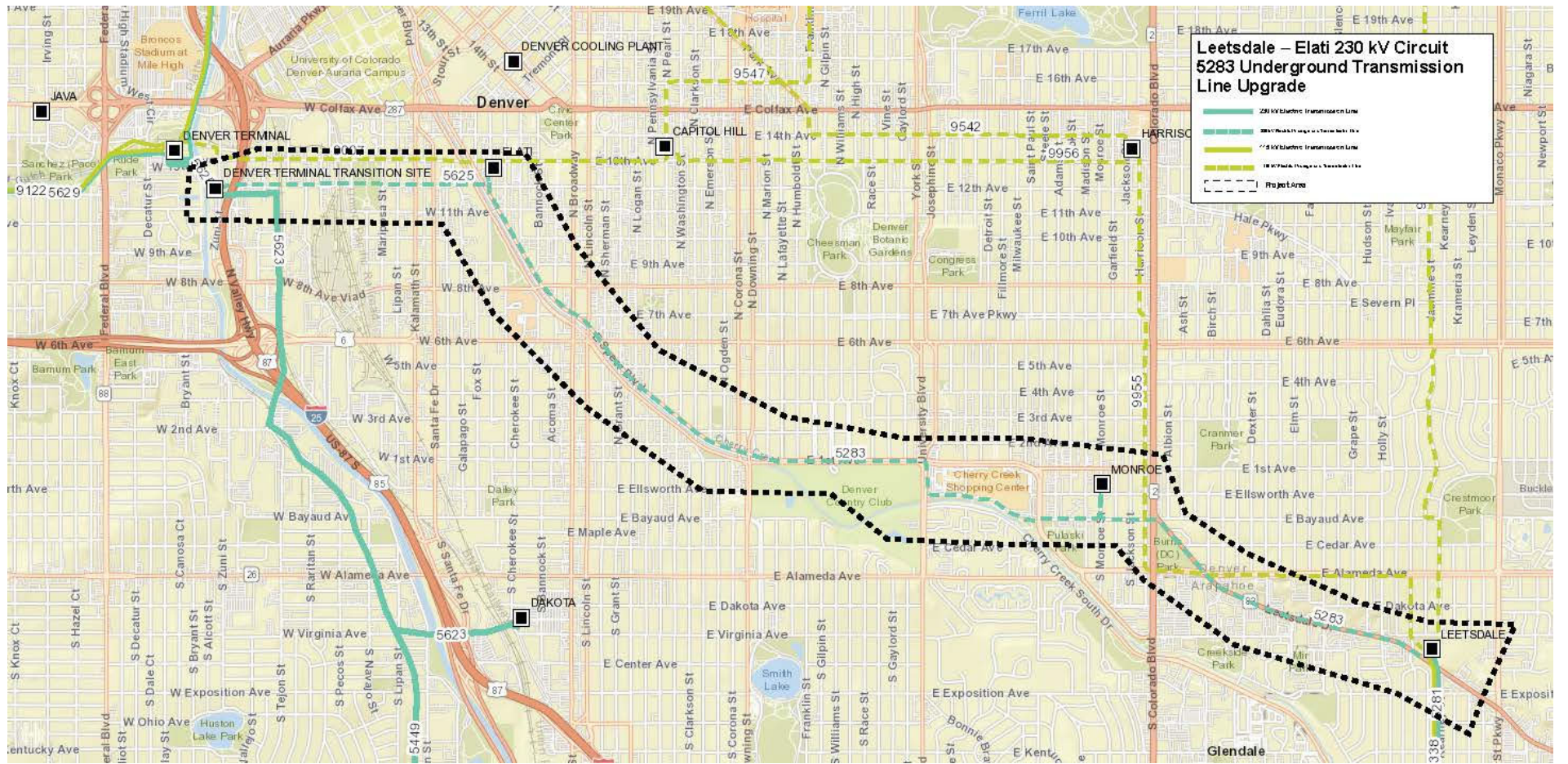
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Mirasol Switching Station

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Construction of a new 230 kV switching station connecting to the Comanche-Midway line for the interconnection of a new 200 MW solar plus 100 MW/generation resource.

Type of Project: Substations

Project Drivers: Generation

Development Status: In Service

Voltage Class: 230 kV

Facility Rating: N/A

Point of Origin/Location: N/A

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): N/A

Planning Study Status: Provisional Interconnection Study Report completed by Public Service on 11/13/2019, available at https://www.rmao.com/public/wtpp/Final_Studies/Provisional%20Study%20report%20for%20GI-2018-25.pdf.

Case Studied: 2023HS2

BAA Peak Summer/Winter Demand (MW): 10,511 Summer
N/A Winter

Study Generation Assumptions: Base case model includes existing Public Service generation resources. Table 1 in the Provisional Interconnection Study Report lists dispatch used to stress the benchmark case.

Estimated Cost (\$ millions): \$22.8 (actual)

Schedule:

Construction Date:

In-Service Date: 2022

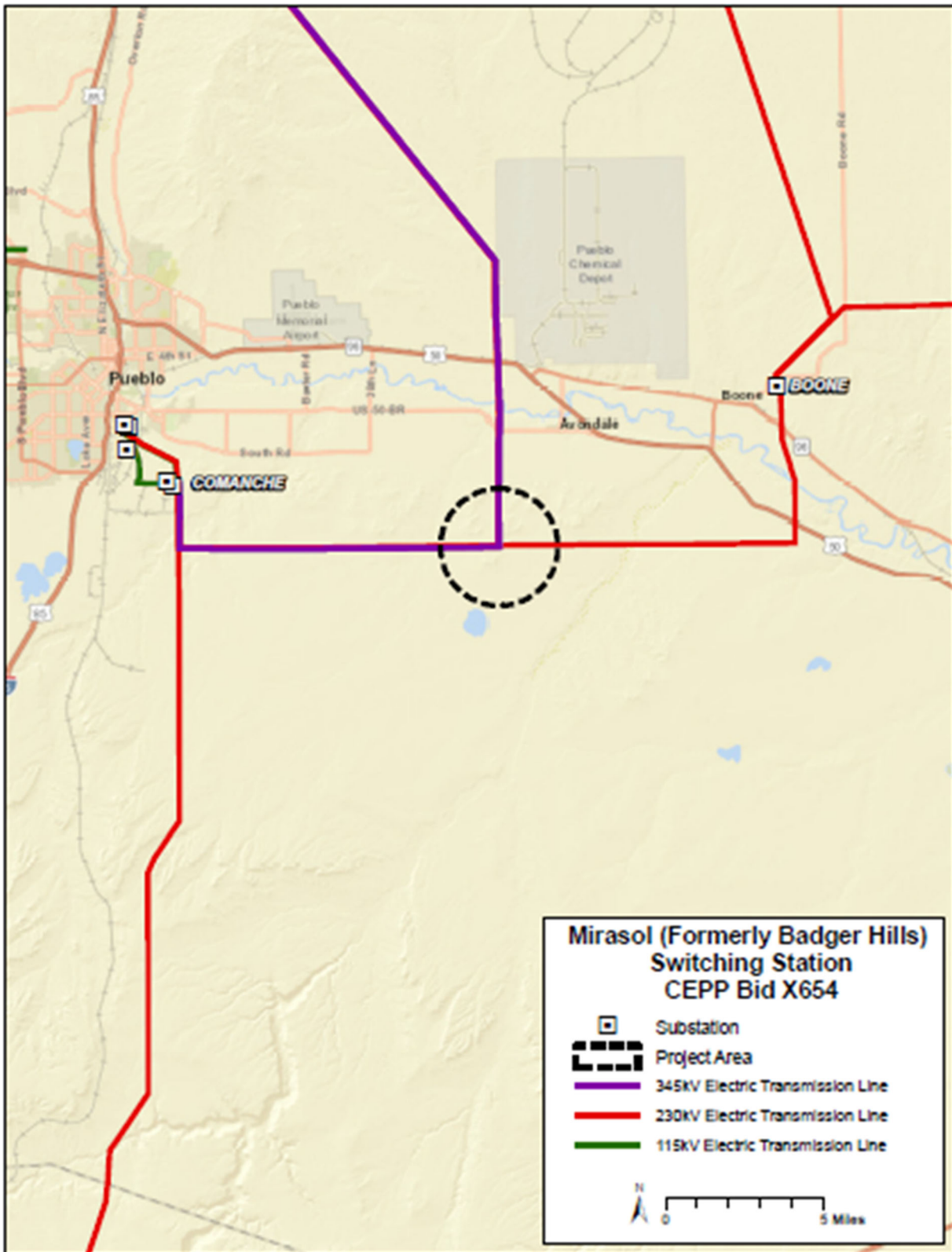
Regulatory Info: CPCN granted by Decision No. C22-0234 in Proceeding No. 21A-0298E.

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Northern Colorado Transmission

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Expanding transmission service to the northern border to improve bi-directional transfer capability with neighboring entities.

Type of Project: Transmission Lines

Project Drivers: Import/Export Capability

Development Status: Conceptual

Voltage Class: TBD

Facility Rating: TBD

Point of Origin/Location: TBD

Point of Termination: TBD

Intermediate Points: TBD

Length of Line (Miles): TBD

Planning Study Status: TBD – Planning study not developed at this time; expected to be studied within the CCPG NECO Subcommittee.

Case Studied: TBD

BAA Peak Summer/Winter Demand (MW): TBD Summer
N/A Winter

Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: TBD

Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:

Pathway Voltage Control/Support

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: A series of voltage control devices required to accommodate the resource portfolio selected in Public Service's 2021 ERP & CEP.

Type of Project: Substations

Project Drivers: Reliability, Generation

Development Status: Conceptual

Voltage Class: Various

Facility Rating: Various

Point of Origin/Location: TBD

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): N/A

Planning Study Status: TBD - Planning study not developed at this time; to be completed based on generation portfolio selected in Public Service's 2021 ERP & CEP.

Case Studied: TBD

BAA Peak Summer/Winter Demand (MW): TBD Summer
N/A Winter

Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: TBD

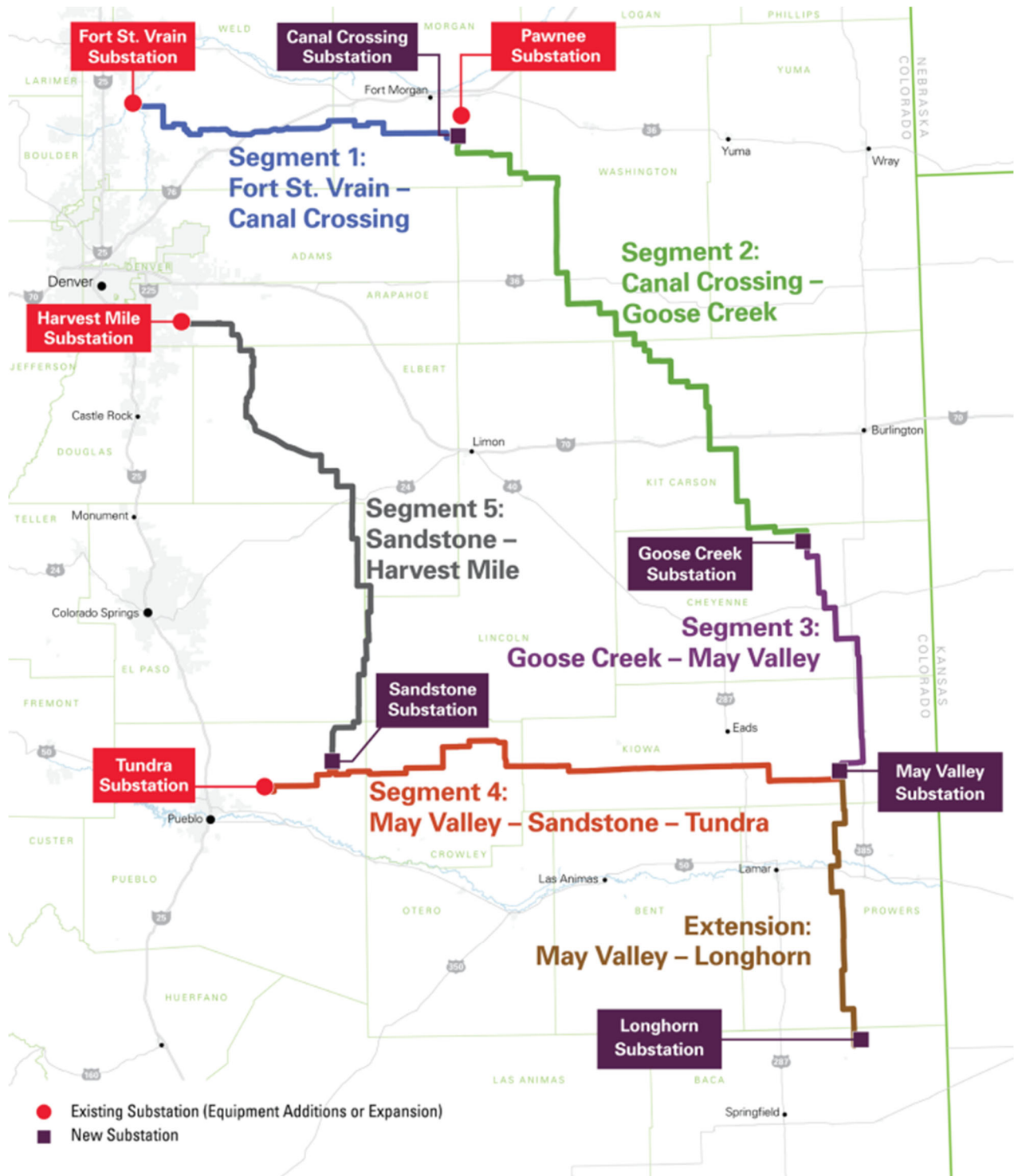
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Poncha – Front Range 230 kV Transmission Line

Project Sponsor: Public Service Company of Colorado
Additional Project Participants: Tri-State Generation and Transmission

Project Description and Purpose: Construct a 230 kV transmission line from the Poncha Substation to terminate at a location in the Front Range to improve reliability, load serving capabilities, and generation interconnection capabilities in the San Luis Valley area.

Type of Project: Transmission Line
Project Drivers: Reliability, load serving, and generation interconnection
Development Status: Conceptual
Voltage Class: 230 kV
Facility Rating: TBD
Point of Origin/Location: Poncha
Point of Termination: TBD, in the Front Range area
Intermediate Points: TBD
Length of Line (Miles): TBD
Planning Study Status: San Luis Valley Subcommittee Phase II Transmission Study Export Capability completed by CCPG on 2/16/2017, available at: https://www.rmao.com/public/wtpp/Operating_Studies/02_02_17_San_Luis_Valley_Phase_II_Final_Report.pdf
Case Studied: 2026HS
BAA Peak Summer/Winter Demand (MW): 9,103 Summer
N/A Winter
Study Generation Assumptions: Benchmark Case Generation Tables included as Appendix E to the transmission study linked above. A generator was added to the San Luis 230 kV bus in order to perform the Transfer Capability Study

Estimated Cost (\$ millions): TBD

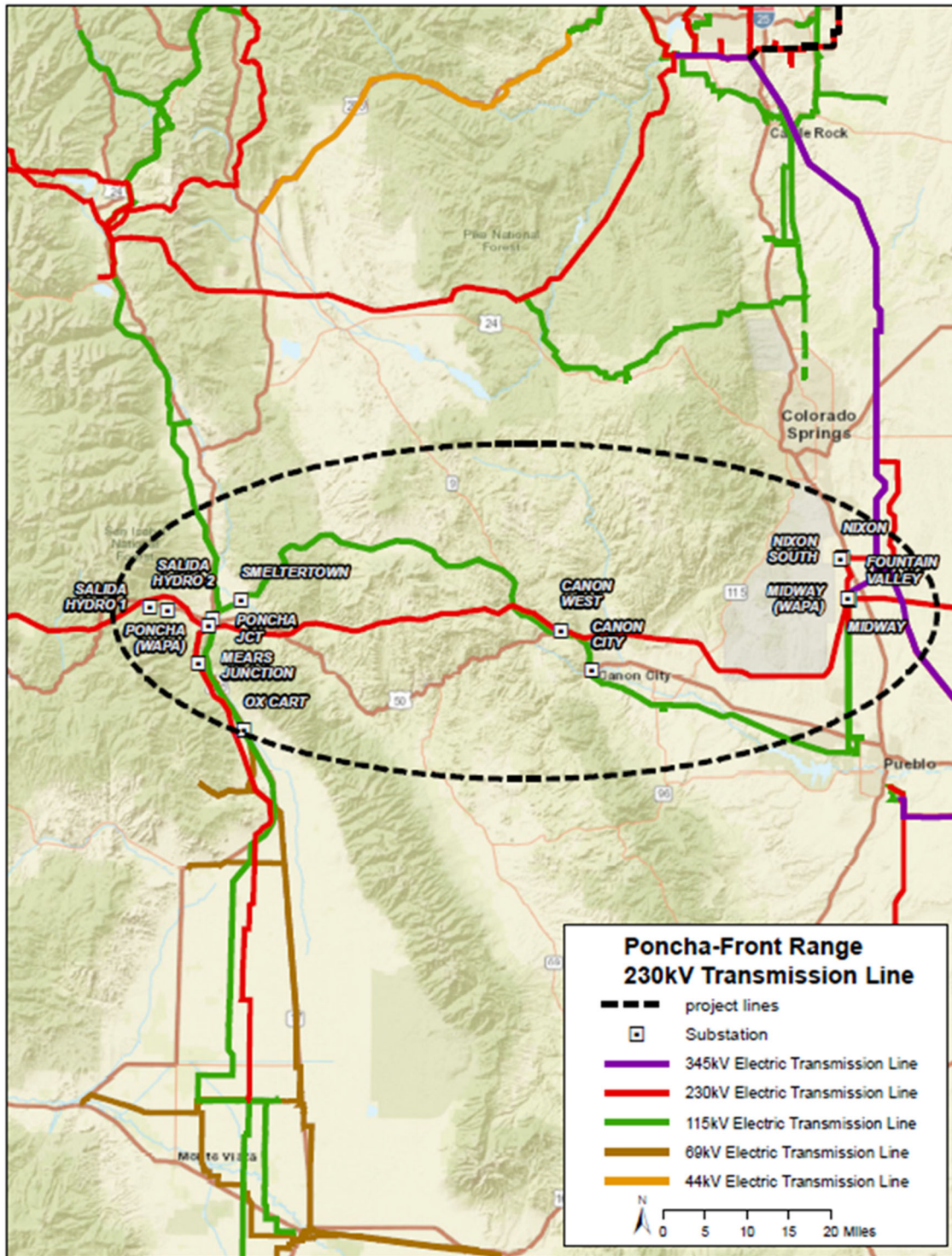
Schedule:

Construction Date: TBD
In-Service Date: TBD
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com
Phone:

Website:



Sandstone Switching Station

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Construct a new switching station in Pueblo County as a scope change to Colorado's Power Pathway Project to address engineering and siting challenges with the original scope of the planned expansion of the Tundra Switching Station.

Type of Project: Substations

Project Drivers: Generation, Reliability

Development Status: Planned

Voltage Class: 345 kV

Facility Rating: N/A

Point of Origin/Location: N/A

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): N/A

Planning Study Status: Sandstone is not expected to materially affect the results of the transmission planning studies conducted in the development of the Colorado's Power Pathway Project. The 80x30 Task Force Phase I Transmission Report was completed by CCPG on 2/24/2021, available at: https://www.rmao.com/public/wtpp/Operating_Studies/02_24_21_80x30_Task%20Force_Phase_I_Transmission_Report.pdf.

Case Studied: 2030HS1

BAA Peak Summer/Winter Demand (MW): 10,273 Summer
N/A Winter

Study Generation Assumptions: Benchmark generation tables are available as Appendix A to the Phase I Transmission Report for the CCPG 80x30 Task Force, linked above. In addition to existing or planned generation reflected in the benchmark model, the Pathway Project was studied with 3000 MW of new generic renewable dispatch and 3000 MW of existing renewable generation dispatch located in ERZs 1, 2, 3, and 5.

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date:

In-Service Date: 2027

Regulatory Info: CPCN Application to be filed in 2024.

San Luis Valley Network Upgrades

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Upgrades, expansions, and construction of new transmission facilities in the Denver metro area to accommodate delivery of generation from the portfolio approved in Public Service's 2021 ERP & CEP, including:

Type of Project: Transmission Lines and Substations

Project Drivers: Reliability, load serving, and generation

Development Status: Conceptual

Voltage Class: Various

Facility Rating: Various

Point of Origin/Location: Various

Point of Termination: Various

Intermediate Points: Various

Length of Line (Miles): TBD

Planning Study Status: TBD - Planning study not developed at this time; study process expected to commence with CCPG in early 2024.

Case Studied: TBD

BAA Peak Summer/Winter Demand (MW): TBD Summer
N/A Winter

Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: TBD

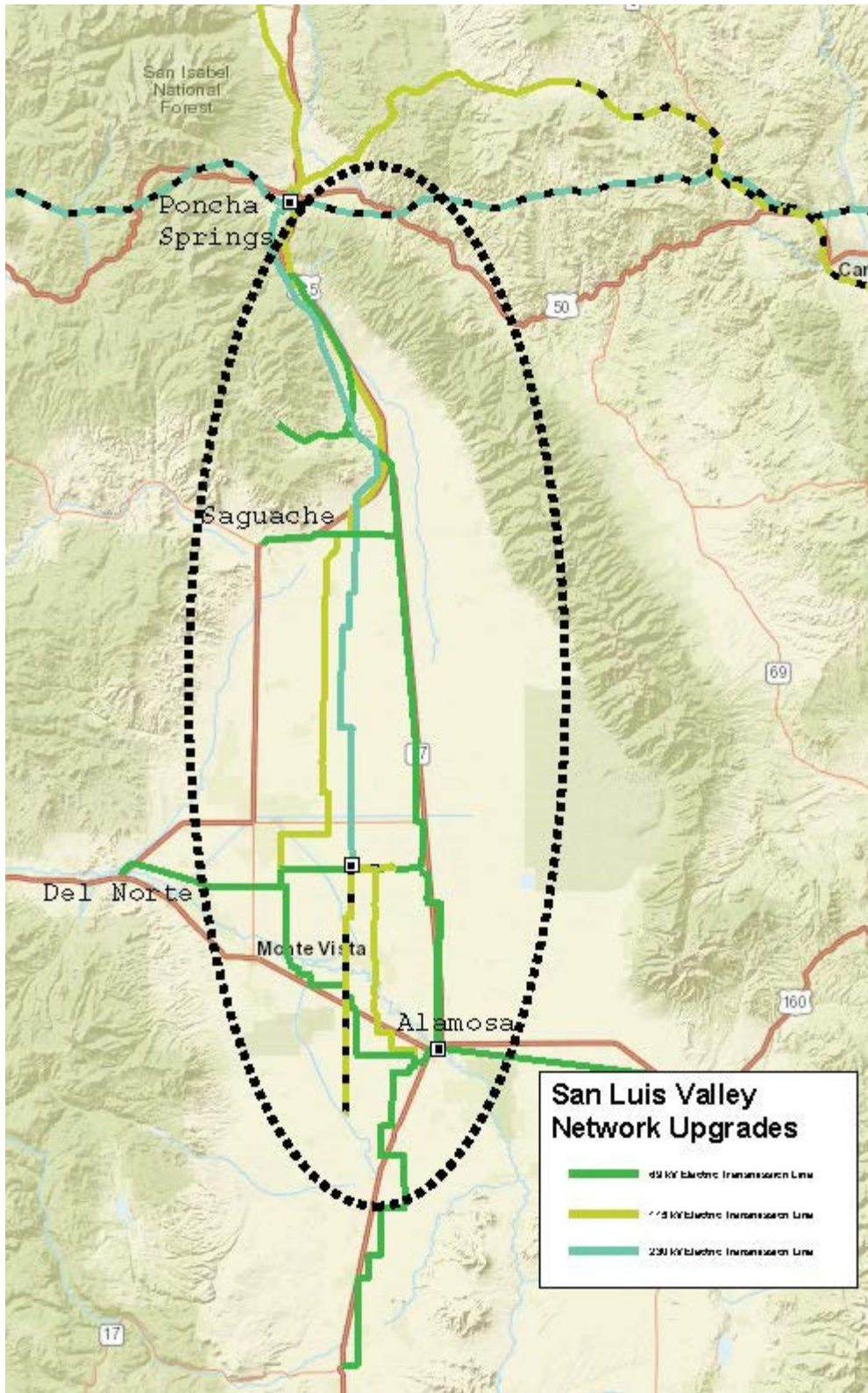
Regulatory Info: CPCN required by Decision No. C24-0052, Proceeding No. 21A-0141E.

Contact Information:

Email: PSCoPlanning@xcelenergy.com

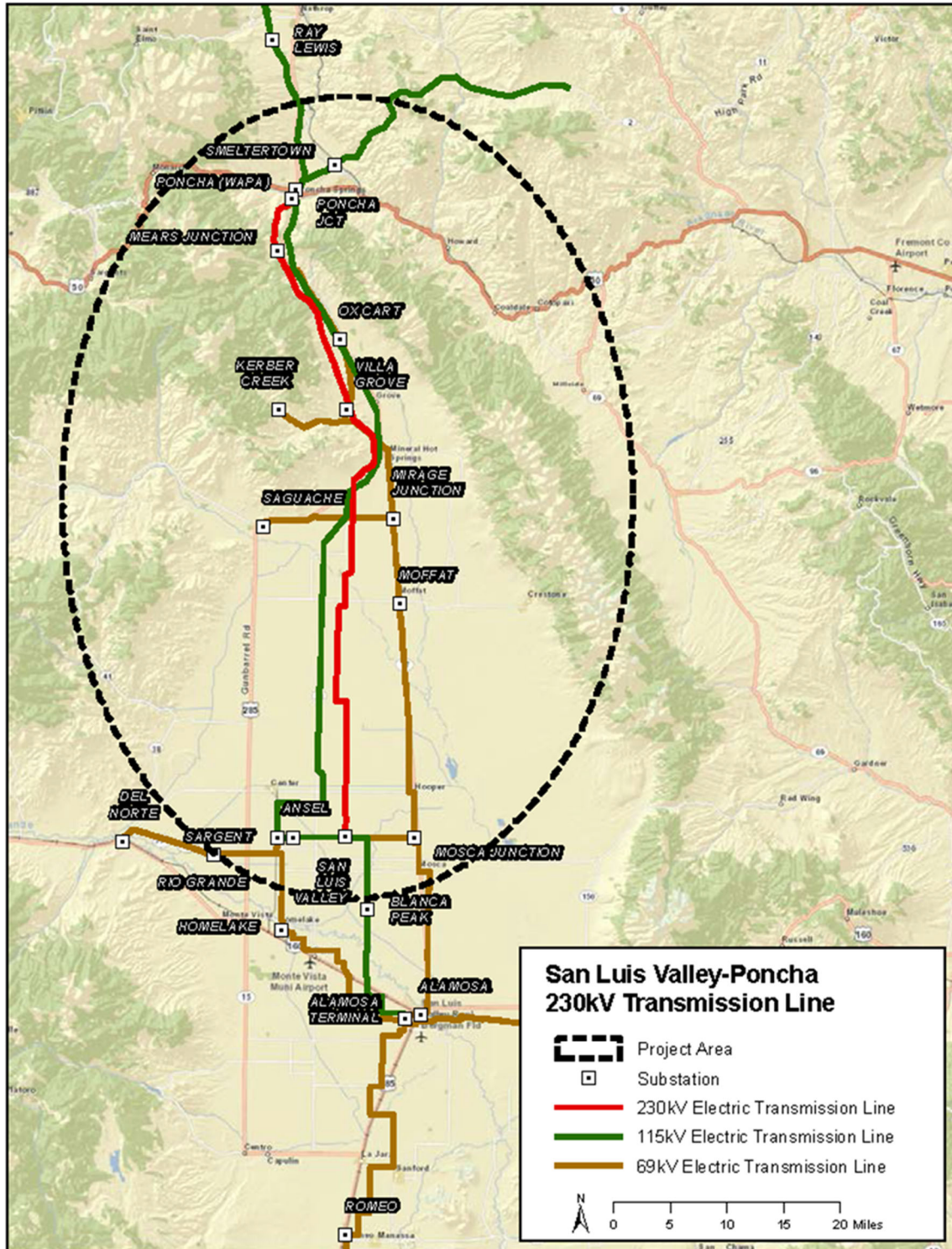
Phone:

Website:



San Luis Valley-Poncha 230 kV Line

Project Sponsor:	Tri-State Generation and Transmission Association
Additional Project Participants:	Public Service Company of Colorado
Project Description and Purpose:	Construct a second 230 kV transmission line from the San Luis Valley Substation to the Poncha Substation.
Type of Project:	Transmission Line
Project Drivers:	Reliability, load serving, and generation
Development Status:	Conceptual
Voltage Class:	230 kV
Facility Rating:	631 MVA
Point of Origin/Location:	San Luis Valley Substation
Point of Termination:	Poncha Substation
Intermediate Points:	N/A
Length of Line (Miles):	62
Planning Study Status:	San Luis Valley Phase I Transmission Study completed by CCPG on 1/28/2016, available at: https://www.rmao.com/public/wtpp/Operating_Studies/01_28_16_San_Luis_Valley_Phase_I_Report.pdf .
Case Studied:	2020HS2
BAA Peak Summer/Winter Demand (MW):	8,387 Summer N/A Winter
Study Generation Assumptions:	Generation assumptions are identified in the study report linked above.
Estimated Cost (\$ millions):	TBD
Schedule:	
Construction Date:	TBD
In-Service Date:	TBD
Regulatory Info:	TBD
Contact Information:	
Email:	PSCoPlanning@xcelenergy.com
Phone:	
Website:	



Stagecoach Switching Station

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: A new 230 kV switching station to connect GI-2014-9, a 70 MW solar generation facility located in Pueblo County. The requested Point of Interconnection for GI-2014-9 is a tap on the Comanche – Midway 230 kV line.

Type of Project: Substation

Project Drivers: Generation

Development Status: Planned

Voltage Class: 230 kV

Facility Rating: N/A

Point of Origin/Location: N/A

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): N/A

Planning Study Status: Interconnection Feasibility and System Impact Study (Updated) Generation Interconnection Request GI-2014-9 completed by Public Service on 8/2/2018, available at: https://www.rmao.com/public/wtpp/Final_Studies/GI-2014-9%20FES%20SIS%20Update%20Final.pdf.

Case Studied: 2022HS1

BAA Peak Summer/Winter Demand (MW): N/A Summer
N/A Winter

Study Generation Assumptions: Generation dispatch in the study area is detailed in Table 7 in the study report linked above.

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: 2025

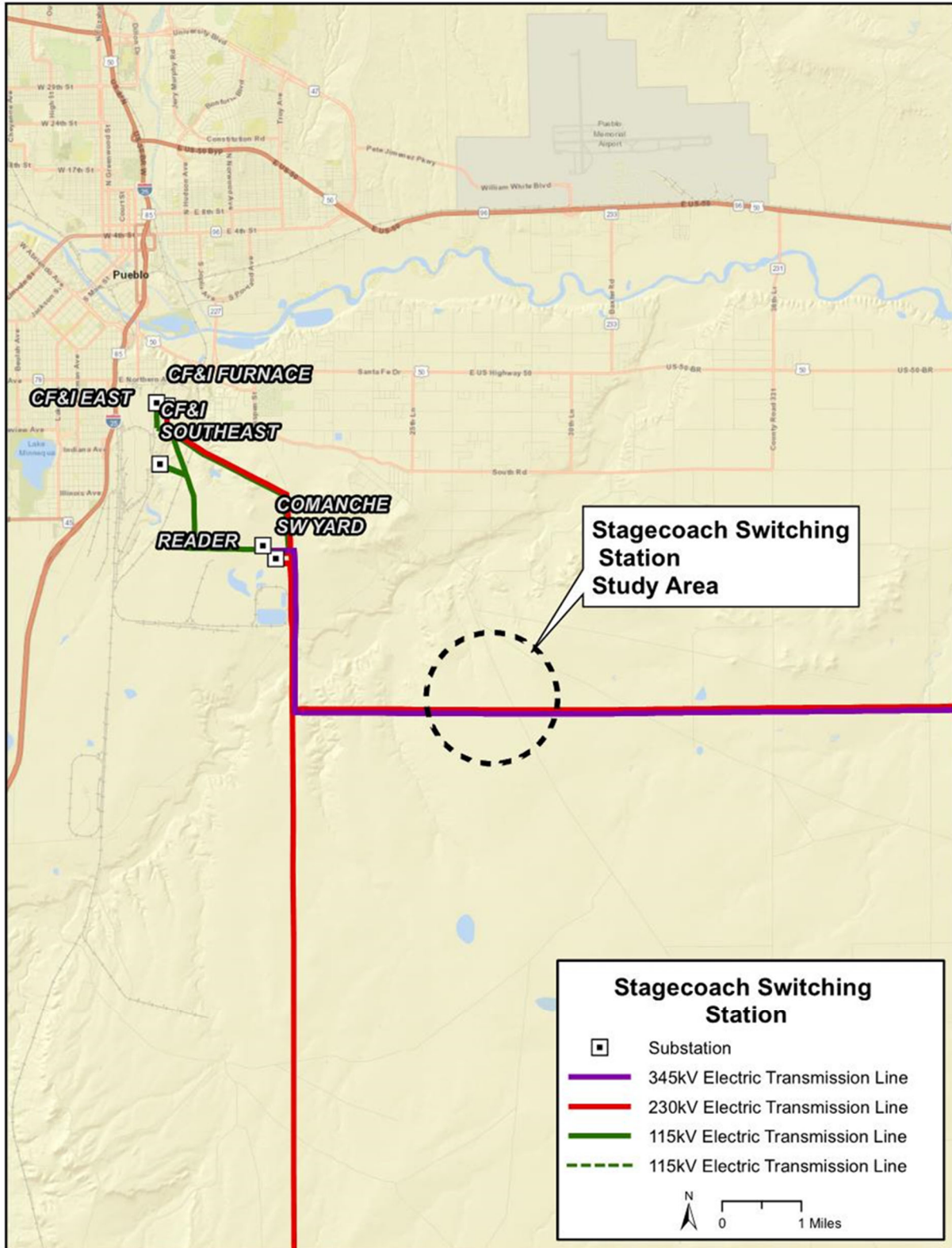
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Tundra Switching Station

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Construct new 345 kV switching station in Pueblo County to interconnect a new 250 MW solar and 125 MW battery storage generation resource to Public Service's transmission system

Type of Project: Substation

Project Drivers: Generation

Development Status: In Service

Voltage Class: 345 kV

Facility Rating: N/A

Point of Origin/Location: N/A

Point of Termination: N/A

Intermediate Points: N/A

Length of Line (Miles): N/A

Planning Study Status: Provisional Interconnection Study Report completed by Public Service on 10/24/2019, available at https://www.rmao.com/public/wtpp/Final_Studies/Provisional%20Study%20Report%20for%20GI-2018-24-PI-2019-2-250MW.pdf.

Case Studied: 2023HS2

BAA Peak Summer/Winter Demand (MW): 10,511 Summer
N/A Winter

Study Generation Assumptions: Base case model includes existing Public Service generation resources. Table 1 in the Provisional Interconnection Study Report lists dispatch used to stress the benchmark case.

Estimated Cost (\$ millions): \$21.9 (actual)

Schedule:

Construction Date:

In-Service Date: 2022 (actual)

Regulatory Info: CPCN granted by Decision No. C22-0234 in Proceeding No. 21A-0298E.

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Weld – Rosedale – Box Elder – Ennis 230/115 kV Transmission

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: Build a new 230 kV transmission line from Weld to Rosedale and a 230kV or 115kV line from Rosedale to Box Elder to Ennis to replace portions of Public Service’s existing 44 kV transmission network in central and southern Weld County to increase reliability, load-serving capability and resource interconnection capability in northern Colorado.

Type of Project: Transmission Line and Substations

Project Drivers: Reliability, load-serving, and generation

Development Status: Conceptual

Voltage Class: 230/115 kV

Facility Rating: 220 MVA

Point of Origin/Location: Weld Substation

Point of Termination: Ennis Substation

Intermediate Points: Rosedale Substation and new Beebe Draw Substation

Length of Line (Miles): 13 + 7

Planning Study Status: Planning study under development by CCPG NECO Subcommittee, final study report not yet available.

Case Studied: 2027HS1

BAA Peak Summer/Winter Demand (MW): 9,165 Summer
N/A Winter

Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD

In-Service Date: TBD

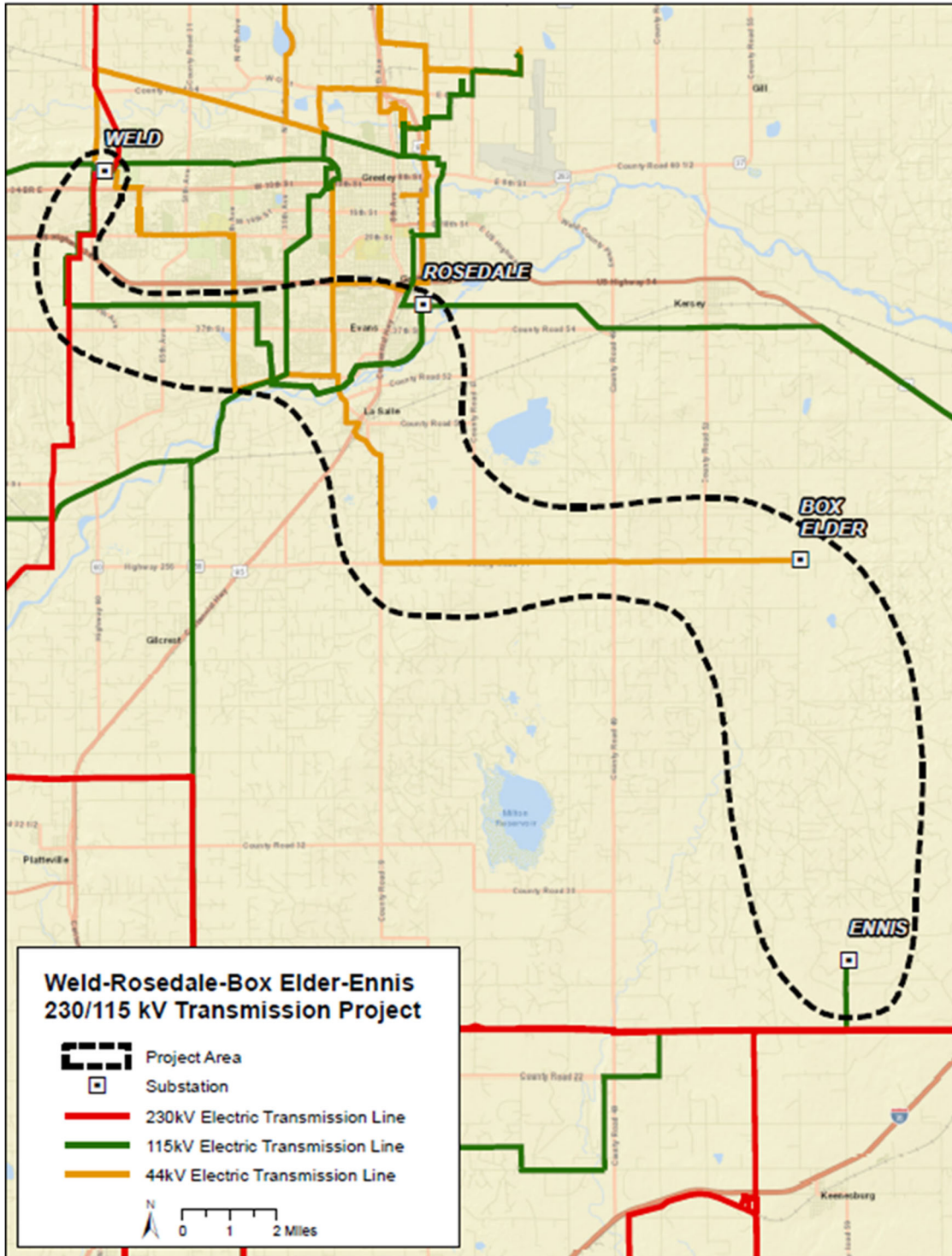
Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com

Phone:

Website:



Weld County Transmission Expansion

Project Sponsor: Public Service Company of Colorado

Additional Project Participants:

Project Description and Purpose: This expansion project may be considered as a third or eastern phase of the planning efforts in the area that have been taking place in the CCPG NECO Subcommittee. In general, the Weld County Expansion conceptualizes an increase in transmission capability between the planned Ault – Cloverly project, the conceptual Weld – Rosedale – Box Elder – Ennis project and the northern Denver metro area. This transmission expansion could enable increased north to south transfers into the Denver metro area and potentially remove operating limitations associated with the WECC TOT 7 path. Further, this project could potentially improve import and export capability between Public Service and northern systems. Finally, the conceptual transmission expansion in Weld County could allow for an increase in load serving capability as well as an increase in generation accommodation to meet clean energy goals.

Type of Project: Transmission Line and Substations
 Project Drivers: Reliability, load-serving, generation, and import/export capabilities
 Development Status: Conceptual
 Voltage Class: TBD
 Facility Rating: TBD
 Point of Origin/Location: TBD
 Point of Termination: TBD
 Intermediate Points: TBD
 Length of Line (Miles): TBD
 Planning Study Status: TBD. To be studied through the CCPG NECO Subcommittee.
 Case Studied: TBD
 BAA Peak Summer/Winter Demand (MW): TBD Summer
 N/A Winter
 Study Generation Assumptions: TBD

Estimated Cost (\$ millions): TBD

Schedule:

Construction Date: TBD
 In-Service Date: TBD
 Regulatory Info: TBD

Contact Information:

Email: PSCoPlanning@xcelenergy.com
Phone:
Website:

