



**TRI-STATE G&T**

A Touchstone Energy<sup>®</sup>  
Cooperative

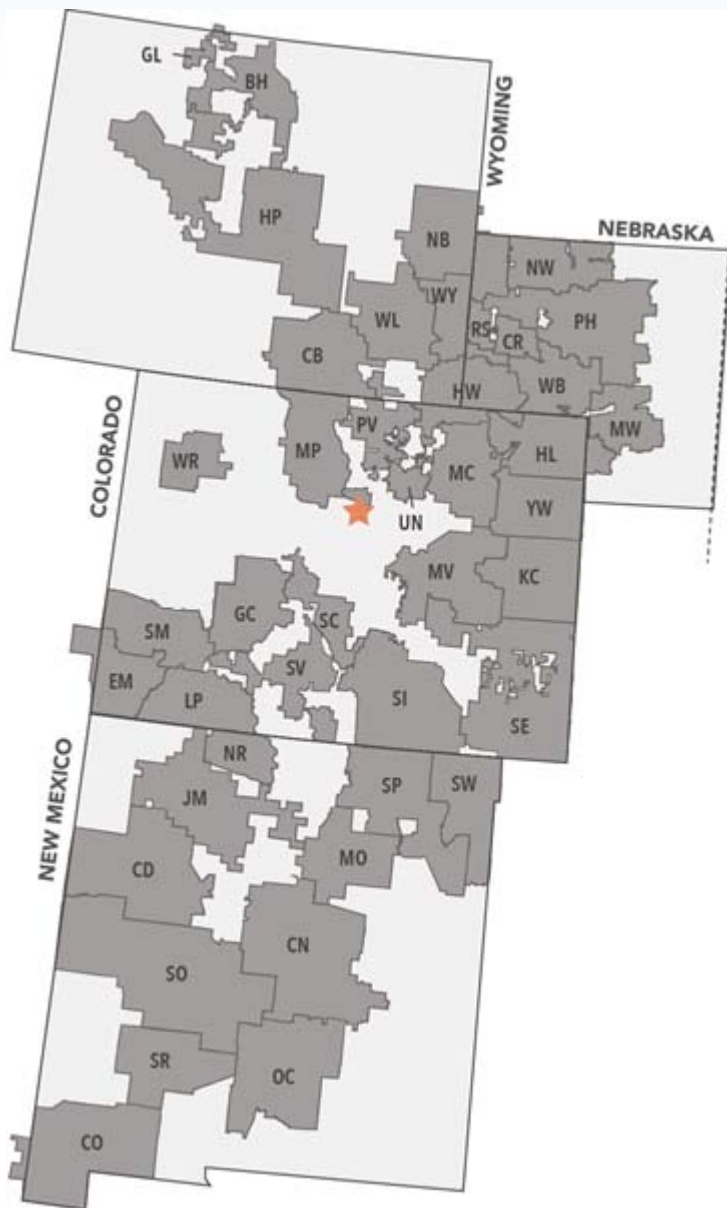


# **Colorado Rule 3627 & FERC Order 890 Stakeholder Meeting October 8, 2020**



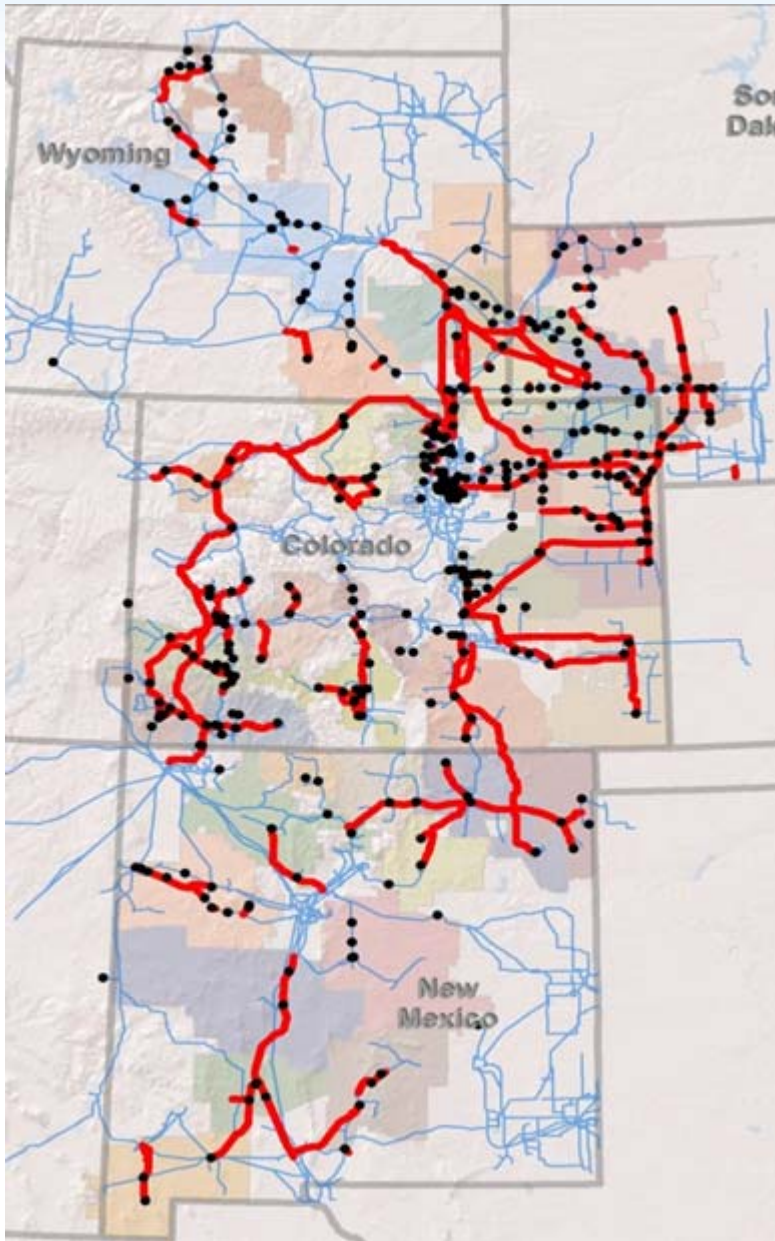
# About Tri-State

Incorporated in 1952, Tri-State is a generation and transmission cooperative (“G&T”) operating on a not-for-profit basis. Tri-State was formed by its Member Systems for the purpose of providing wholesale power and energy to its Members for resale to their retail consumers. Tri-State is controlled by a 40+ seat Board of Directors, with each of Tri-State’s Members occupying one seat on the Board.



Our mission is to provide our members a **reliable, affordable and responsible** supply of electricity in accordance with cooperative principles.

# Tri-State's Transmission System



Tri-State delivers reliable power to communities across nearly 200,000 square miles of the west, from the eastern plains through the Rocky Mountains and down to the southern deserts. We own or operate more than 5,665 miles of high-voltage lines, supported by our system of 220 substations and telecommunications sites.

# This Meeting



- Participation in Tri-State's local planning process is open to all interested parties, including but not limited to, all network and point-to-point transmission service customers, interconnecting neighboring transmission providers, regulatory agencies, and other stakeholders.
- Promote discussion of all aspects of the Tri-State transmission planning activities, including, but not limited to, methodology, study inputs, public policy requirements, study results, and alternative solutions.
- Provide a forum for Tri-State to better understand the specific electric transmission interests of all stakeholders.





# Scope

- Review Tri-State's transmission planning process and current study plan.
- Summarize the status of Tri-State's generator interconnection queue.
- Provide updates on its developing and planned projects.
- Receive transmission study requests from stakeholders for review and discussion.
- Solicit information from its Transmission Customers on loads and resources and other needs, such as public policy requirements, for the preparation of its ten-year plan.



## Note

- This is not the only forum to be involved.
- This meeting will be supplemented by additional stakeholder outreach activities in connection with individual transmission projects or overall programmatic needs, as necessary.
- Colorado Coordinated Planning Group (CCPG)
  - Voluntary, open transmission planning forum.
  - Membership is open to all interested stakeholders.
  - Includes all Colorado transmission utilities
  - <http://regplanning.westconnect.com/ccpg.htm>



# Planning Processes

# Planning Considerations



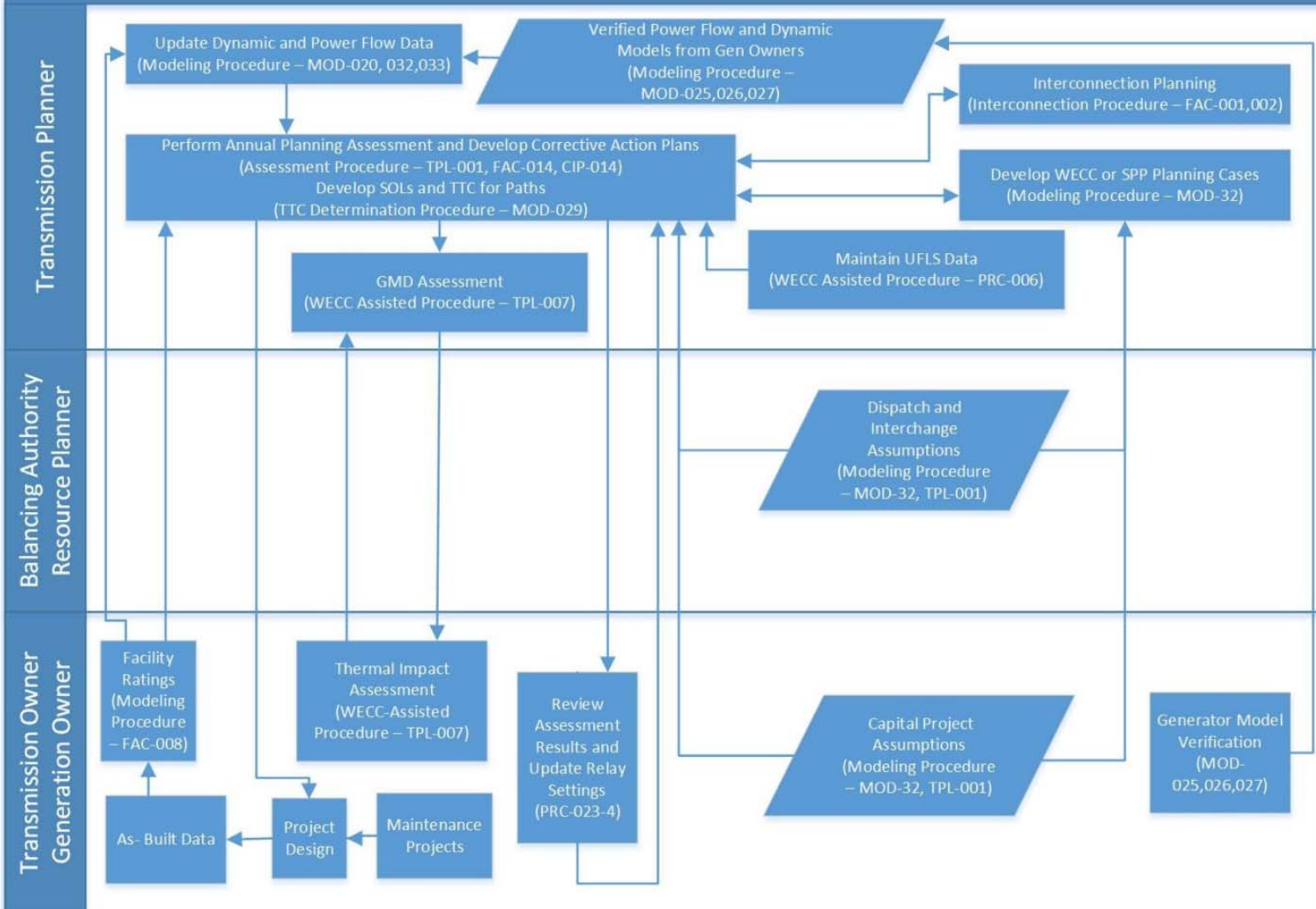
- Tri-State endeavors to conduct transmission planning with the goal of achieving best-cost solutions that balance numerous factors and result in optimal transmission projects:
  - Load projections
  - New delivery points
  - NERC reliability standards
  - Generation resources and interconnections
  - Project partnership opportunities
  - Regional congestion
  - Transmission corridors
  - City and county zoning
  - Geographic features
  - Societal and environmental impacts
  - Operational and maintenance requirements
  - Consistency with short term and long term planning opportunities
  - Initial construction cost



# Planning Processes: NERC Compliance



## Process Diagram for Assessment, Modeling, WECC/SPP-Assisted and Interconnection Procedures



# Study Process and/or Methodology for Other Studies

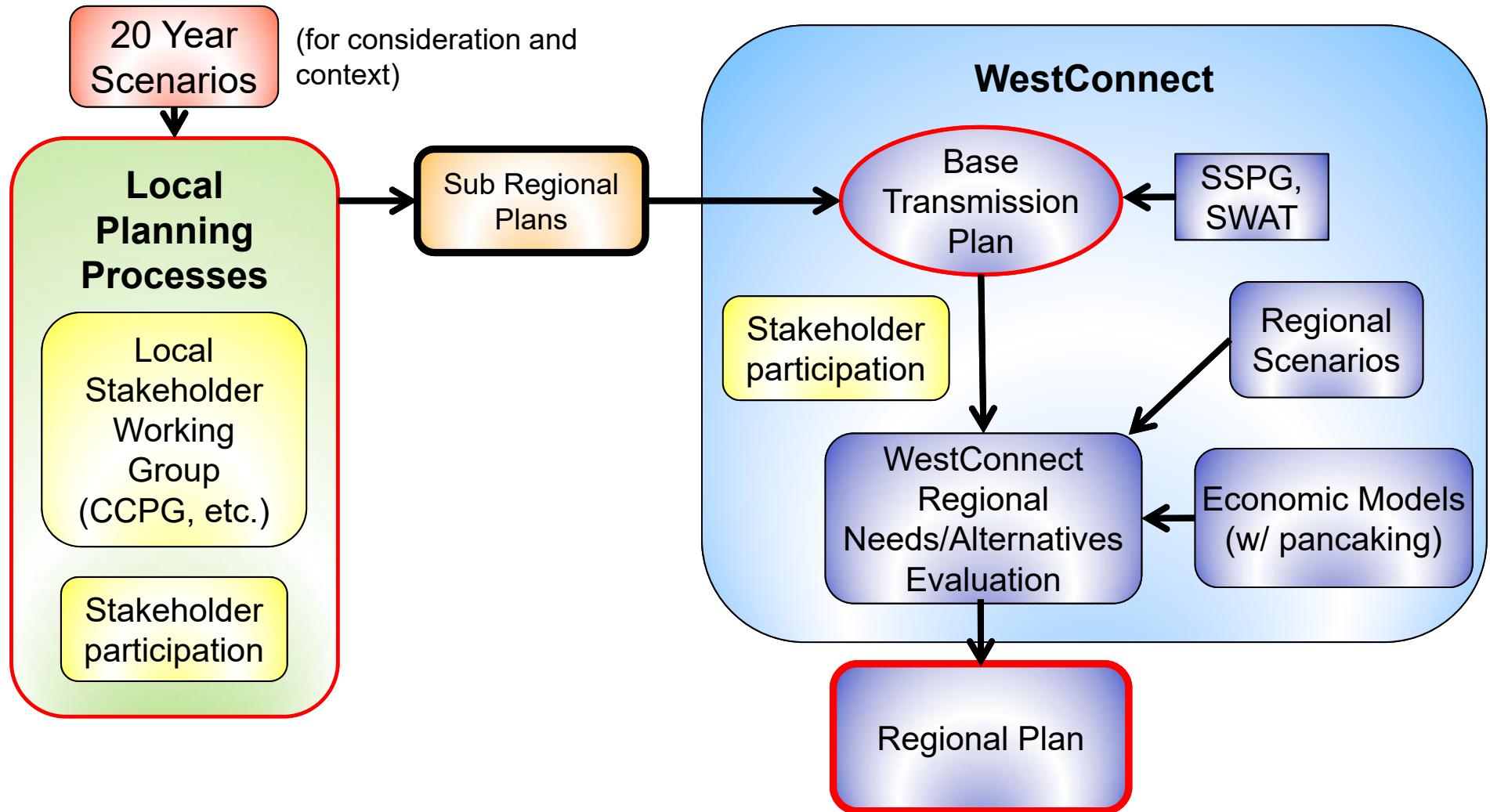


- Tri-State Oasis Site: <https://www.oasis.oati.com/tsgt/index.html>
  - Transmission Planning Process
    - ◆ → Open Access Transmission Tariff (OATT)
      - Attachment K of OATT
  - Large Generator Interconnection Procedures
    - ◆ → Open Access Transmission Tariff (OATT)
      - Attachment N of OATT
  - Small Generator Interconnection Procedures
    - ◆ → Open Access Transmission Tariff
      - Attachment O of OATT
  - Engineering Standards Bulletin (Transmission Planning Criteria, etc.)
    - ◆ → Open Access Transmission Tariff
      - → Transmission Planning
        - → Engineering Standards Bulletin
  - EMTP Modeling Guidelines
    - ◆ → Open Access Transmission Tariff
      - → Transmission Planning
        - → EMTP Model Guidelines

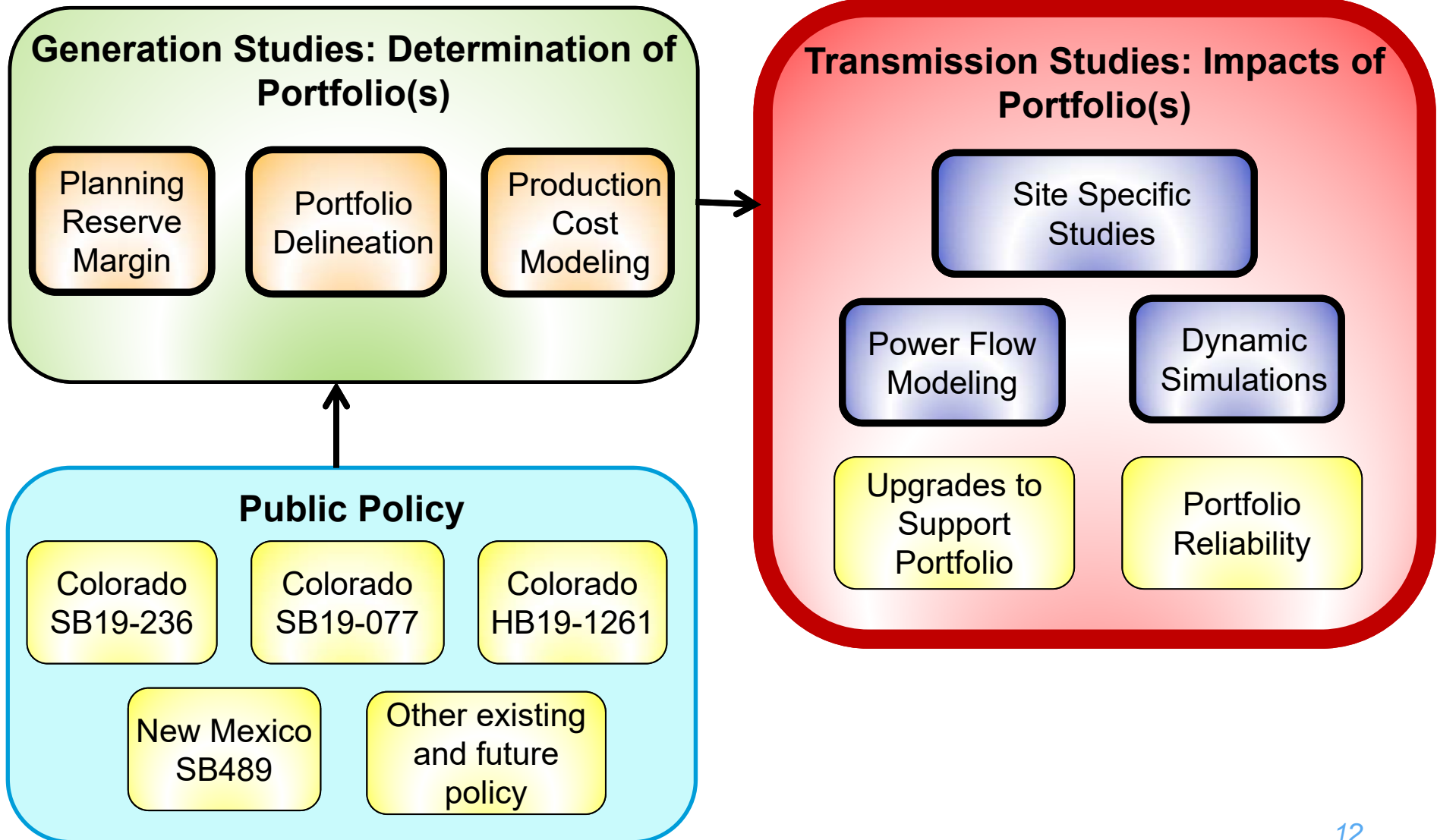
# Local vs Regional Planning



Relationship between local and regional planning processes:



# Resource Portfolios vs Transmission Planning



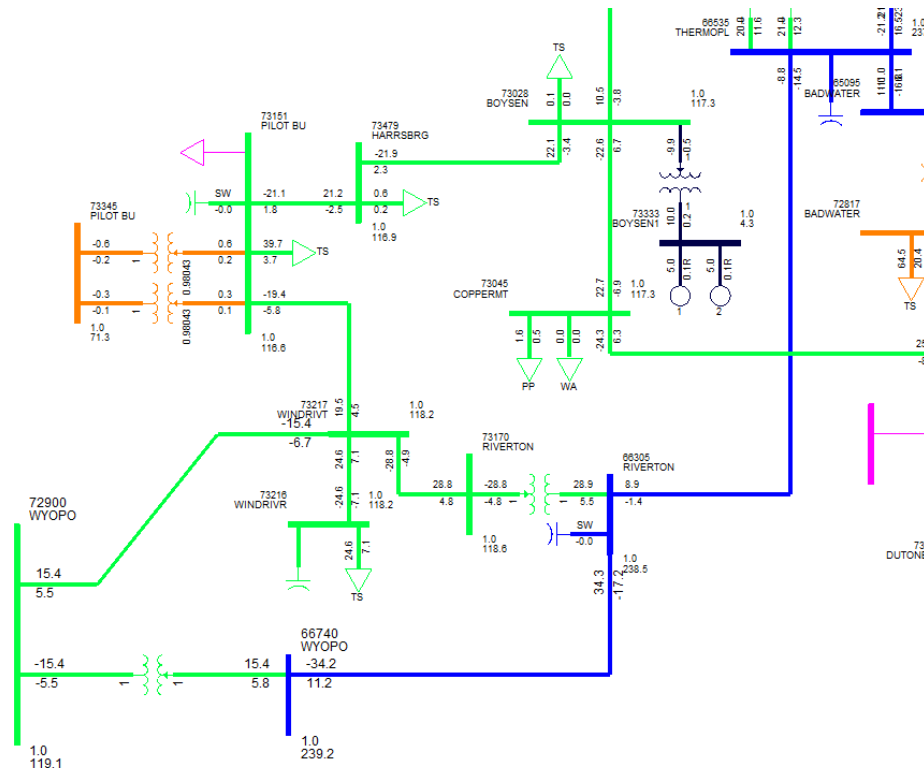




# Required Studies

## Power Flow Studies

- Contingency analysis (P0-P7 & Extreme Events per NERC TPL-001-04)
- Monitor for overloads and voltage issues
- Identify areas for local, site-specific studies

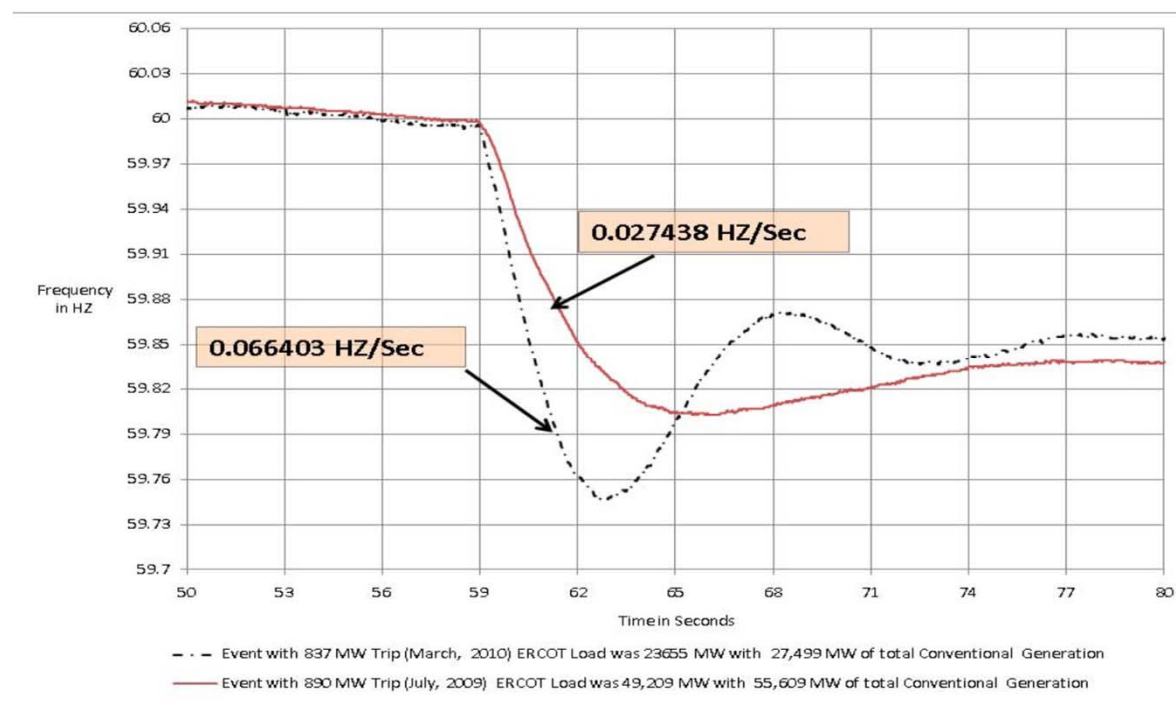




# Required Studies

## Dynamic Simulations

- Monitor frequency response
- Monitor governor response, rotor angle stability, out of step
- Voltage instability and ride through
- Dynamic VARS

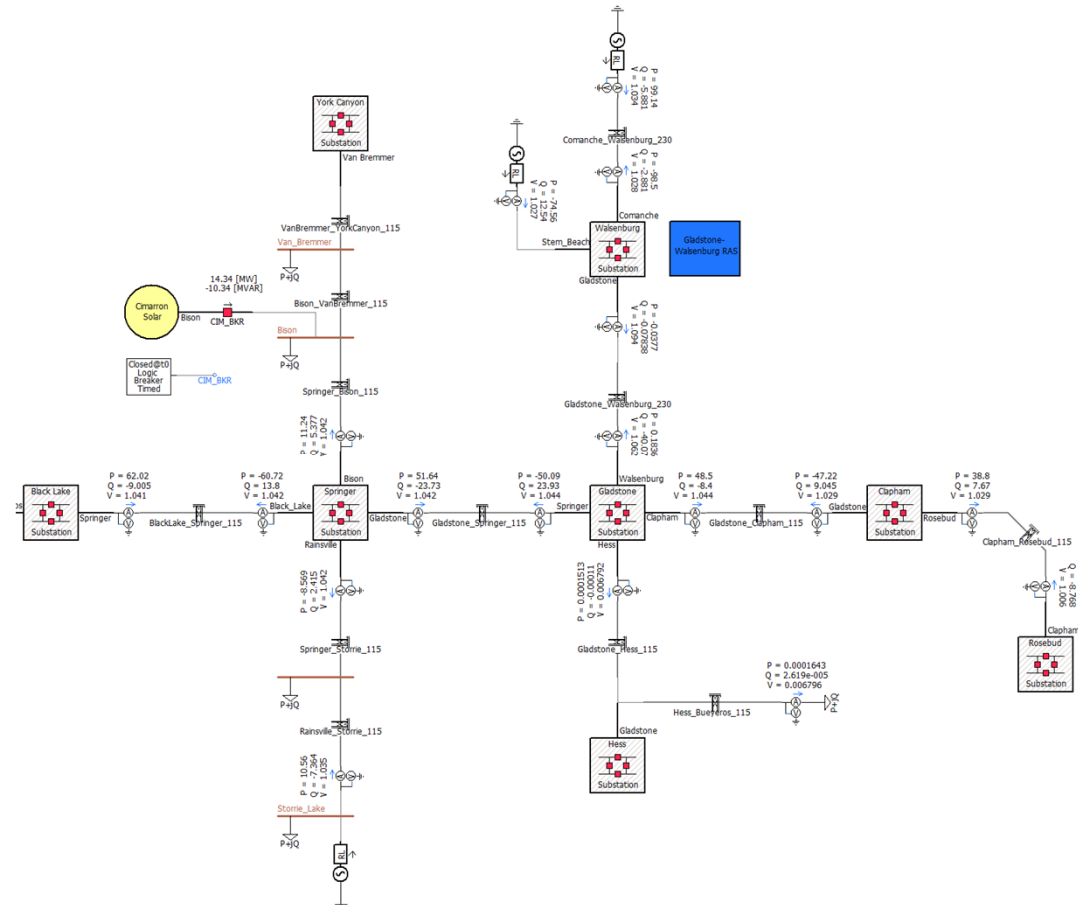




# Required Studies

## Localized (Electromagnetic Transient) Studies

- Controller interactions
- Flicker
- Harmonics
- Weak Grid



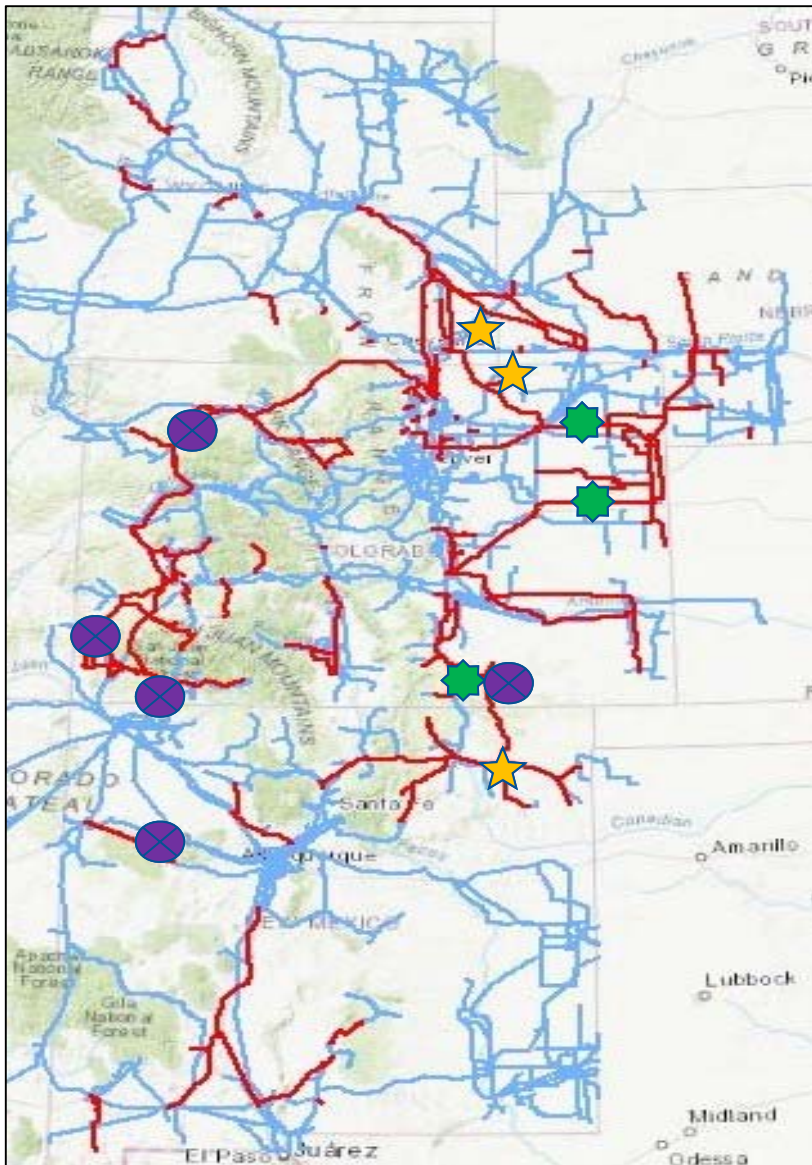
# Generator Interconnection Queue



- Large Generator Interconnection Requests
  - Forty-seven (47) Interconnection Requests
    - 1,902 MW of Wind
    - 5,380 MW of Solar
    - 1,717 MW of Battery Storage
  
- Small Generator Interconnection Requests
  - One (1) Interconnection Request
    - 12.5 MW of Solar



# Interconnection & Transmission Service Projects



**Filed Interconnection Agreement**



**Approved Transmission Service Request**



**Signed Interconnection Agreement w/ Approved Transmission Service**



# Interconnection & Transmission Service Queues



## Generator Interconnection Requests with LGIAs:

- [https://www.oasis.oati.com/woa/docs/TSGT/TSGTdocs/LGIA\\_Interconnection\\_Request\\_Queue.pdf](https://www.oasis.oati.com/woa/docs/TSGT/TSGTdocs/LGIA_Interconnection_Request_Queue.pdf)

Request Number	Date Received	Point of Receipt	LOCATION	Service Type	MW Capacity	Initial Requested ISD	GIA ISD	GIA Suspended	Status / Comments
<b>PROJECTS WITH COMPLETED or UNEXECUTED GIA/LGIA</b>									
TI-08-0312	3/12/2008	Springer to Van Bremmer 115kV	Colfax Couty, New Mexico	Tri-State Network Resource	30 MW Solar	6/1/2010	7/10/2010	N/A	Completed
TI-08-0502	5/2/2008	Burlington to Big Sandy 230kV	Kit Carson County, Colorado	Tri-State Network Resource	51 MW Wind	12/31/2010	10/15/2010	N/A	Completed
TI-12-0217	2/17/2012	South Canal to Dallas Creek 115kV Line	Ouray County, Colorado	Tri-State Network Resource	7.2 MW Solar	3/1/2014	11/1/2013	N/A	Completed
TI-08-0204	2/4/2008	Burlington 230 kV Bus	Kit Carson County, Colorado	Tri-State Network Resource	150 MW Wind	11/30/2009	11/30/2015	N/A	Completed
TI-15-0227	2/27/2015	Mimbres 115kV	Luna County, New Mexico	Tri-State Network Resource	25 MW Solar	6/30/2016	10/31/2016	N/A	Completed
TI-15-0612	6/17/2015	Ludlow-Pinon Canyon 115kV	Las Animas County, Colorado	Tri-State Network Resource	30 MW Solar	9/15/2016	9/15/2016	N/A	Completed
TI-17-0224	2/24/2017	Burlington-Big Sandy 230kV Line	Kit Carson/Cheyenne Counties, Colorado	Tri-State Network Resource	104 MW Wind	6/1/2020	9/11/2020	No	Executed GIA
TI-18-0827	8/27/2018	Redtail 115 kV Substation	Weld County, Colorado	Network Resource	145 MW Wind	10/01/2020	09/01/2021	No	Unexecuted LGIA
TI-18-0227C	2/27/2018	Round Top Switching Station	Banner County, Nebraska	Network Resource	103 MW Wind	10/1/2021	12/31/2023	No	Executed LGIA
TI-19-0828	8/28/2019	N. Yuma-Story Substation	Logan County, Colorado	Network Resource	200 MW Wind	10/31/2021	8/15/2021	No	Executed PLGIA
TI-18-0809	8/9/2018	Walsenburg-Gladstone 230 kV Line	Las Animas County, Colorado	Network Resource Energy Resource	100 MW Solar	10/1/2023	10/01/2022	No	Executed LGIA
TI-17-0228	9/11/2019	Gladstone Sub/Gladstone-Hess 115kV Line	Union County, New Mexico	Network Resource	78 MW Wind	9/1/2019	10/31/2021	No	Unexecuted LGIA

# Interconnection & Transmission Service Queues



## Transmission Service Request Queue

- [https://www.oasis.oati.com/woa/docs/TSGT/TSGTdocs/TRANSMISSION SERVICE Queue 6-1-2020.pdf](https://www.oasis.oati.com/woa/docs/TSGT/TSGTdocs/TRANSMISSION_SERVICE_Queue_6-1-2020.pdf)

Network Service Transmission Requests											
Request Number	Application/Submission Completion Date	Oasis Reservation or Status Change	Location or POR / POD	Service Type	MW Capacity Requested (Granted)	In-service Date	Status / Comments	Study	Agreement Executed	Study Completed	Network Service Granted
TSR-15-0319	3/19/2015	TSR # 81269893	Lamar 230 kV to Midway 230 kV	Network Service	75 (75)	12/1/2017	Evaluation Complete	N/A			Declared acceptable for Network Resource Designation
	12/19/2018	TSR# TSWALTCOMA	Walsenburg 230kV to Gladstone 230kV	Network Service	100	11/1/2023	Evaluation Complete	N/A			Declared acceptable for Network Resource Designation
	2/15/2019	TSR # TSBURLBSAN	Landsman Creek to Big Sandy 230kV	Network Service	104	12/18/2020	Evaluation Complete	N/A			Declared acceptable for Network Resource Designation
TSOA-19-0025	10/18/2019	NITS Application	Southeastern Colorado	Network Service	63	1/1/2020	Network Integration Transmission Service Agreement Executed	N/A		N/A	
TSOA-19-0063	12/10/2019	TSR # TSAXBASINSOLAR	Moffat County, Colorado	Network Service	145	1/1/2023	Evaluation Complete	SIS		3/18/2020	Declared acceptable for Network Resource Designation
TSOA-19-0064	12/10/2019	TSR # TSDOLOCANSOLAR	Cahone 115kV	Network Service	110	1/1/2023	Evaluation Complete	SIS		3/18/2020	Declared acceptable for Network Resource Designation
TSOA-19-0065	12/10/2019	TSR # TSESCALANTESOLAR	PEGS TO AMBROSIA 230kV	Network Service	200	10/1/2023	Evaluation Complete	SIS		3/12/2020	Declared acceptable for Network Resource Designation
TSOA-19-0006	12/10/2019	TSR # TSSPANPEAKSII	Las Animas County, Colorado	Network Service	40	1/1/2023	Evaluation Complete	SIS		3/23/2020	Declared acceptable for Network Resource Designation
TSOA-19-0067	12/18/2019	TSR # TSNIIYOLWIND	Logan and Washington Counties, Colorado	Network Service	201	8/18/2021	Evaluation Complete	SIS		3/13/2020	Declared acceptable for Network Resource Designation
TSOA-20-0007	1/7/2020	NITS Application TSOA-20-0007	Montrose, Colorado	Network Service	99	5/1/2020	Evaluation Complete	SIS		3/13/2020	Declared acceptable for Network Integration Transmission Service
TSOA-20-0004	1/13/2020	TSR # TSCGULSOLAR	Southwestern Colorado	Network Service	120	1/1/2023	Evaluation Complete	SIS		3/24/2020	Declared partially acceptable for Network Resource Designation until system upgrades are complete

# Interconnection & Transmission Service Queues



## Large Generator Interconnection Request Queue

- [https://www.oasis.oati.com/woa/docs/TSGT/TSGTdocs/Active Interconnection Request Queue.pdf](https://www.oasis.oati.com/woa/docs/TSGT/TSGTdocs/Active_Interconnection_Request_Queue.pdf)

## Small Generator Interconnection Request Queue

- [https://www.oasis.oati.com/woa/docs/TSGT/TSGTdocs/Small Generator Interconnection Request Queue 9-29-2020.pdf](https://www.oasis.oati.com/woa/docs/TSGT/TSGTdocs/Small_Generator_Interconnection_Request_Queue_9-29-2020.pdf)



# Queue Reform

- Tri-State filed Revised Generator Interconnection Procedures at FERC on July 31, 2020
- The Revised Generator Interconnection Procedures were *rejected without prejudice* by FERC on October 6, 2020
- Tri-State is reviewing the decision and will determine next steps in the near future.



# Study Requests

# Study/Information Requests



- Transmission Study Requests
  - None received outside of the sub-regional planning groups (CCPG, SWAT)
  - Any new requests for discussion?
  
- Economic Study Requests
  - None received outside of regional study process (Westconnect)
    - Due to Tri-State by Sept 1 each year for discussion at this annual meeting
  - Submit any requests to Tri-State at: [transmissionplanning@tristategt.org](mailto:transmissionplanning@tristategt.org)
  
- Information Requests
  - Load and Resource information requests have been sent to Network Customers
    - Tri-State requests Network Customers continue to provide updates to Load and Resource information, as well as other modeling information, to assist in preparation of our ten-year plan





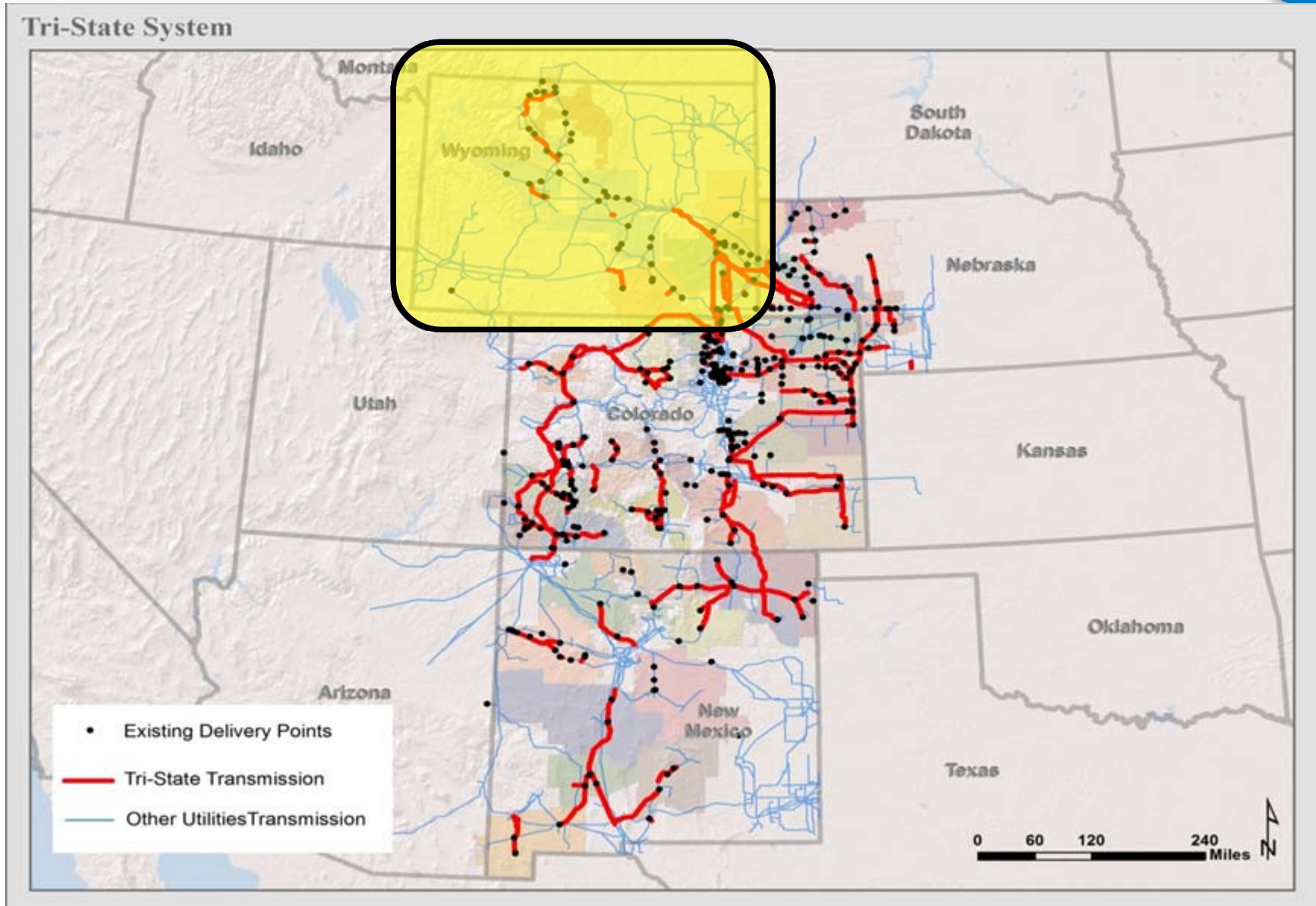
# Projects



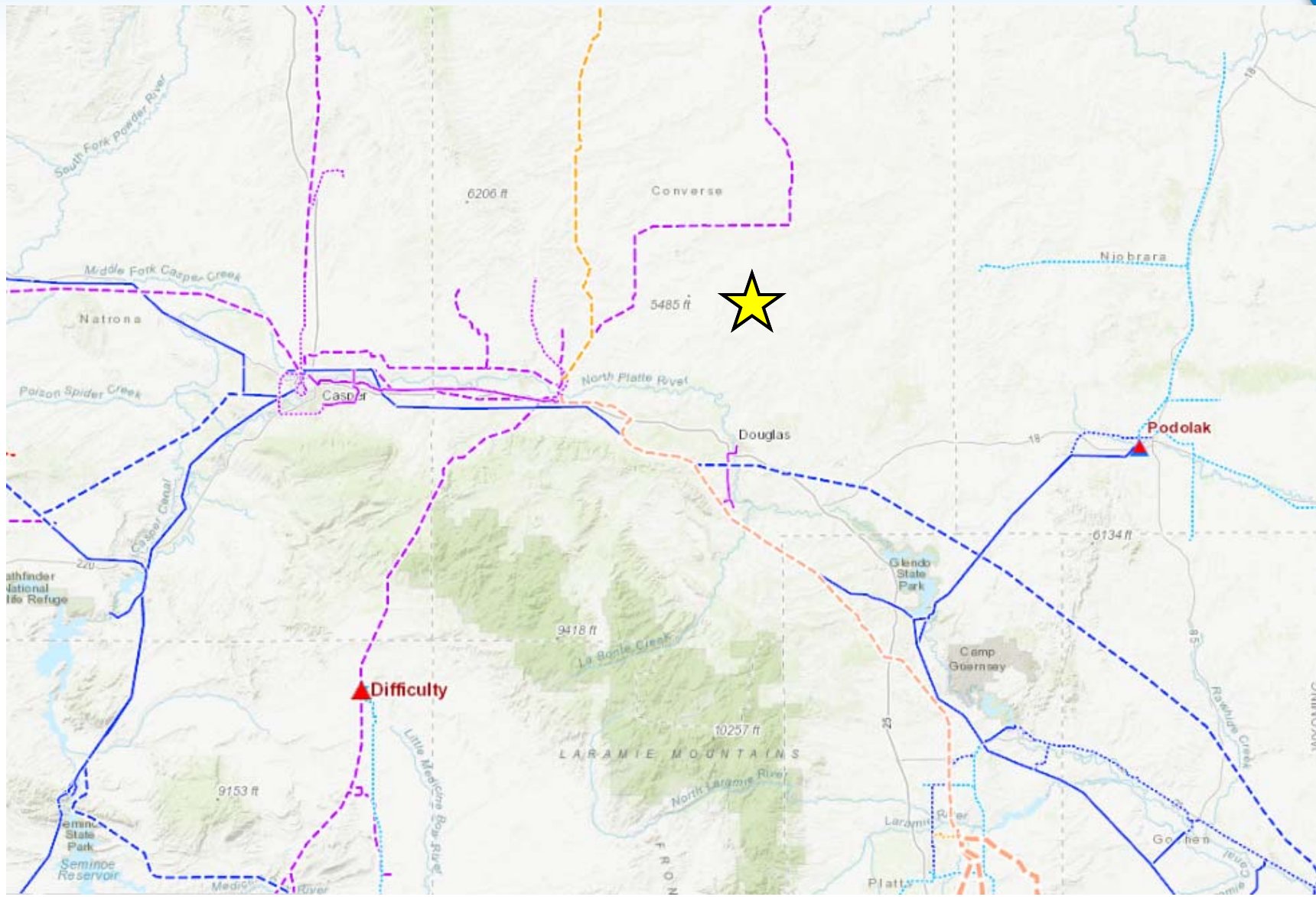
# Project Status Categories

- Developing
  - Some objectives and needs have been identified. Some alternatives have or are being considered, but stakeholder proposed alternatives are also requested.
- Conceptual
  - Conceptual/hypothetical objectives and needs. Alternative(s) has been decided. Project drivers are uncertain.
- Planned
  - Objectives and needs are more clear at the current time, but are subject to change. Preferred alternative(s) has been identified. Project drivers have more certainty than Conceptual projects.
- Under-Construction
  - Board approved project. Project has started accruing costs due to preliminary activities (i.e. design, routing, permitting, regulatory activities), and/or actual construction.
- Energized
- Canceled

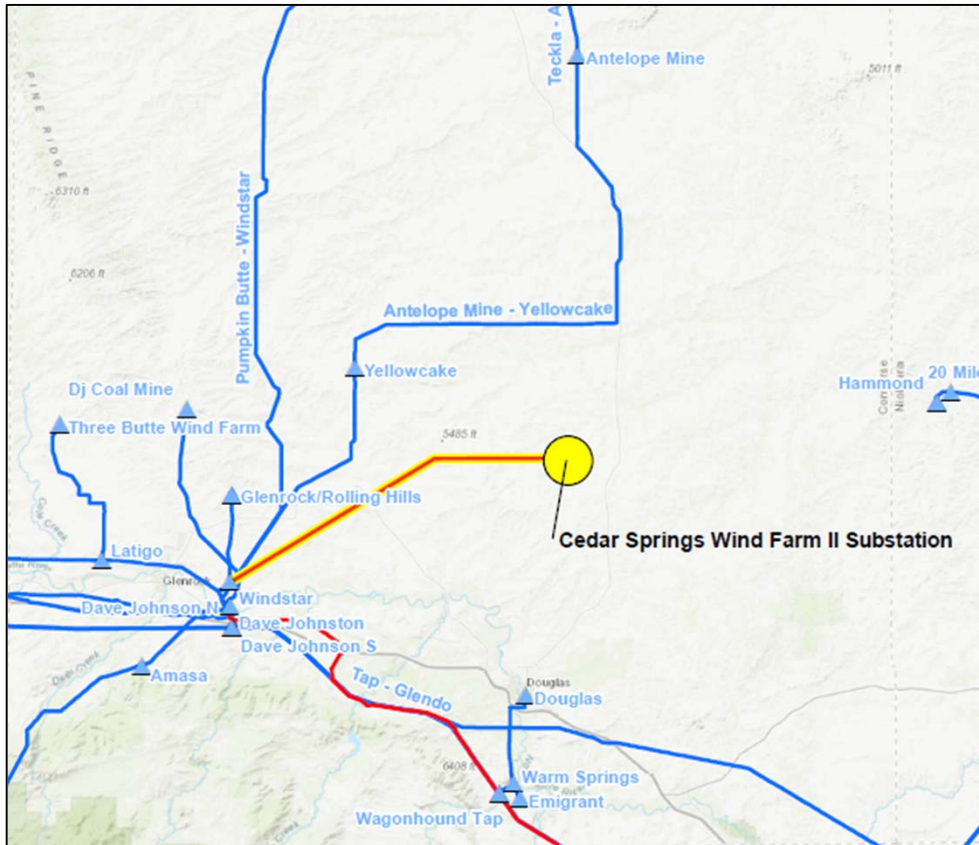
# Projects: Wyoming (5)



# Converse County Oil Development



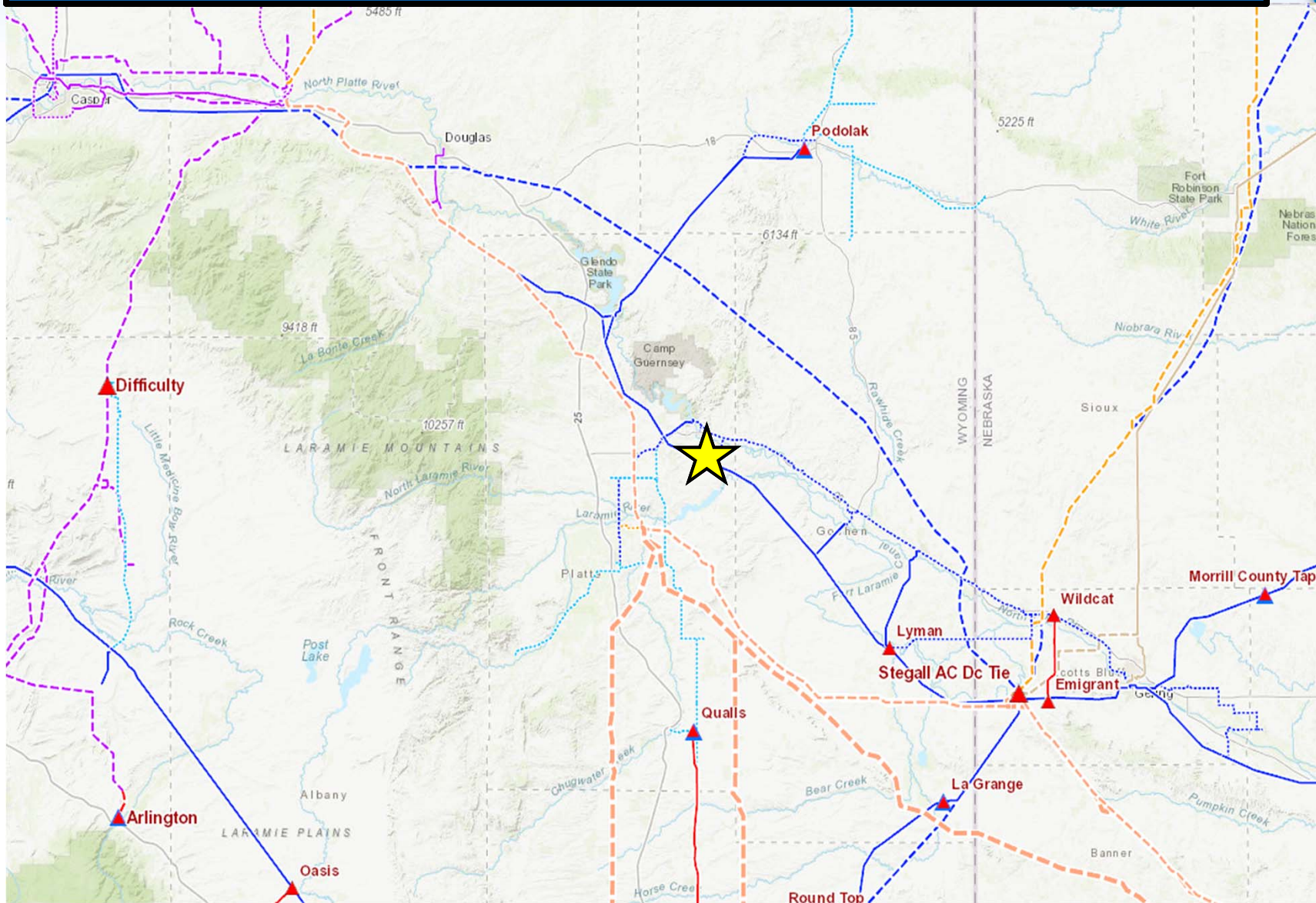




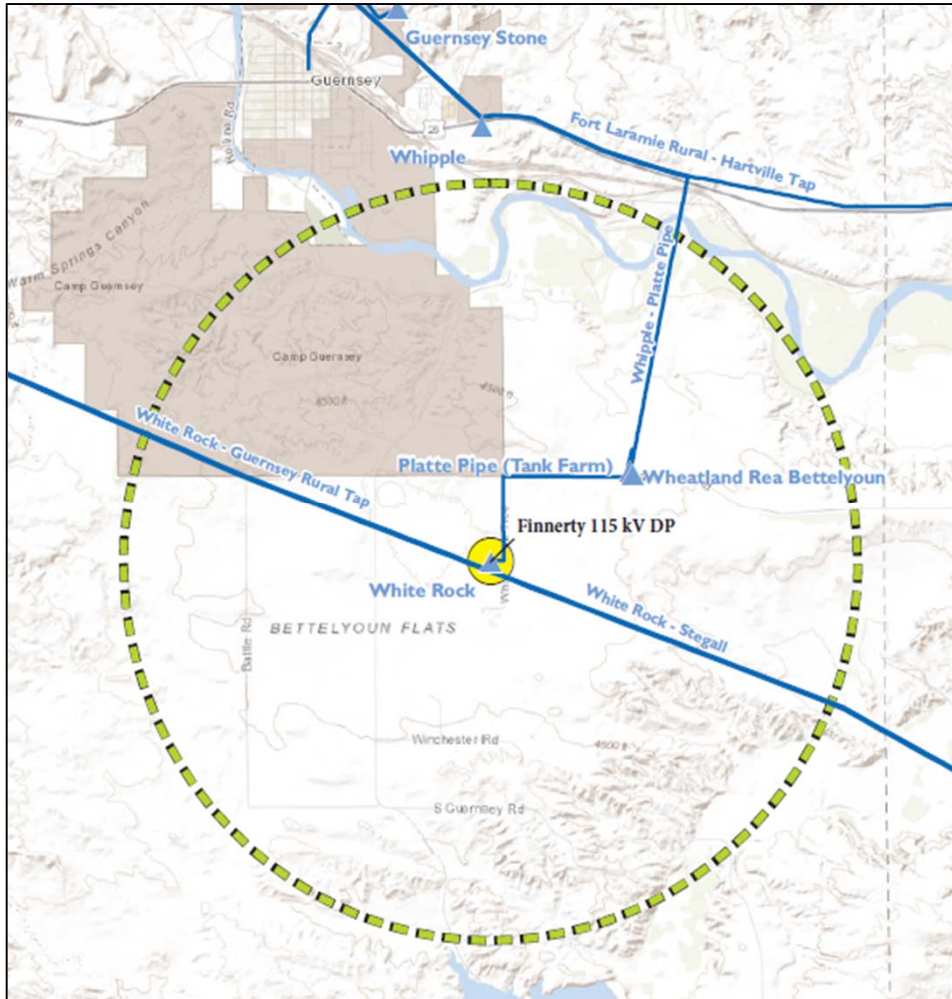
## Converse County Oil Development

Purpose:	Completed a joint planning effort between PACE, Tri-State, Petroleum Association of Wyoming (PAW) and Wyoming Legislature to meet oil and gas development requirements without duplicative transmission facilities
History:	Tri-State approved Southeast Wyoming Transmission Project (SEWP) to provide second transmission source to member NEA in 2014. SEWP could also serve anticipated oil exploration load. SEWP was cancelled in 2020 due to inability to acquire 230 kV transmission line right-of-way. Rocky Mountain Power acquired ownership interest in Windstar-Cedar Springs II Windfarm 230 kV line and Cedar Springs II 230-34.5 kV substation
Status:	Developing
Planned ISD:	Tri-State has requested 34.5 kV Delivery at Cedar Springs II with a 2021 ISD
Purpose	Load Serving

# Finnerty 115 kV DP





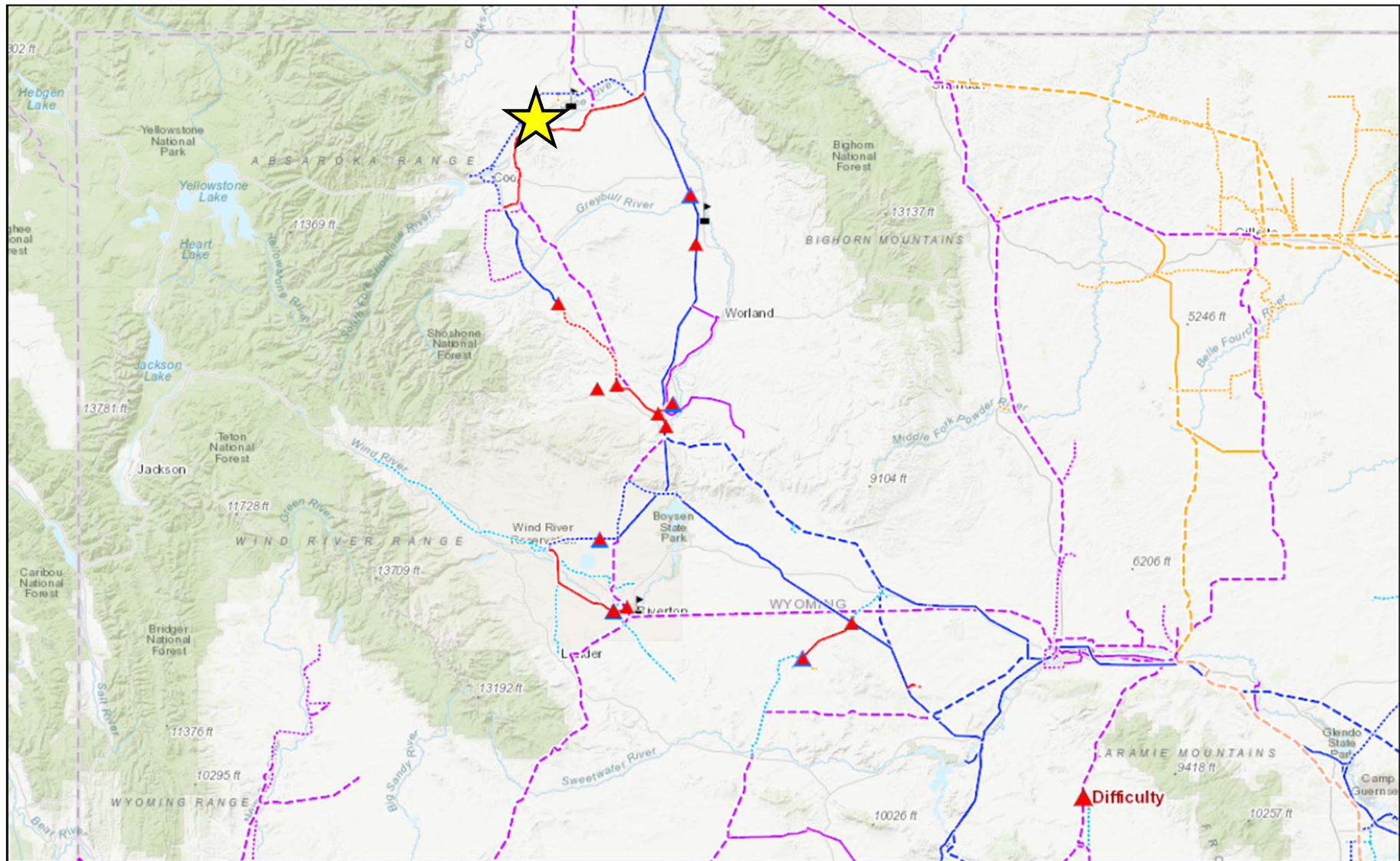


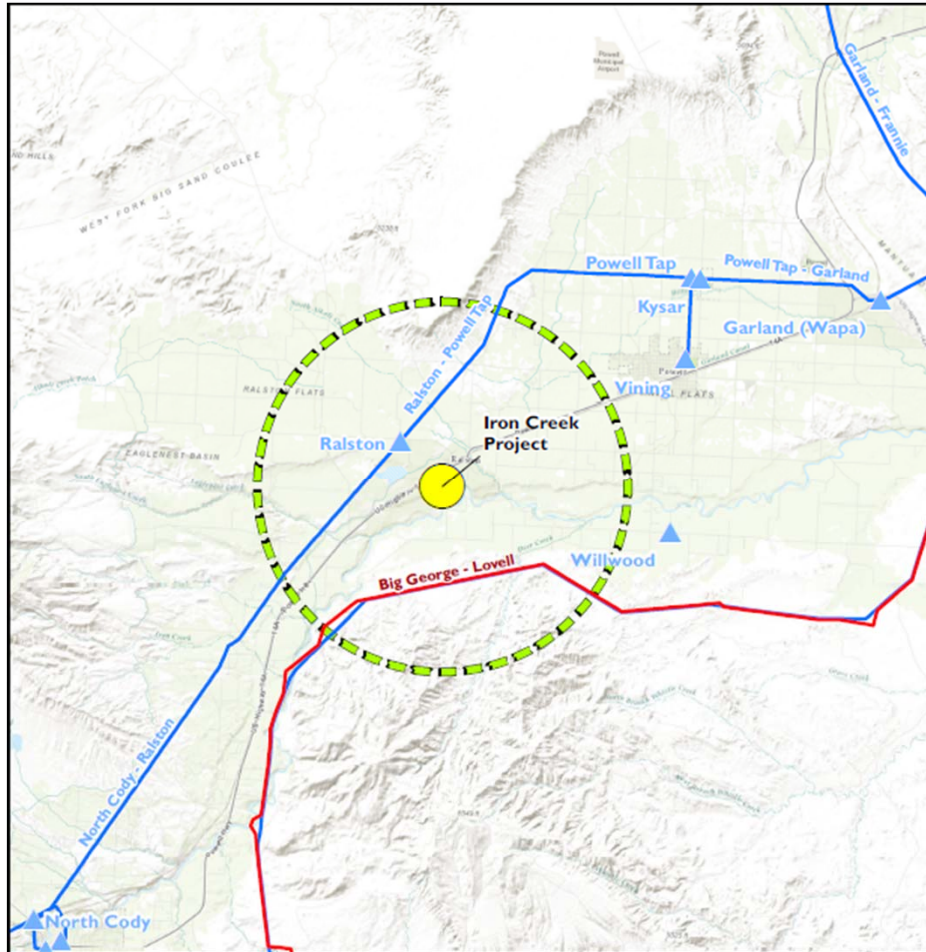
## Finnerty 115 kV DP

Description:	Establish a new 115 kV DP for WLREA. Scope of project includes a 115 kV breaker addition to adjacent WAPA Whiterock Substation, 115 kV transmission line from Whiterock to Finnerty. Finnerty Substation will consist of a single 115 kV breaker, 115/34.5 kV 50 MVA transformer, low side 34.5 kV equipment and metering equipment.
Voltage:	115 kV
Length:	>.5 miles
Type:	Substation
Status:	Under Construction
Planned ISD:	2021
Purpose:	Load Serving



# Iron Creek DP



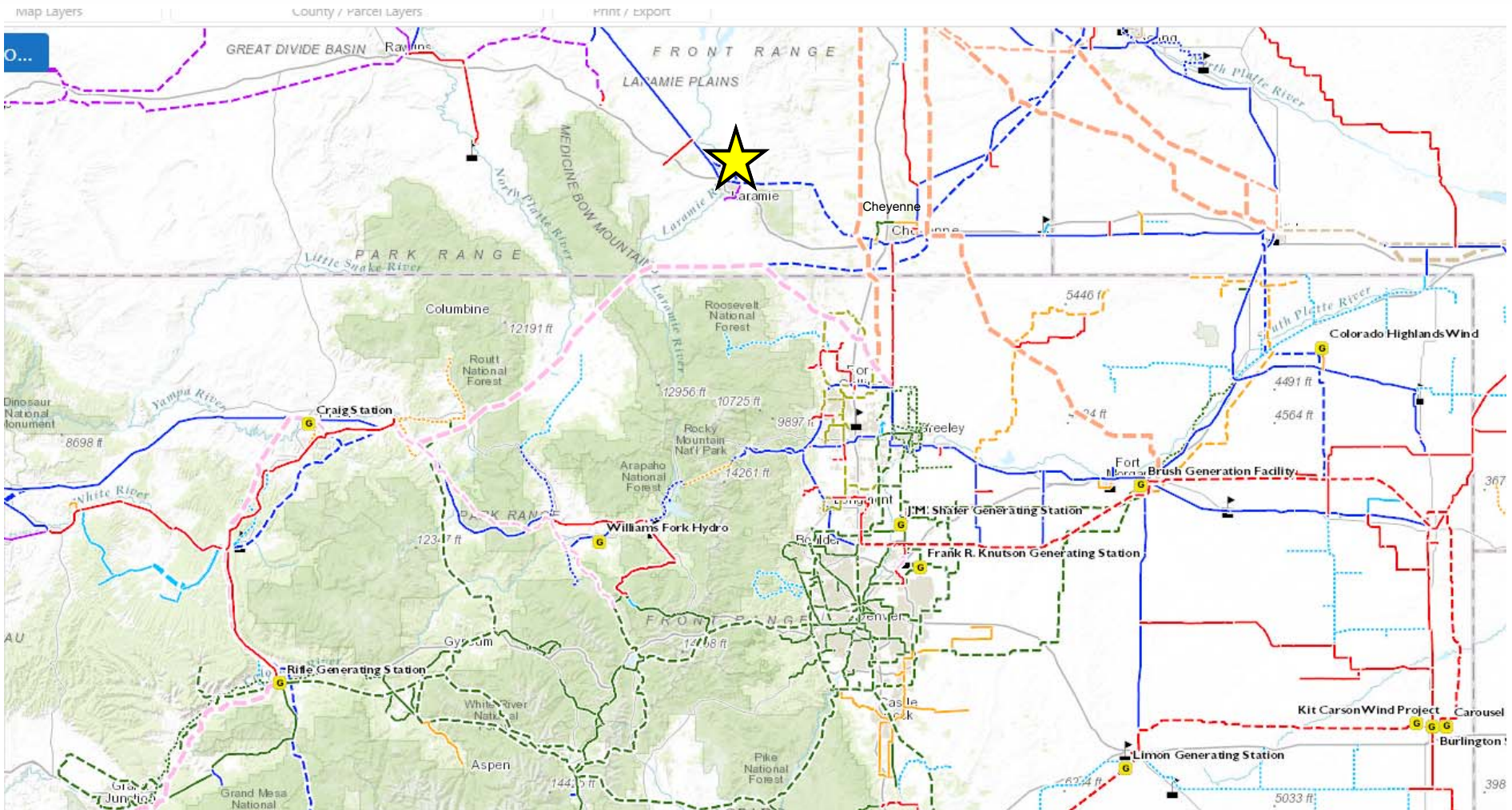


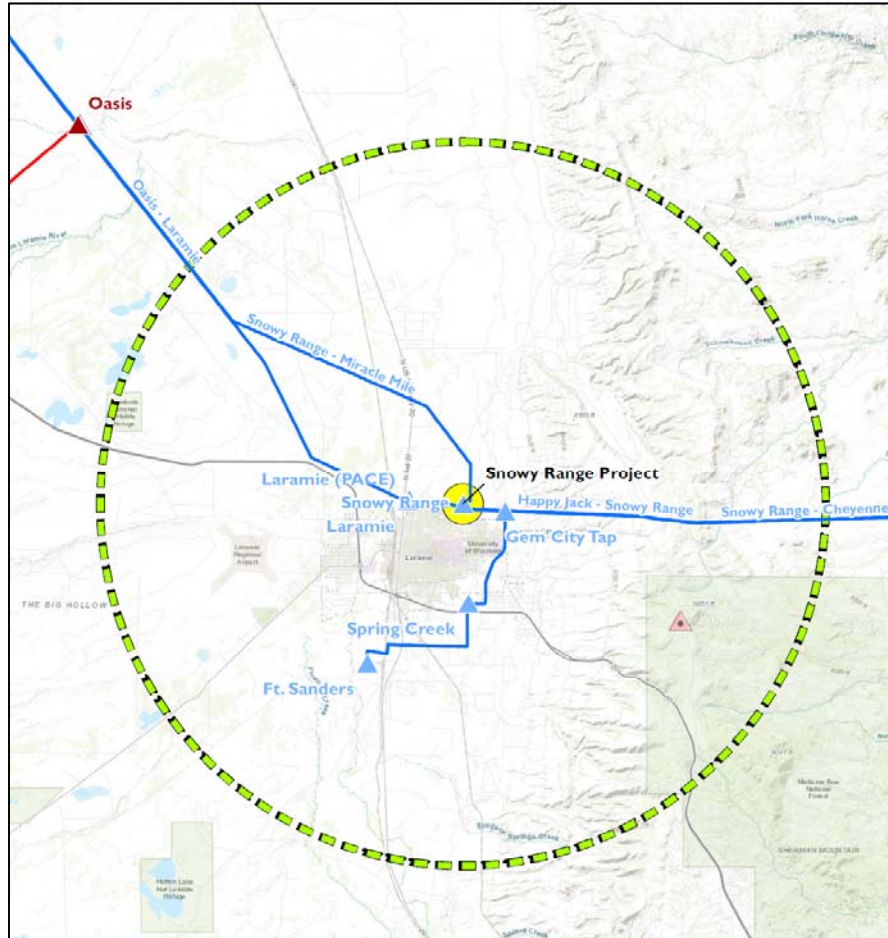
## Iron Creek DP

Description:	Build approximately 3.5 miles of 115 kV transmission from a tap on Tri-State's Lovell – Big George 115 kV line to a new Iron Creek substation. Iron Creek substation includes one 115 – 12.47 kV, 9.375 MVA transformer, low side metering, one 115 kV fuse disconnect switch, switches and associated equipment.
Voltage:	115 kV
Length:	3.5 miles
Type:	Substation and Line
Status:	Energized
Planned ISD:	2020
Purpose:	Load Serving



# Snowy Range Project



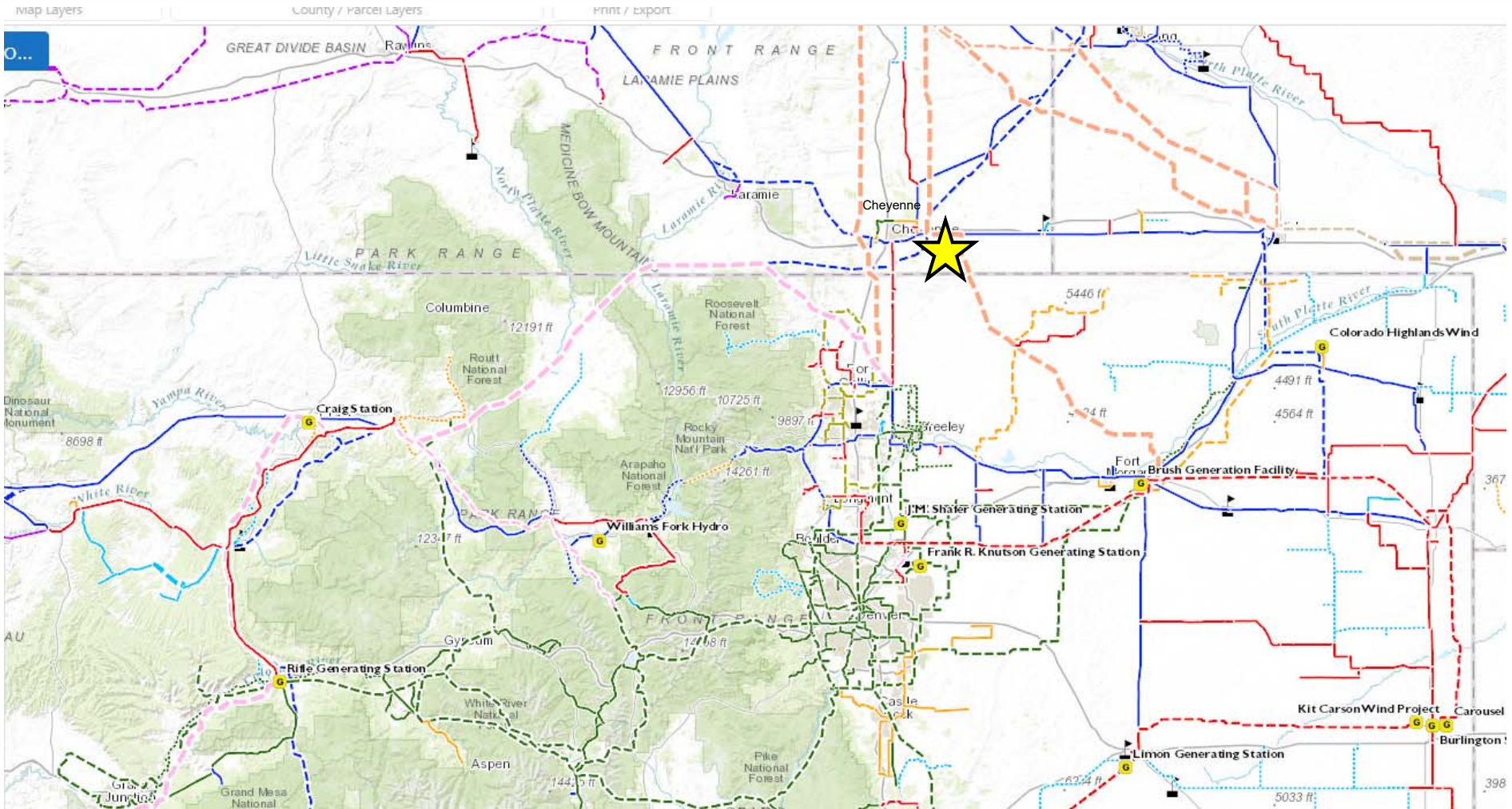


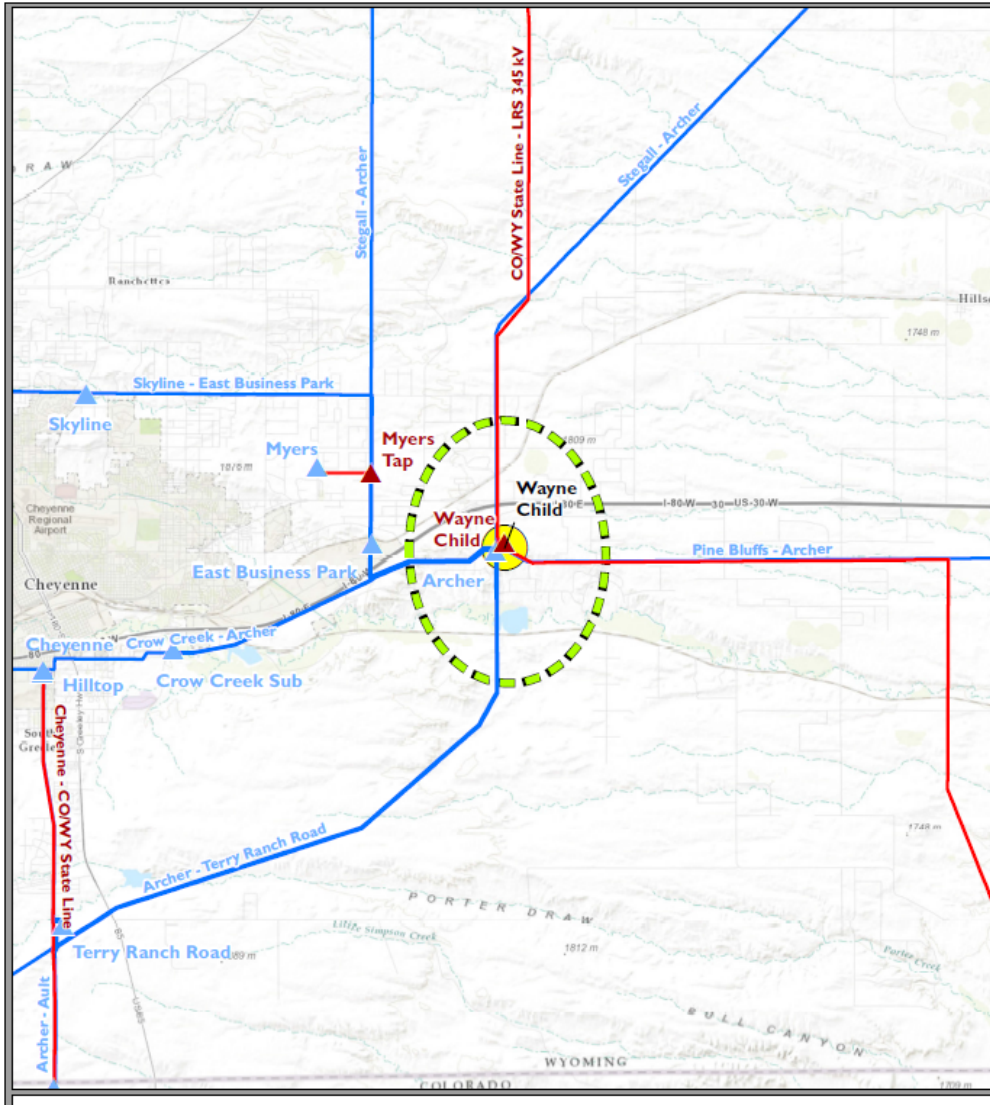
## Snowy Range Project

Description:	A new 115 kV breaker bay at the existing Western owned Snowy Range Substation and 1.5 miles of new 115 kV transmission line on wood H-Frame structures sourced at a newly constructed breaker bay at Snowy Range and intersecting the Gem City-Ft. Sanders 115 kV transmission line at Gem City Tap
Voltage:	115 kV
Length:	1.5 miles
Type:	Substation and Line
Status:	Under Construction
Planned ISD:	2021
Purpose:	Load Serving



# Wayne Child Phase II



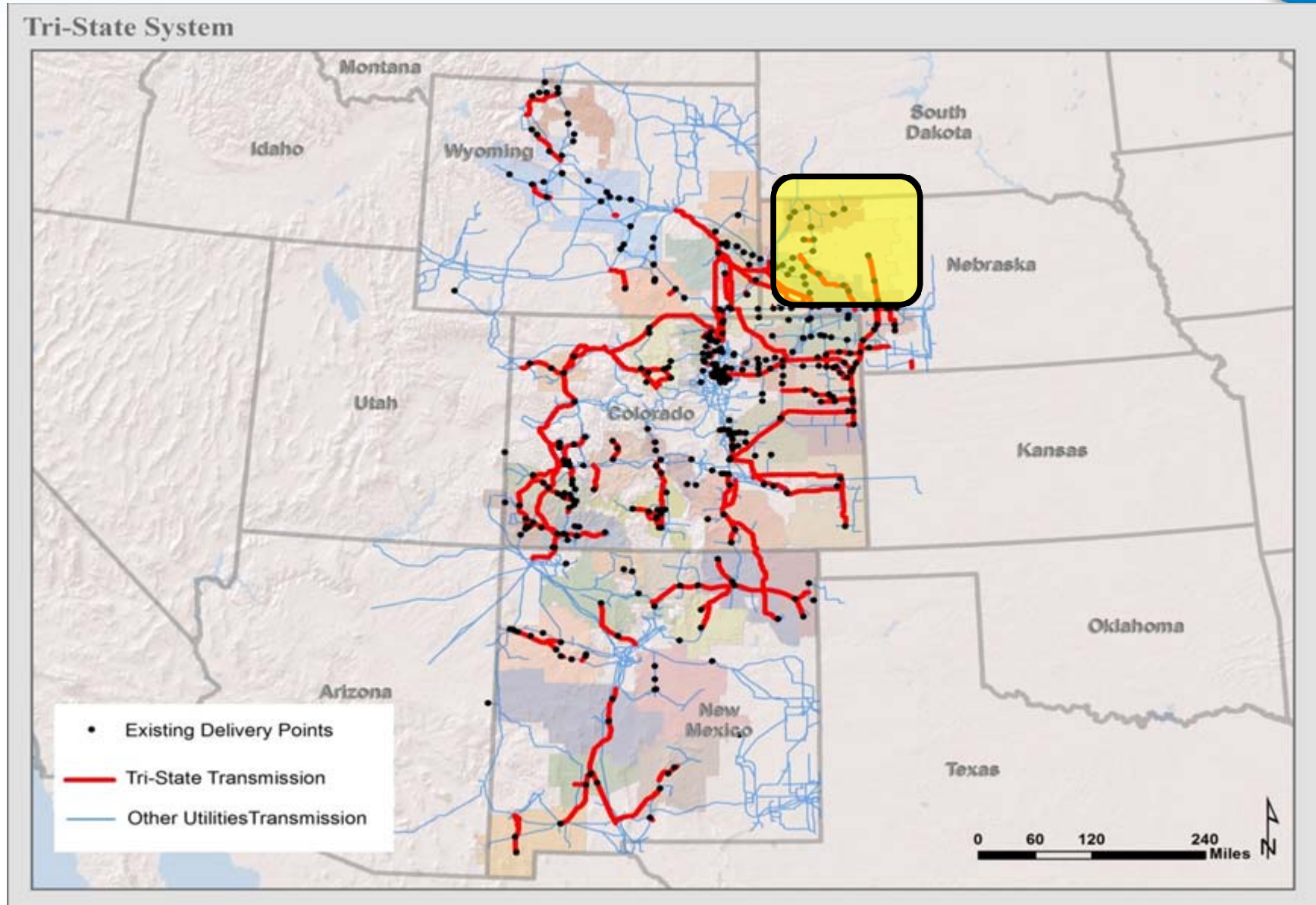


## Wayne Child Phase II

Description:	Sectionalize Laramie River Station (LRS) – Story 345kV line at the existing Wayne Child substation.
Voltage:	345 kV
Length:	0 miles
Type:	Substation.
Status:	Under Construction
Planned ISD:	2022
Purpose:	Load Serving, increased transfer capabilities.

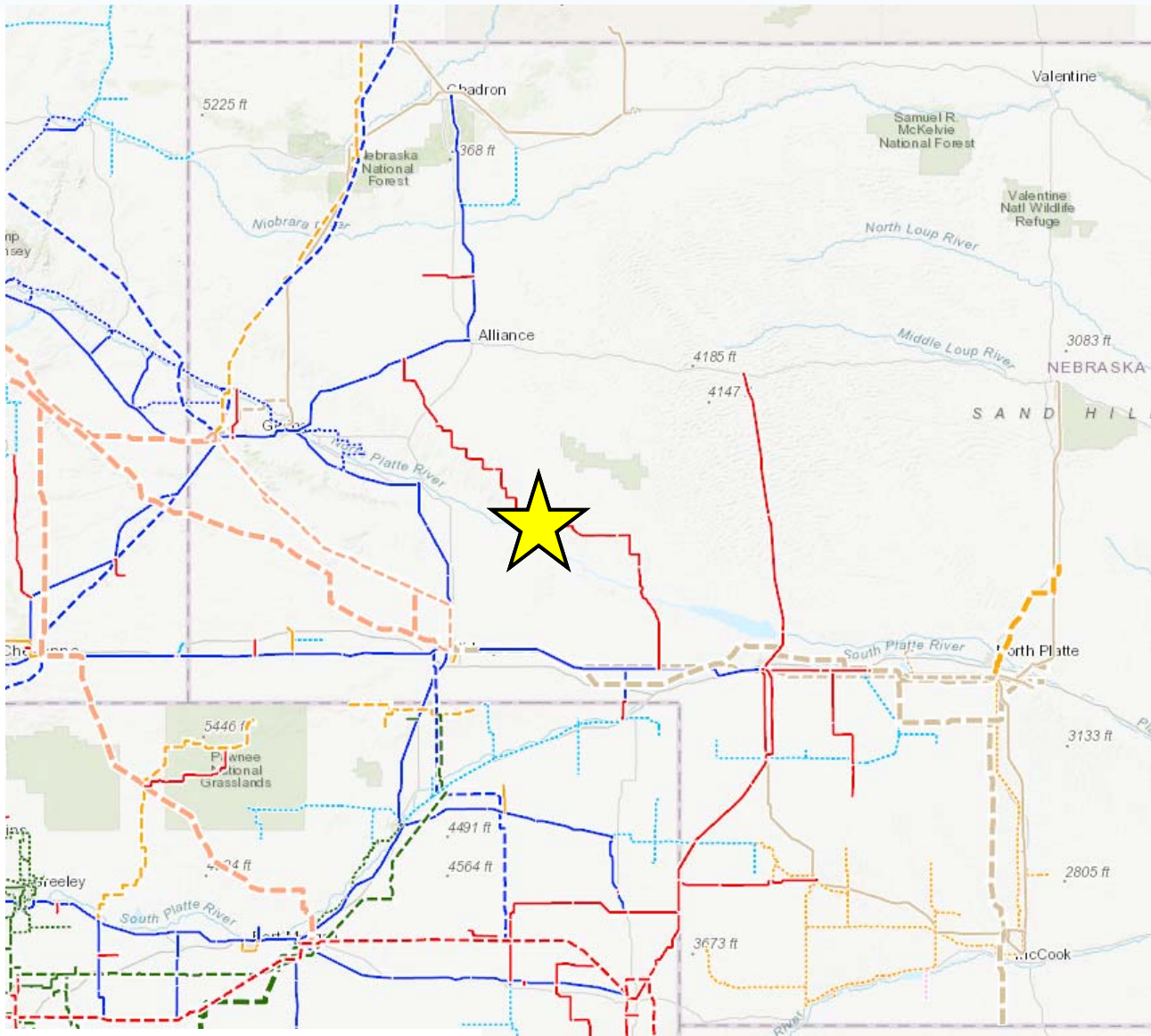


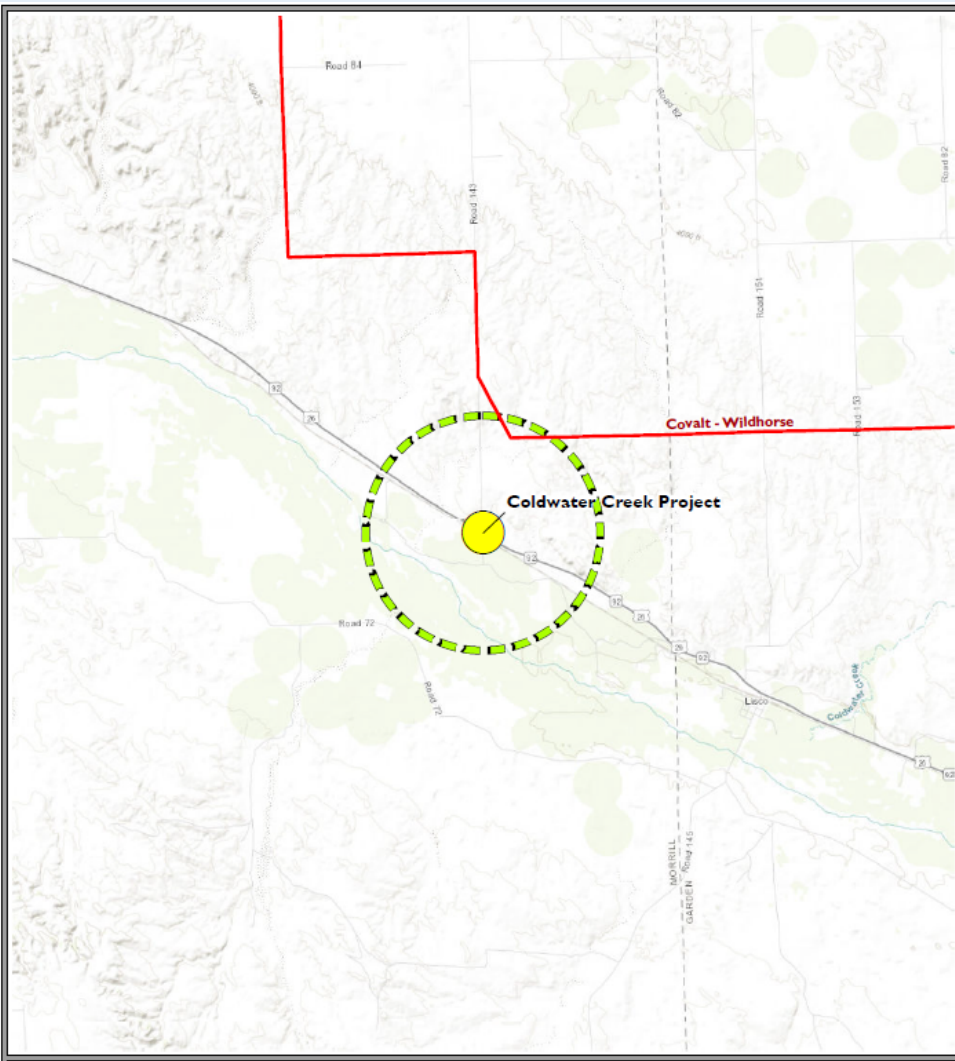
# Projects: Nebraska (1)





# Coldwater Creek Project

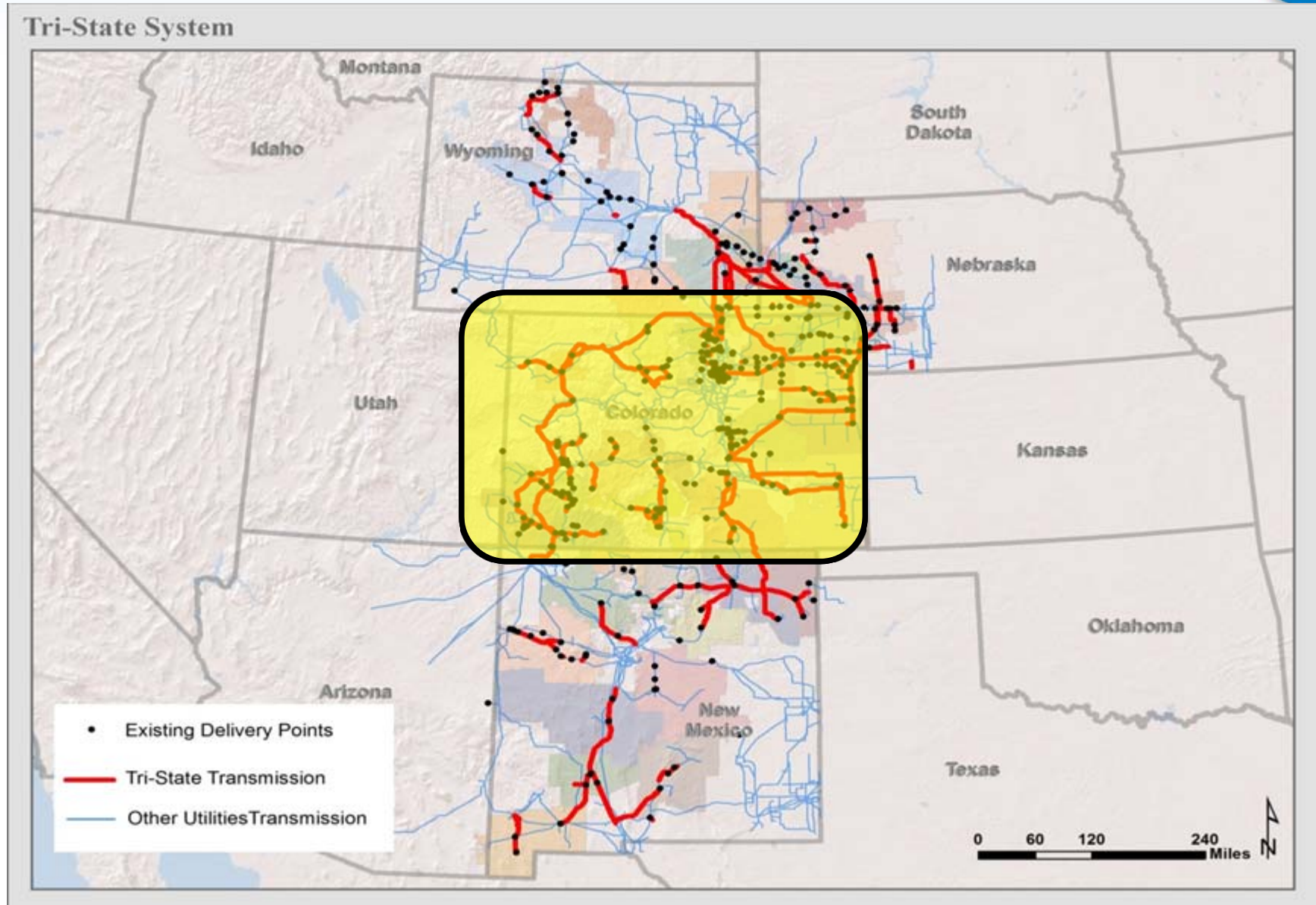




## Coldwater Creek Project

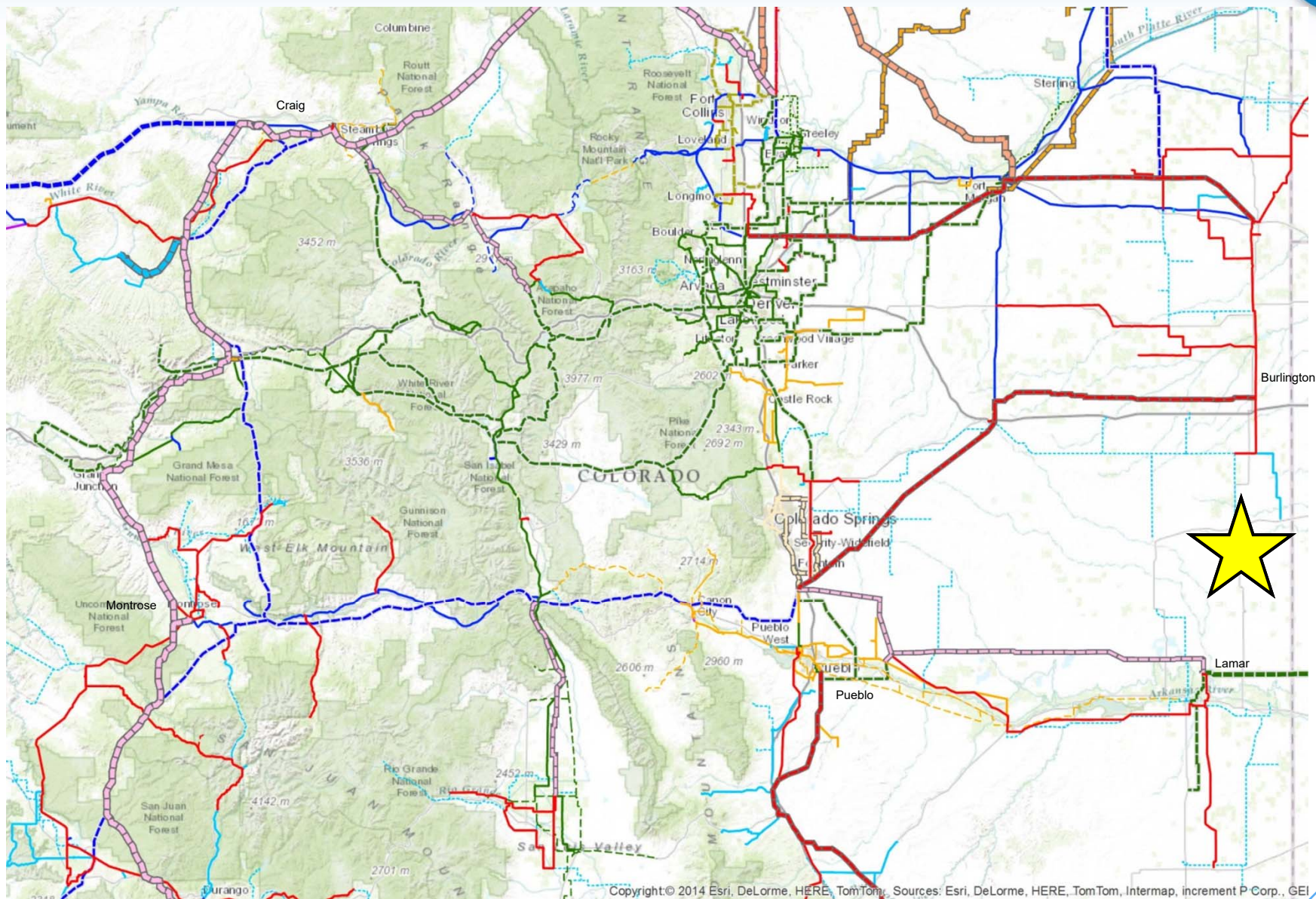
Description:	Loop through Covalt – Wildhorse 115 kV line section through new Coldwater Creek Substation. Install 115-24.9 kV transformer.
Voltage:	115 kV
Length:	0
Type:	Substation
Status:	Energized
Planned ISD:	2020
Purpose:	Reliability; Load Serving.

# Projects: Colorado (28)





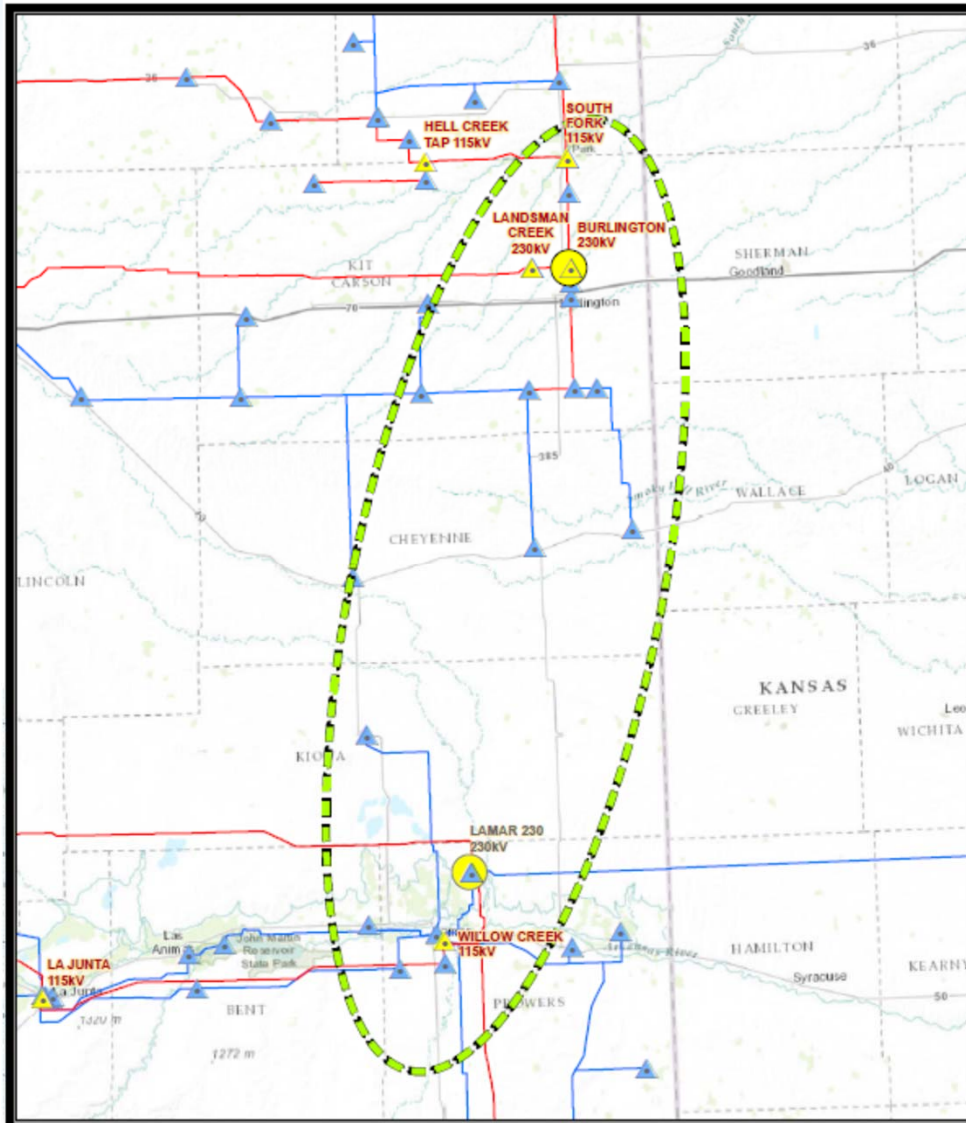
# Burlington – Lamar 230 kV Transmission Project





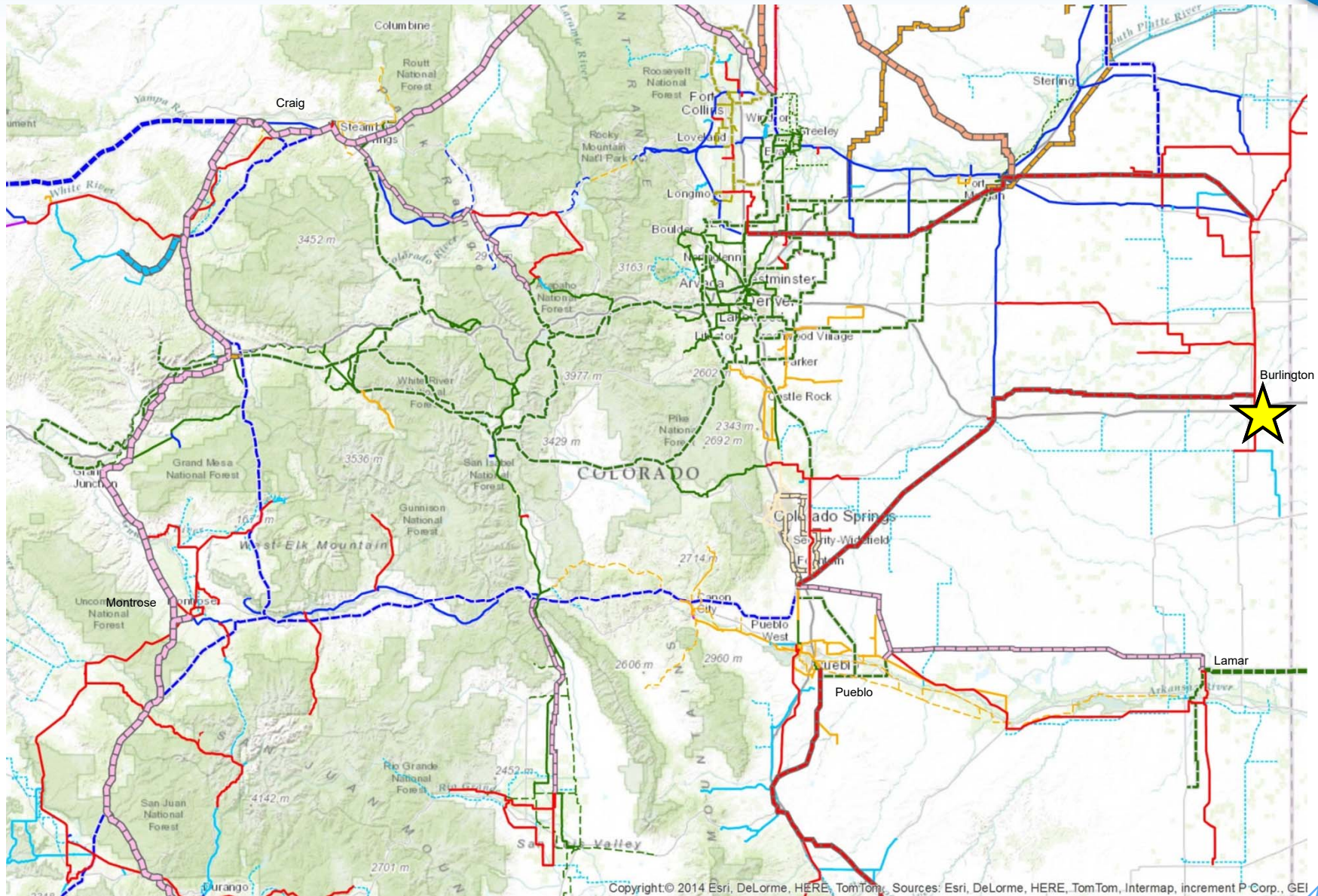
## Burlington – Lamar 230 kV Transmission Project

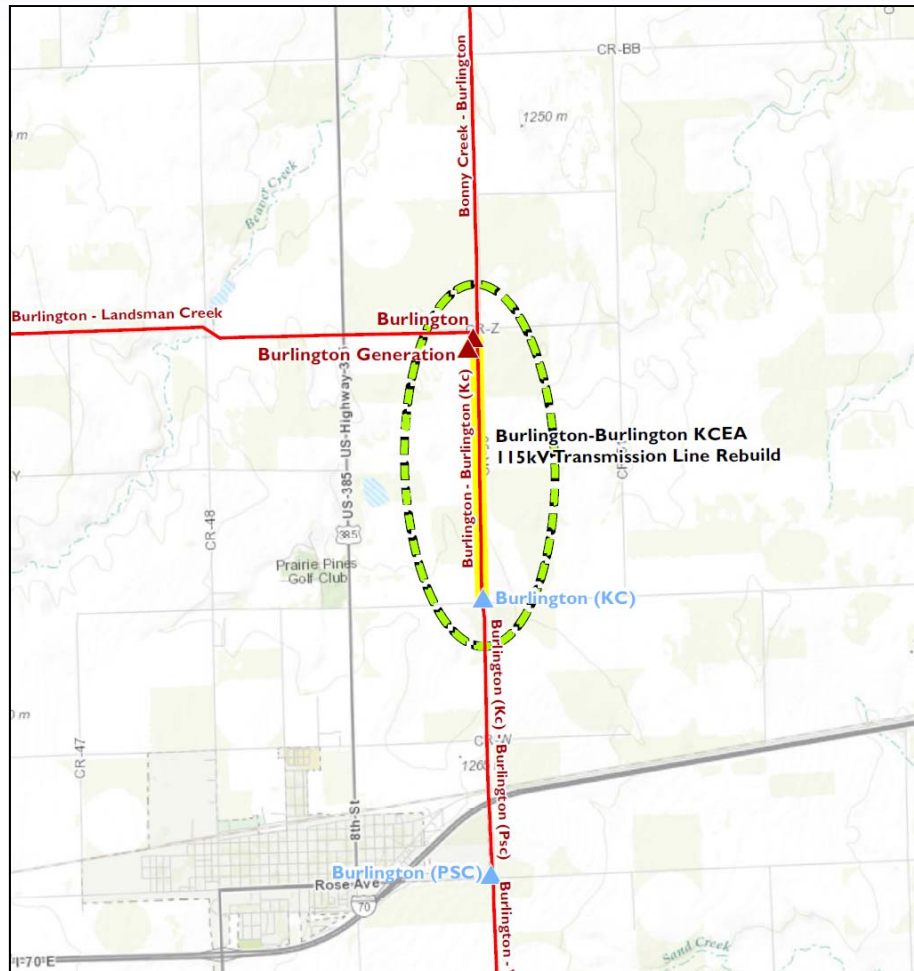
Description:	Construct a 230 kV transmission line from Burlington to Lamar.
Voltage:	230 kV
Length:	107 miles
Type:	Line.
Status:	Cancelled
Planned ISD:	-
Purpose:	Reliability, improve load-serving capability, remove generation operating restrictions, and support renewable resource development in eastern Colorado.





# Burlington (TS) – Burlington (KCEA) 115 kV



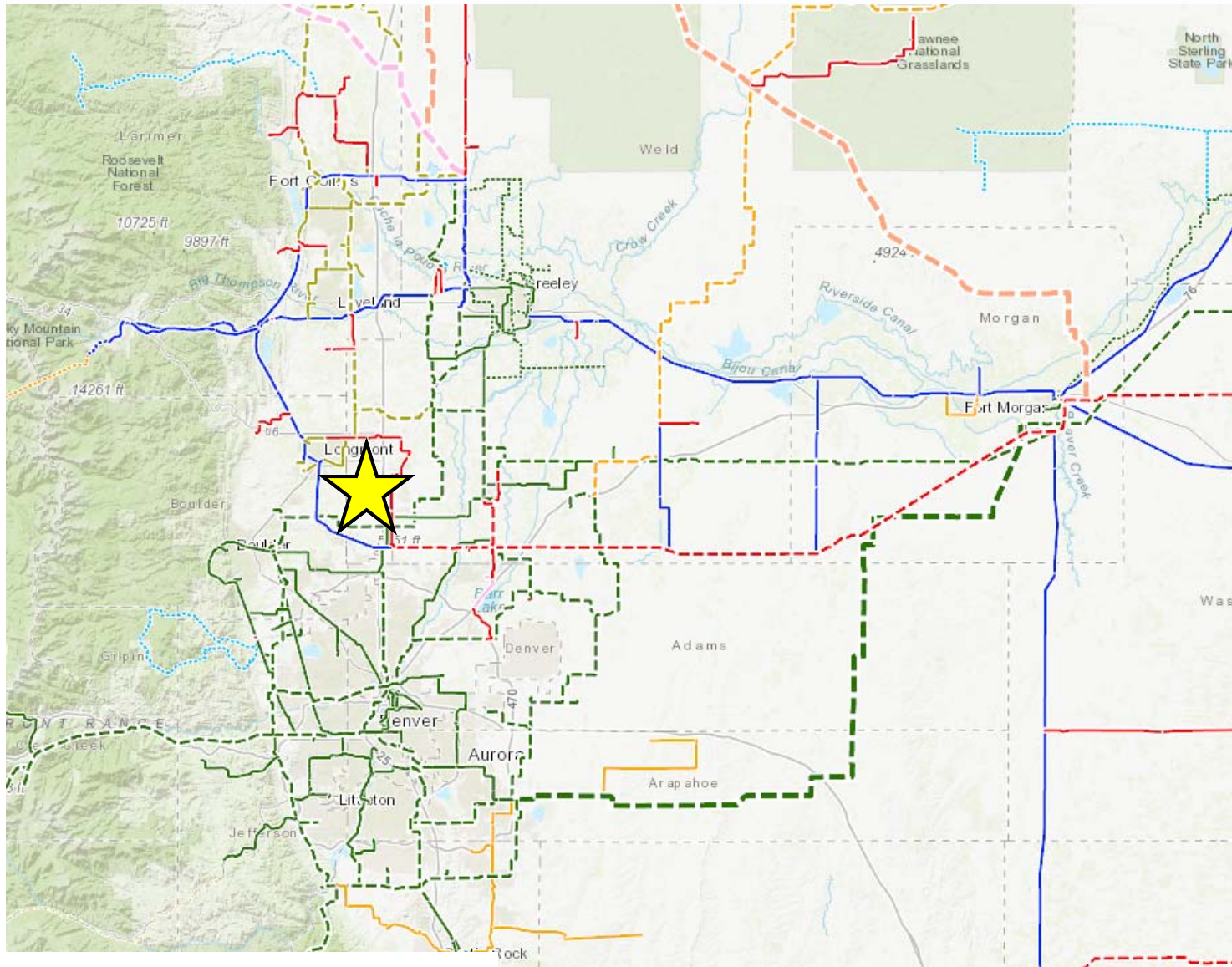


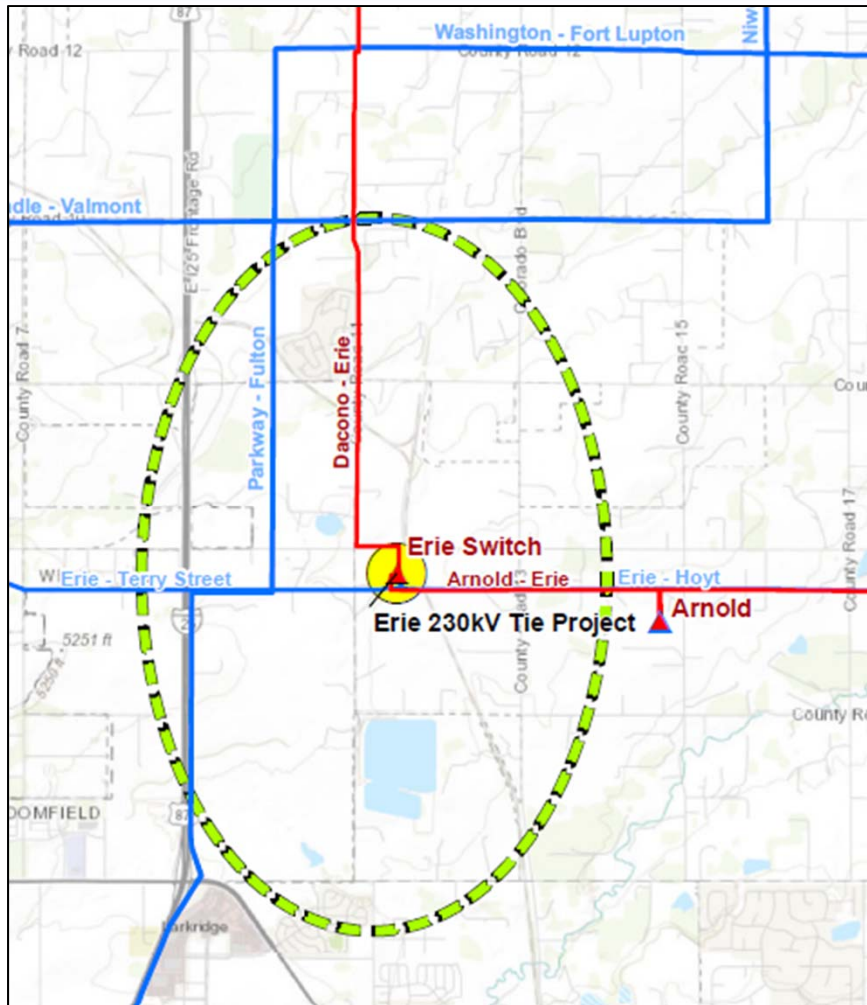
## Burlington (TS) – Burlington (KCEA) 115 kV

Description:	Reconductor with 795 ACSR.
Voltage:	115 kV
Length:	1.94 miles
Type:	Line.
Status:	Planned
Planned ISD:	2023
Purpose:	Accommodate distribution system load shifting.



# Erie 230 kV Tie Project



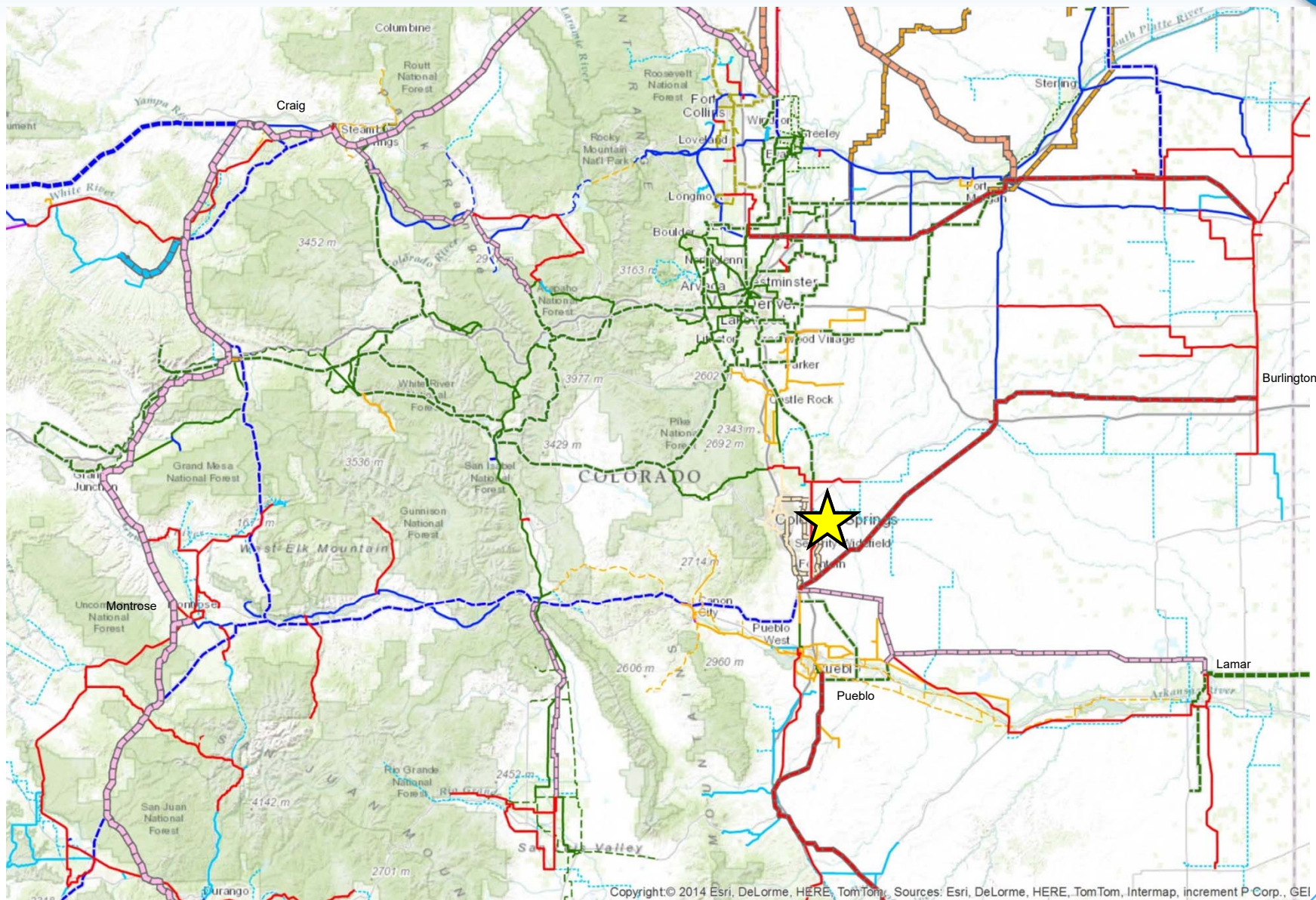


## Erie 230 kV Tie Project

Description:	Cut and loop PSCo's Ft. Lupton – JL Green 230 kV line into Erie Substation. Add line breakers to the ring bus, and add a 2nd 230-115 kV transformer for reliability.
Voltage:	230 kV
Length:	1 mile
Type:	Line and Substation
Status:	Planned
Planned ISD:	2024
Purpose:	Reliability; Load Serving



# Falcon – Paddock – Calhan 115 kV





## Falcon – Paddock – Calhan 115 kV

**Description:** New 115 kV line and 69 kV line rebuilds to 115 kV. Rebuild Falcon Substation with 115 kV ring bus. Rebuild Paddock Substation to 115 kV ring bus. Replace Paddock 69/12.47 kV distribution transformers with 115/12.47 distribution transformers. Potentially utilize existing 110/67 kV, 46 MVA Falcon T1 at rebuilt Paddock Substation for Ellicott delivery. Install new breaker in the existing 115 kV ring bus at Calhan Substation for new Paddock-Calhan 115 kV transmission line.

**Voltage:** 115 kV

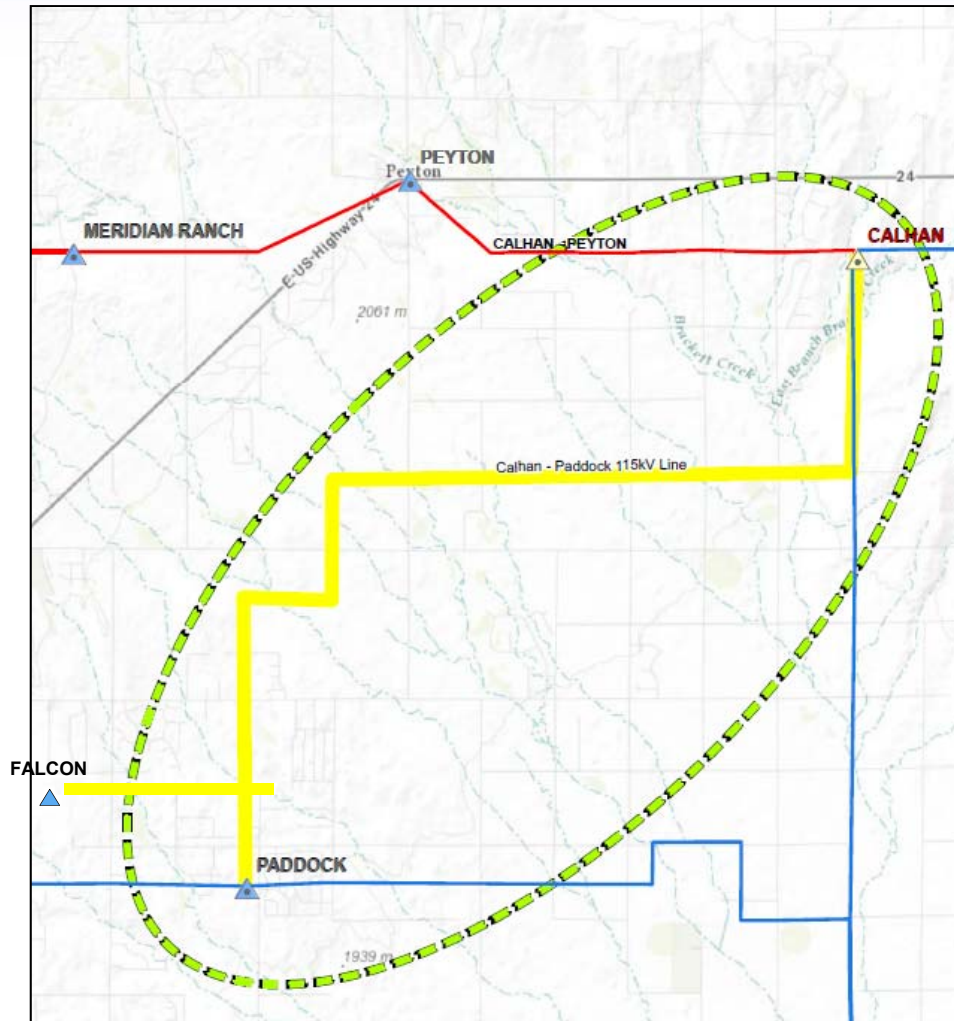
**Length:** 25 miles

**Type:** Line/Substation (Multiple).

**Status:** Conceptual

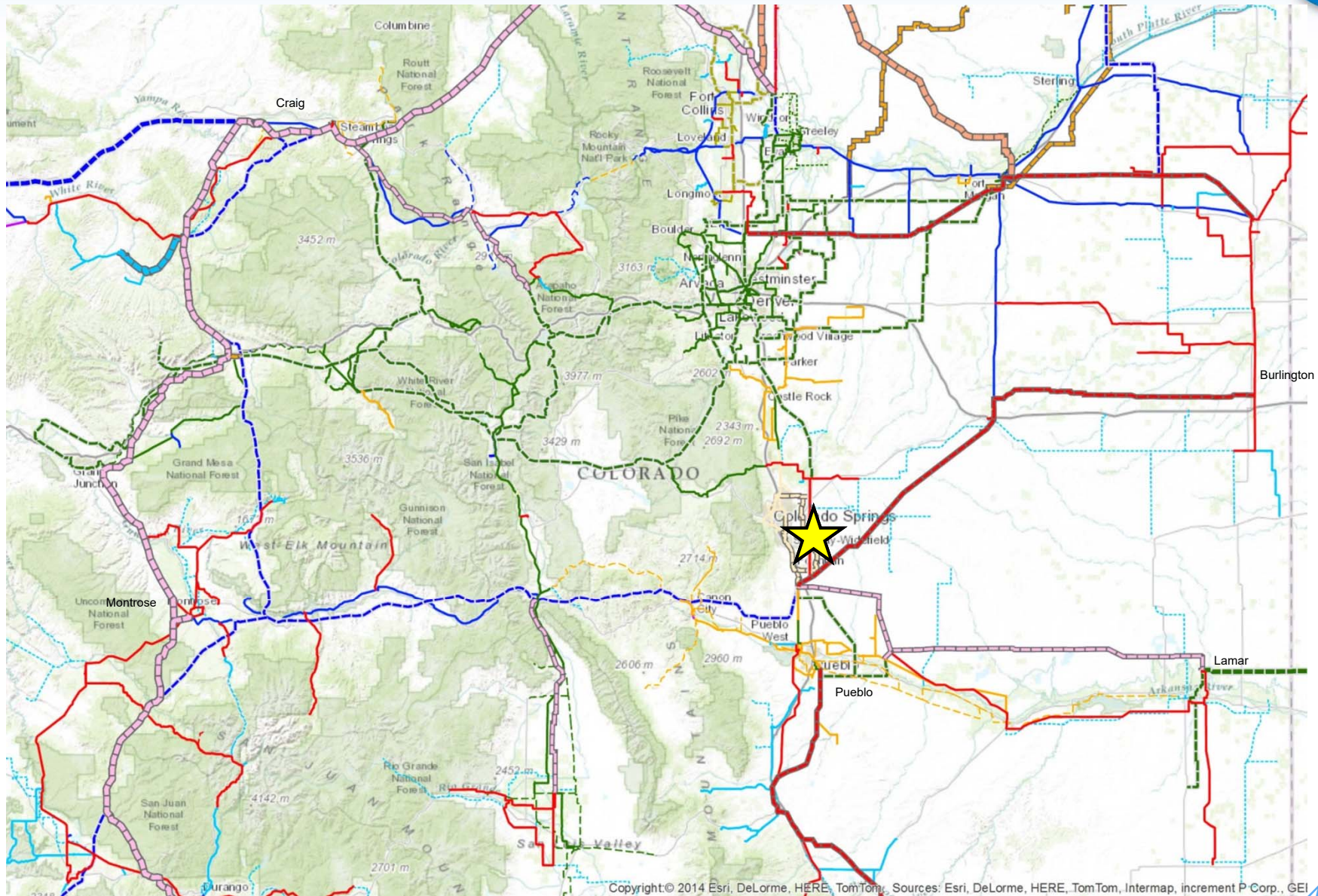
**Planned  
ISD:** 2025

**Purpose:** Accommodate increased loads and improve reliability.

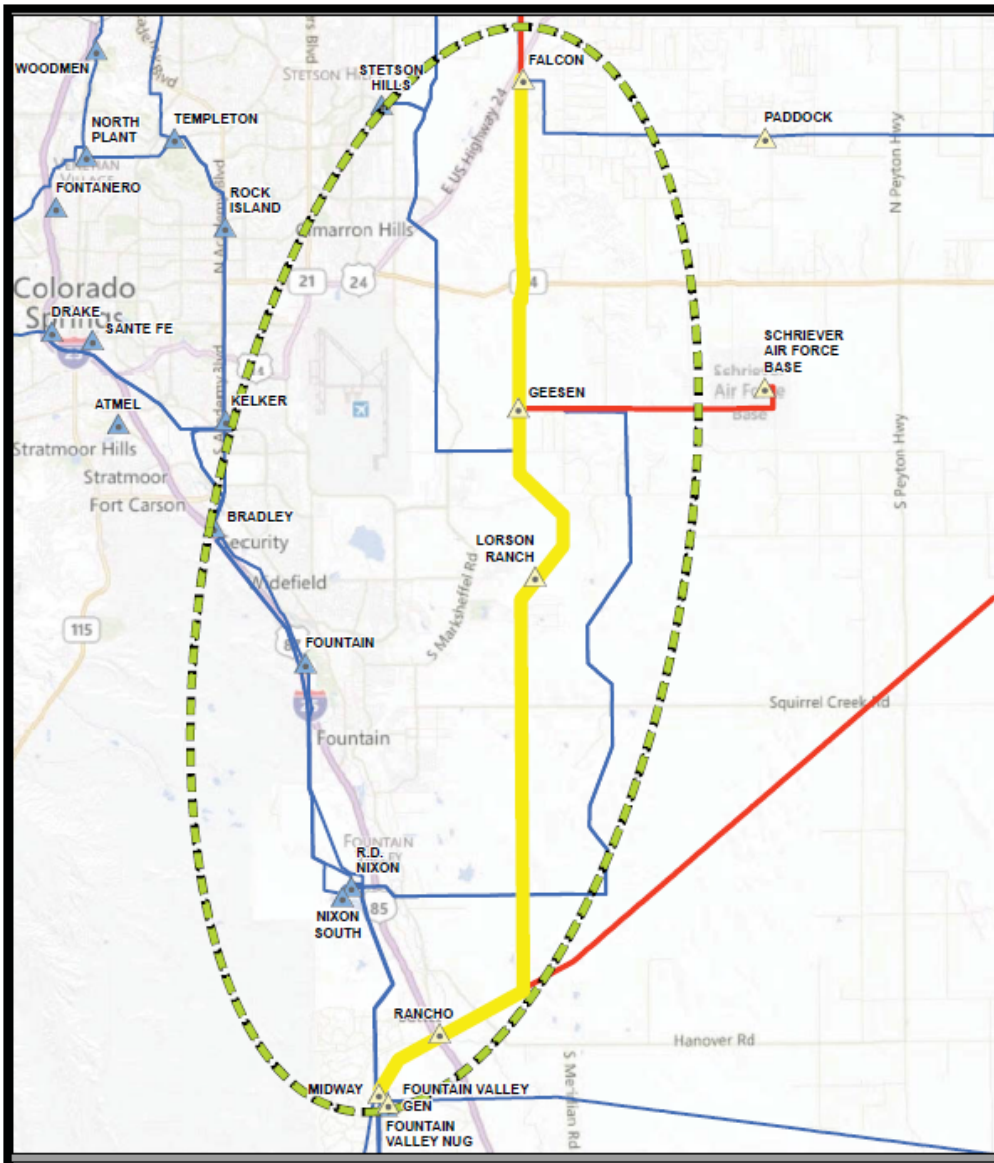




# Falcon – Midway 115 kV Line Uprate Project



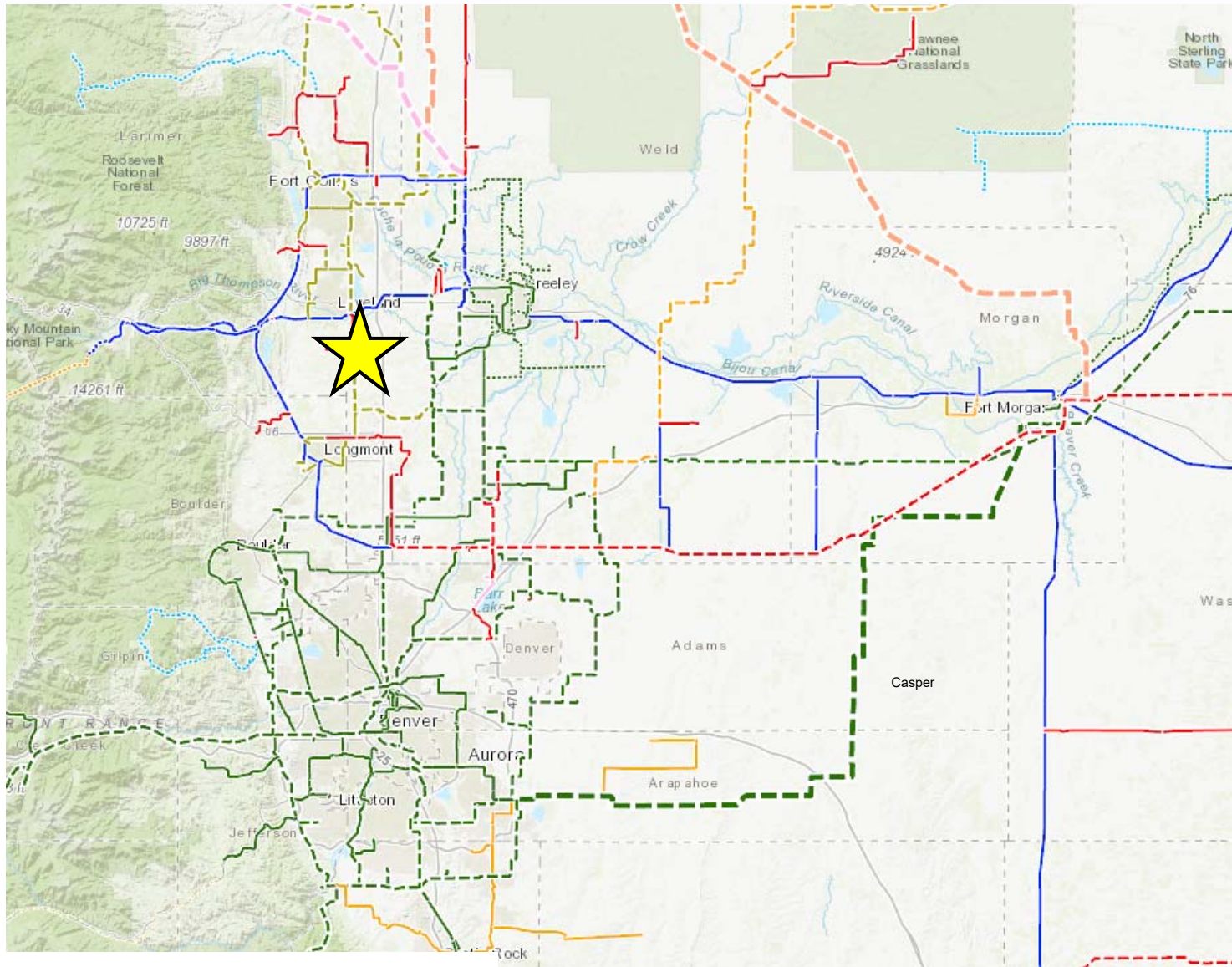


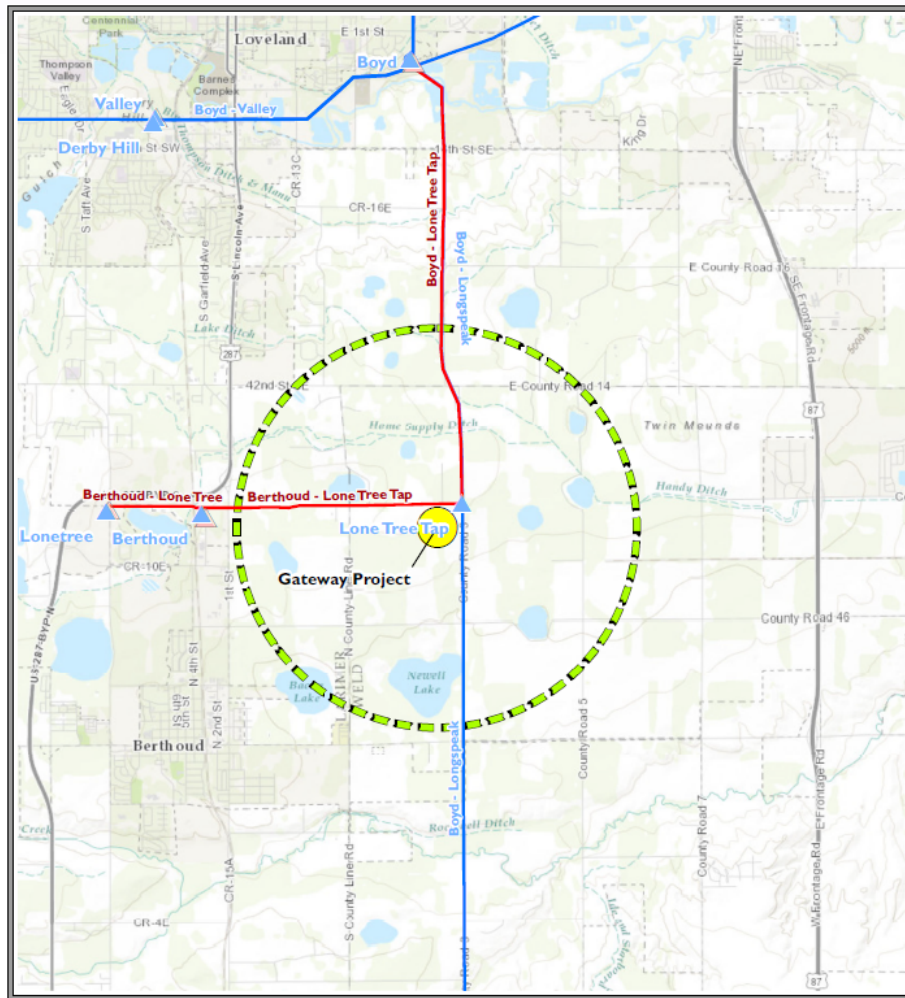


## Falcon – Midway 115 kV Line Uprate Project

Description:	Planned uprate of existing 115 kV line between Falcon and Midway.
Voltage:	115 kV
Length:	27 miles
Type:	Line.
Status:	Under Construction
Planned ISD:	2021
Purpose:	Increase conductor thermal rating.

# Gateway Project



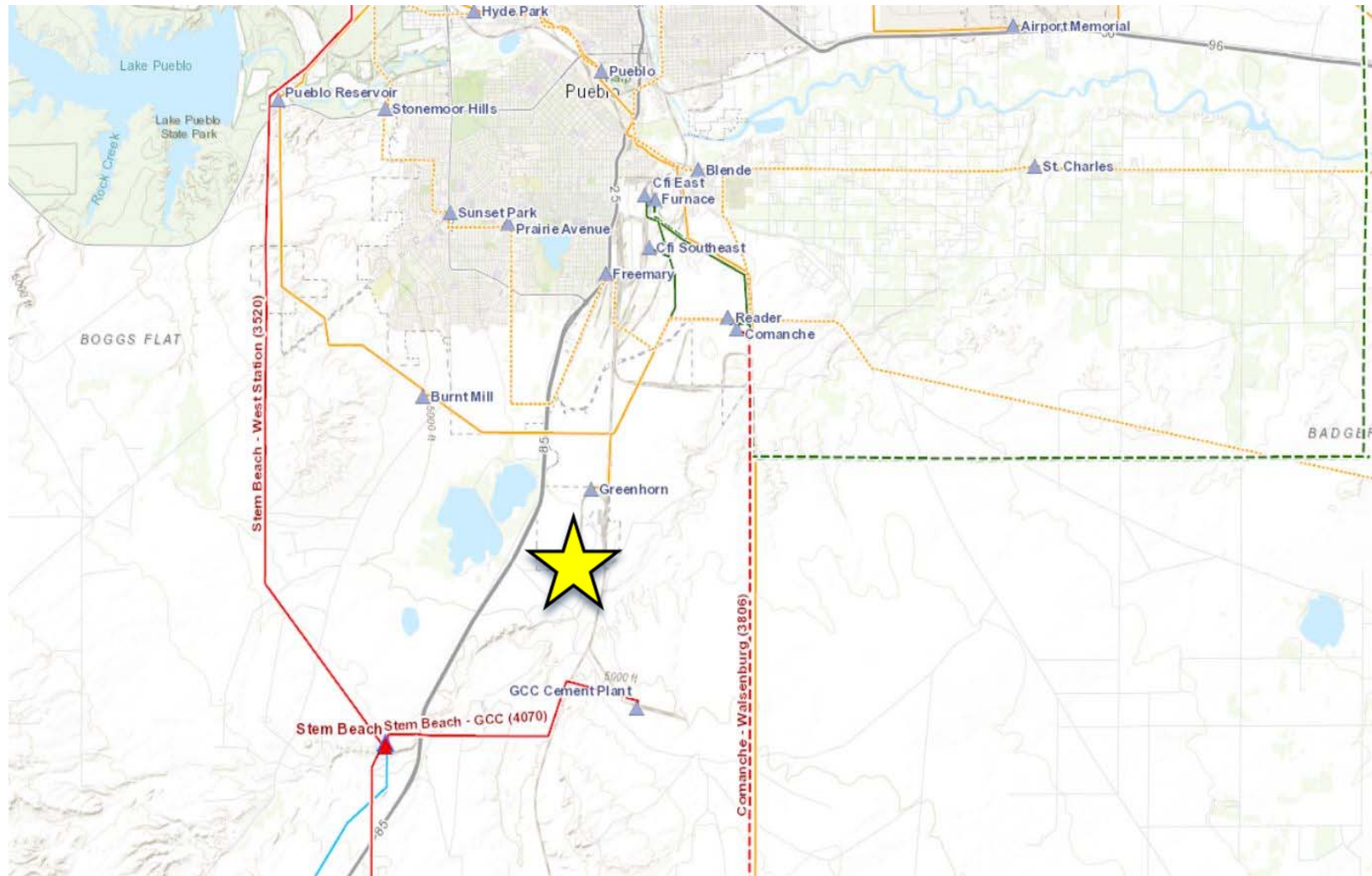


## Gateway Project

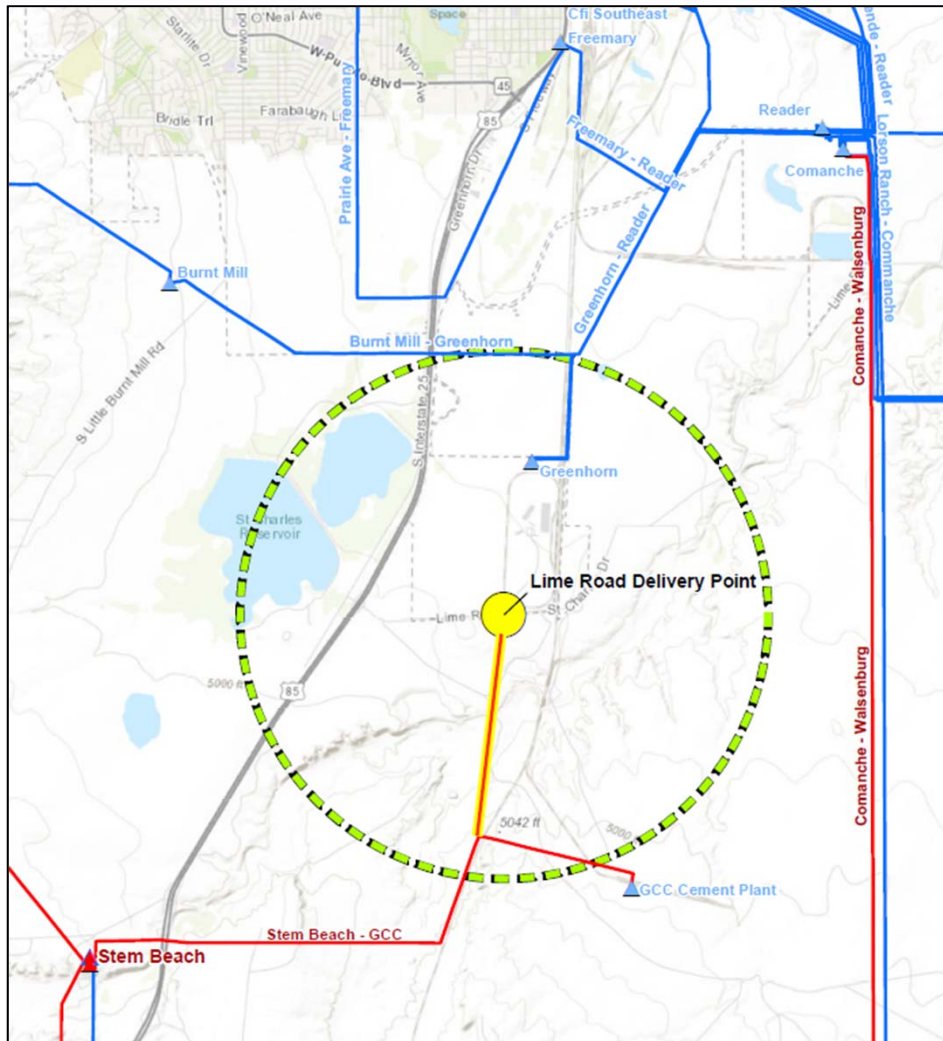
Description:	Sectionalize Boyd – Longs Peak 230 kV line and Boyd – Lone Tree 115 kV line at new Gateway Substation. Install 230-115 kV transformer. Install 115-12.5 kV distribution transformer.
Voltage:	230 and 115 kV
Length:	0
Type:	Substation
Status:	Energized
Planned ISD:	2020
Purpose:	Reliability; Load Serving



# GCC - Lime Road 115 kV Line



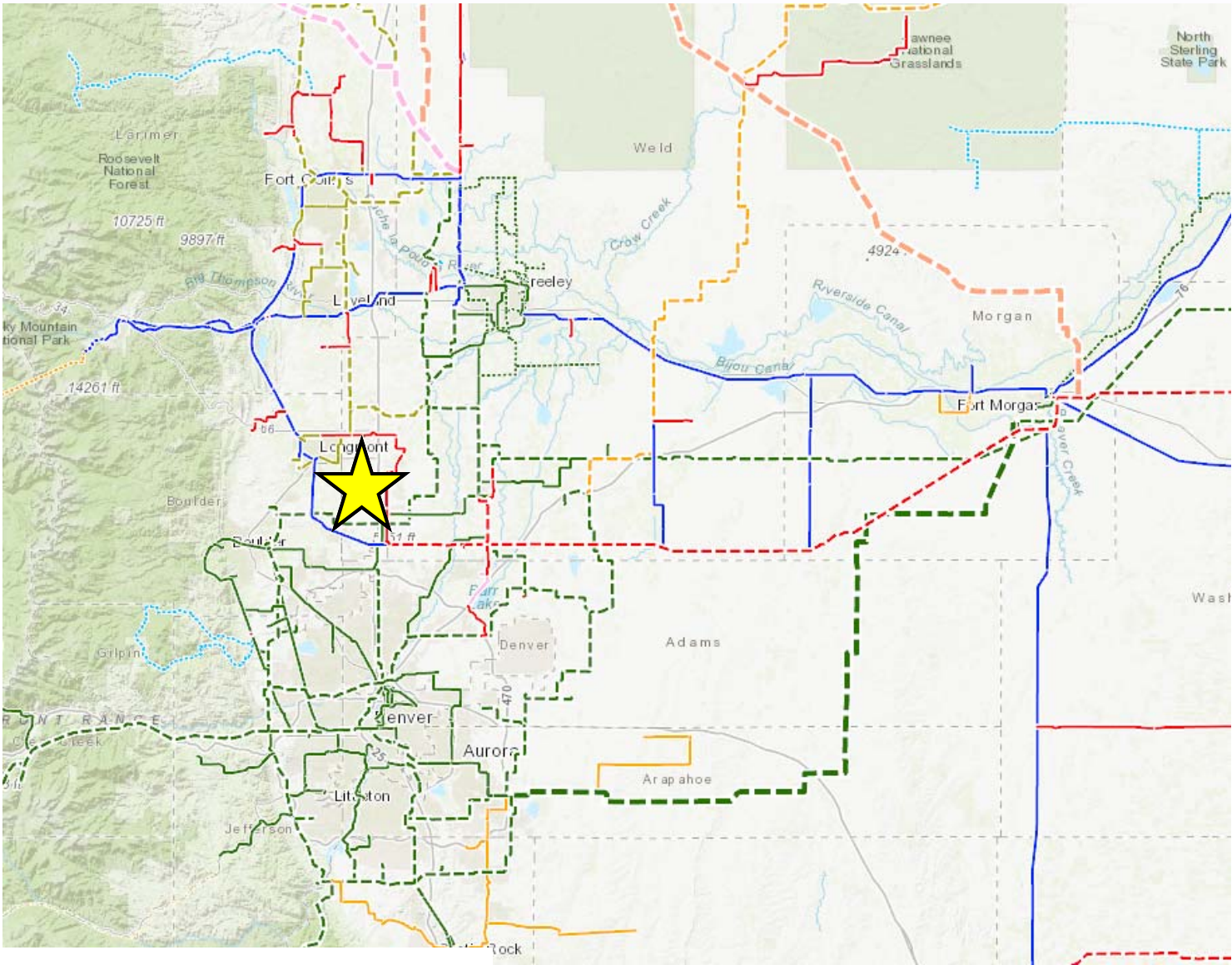


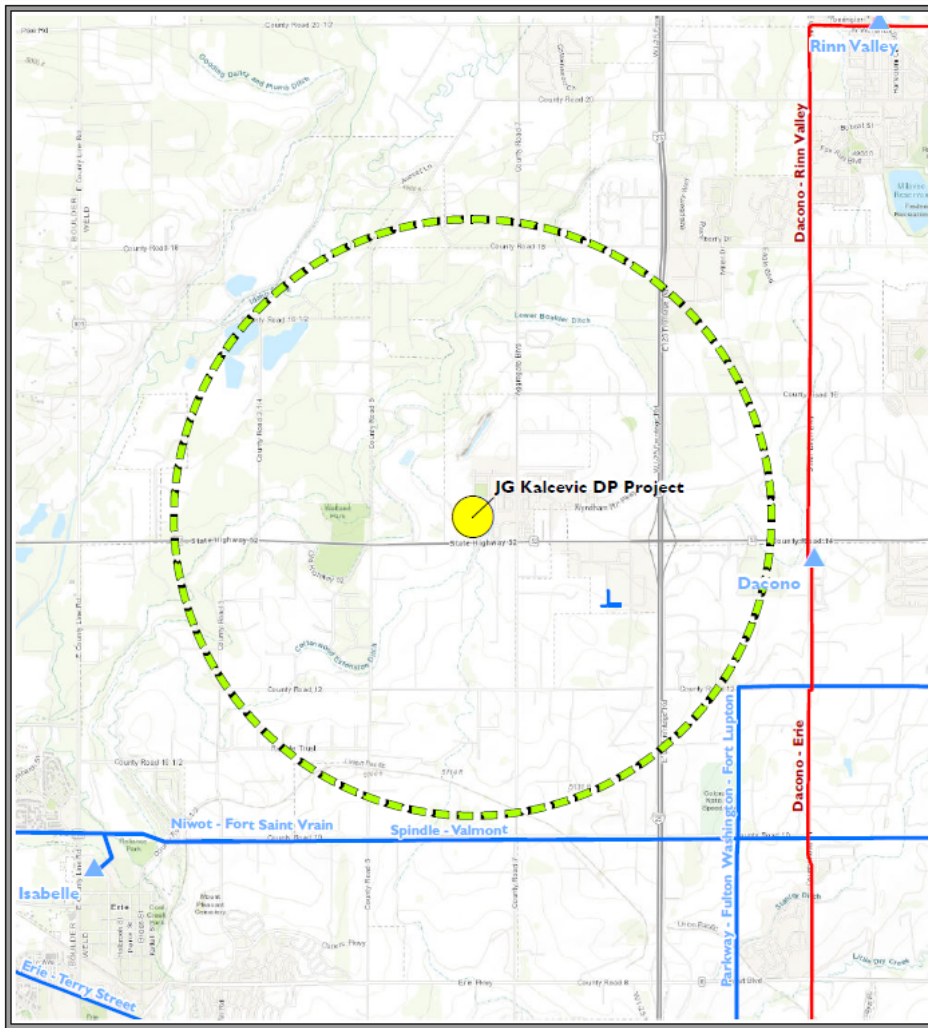


## GCC – Lime Road 115 kV Line

Description:	Construct new 115 kV line from the existing GCC Cement Plant Tap to the planned Lime Road Substation.
Voltage:	115 kV
Length:	3 miles
Type:	Line
Status:	Cancelled
Planned ISD:	-
Purpose:	Load Serving

# JG Kalcevic DP Project



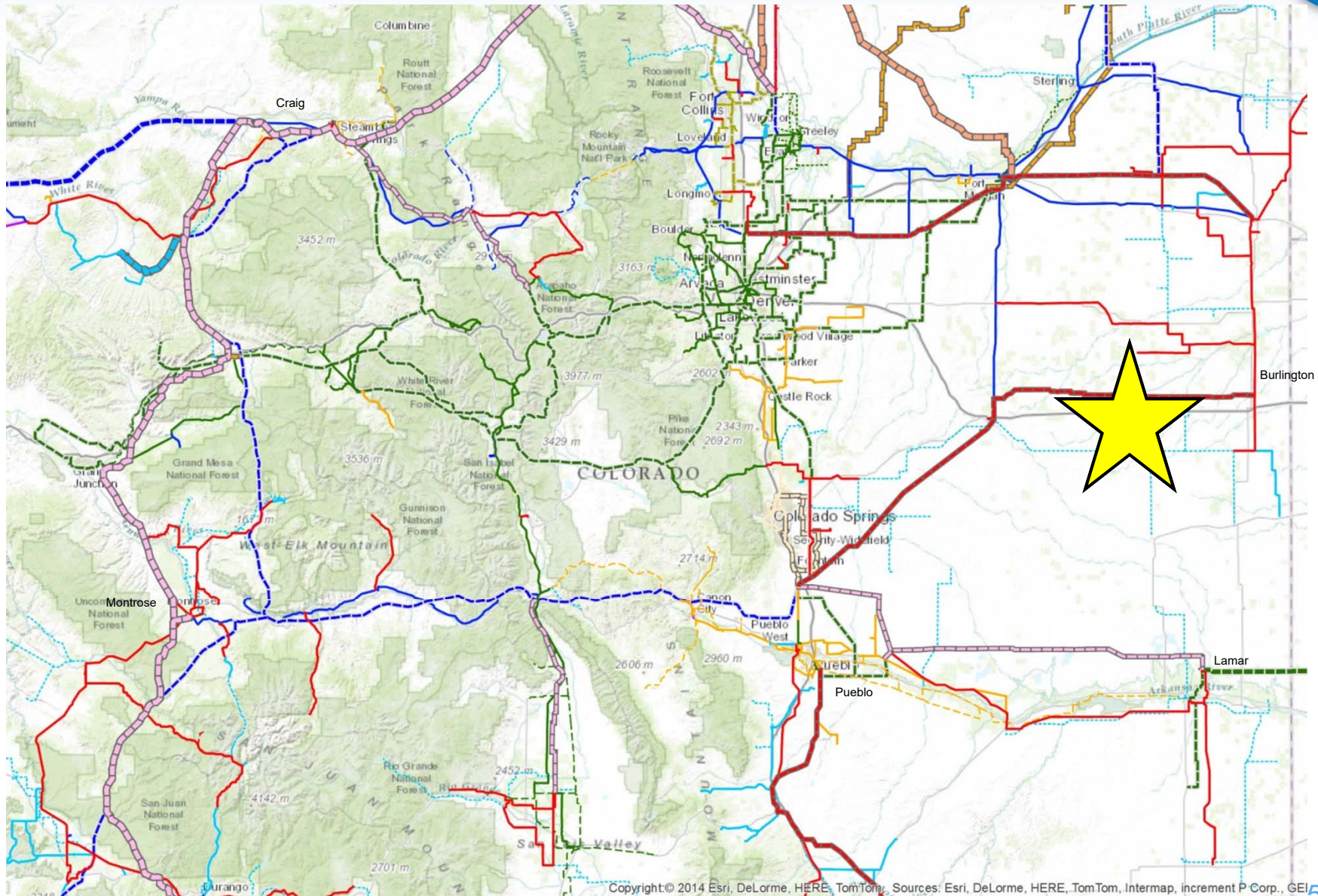


## JG Kalcevic DP Project

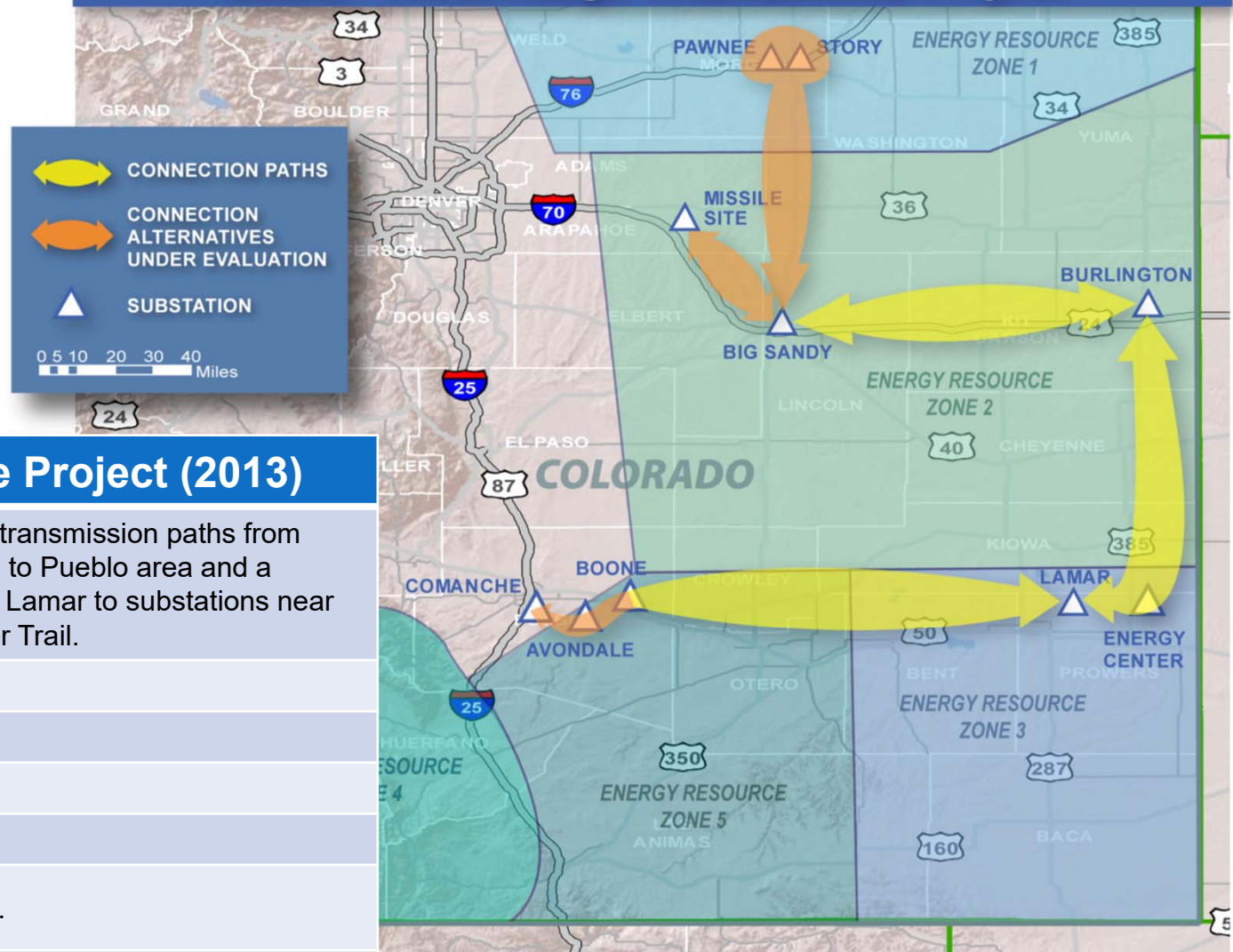
Description:	Sectionalize Erie – Dacono – Rinn Valley 115 kV line at new JG Kalcevic DP Substation. Build double circuit line from exiting line to substation site. Install 115-12.47 kV distribution transformer.
Voltage:	115 kV
Length:	2 miles
Type:	Line and Substation
Status:	Cancelled
Planned ISD:	-
Purpose:	Reliability; Load Serving



# Lamar – Front Range Project



# Lamar - Front Range Transmission Project

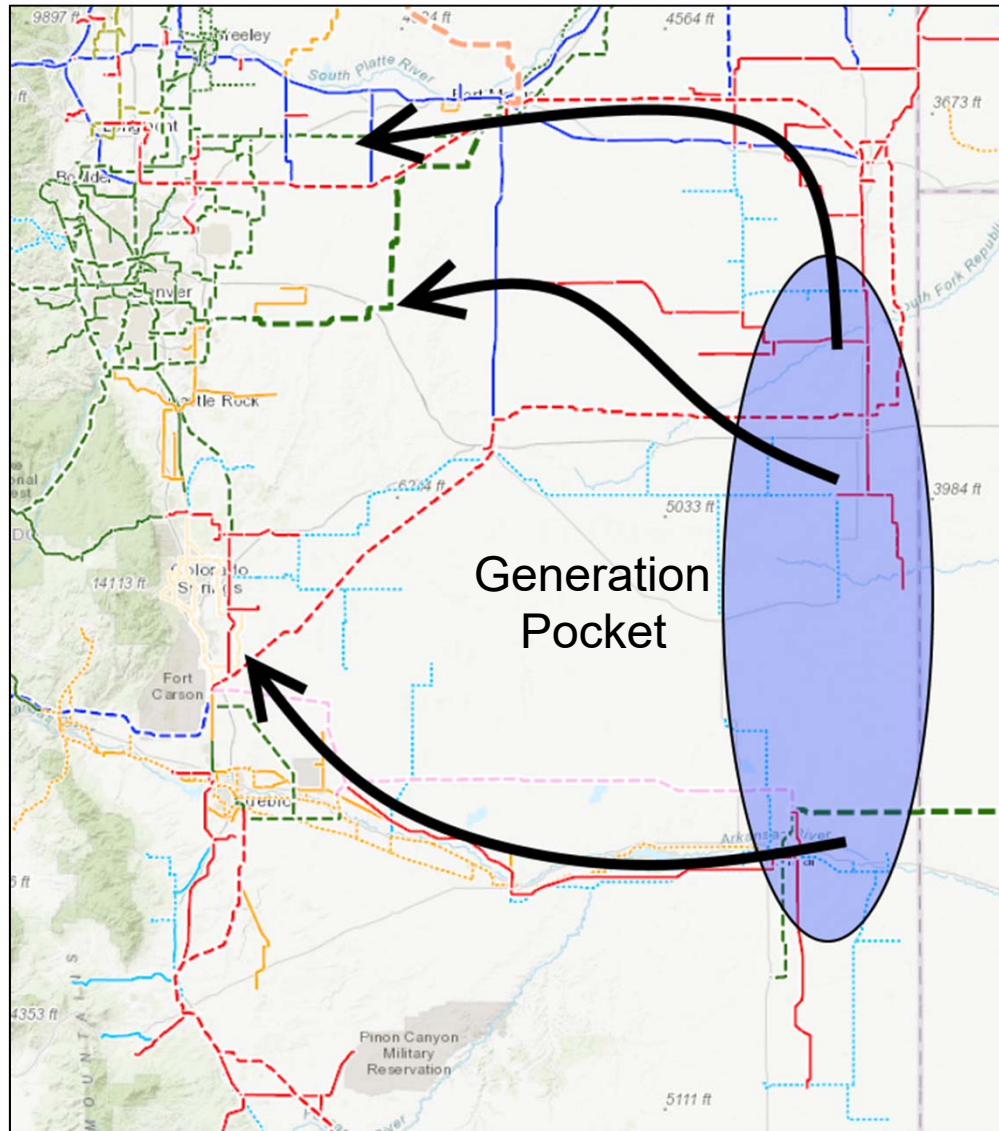


## Lamar – Front Range Project (2013)

Description:	Two high voltage transmission paths from Lamar Substation to Pueblo area and a second path from Lamar to substations near Brush and/or Deer Trail.
Voltage:	345 kV
Length:	300 – 350 miles
Type:	Line.
Status:	Conceptual.
Planned ISD:	To be determined.
Purpose:	Tri-State reliability, system load-serving connectivity as regional power provider and future resources. Xcel Senate Bill 07-100 and reliability.



# Developing Project in Colorado: Lamar Front Range Task Force

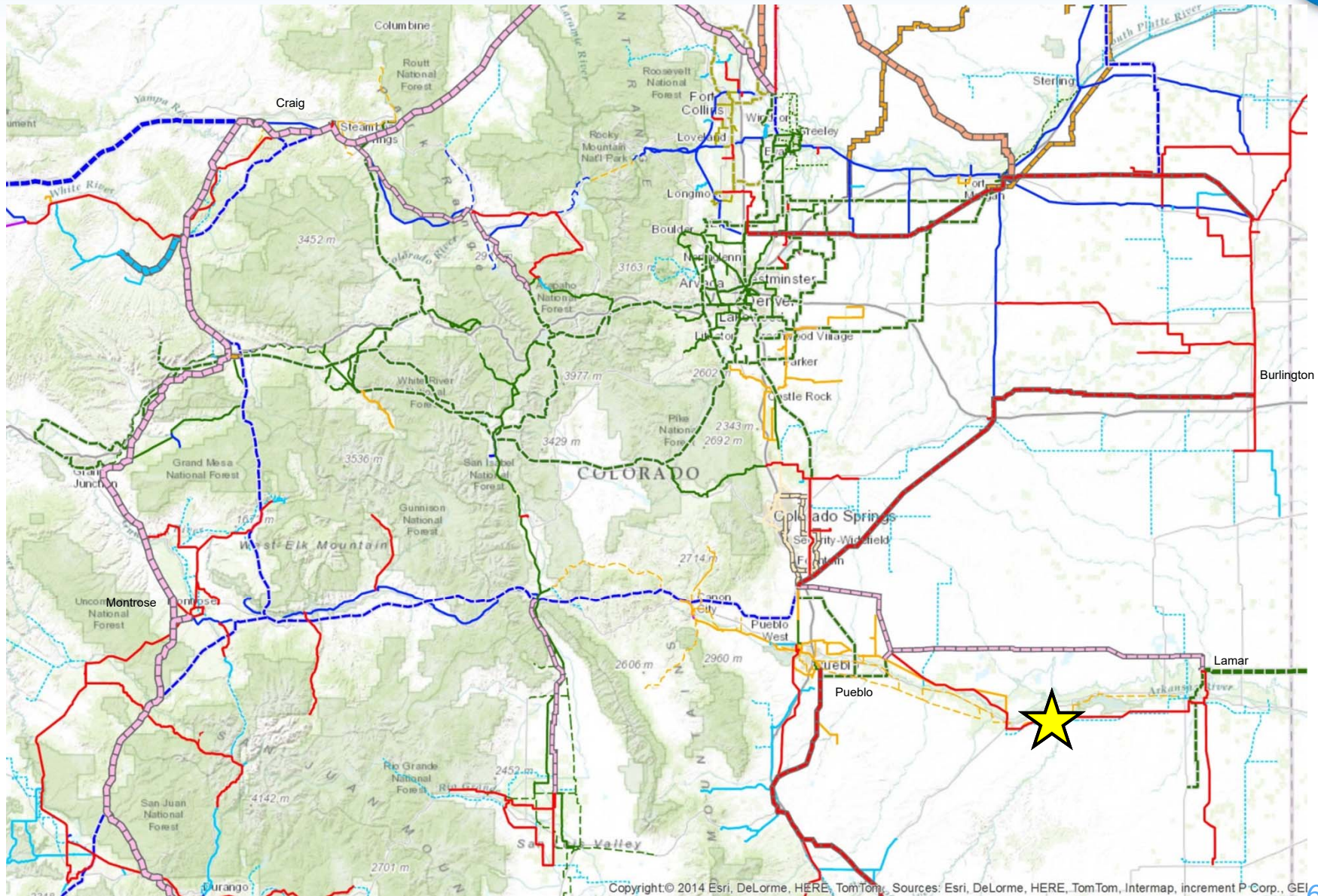


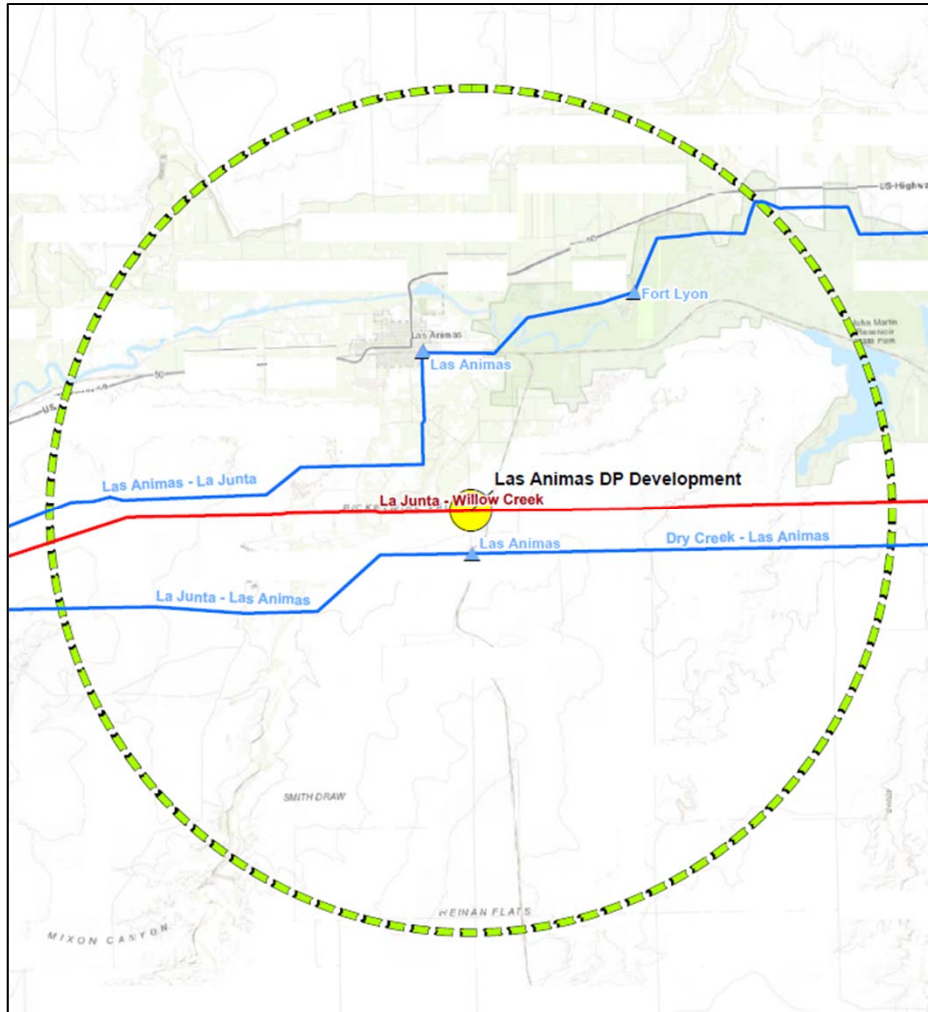
## Lamar Front Range

Purpose:	Coordinated Colorado Planning Group Task Force to evaluate transmission expansion alternatives to improve generation export capacity from eastern Colorado to load-serving regions along the Front Range.
Status:	Studies completed May 2020
	<ul style="list-style-type: none"> <li>• Phased approach to project development</li> <li>• Several smaller alternatives were combined to assess impact of a larger alternative on export capability.</li> <li>• Combined alternatives can improve export capacity up to 2000 MW</li> </ul>
Schedule:	Report finalized. <a href="http://regplanning.westconnect.com/ccp_g_lamar_tf.htm">http://regplanning.westconnect.com/ccp_g_lamar_tf.htm</a>



# Las Animas DP



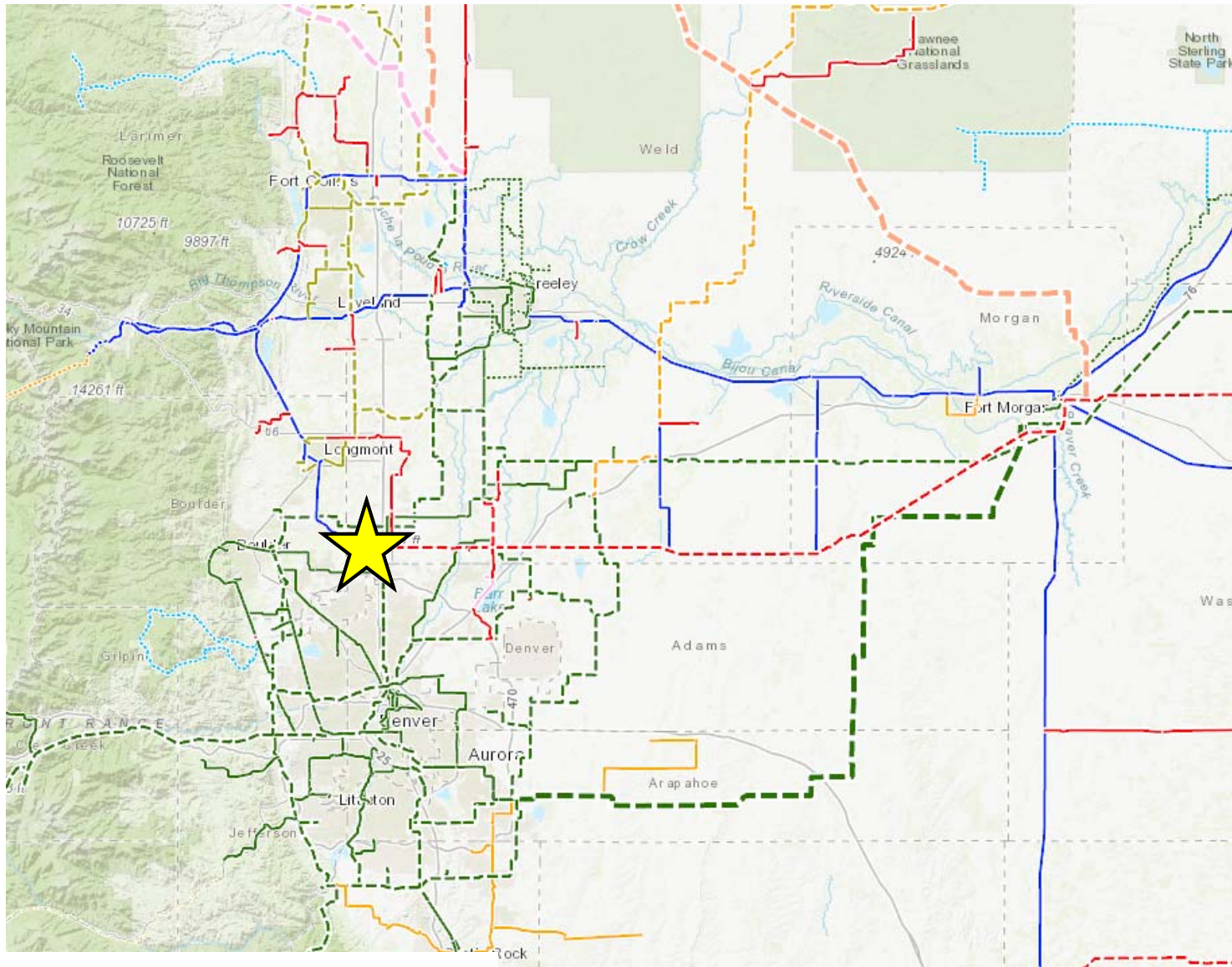


## Las Animas DP

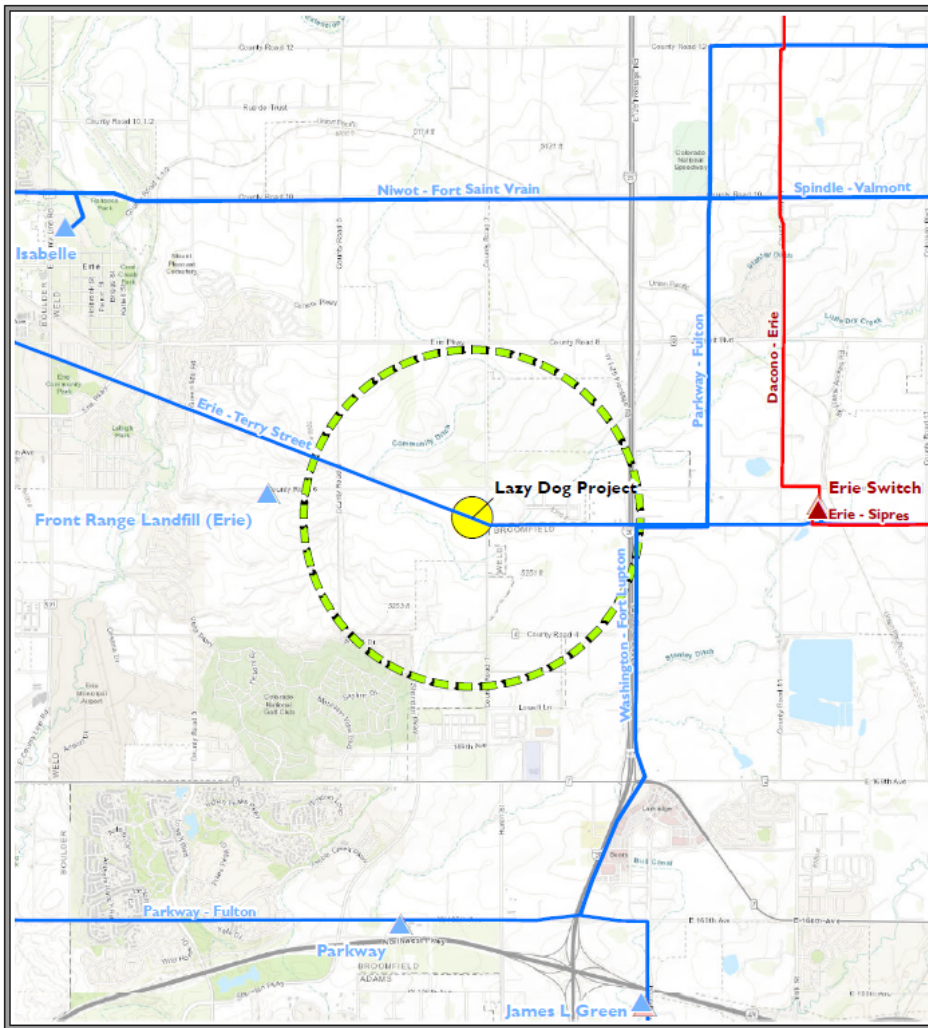
Description:	A new substation sectionalizing Tri-State's La Junta – LAMSO – Willow Creek 115 kV line, with a 115 kV, three breaker ring, and a 115-69 kV transformer.
Voltage:	115 kV
Length:	0 miles
Type:	Substation
Status:	Planned
Planned ISD:	2024
Purpose:	Reliability; Load Serving



# Lazy Dog Project



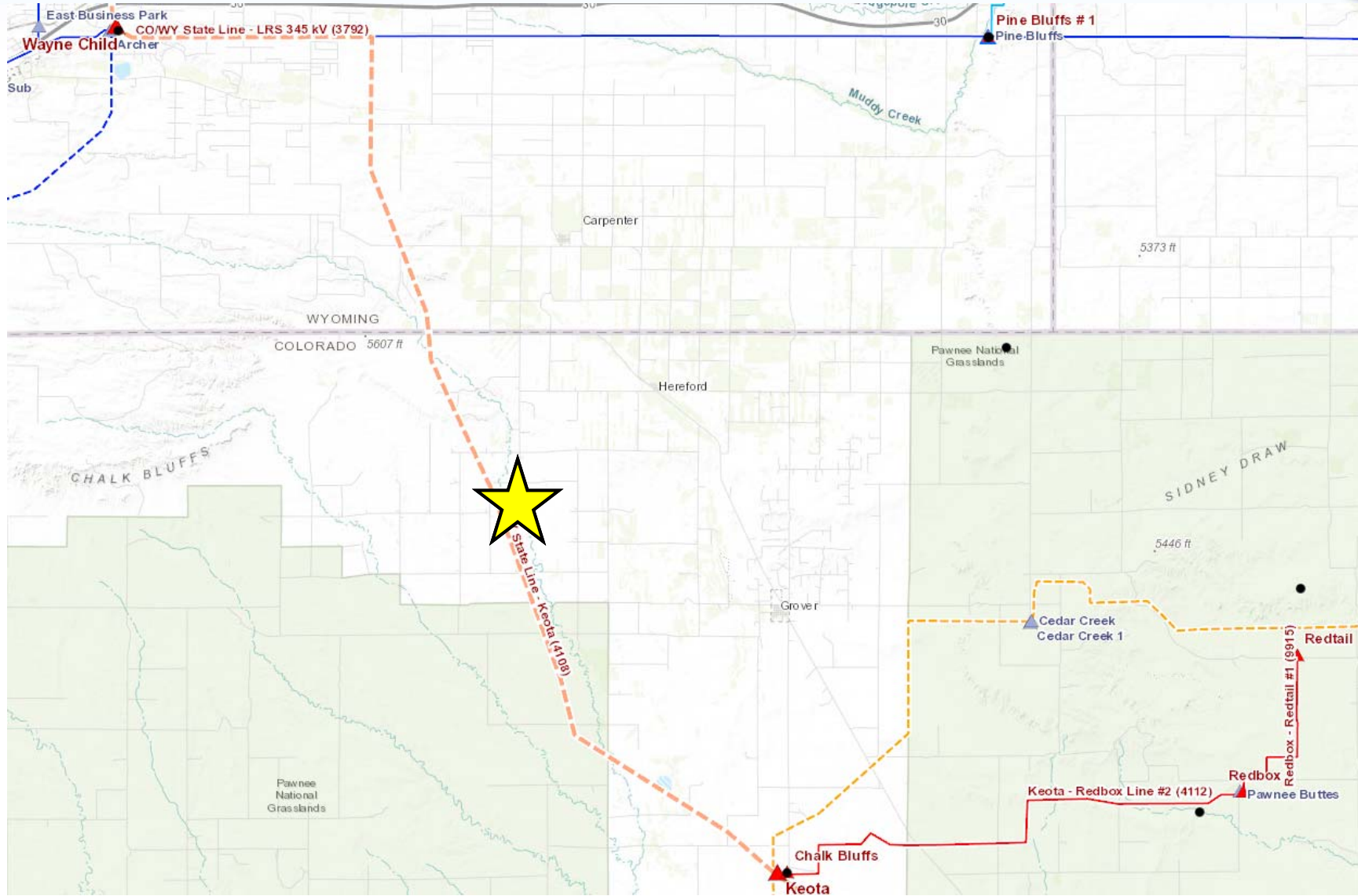


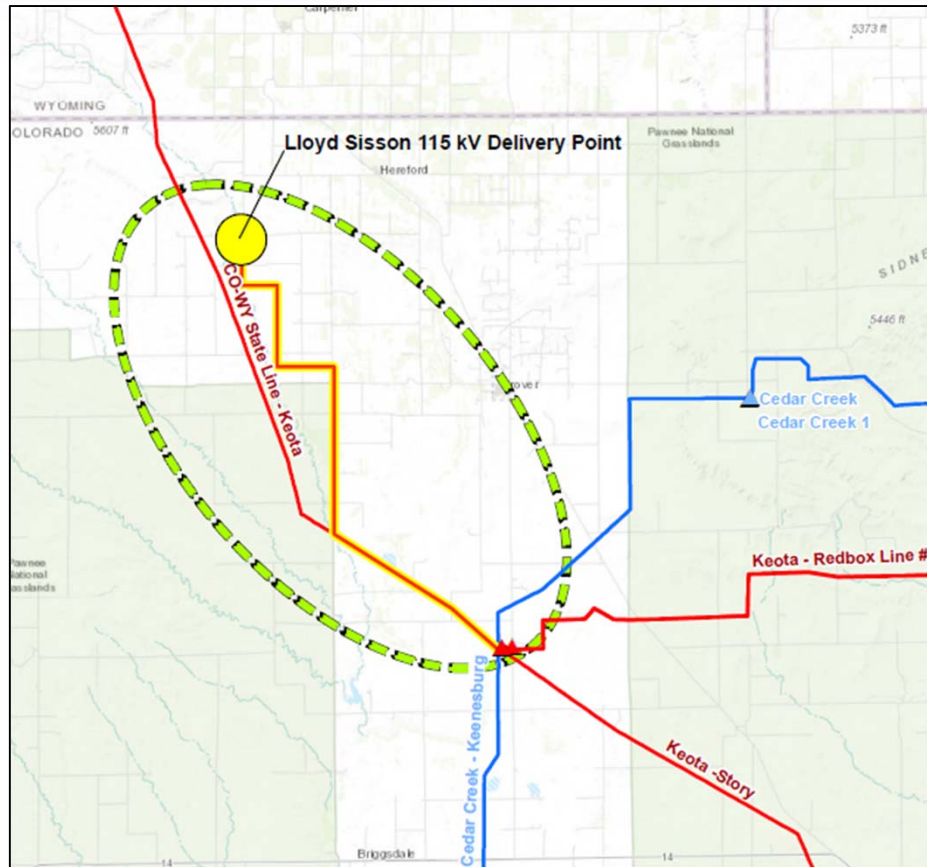


## Lazy Dog Project

Description:	Loop Erie – Terry Street 115 kV line though new Lazy Dog Substation. Install 115-12.47 kV transformer.
Voltage:	115 kV
Length:	0
Type:	Substation
Status:	Energized
Planned ISD:	2020
Purpose:	Reliability; Load Serving

# Lloyd Sisson Delivery Point Project



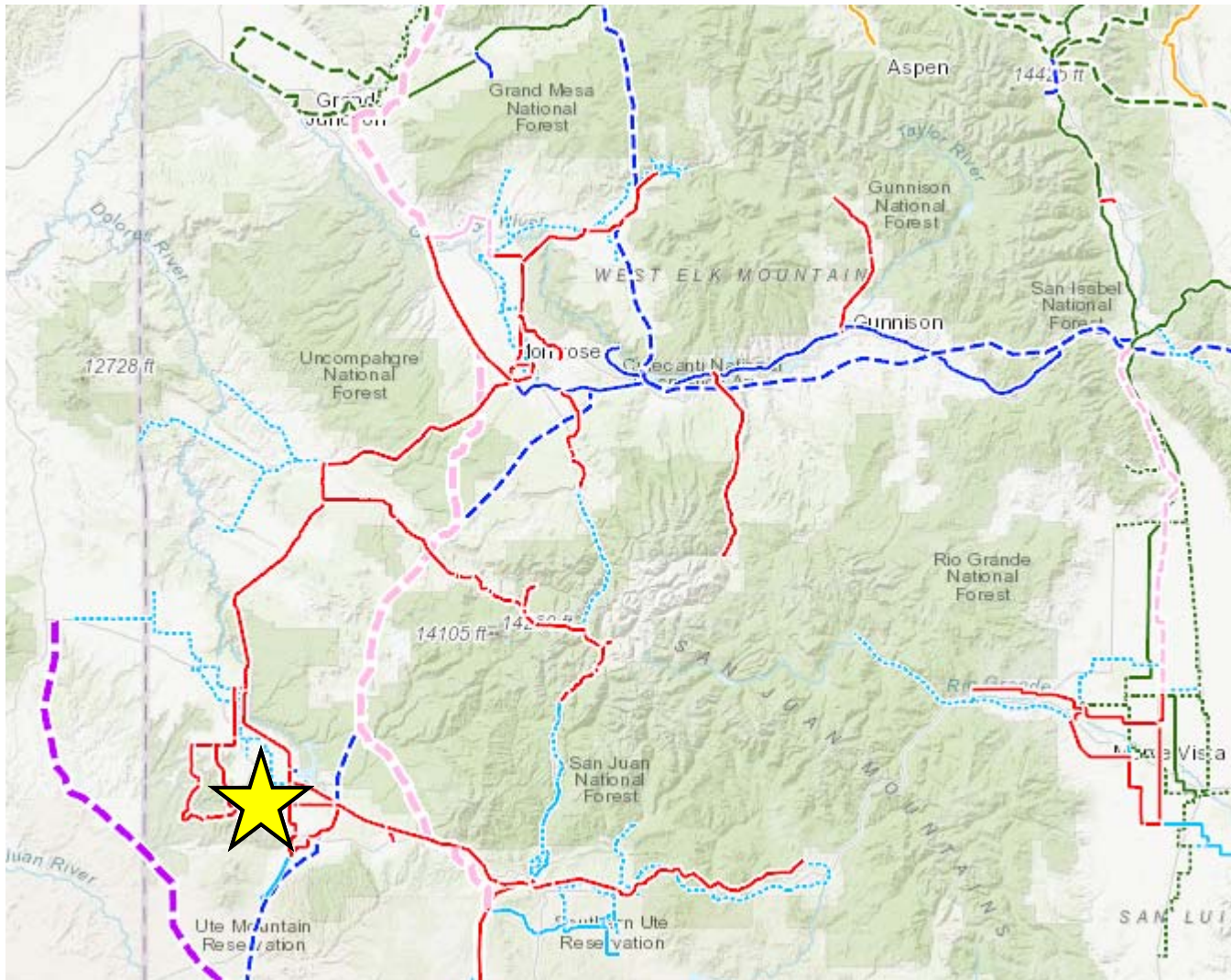


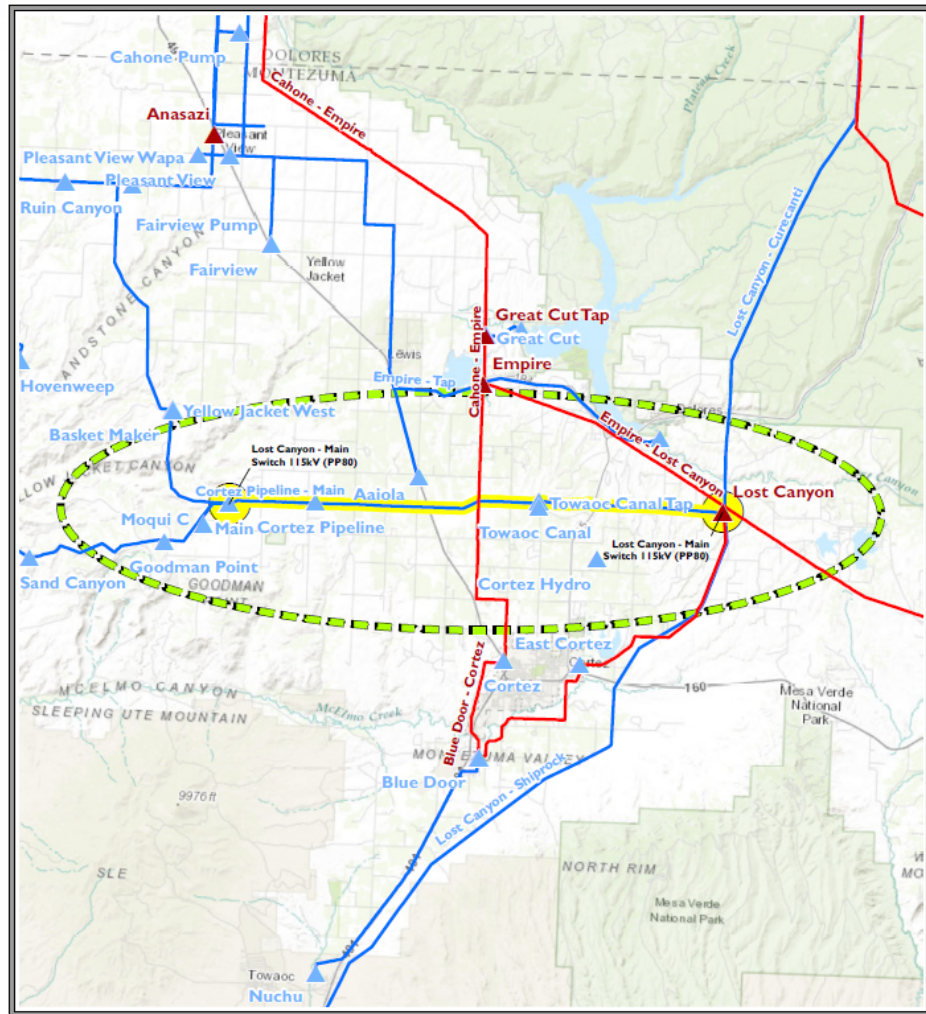
## Lloyd Sisson Delivery Point Project

Description:	A new load serving Delivery Point (DP) to serve approximately 12 MW of requested load growth near the end of the Member's 34.5 kV system, which is beyond its capability. This new DP is located approximately 10 miles northwest of Grover, Colorado.
Voltage:	115 kV
Length:	20 miles
Type:	Line and Substation
Status:	Under Construction
Planned ISD:	2021
Purpose:	Load Serving



# Lost Canyon – Main Switch 115 kV Line



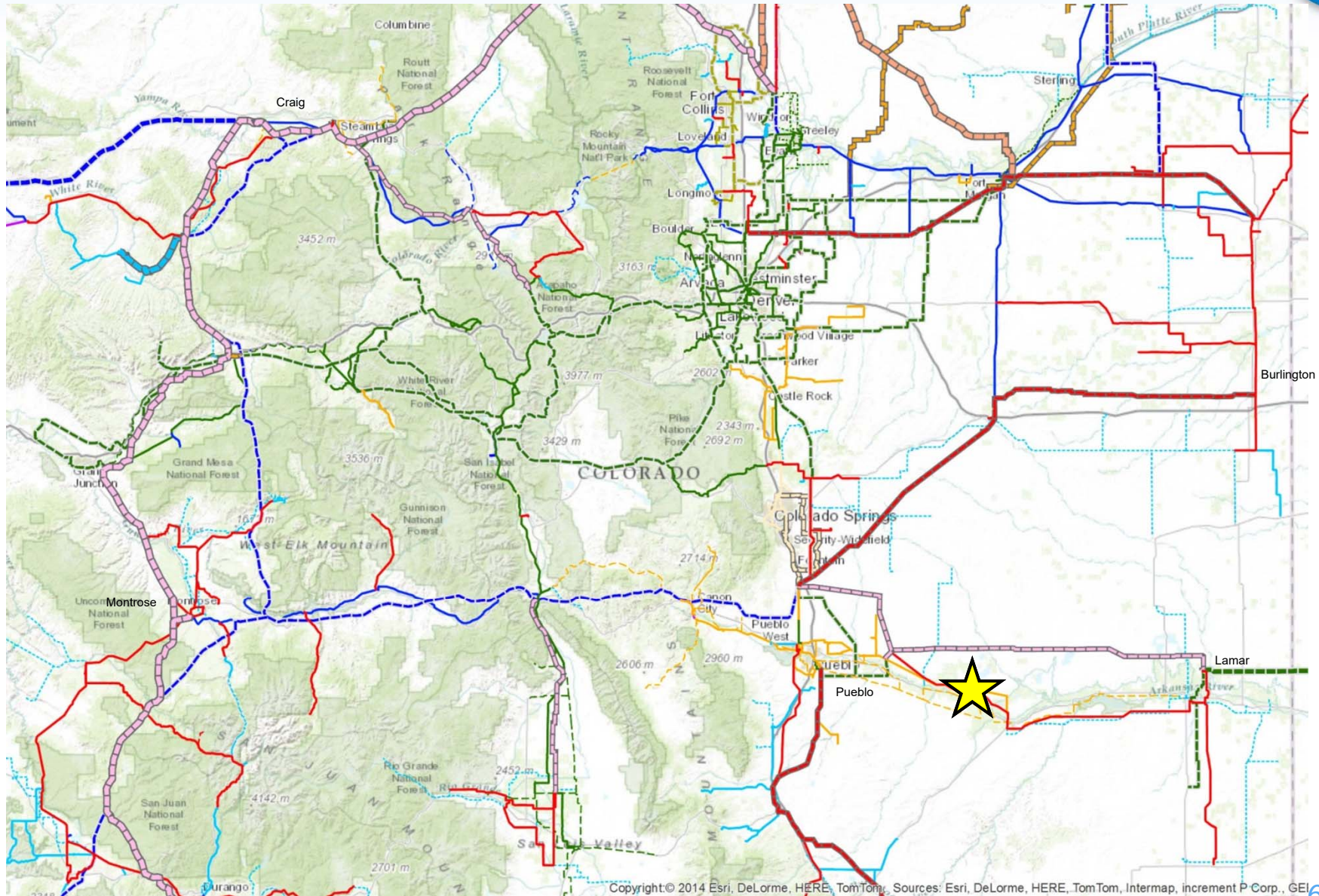


## Lost Canyon – Main Switch 115 kV Line

Description:	Construct new Lost Canyon – Main Switch 115 kV line
Voltage:	115 kV
Length:	16 miles
Type:	Line
Status:	Conceptual
Planned ISD:	2024
Purpose:	Load Serving



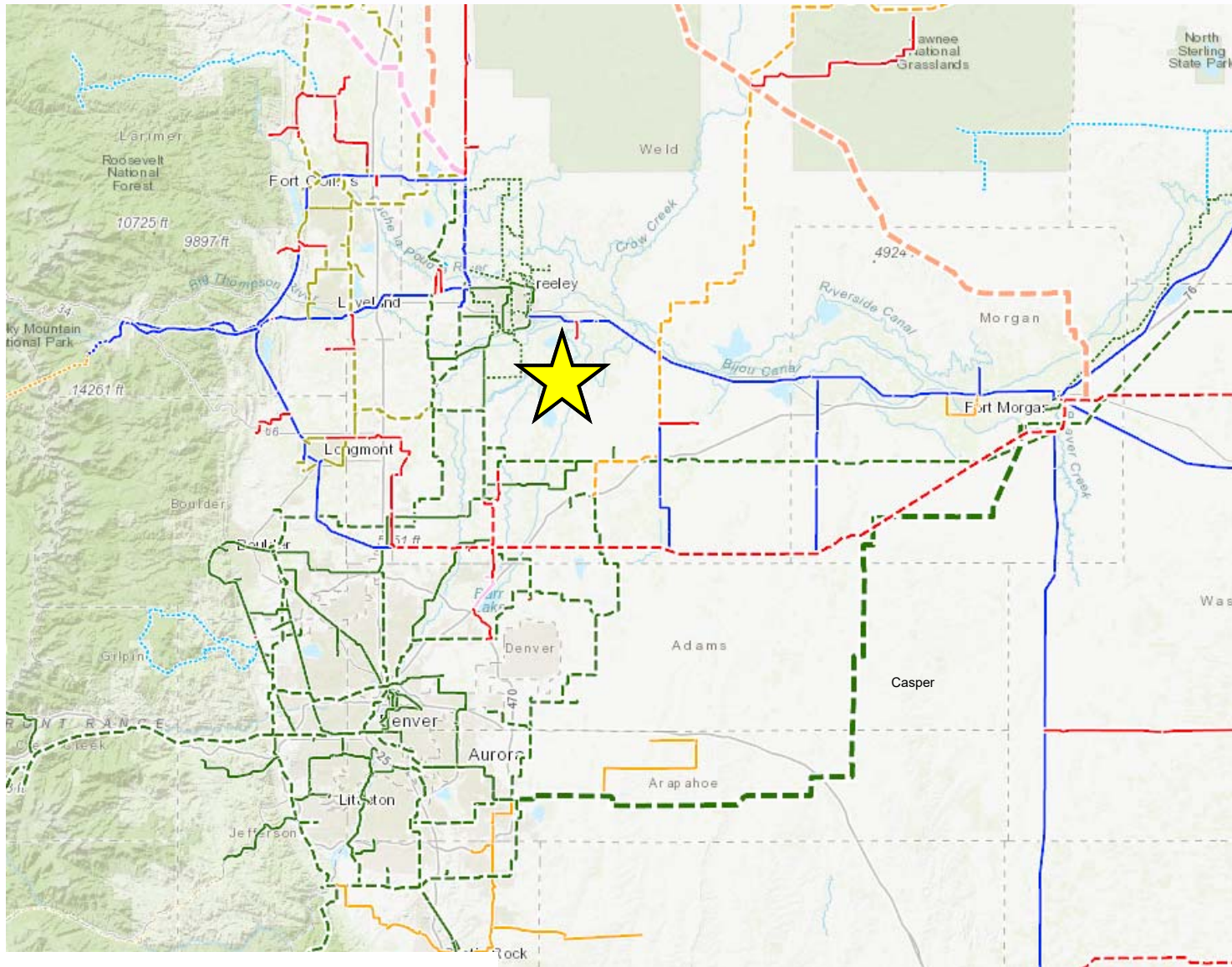
# Meredith DP

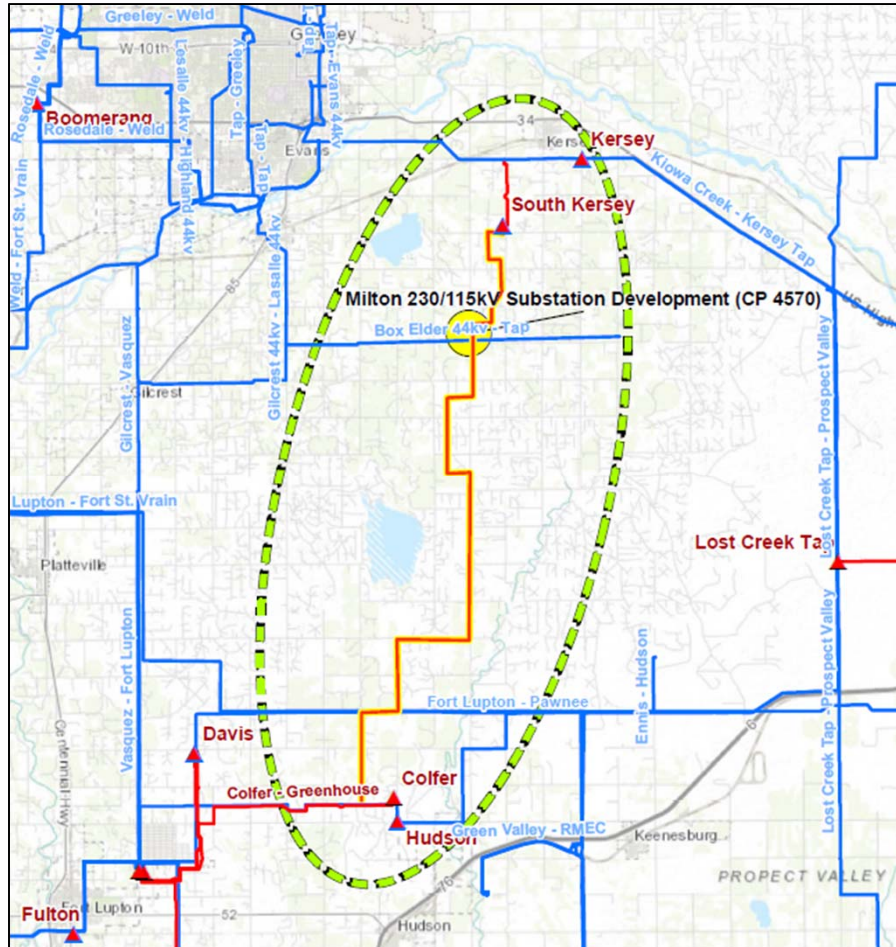






# Milton 230/115 kV Substation Development



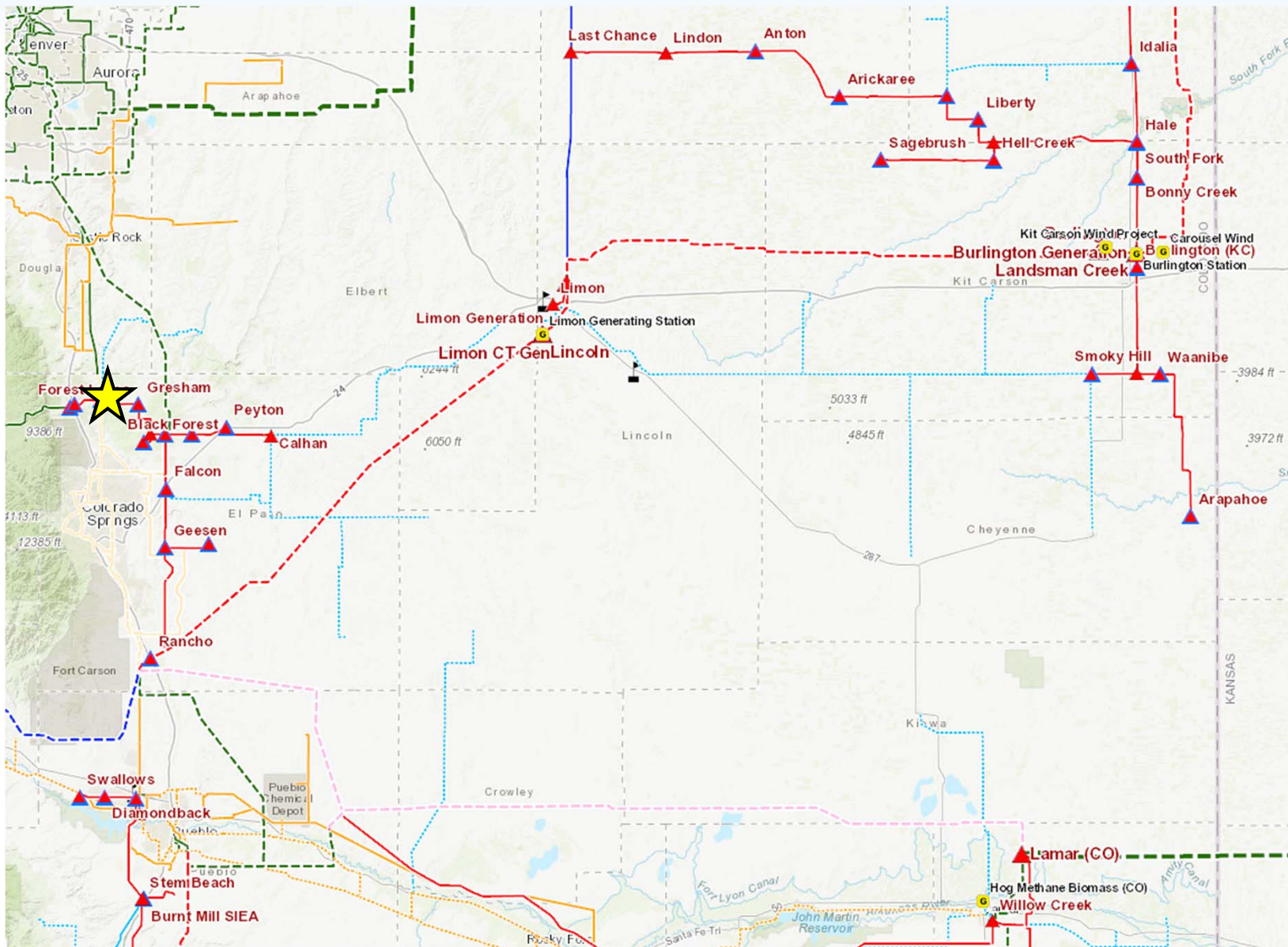


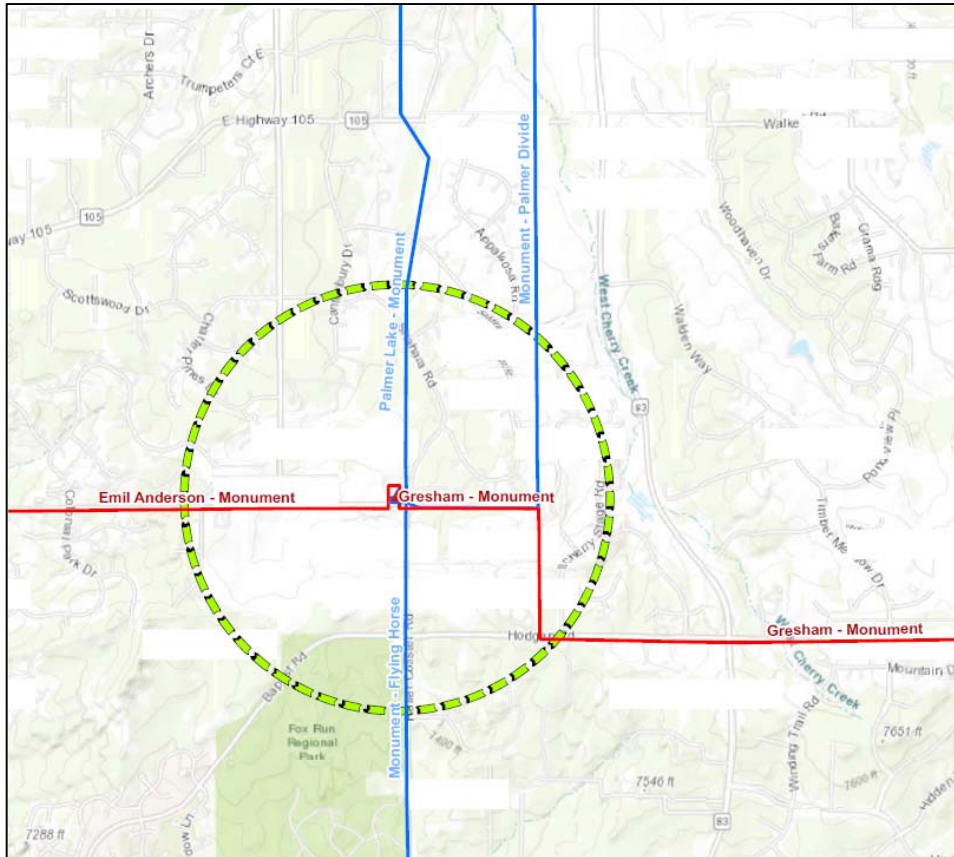
## Milton 230/115 kV Substation Development

Description:	Construct a 230-115 kV Substation as part of the Southwest Weld Expansion Project.
Voltage:	230 kV
Length:	0
Type:	Substation
Status:	Cancelled
Planned ISD:	-
Purpose:	Load Serving, Reliability



# Monument – Substation Improvements



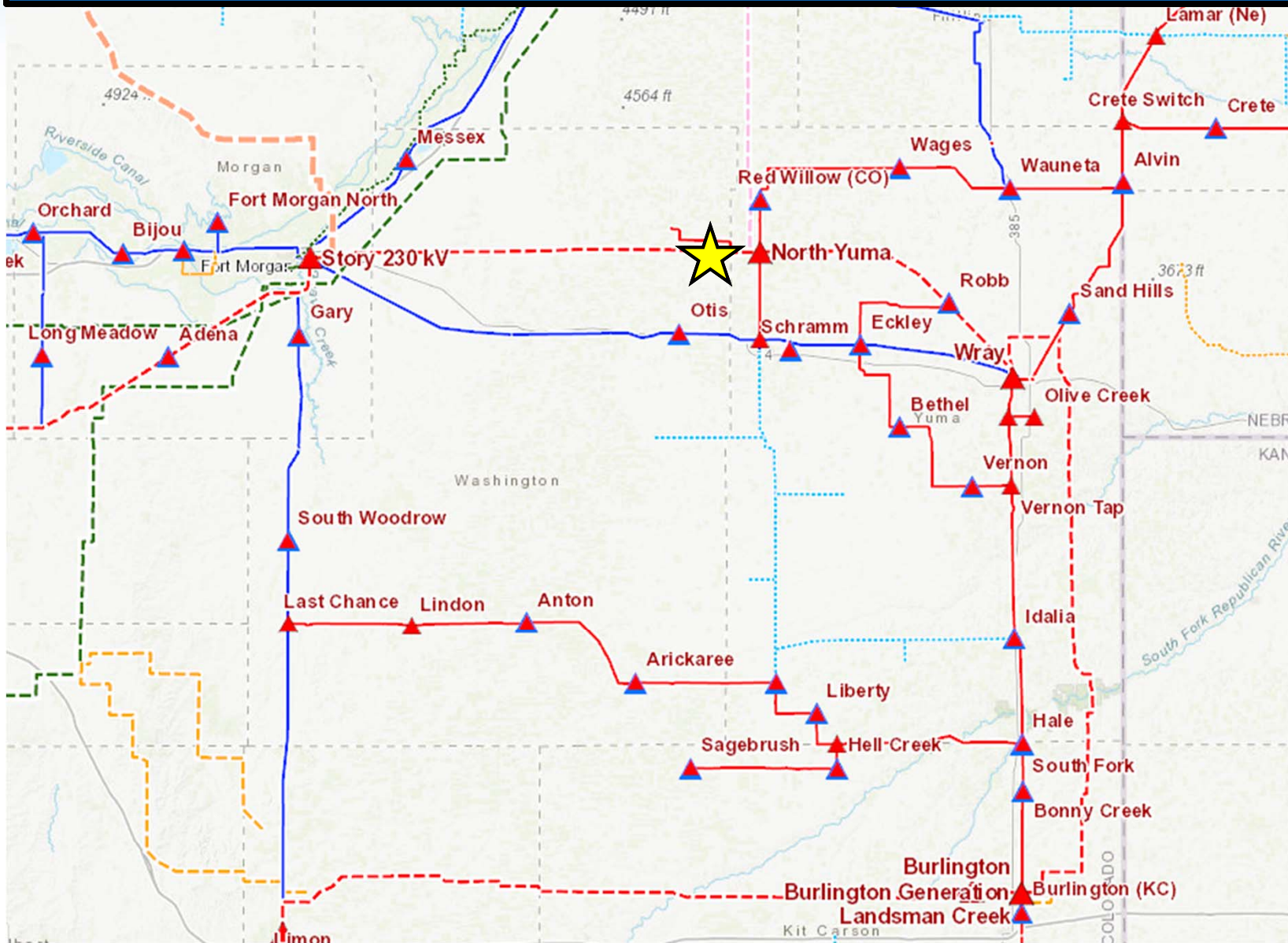


## Monument – Substation Improvements

Description:	Redesign substation to an eight position breaker and a half design. Replace 69/12.47 kV distribution transformers with 115/12.47 kV distribution transformers. Relocate existing 115/69 kV and 115/67 kV transformer to new yard.
Voltage:	115/69/12.47 kV
Current:	Star Bus
New:	Breaker and a Half
Status:	Planned
Planned ISD:	2023
Purpose:	Load Serving/Reliability/Area Capacity



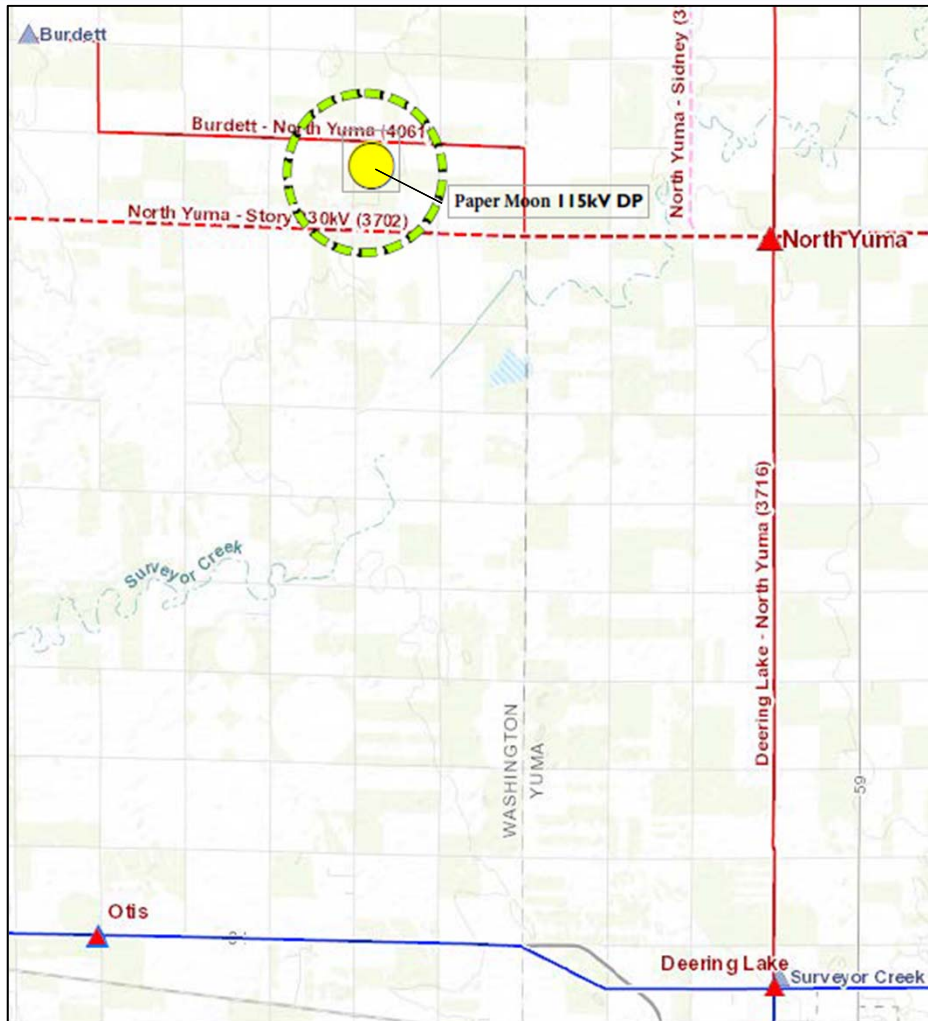
# Paper Moon 115 kV DP





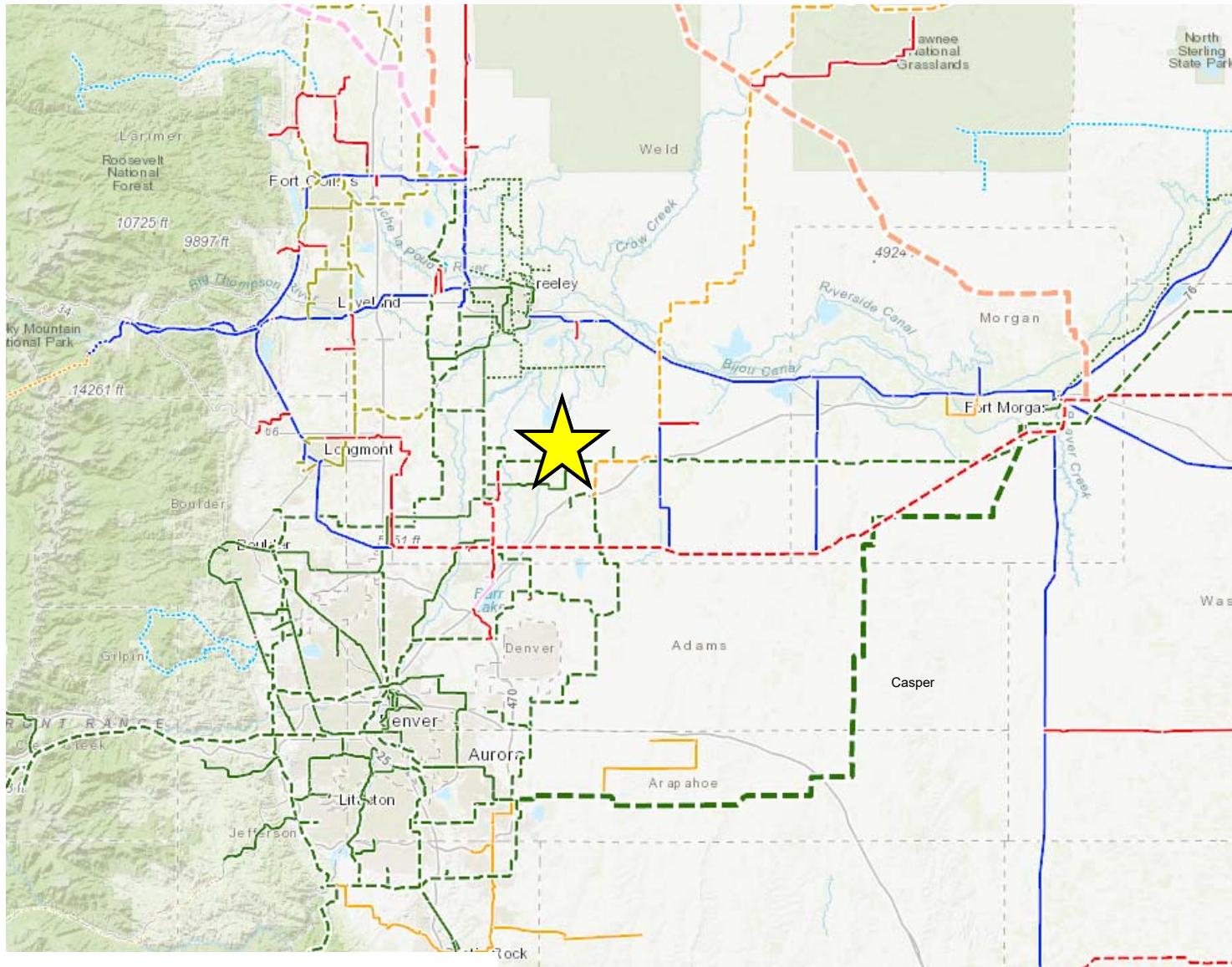


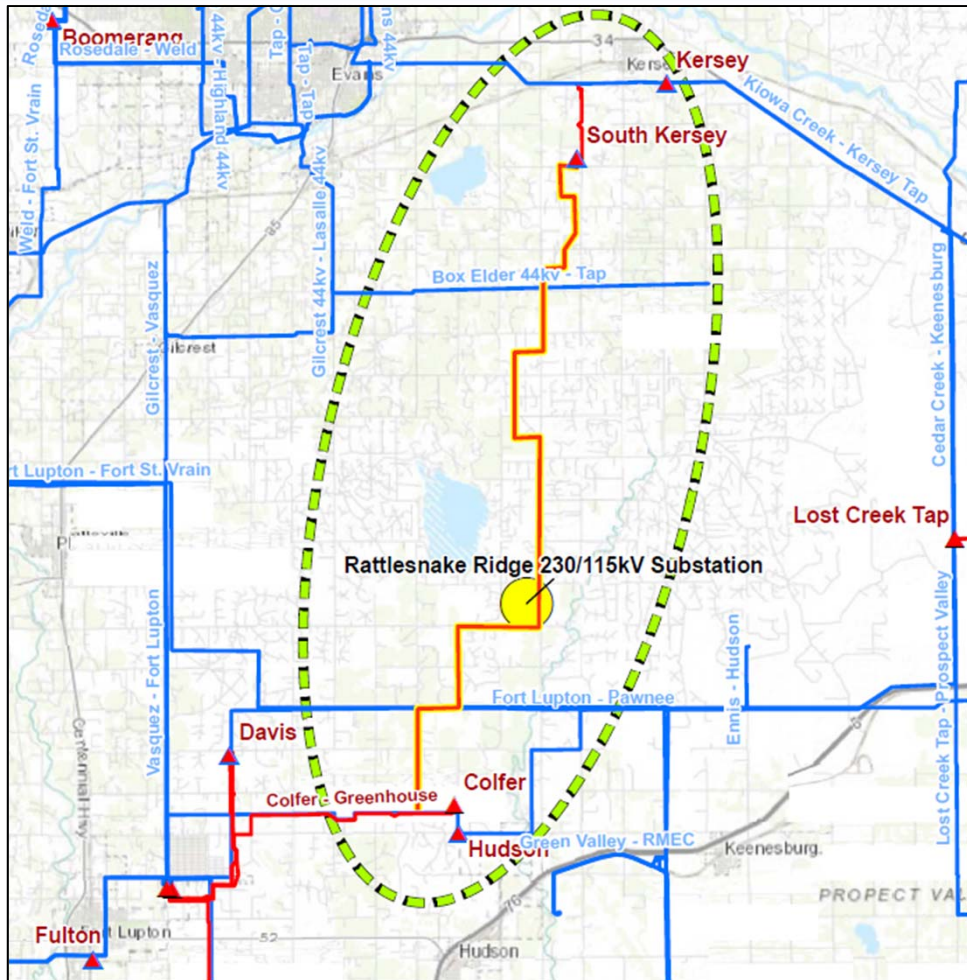
## Paper Moon 115 kV DP



Description:	Establish a new 115 kV DP for YWEA. Scope of project includes tapping 115 kV Burdett-North Yuma Transmission Line, 115 kV circuit switcher, 115/12.47 kV 10 MVA transformer, metering equipment and low side equipment.
Voltage:	115 kV
Type:	Substation
Status:	Planned
Planned ISD:	2022
Purpose:	Load Serving

# Rattlesnake Ridge T4 and T5



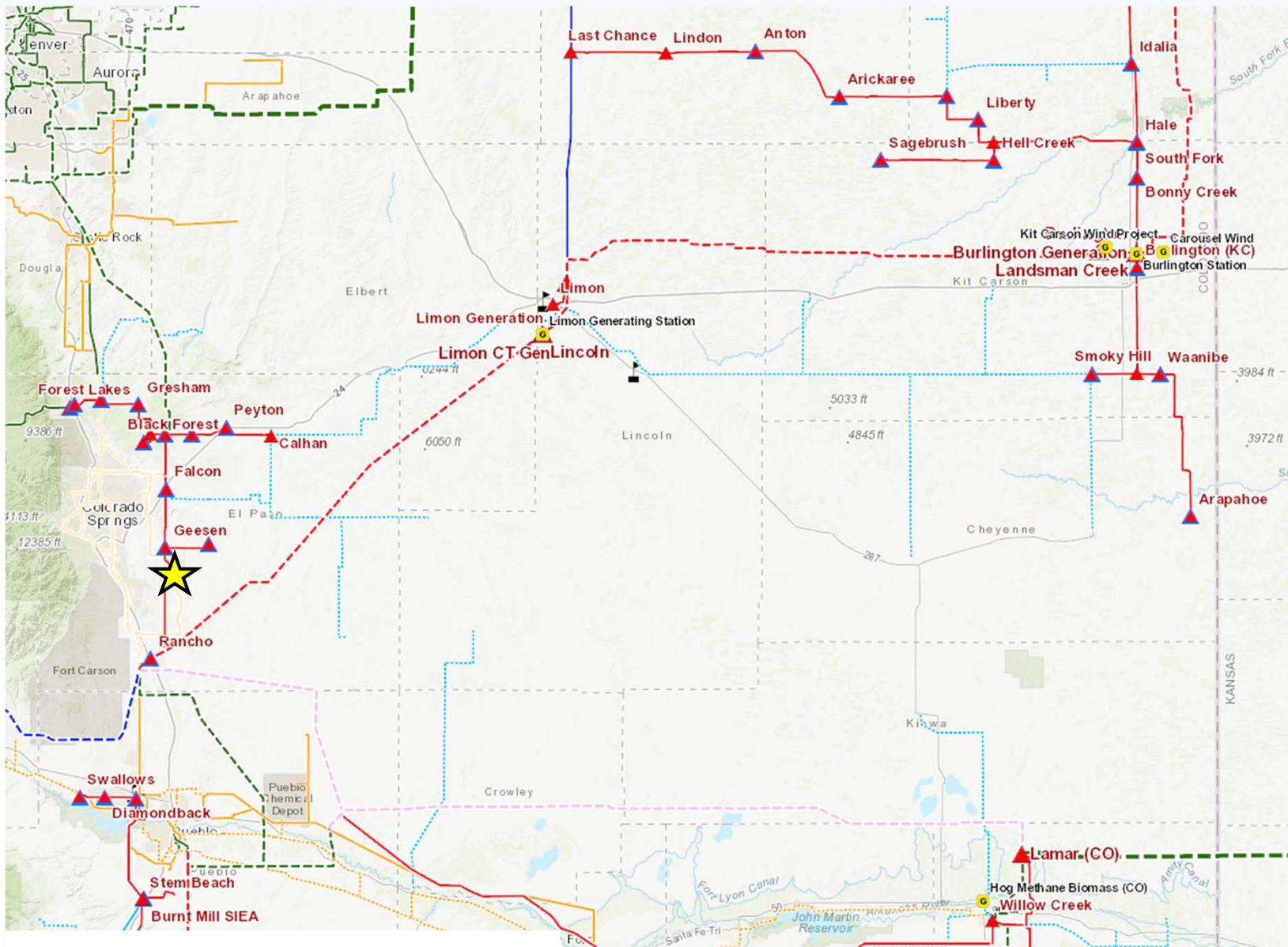


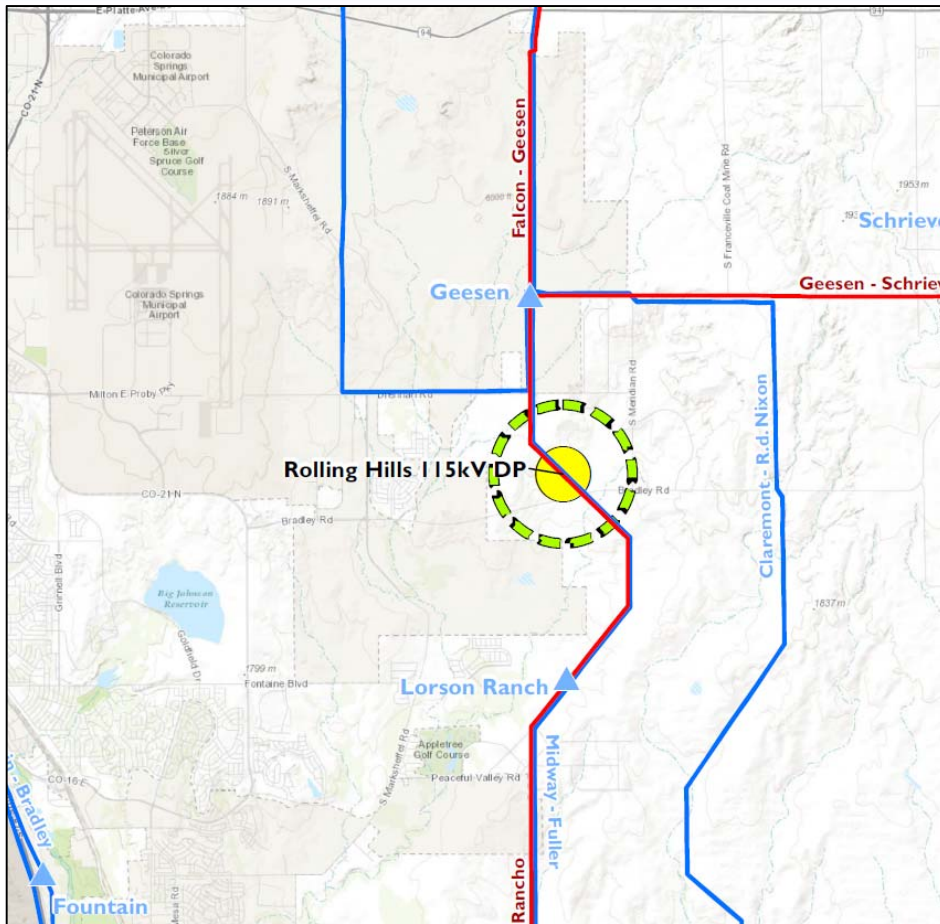
## Rattlesnake Ridge T4 and T5

Description:	Install a 115-69 kV and 115-13.2kV transformers at Rattlesnake Ridge Substation.
Voltage:	115 kV
Length:	0
Type:	Substation
Status:	Cancelled
Planned ISD:	-
Purpose:	Load Serving



# Rolling Hills 115 kV DP



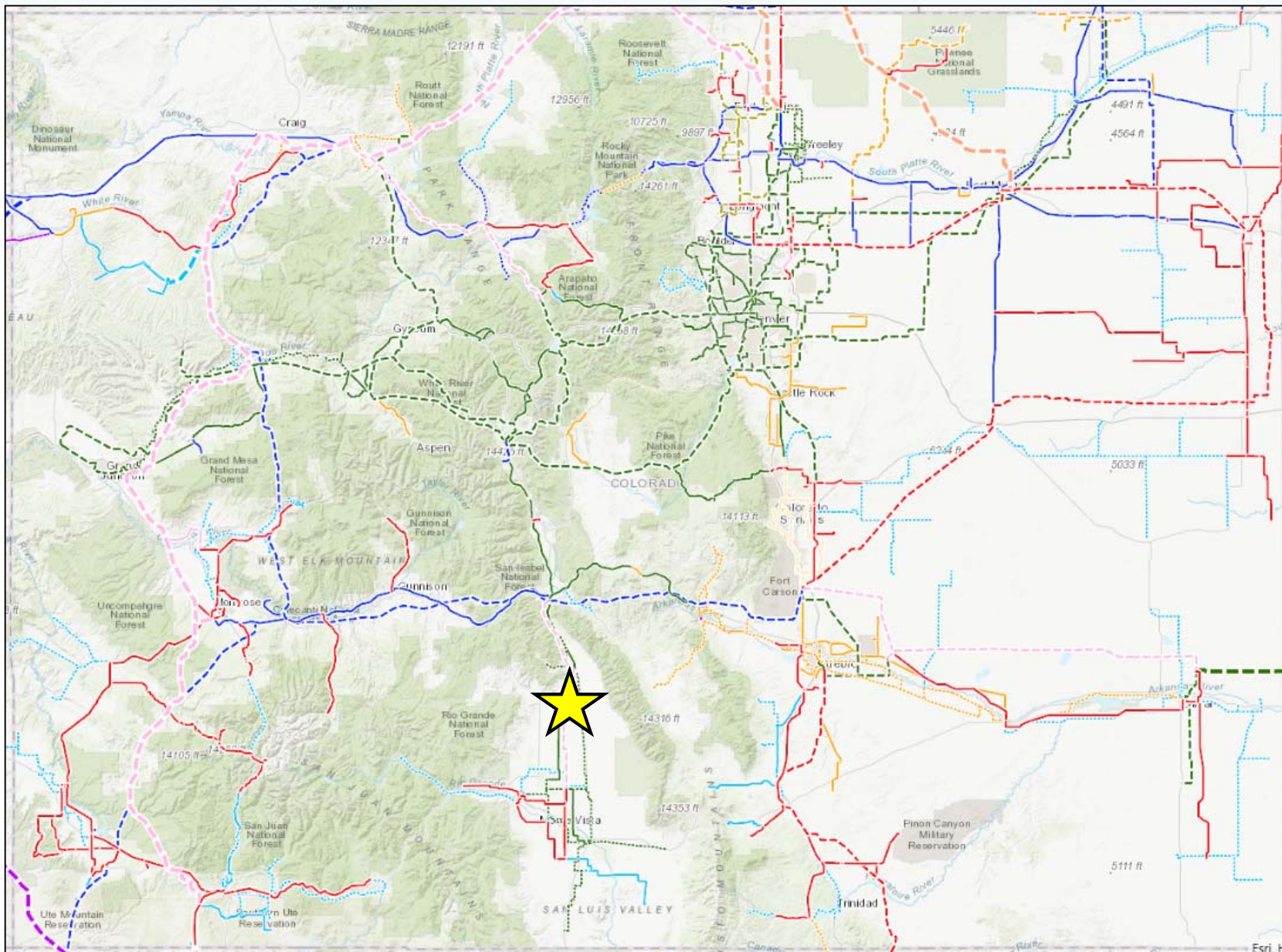


## Rolling Hills 115 kV DP

Description:	The proposed scope of work for this project will be to establish a new 115 kV Point of Delivery for MVEA at Rolling Hills 115-12.5 kV Substation by ‘tapping’ (with an in and out configuration), the existing 115 kV Geesen-Lorson Ranch-Rancho-Midway line between Geesen and Lorson Ranch subs.
Voltage:	115 kV
Length:	0
Type:	Substation
Status:	Planned
Planned ISD:	2025
Purpose:	Load Serving



# San Luis Valley – Poncha 230 kV Project

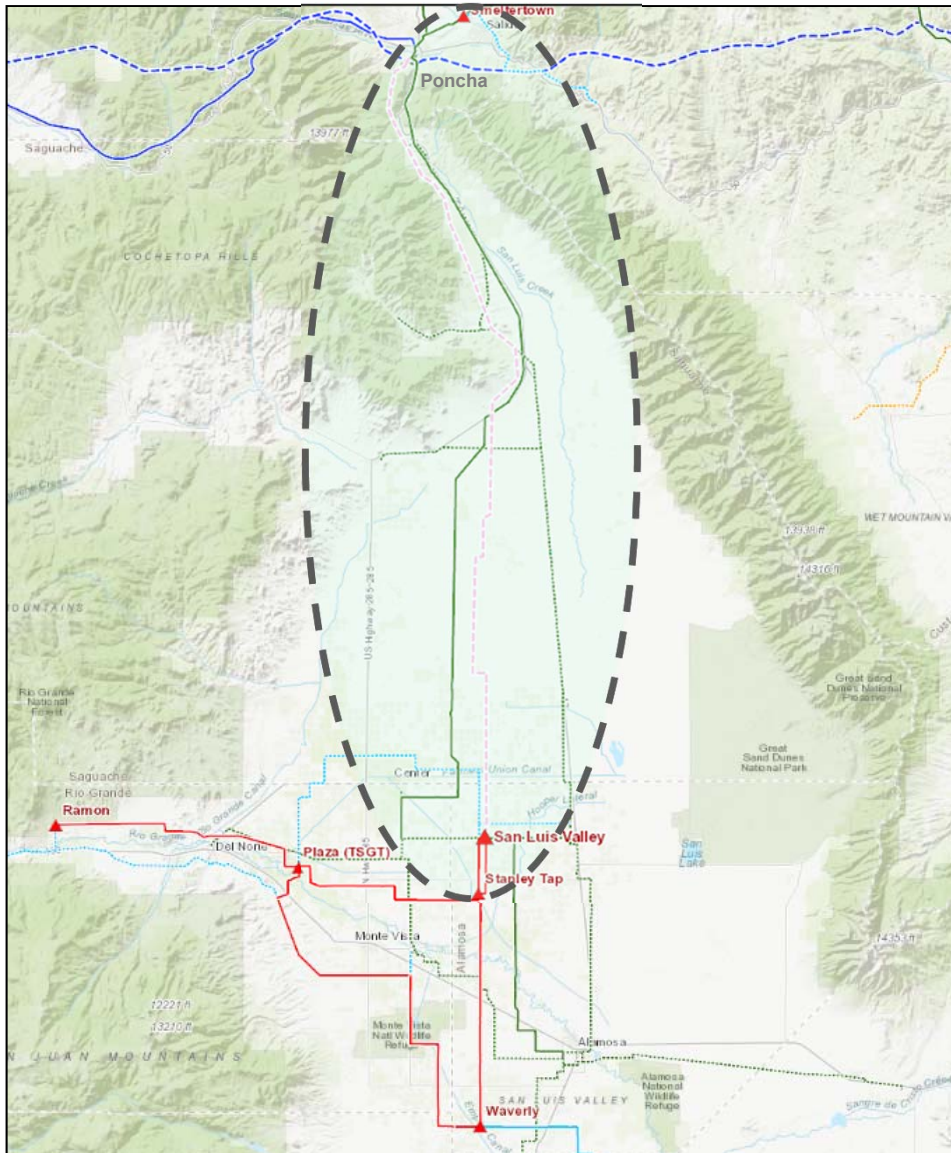




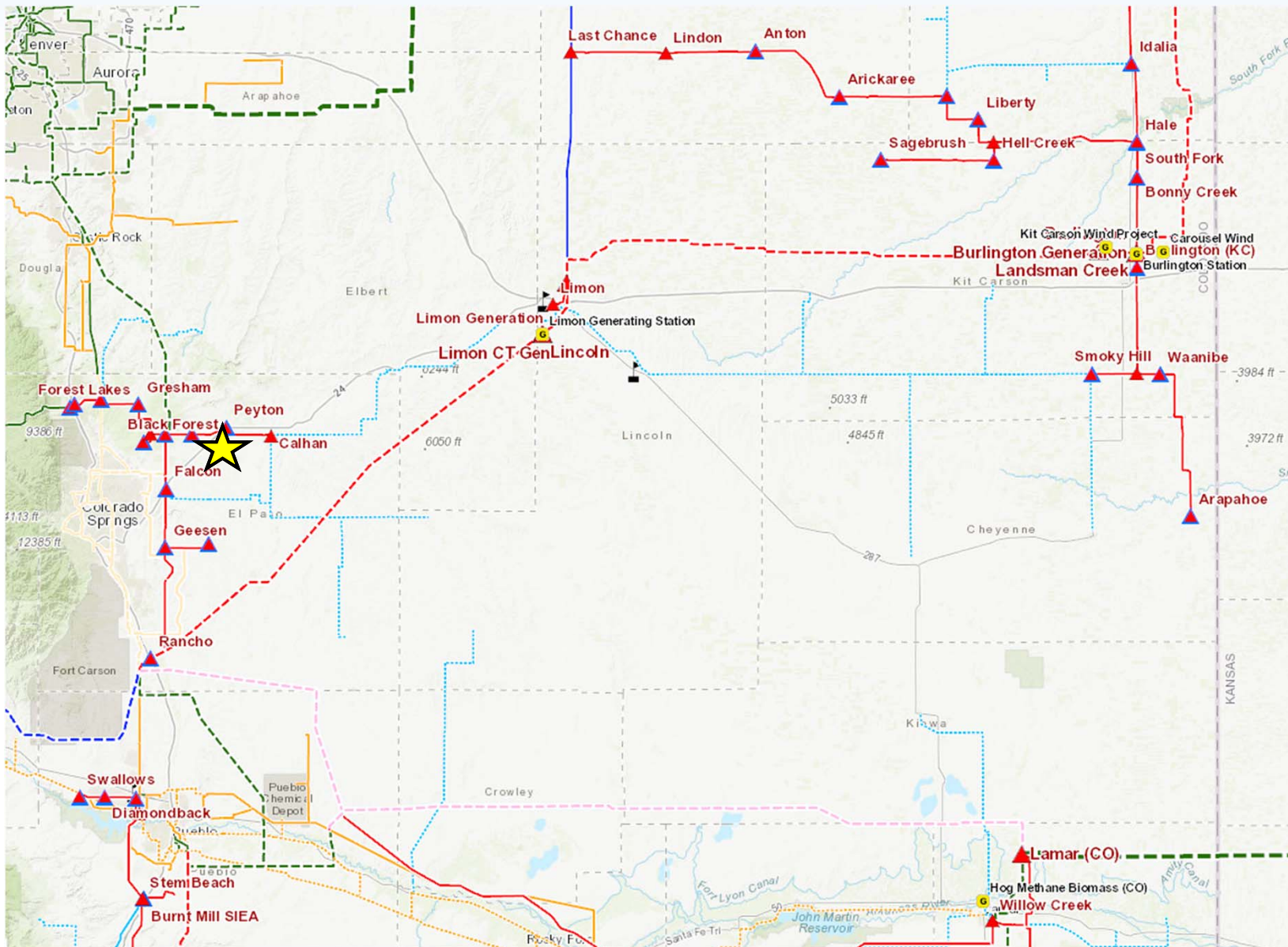


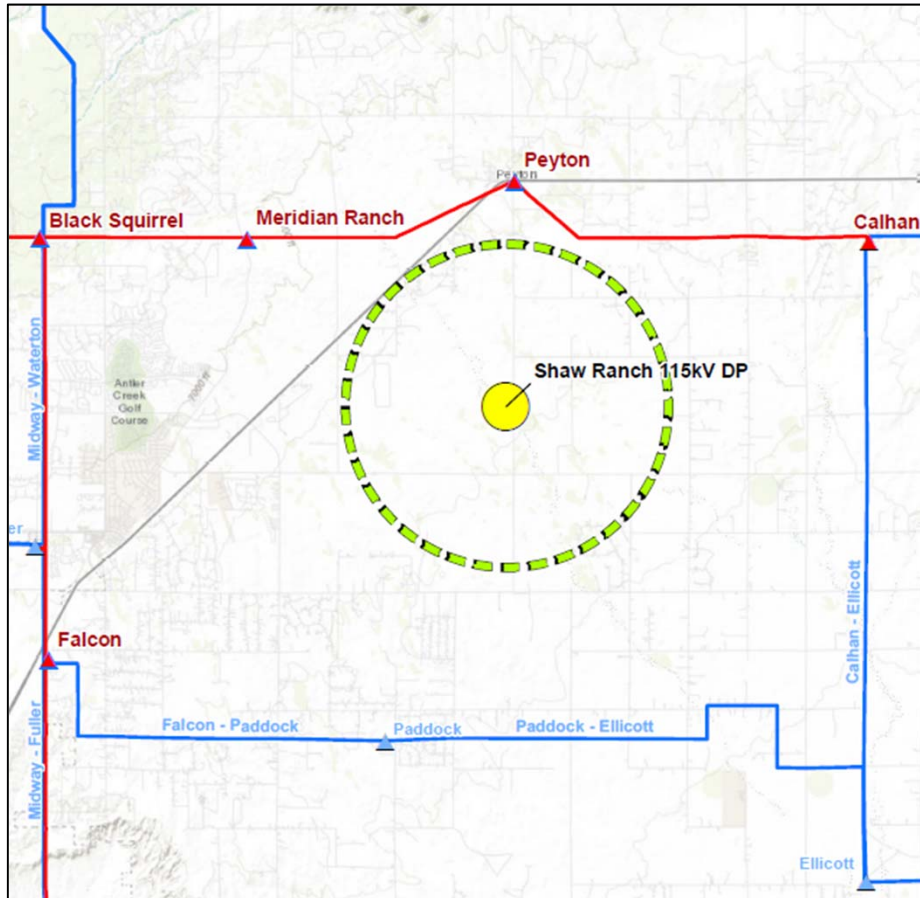
## San Luis Valley – Poncha 230 kV Project

Description:	Construct approximately 60 mile 230 kV transmission line from the San Luis Valley to Poncha 230 kV.
Voltage:	230 kV
Length:	60 miles
Type:	Line.
Status:	Re-development
Planned ISD:	TBD
Purpose:	Reliability.



# Shaw Ranch 115 kV Substation



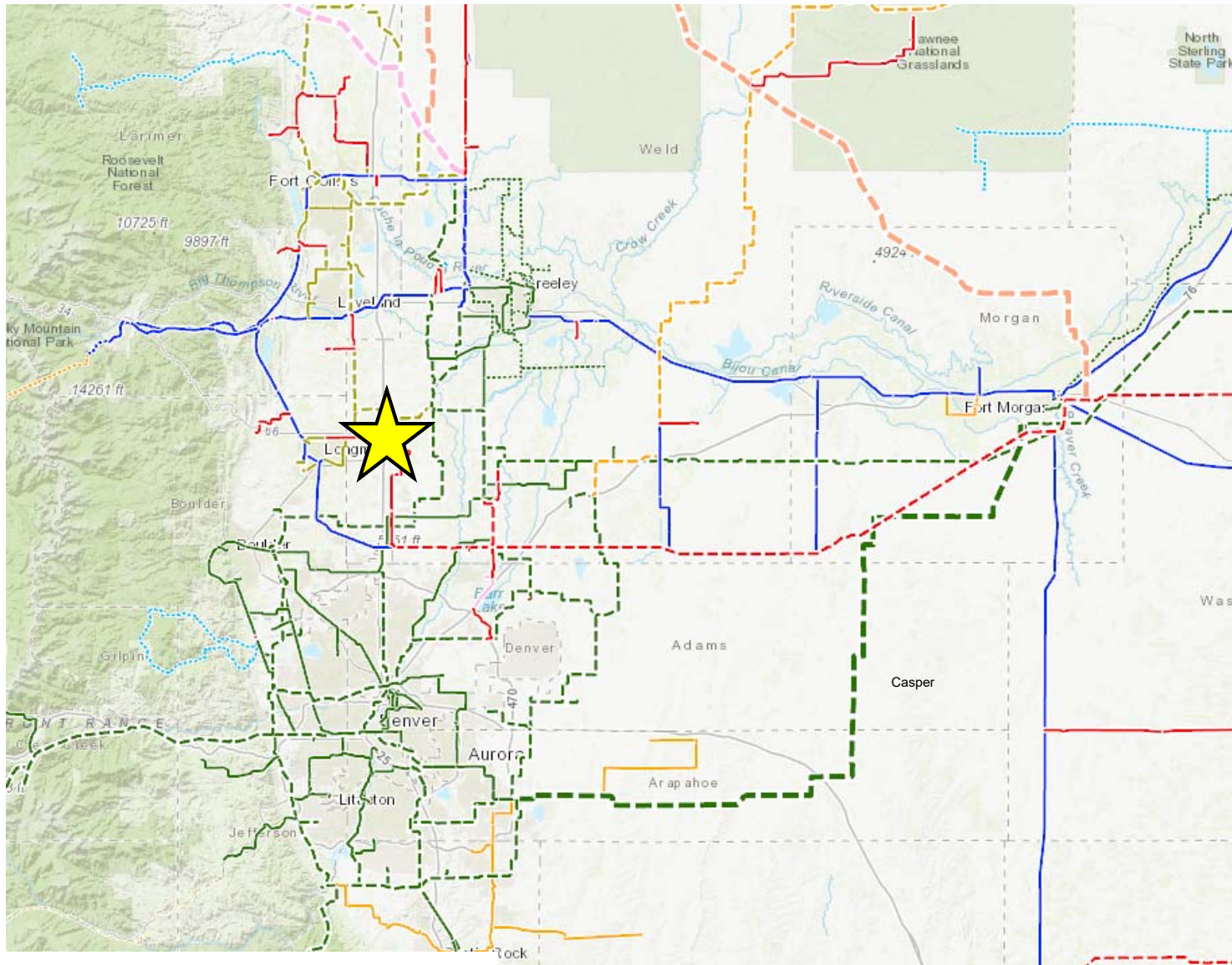


## Shaw Ranch 115 kV Substation

Description:	New 115 kV single circuit line approximately 4 miles on wood H frame structures from the Peyton substation to new Shaw Ranch. Construct new 115 kV Shaw Ranch substation.
Voltage:	115/12.47 kV
Length:	4 miles
Type:	Line and Substation
Status:	Planned
Planned ISD:	2025
Purpose:	Load Serving



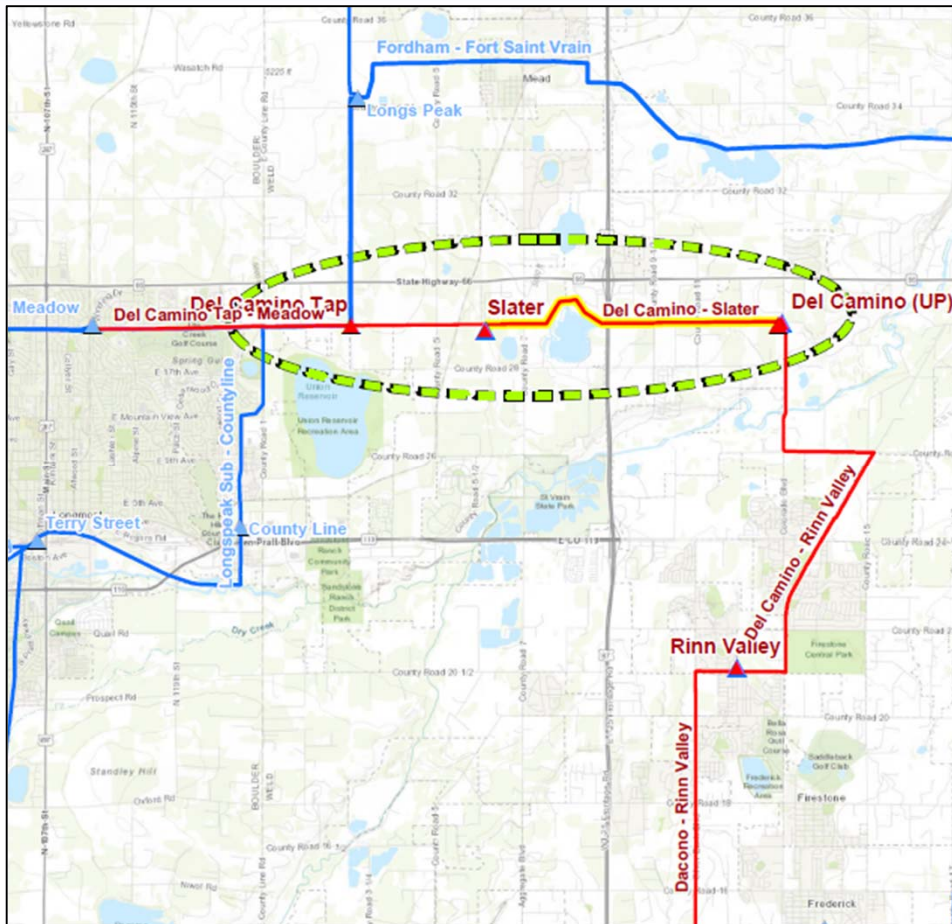
# Slater – Del Camino Line Uprate





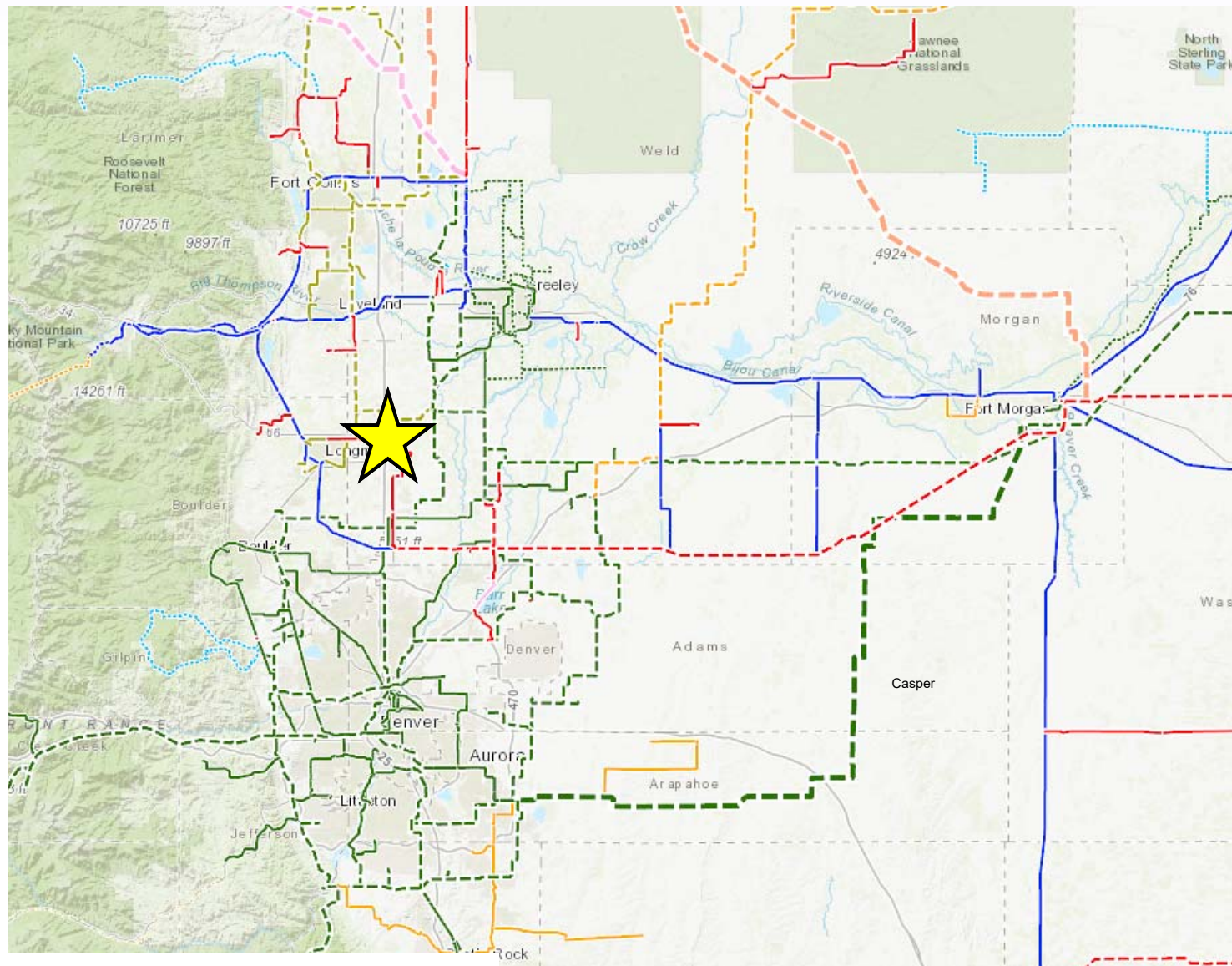
## Slater – Del Camino Line Uprate

Description:	Uprate Slater – Del Camino line to increase capacity by replacing conductor and poles where needed.
Voltage:	115 kV
Length:	2 miles
Type:	Line
Status:	Planned
Planned ISD:	2022
Purpose:	Load Serving





# Slater Double Circuit Conversion

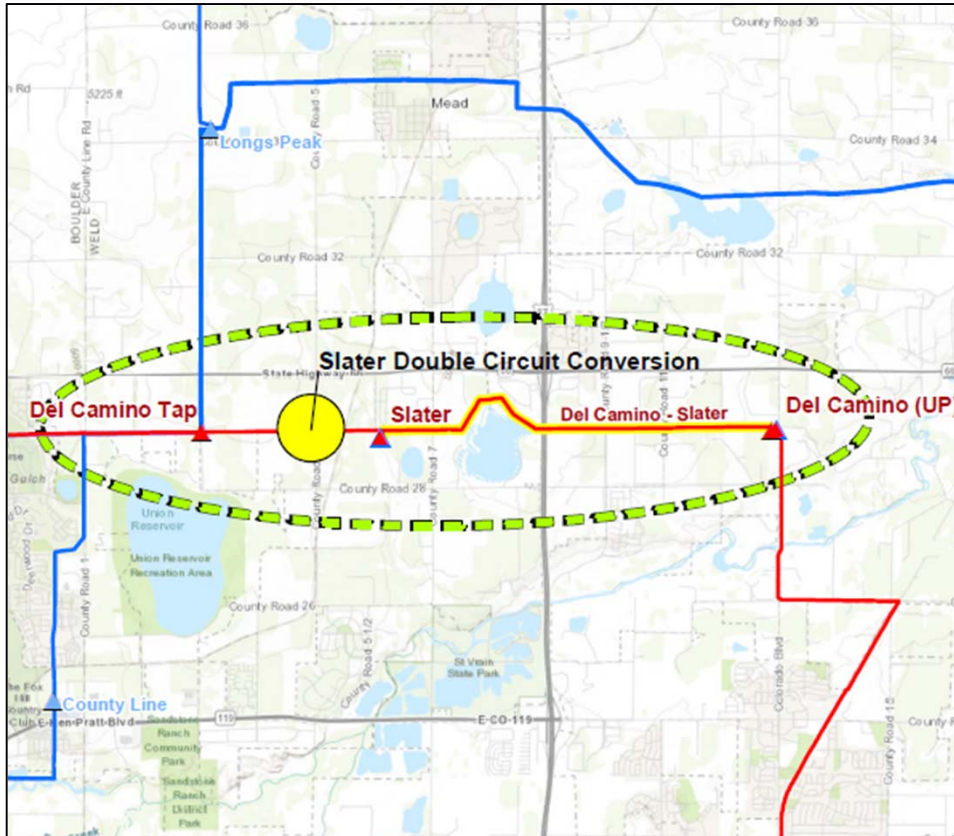




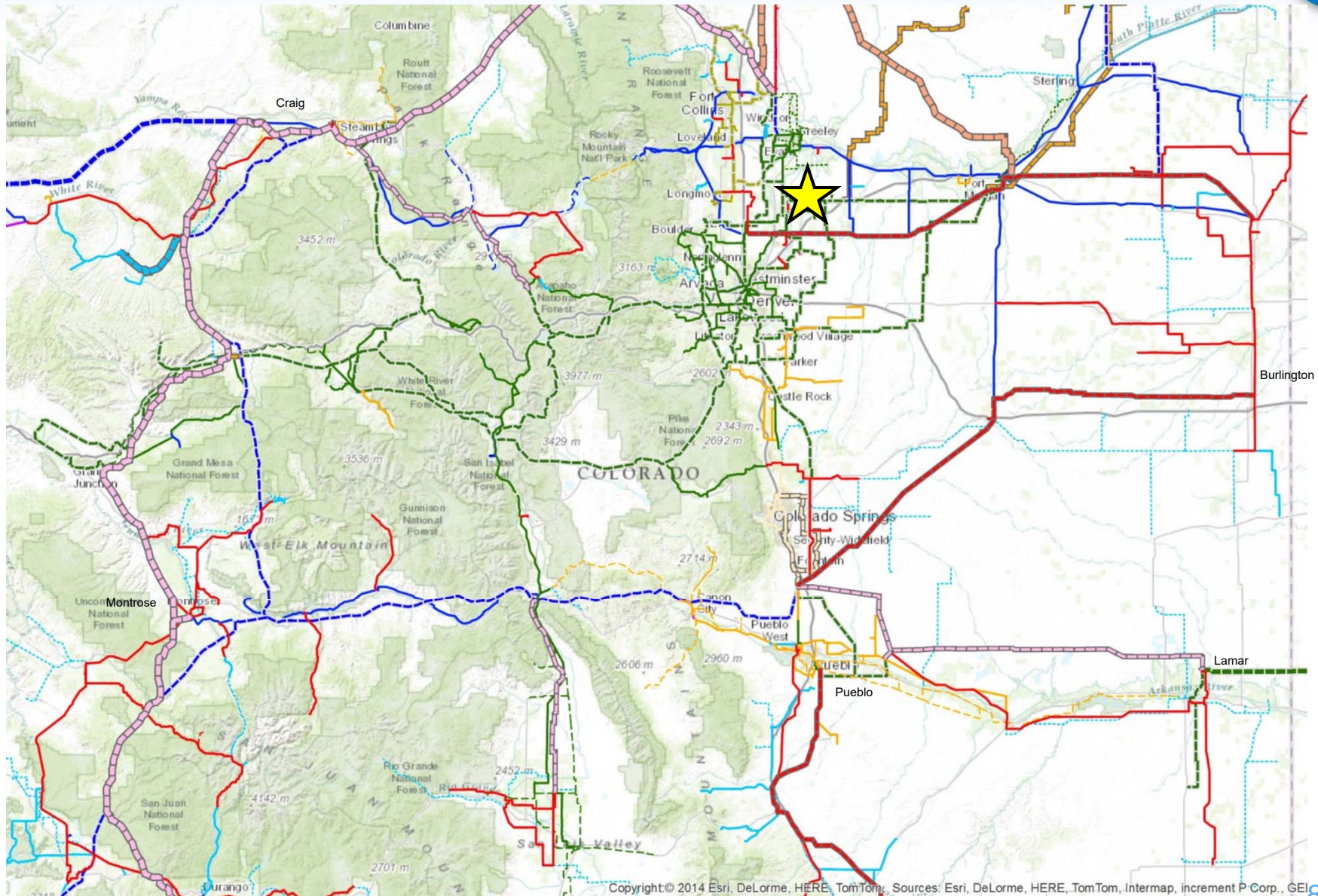


## Slater Double Circuit Conversion

Description:	Rebuild the Del Camino Tap – Slater line as a double circuit. Convert three terminal line to Longs Peak – Slater and Meadow – Slater. Add 115 kV breaker to Slater.
Voltage:	115 kV
Length:	2 miles
Type:	Line
Status:	Planned
Planned ISD:	2024
Purpose:	Load Serving, Reliability



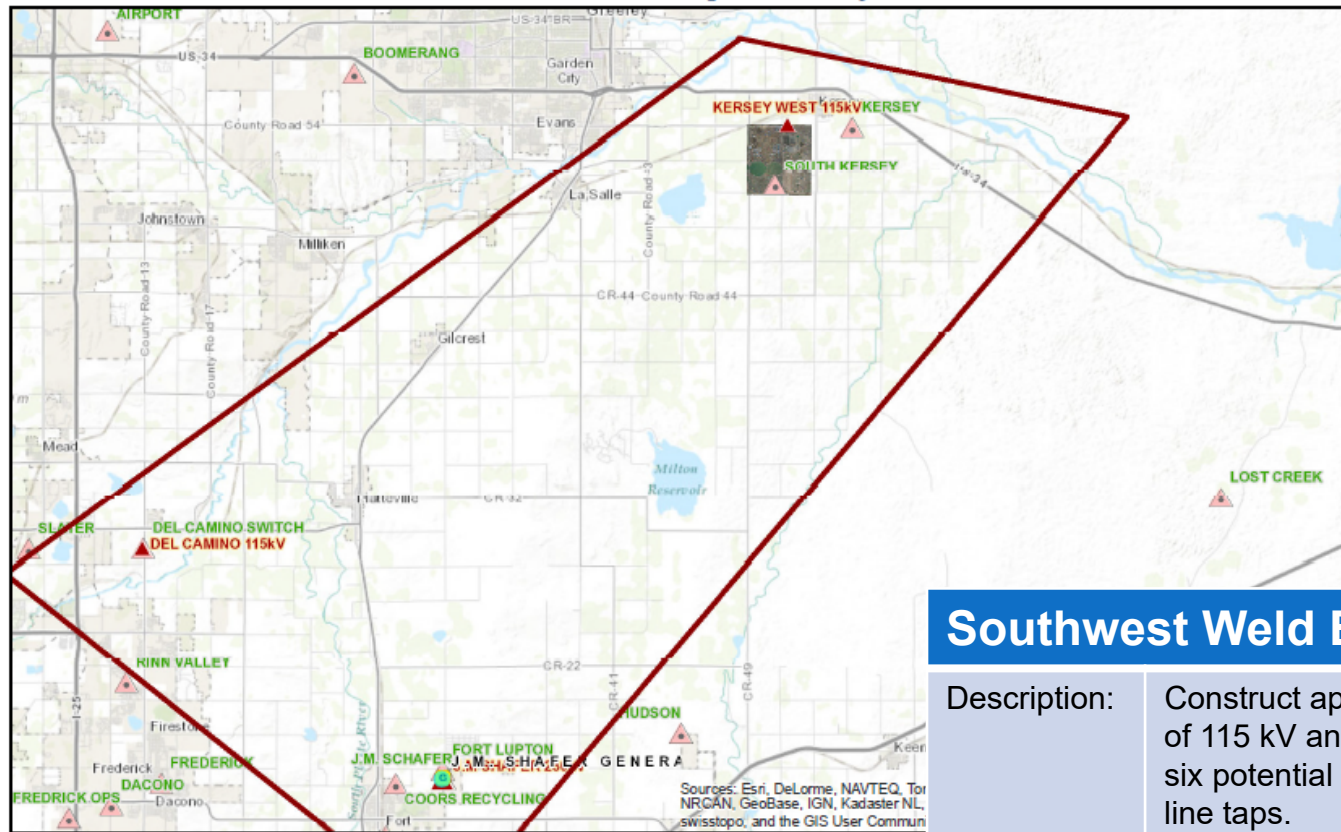
# Southwest Weld Expansion Project







## Southwest Weld Expansion Project



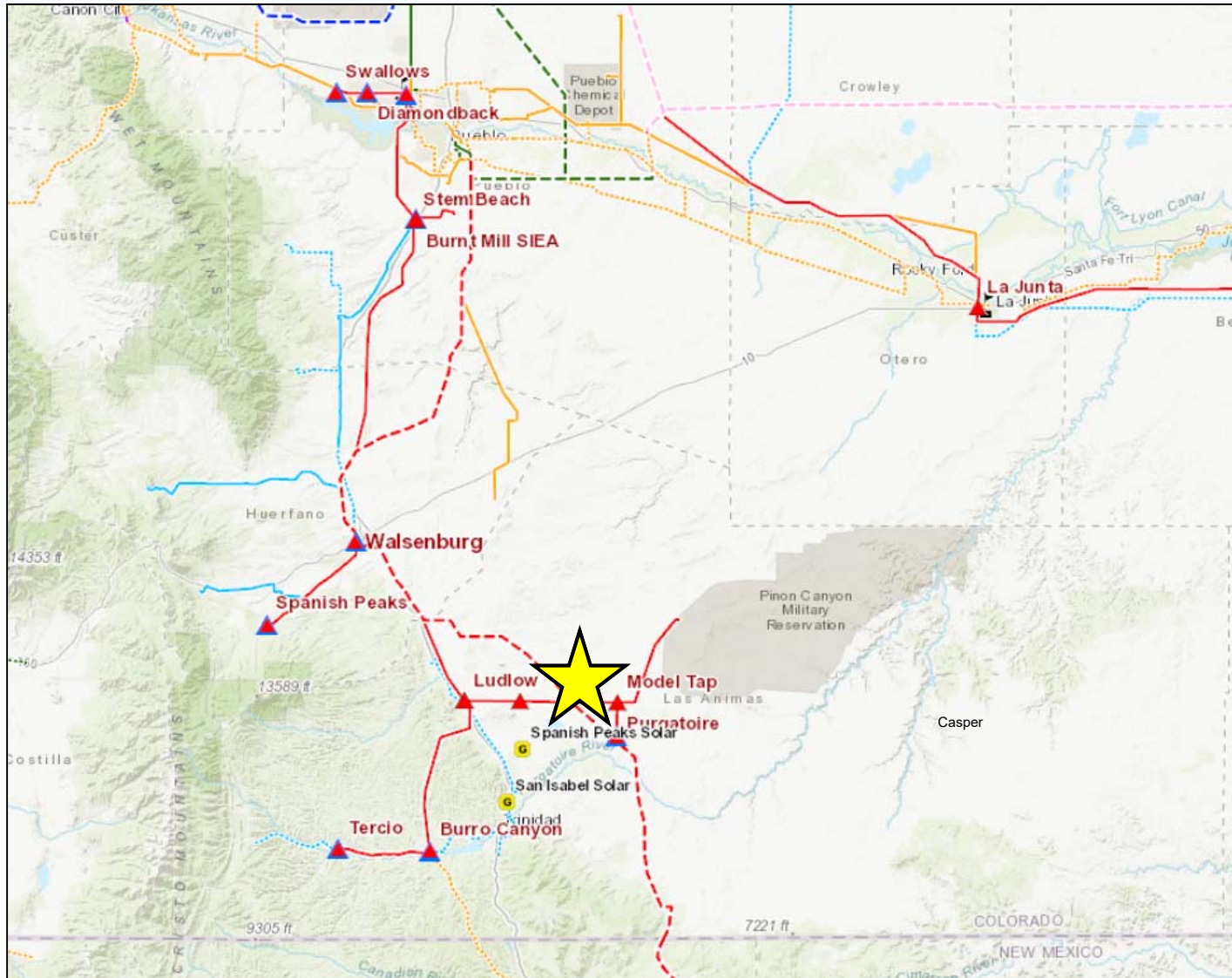
## Southwest Weld Expansion Project

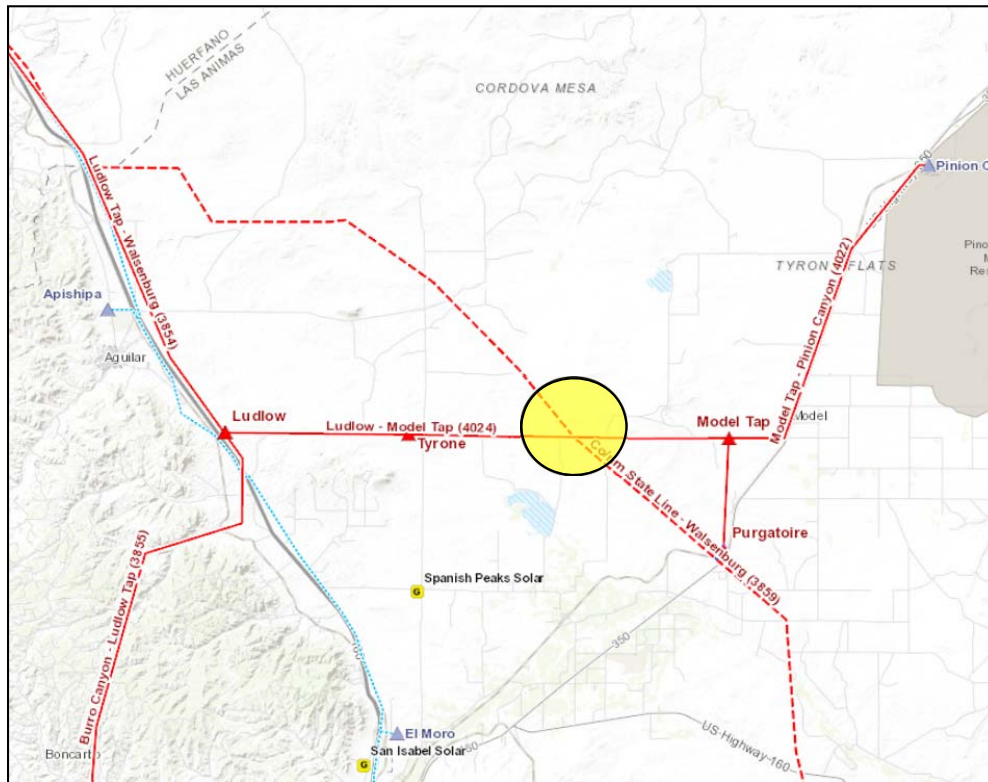
Description:	Construct approximately 49 aggregated miles of 115 kV and 230 kV transmission lines with six potential load-serving substations and/or line taps.
Voltage:	115/230 kV
Length:	49 miles
Type:	Line and Substations
Status:	Energized/Cancelled
Planned ISD:	-
Purpose:	Load Serving

\*JM Shafer – Greenhouse – Henry Lake 230 kV portions are complete. All other elements of the Southwest Weld Expansion Project will be based on evolving needs.



# Spanish Peaks Solar Interconnect

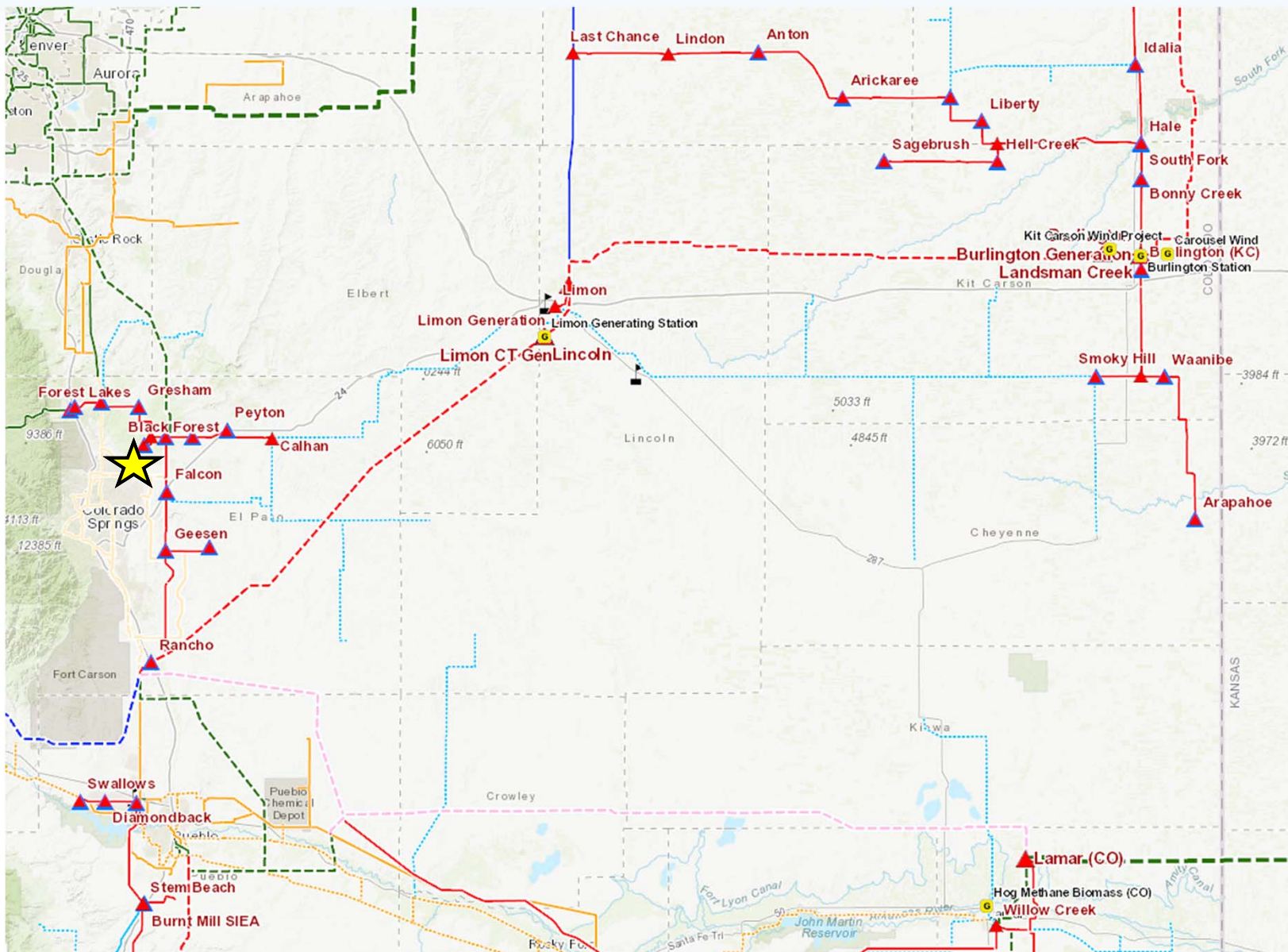




## Spanish Peaks Solar Interconnect

Description:	Construct new 230 kV substation along Walsenburg – Gladstone 230 kV to accommodate Spanish Peaks Solar
Voltage:	230 kV
Location	22 Miles Southeast of Walsenburg
Type:	Substation
Status:	Planned
Planned ISD:	2023
Purpose:	Generation Addition

# Vollmer 115 kV Substation

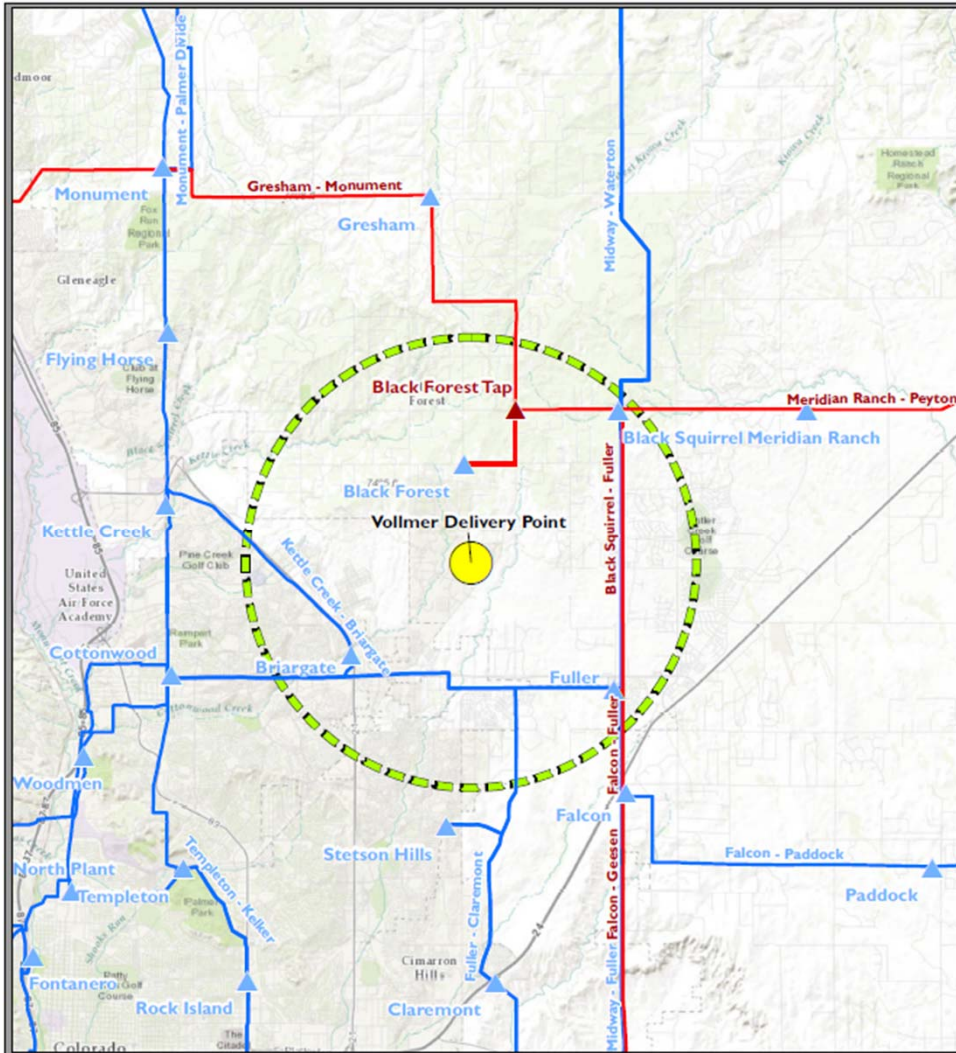




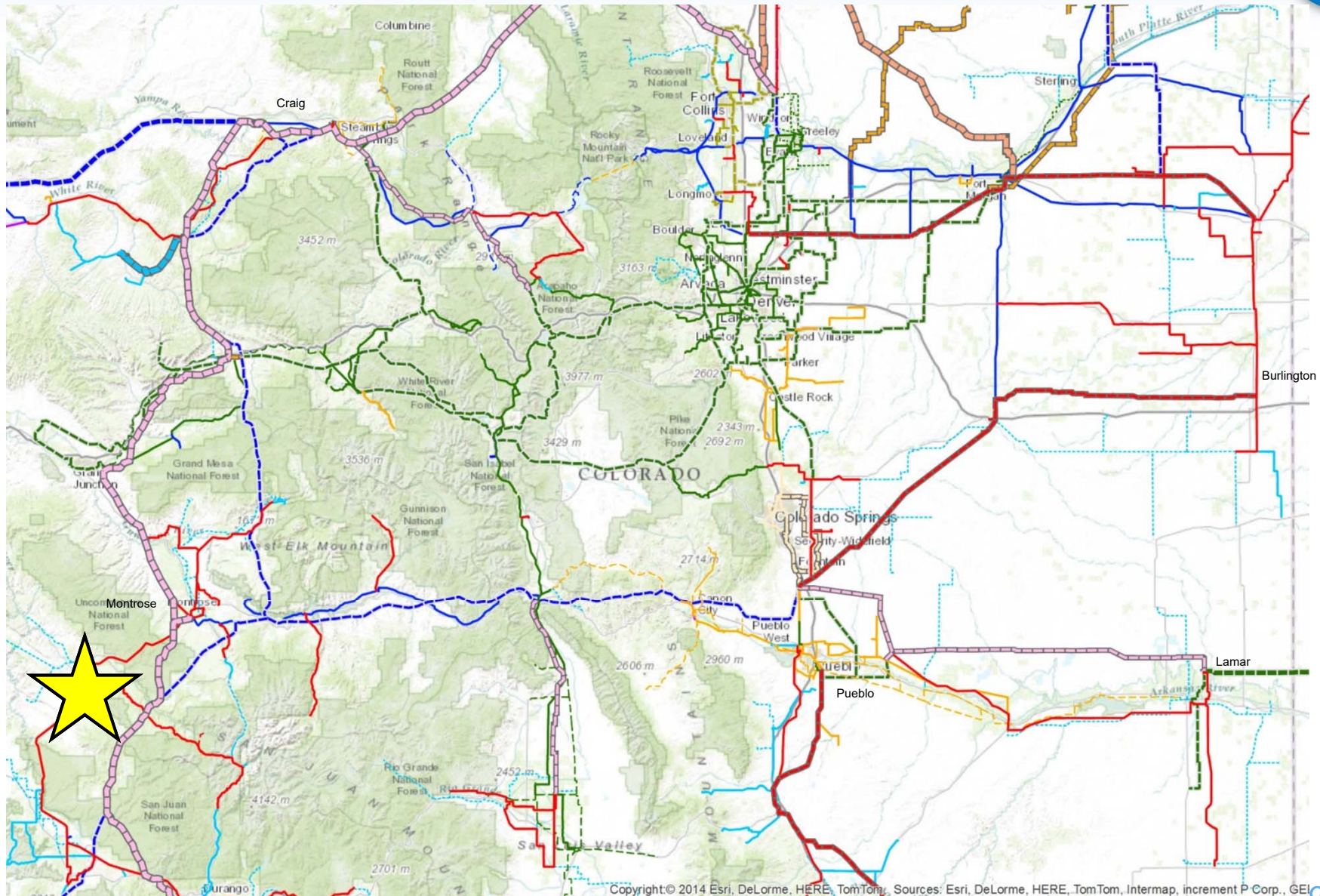


## Vollmer 115 kV Substation

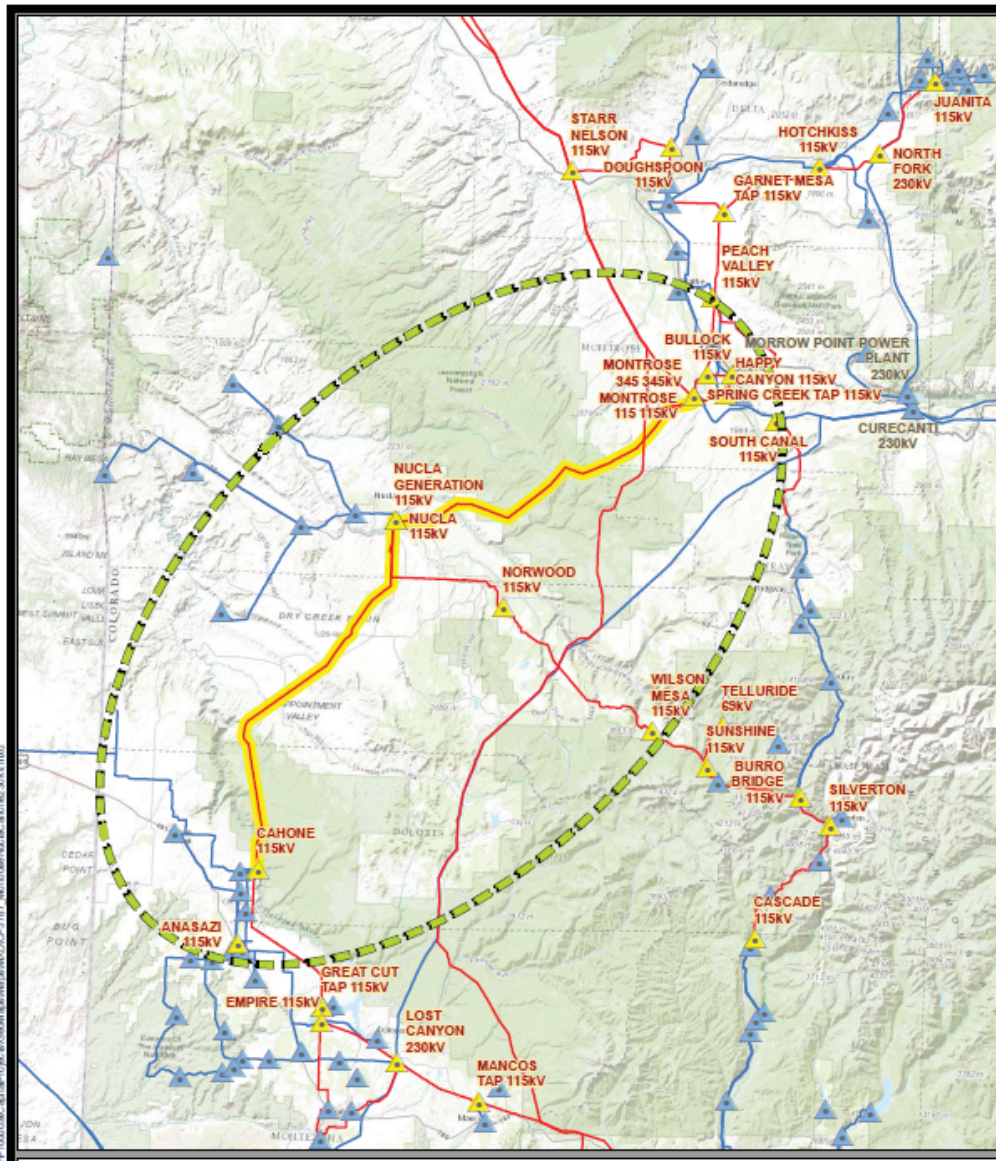
Description:	Extend a new 115 kV single circuit line approximately 2 miles on wood H frame structures from the existing 115 kV Jackson Fuller-Black Squirrel line to Vollmer. Construct new 115 kV Vollmer substation.
Voltage:	115/12.47 kV
Length:	2 miles
Type:	Line and Substation
Status:	Planned
Planned ISD:	2022
Purpose:	Load Serving



# Western Colorado Transmission Upgrade Project





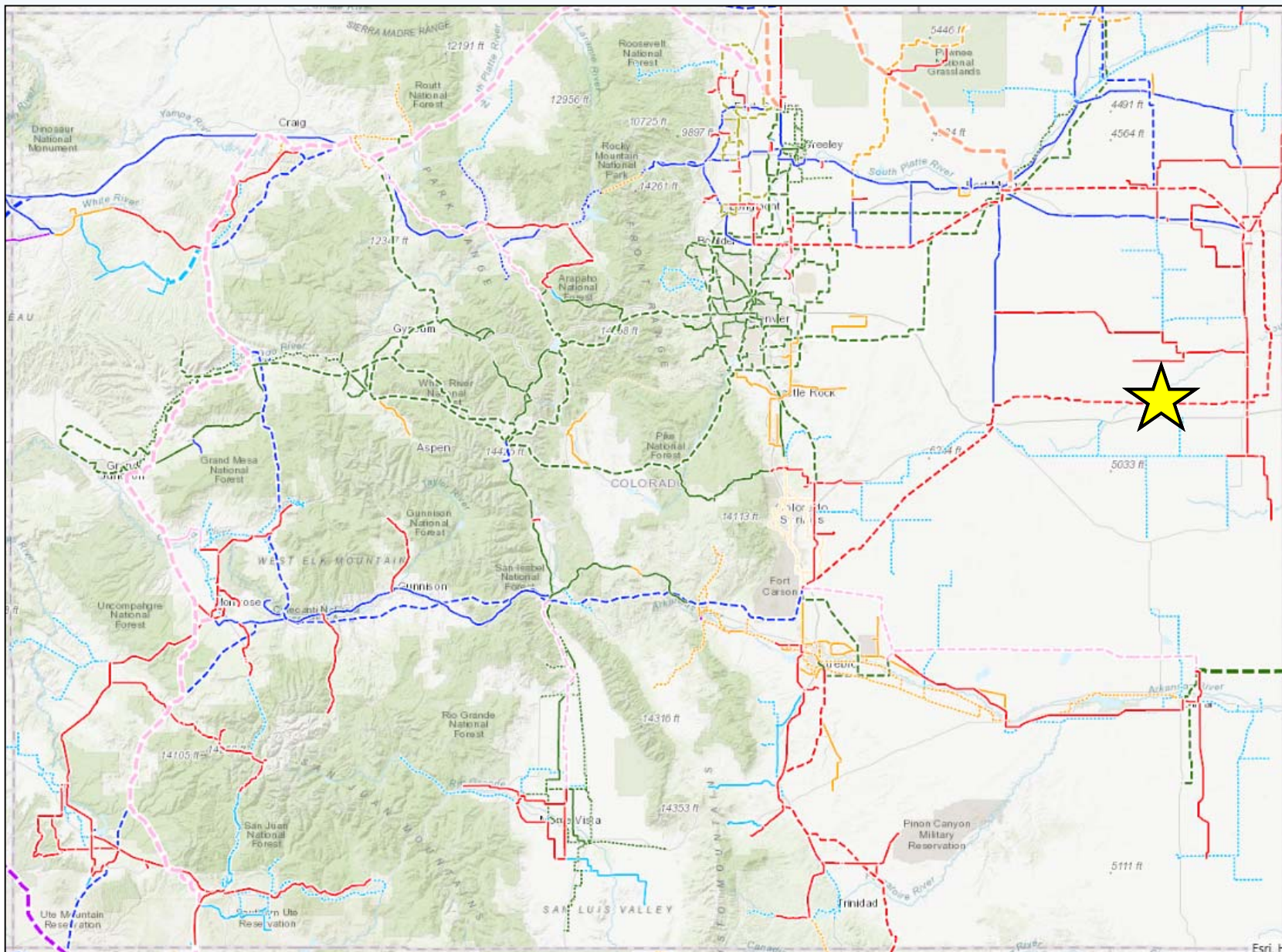


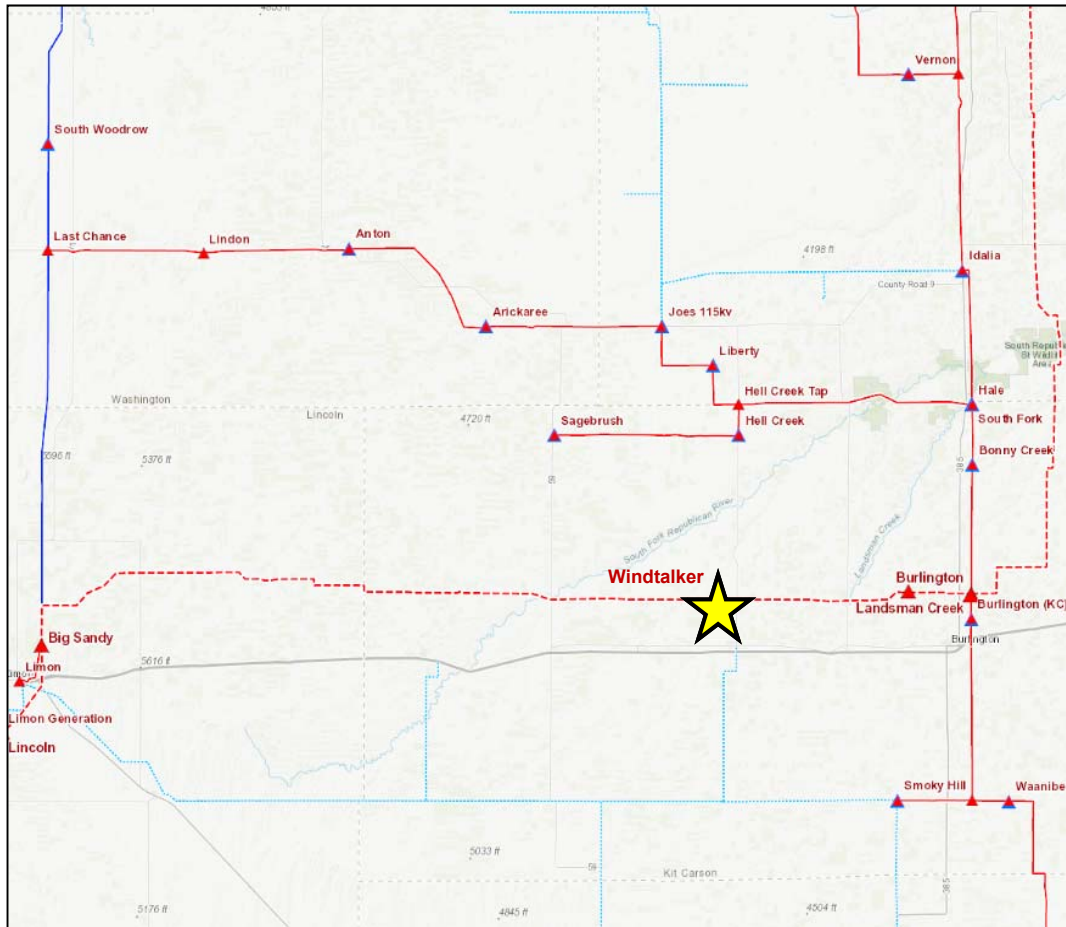
## Western Colorado Transmission Upgrade Project

Description:	Upgrade existing transmission line and facilities from Montrose Substation to Cahone Substation from 115 kV operation to 230 kV.
Voltage:	230 kV
Length:	80 miles
Type:	Line
Status:	Under Construction
Planned ISD:	2020
Purpose:	Reliability – eliminate need for existing Nucla Remedial Action Scheme and replace failing structures. Load serving.



# Windtalker 230kV Switchyard



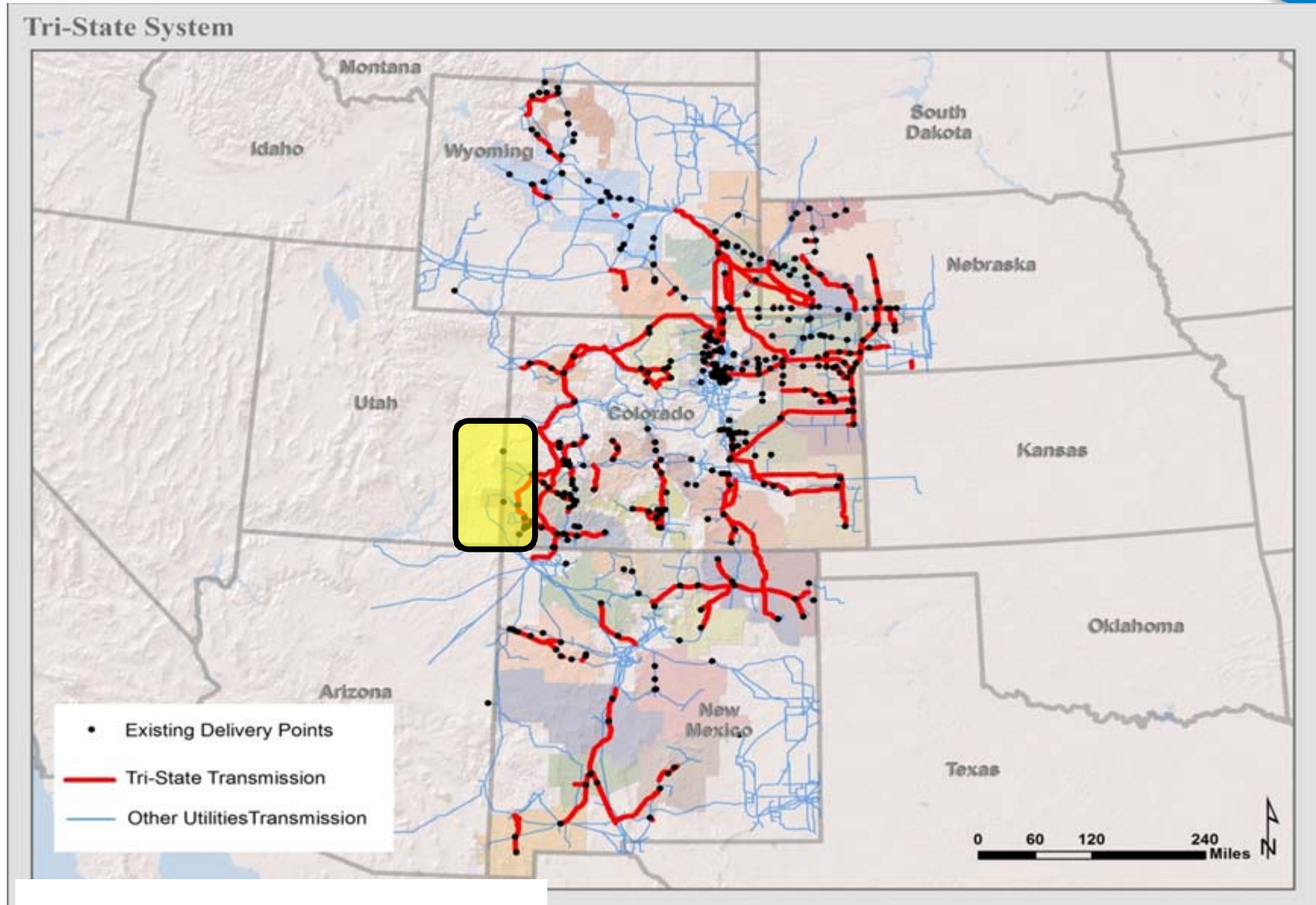


## Windtalker 230kV Switchyard

Description:	Construct a new three breaker ring switchyard along the Big Sandy – Landsman Creek 230kV line to accommodate Crossing Trails Wind
Voltage:	230 kV
Type:	Substation
Status:	Energized
Planned ISD:	2020
Purpose:	Generation Addition

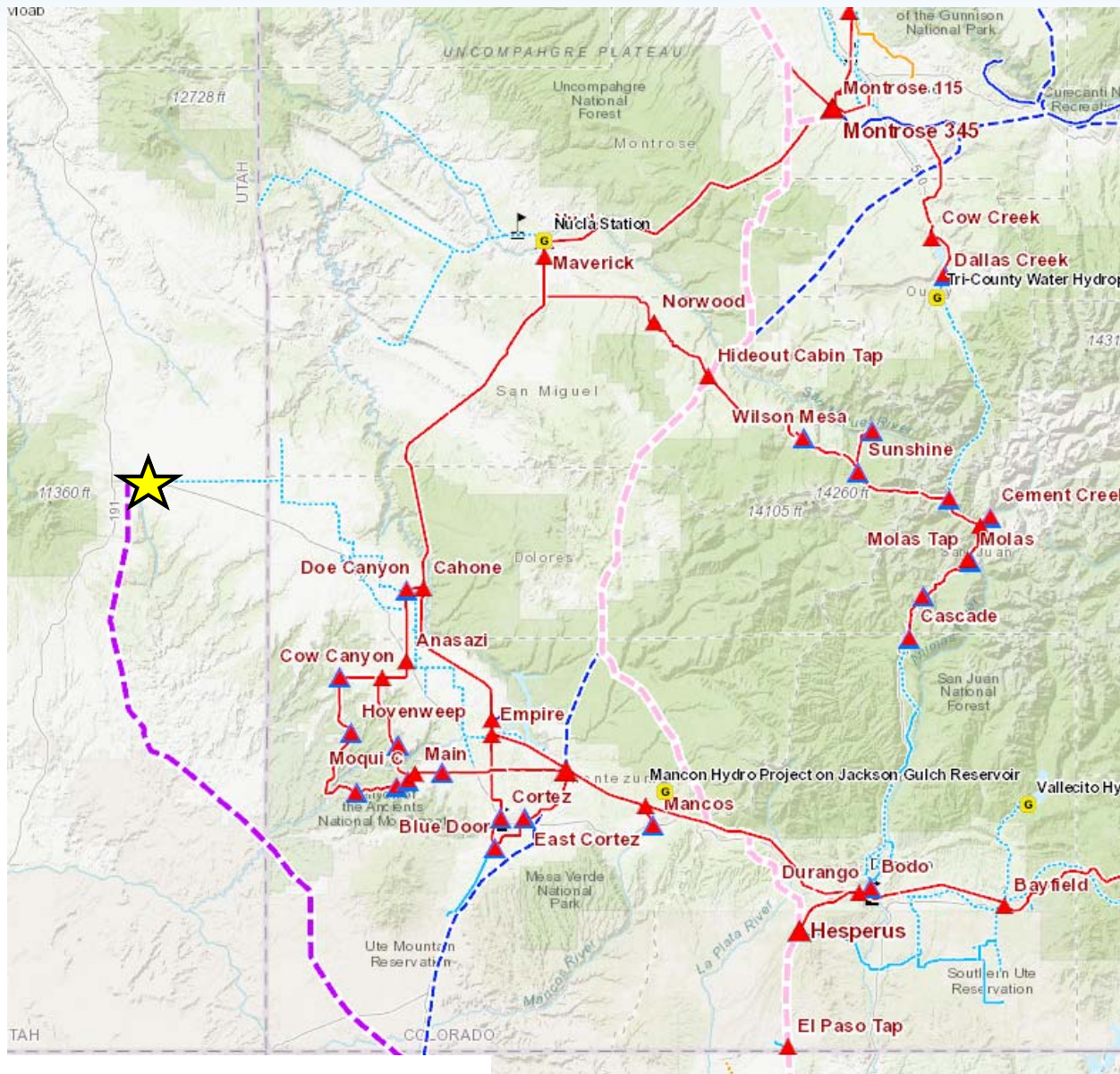


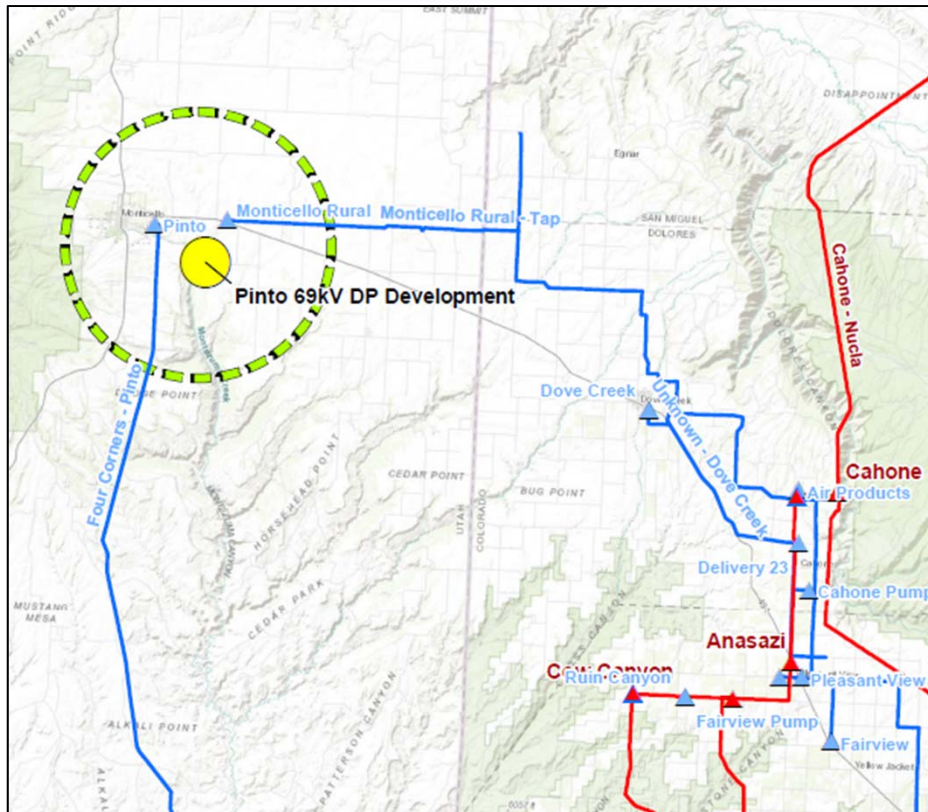
# Projects: Utah (1)





# Pinto 69 kV DP



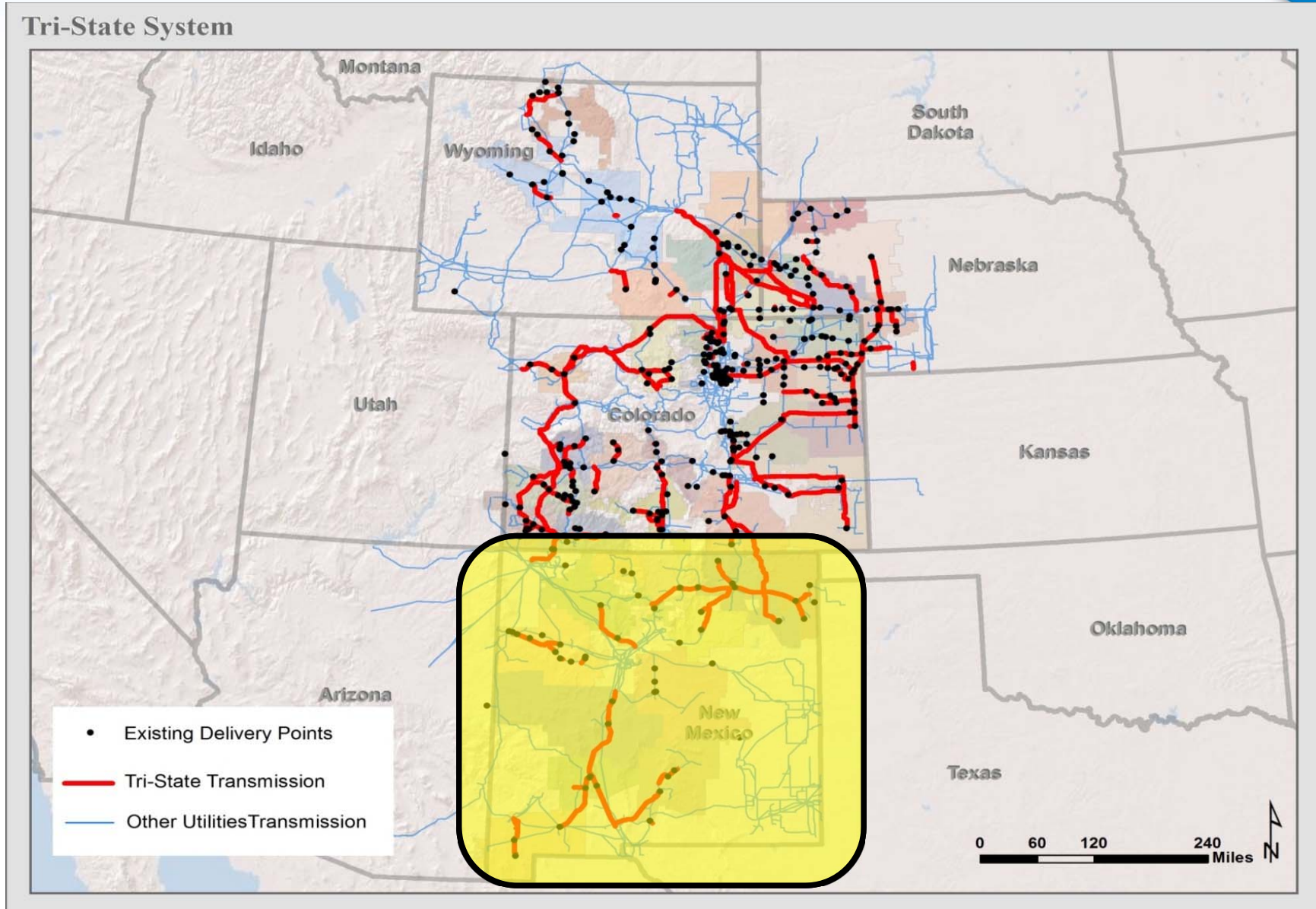


## Pinto 69 kV DP

Description:	Add 69 kV line bay and delivery point to PacifiCorp's Pinto Substation
Voltage:	69 kV
Length:	0 miles
Type:	Substation
Status:	Planned
Planned ISD:	2022
Purpose:	Reliability

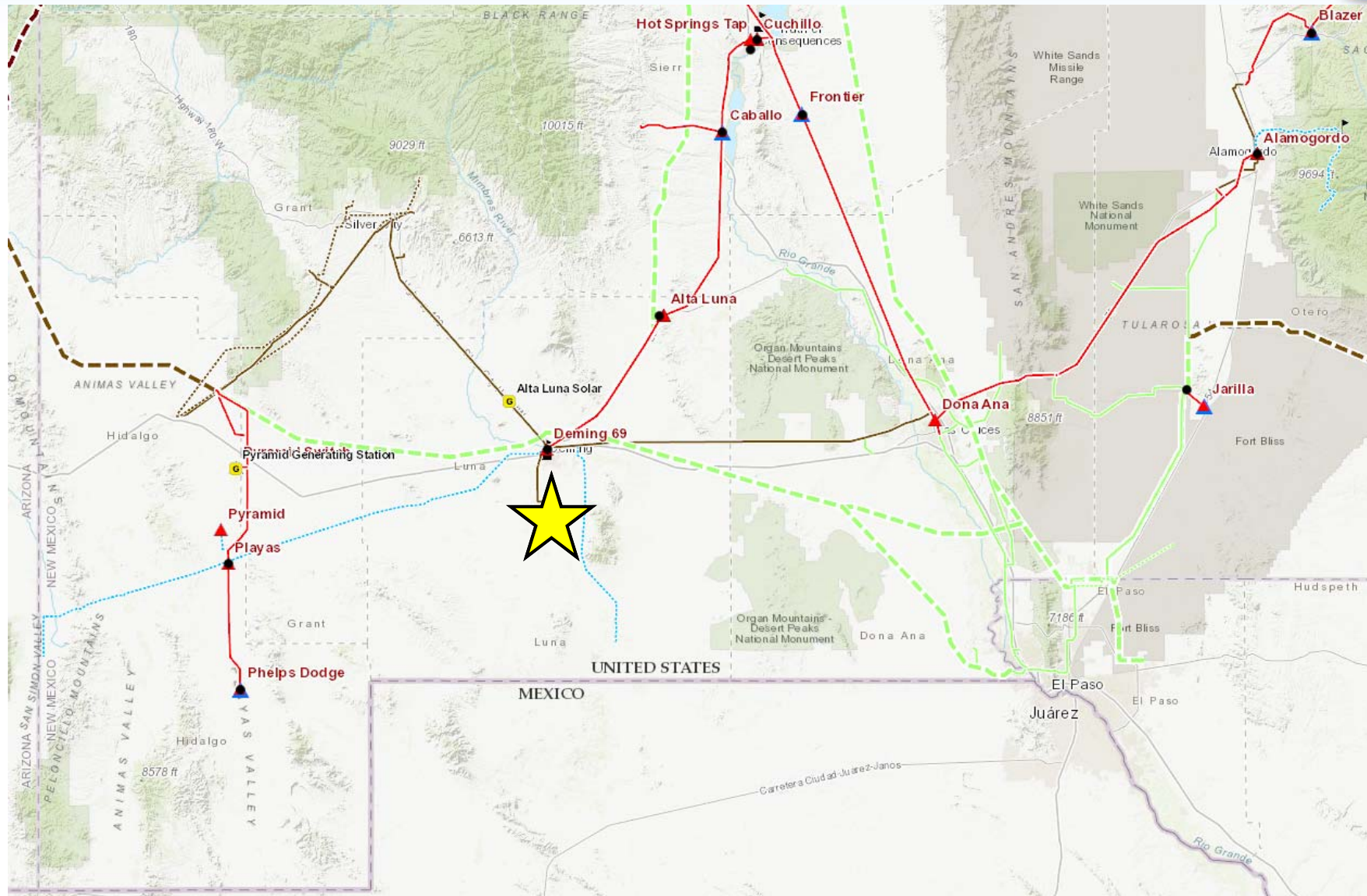


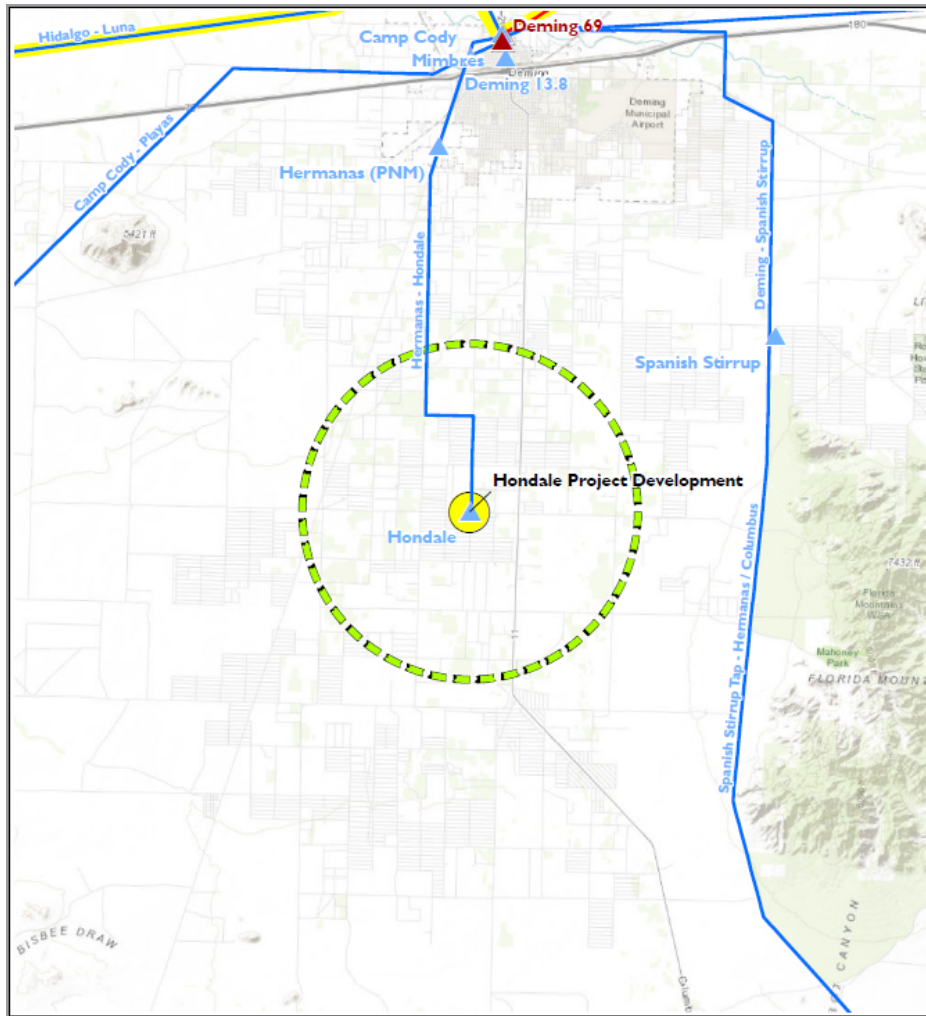
# Projects: New Mexico (4)





# Hondale Delivery Point Project



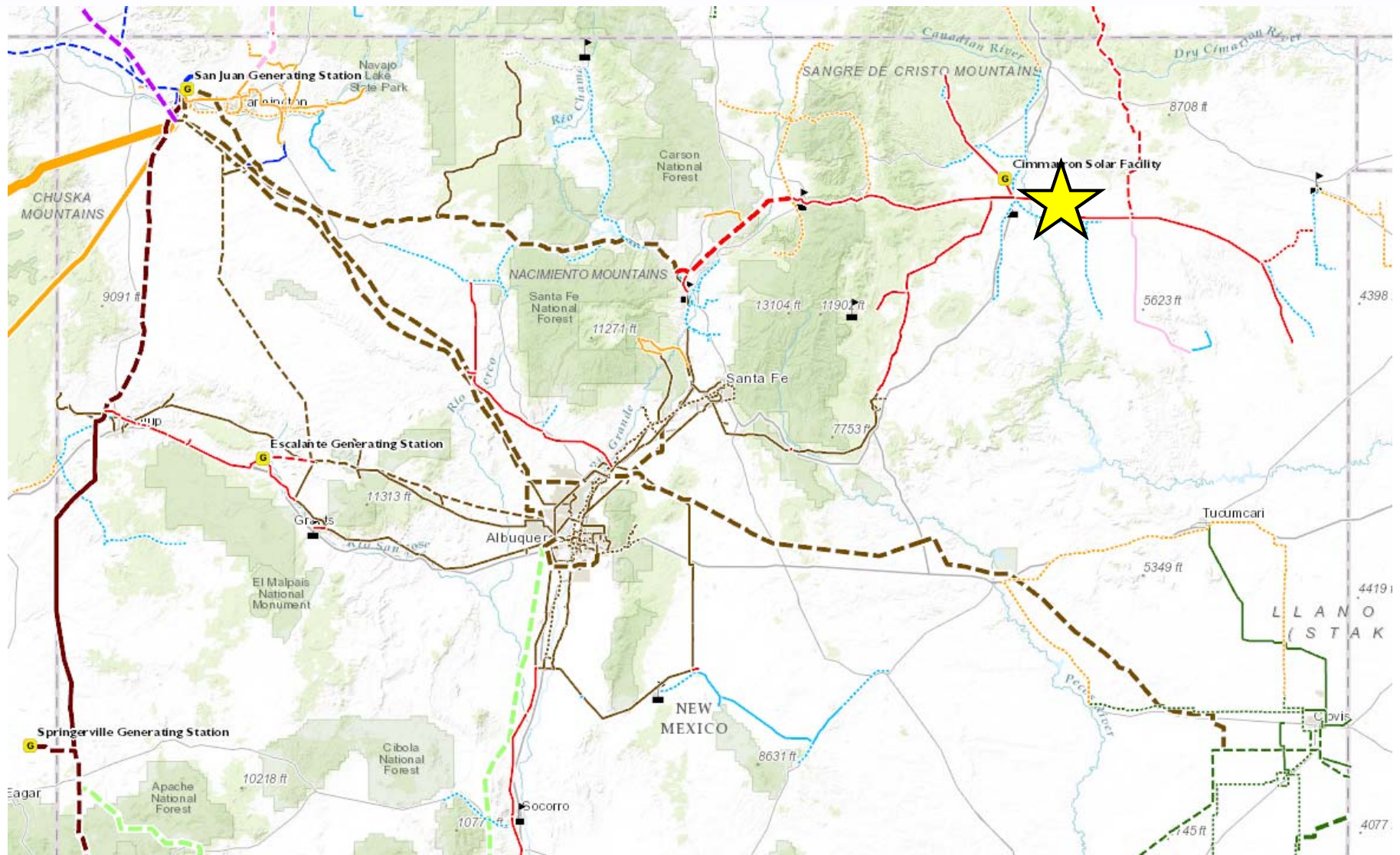


## Hondale Delivery Point Project

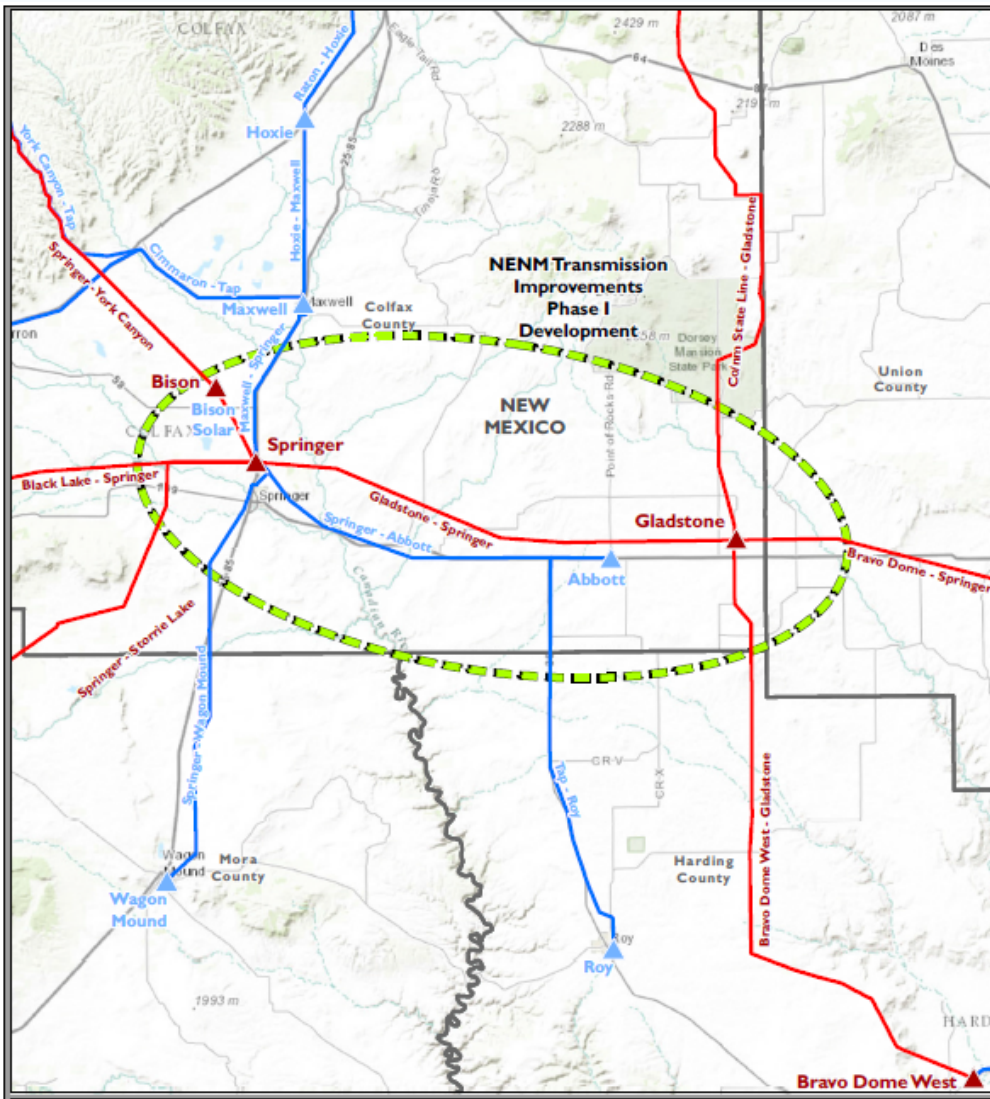
Description:	A new Delivery Point (DP) substation to serve growing Member load south of Deming, New Mexico. The new DP will tap PNM's Mimbres – Hondale 115 kV line near PNM's Hondale substation, and include a 115-69 kV, 25 MVA transformer, high side circuit switcher, 115 kV and 69 kV switches and associated equipment.
Voltage:	115 kV
Length:	0 miles
Type:	Substation
Status:	Cancelled
Planned ISD:	-
Purpose:	Load Serving



# NENM Transmission Improvements Phase I



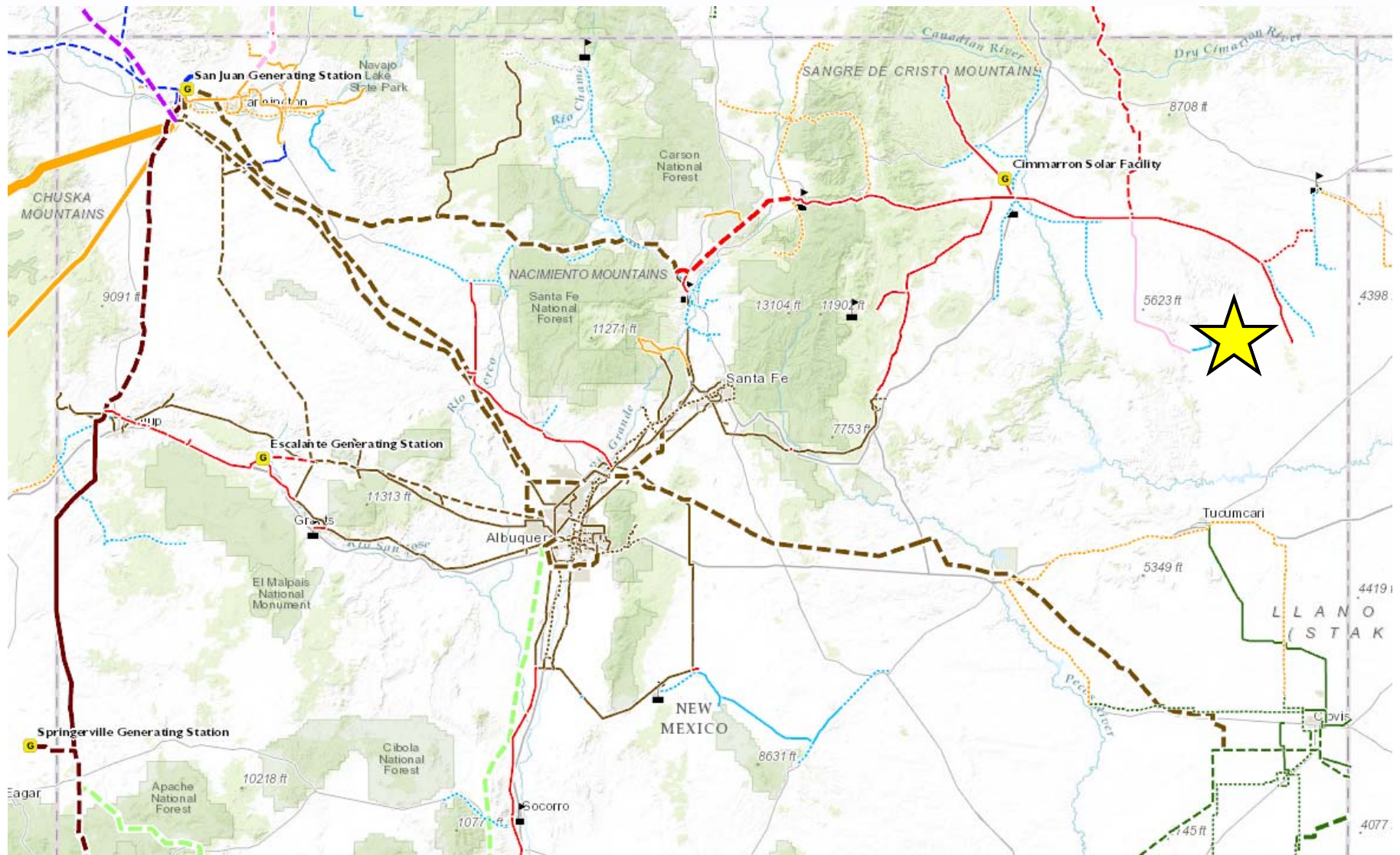




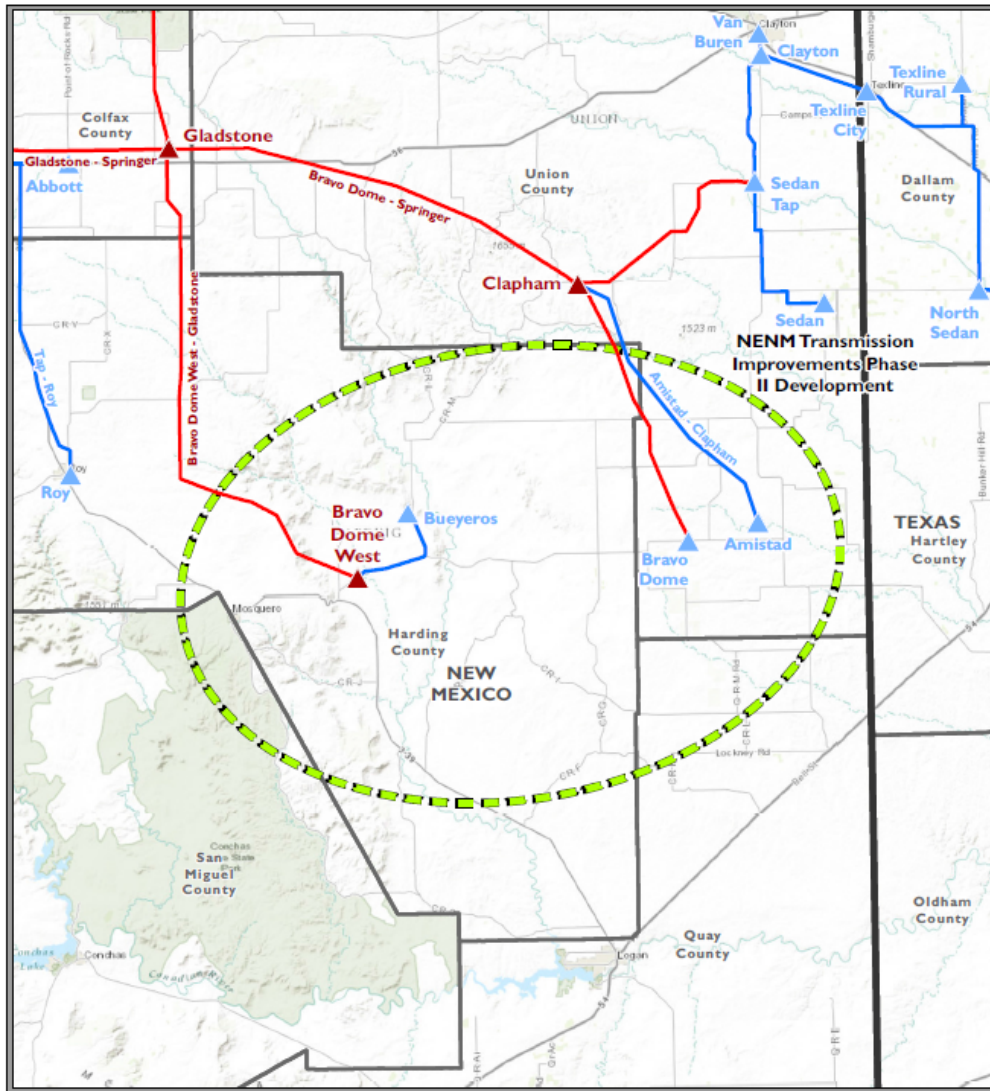
## NEM Transmission Improvements Phase I

Description:	Construct a second 115kV line from the existing Springer Substation to the existing Gladstone Substation.
Voltage:	115 kV
Length:	32 miles
Type:	Line
Status:	Conceptual
Planned ISD:	2026
Purpose:	Reliability; Load Serving.

# NENM Transmission Improvements Phase II





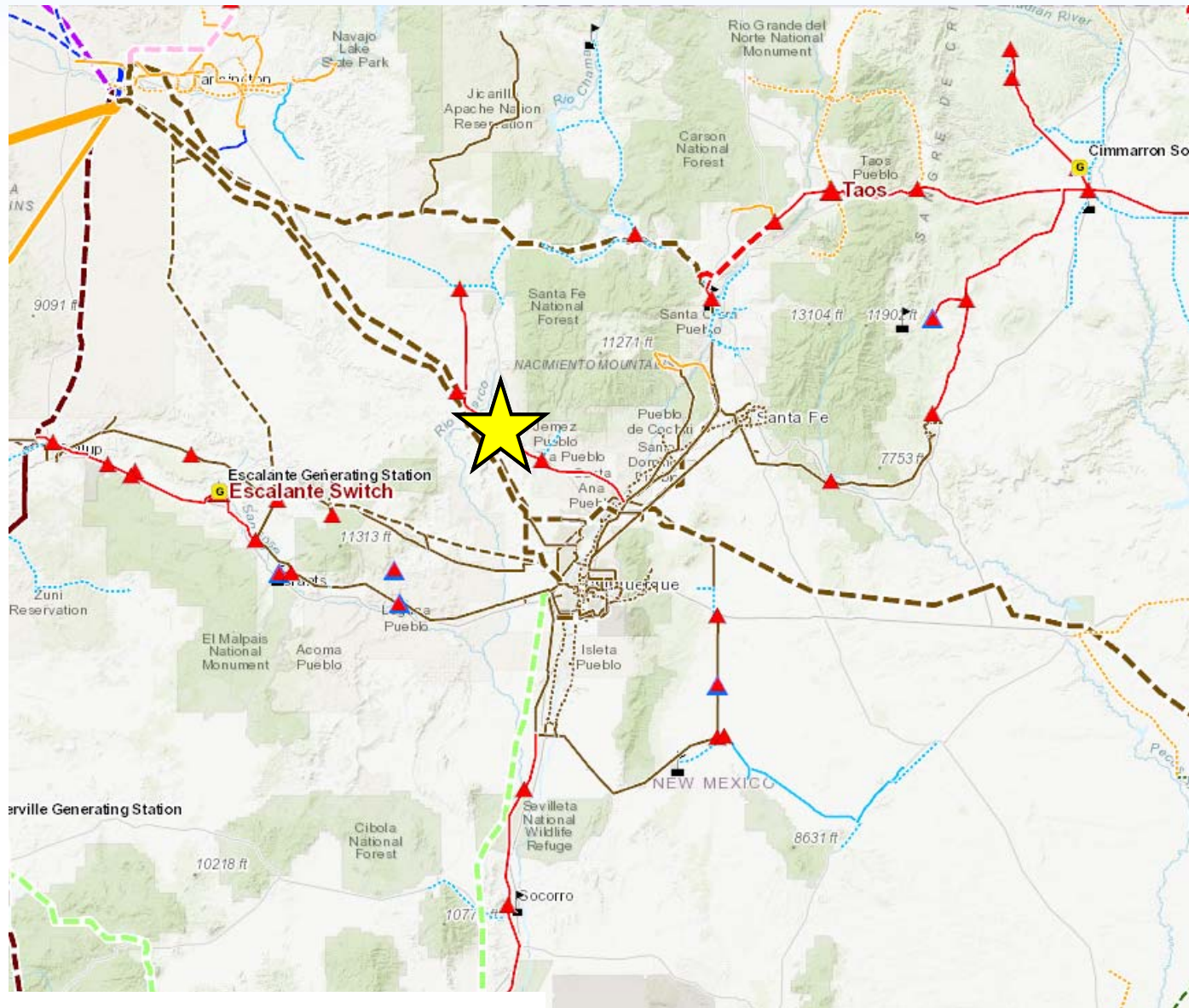


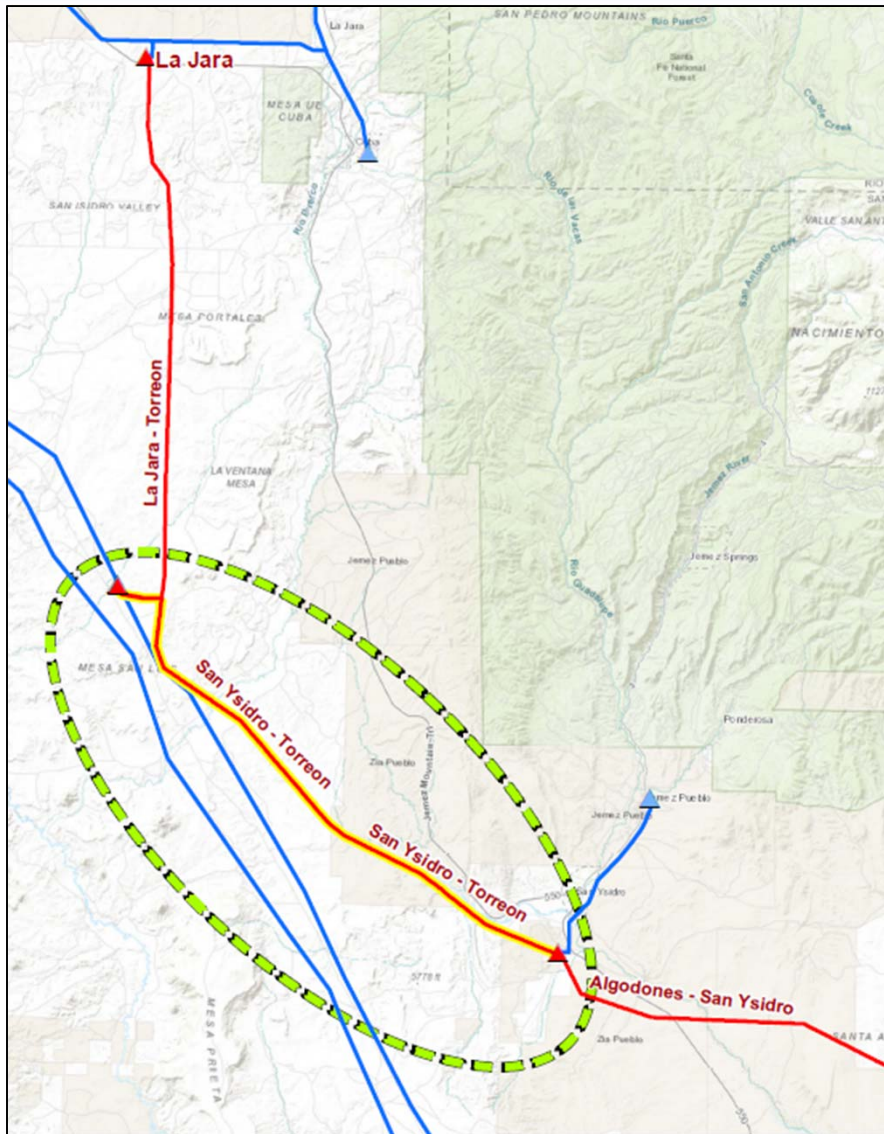
## NEMM Transmission Improvements Phase II

Description:	Sectionalize Gladstone – Bravo Dome West (Hess) at the new Antelope Springs Substation; Sectionalize Clapham – Bravo Dome 115kV at the new Mosquero Substation; Construct a new 115kV line from the planned Antelope Springs Substation to the planned Mosquero Substation; Convert Gladstone – Antelope Springs 115kV to 230kV.
Voltage:	115 kV
Length:	29 miles
Type:	Line
Status:	Conceptual
Planned ISD:	2026
Purpose:	Reliability; Load Serving.



# San Ysidro – Torreon 115 kV to 69 kV





## San Ysidro – Torreon 115 kV to 69 kV

Description:	Convert Torreon – San Ysidro line from 115 kV to 69 kV.
Voltage:	115 kV and 69 kV
Length:	24 miles
Type:	Substation and Line
Status:	Planned
Planned ISD:	2022
Purpose:	Load Serving



For more information

**Tri-State webpage:**

**[www.tristategt.org](http://www.tristategt.org)**

**click “*Operations*”**

**then see “*Transmission Planning*”**

**Tri-State Email:**

**[transmissionplanning@tristategt.org](mailto:transmissionplanning@tristategt.org)**

**CCPG Comment Form (for Colorado projects):**

**[http://regplanning.westconnect.com/ccpg\\_stakeholder\\_opportunities.htm](http://regplanning.westconnect.com/ccpg_stakeholder_opportunities.htm)**

**CCPG Lamar Front Range Task Force:**

**[http://regplanning.westconnect.com/ccpg\\_lamar\\_tf.htm](http://regplanning.westconnect.com/ccpg_lamar_tf.htm)**





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