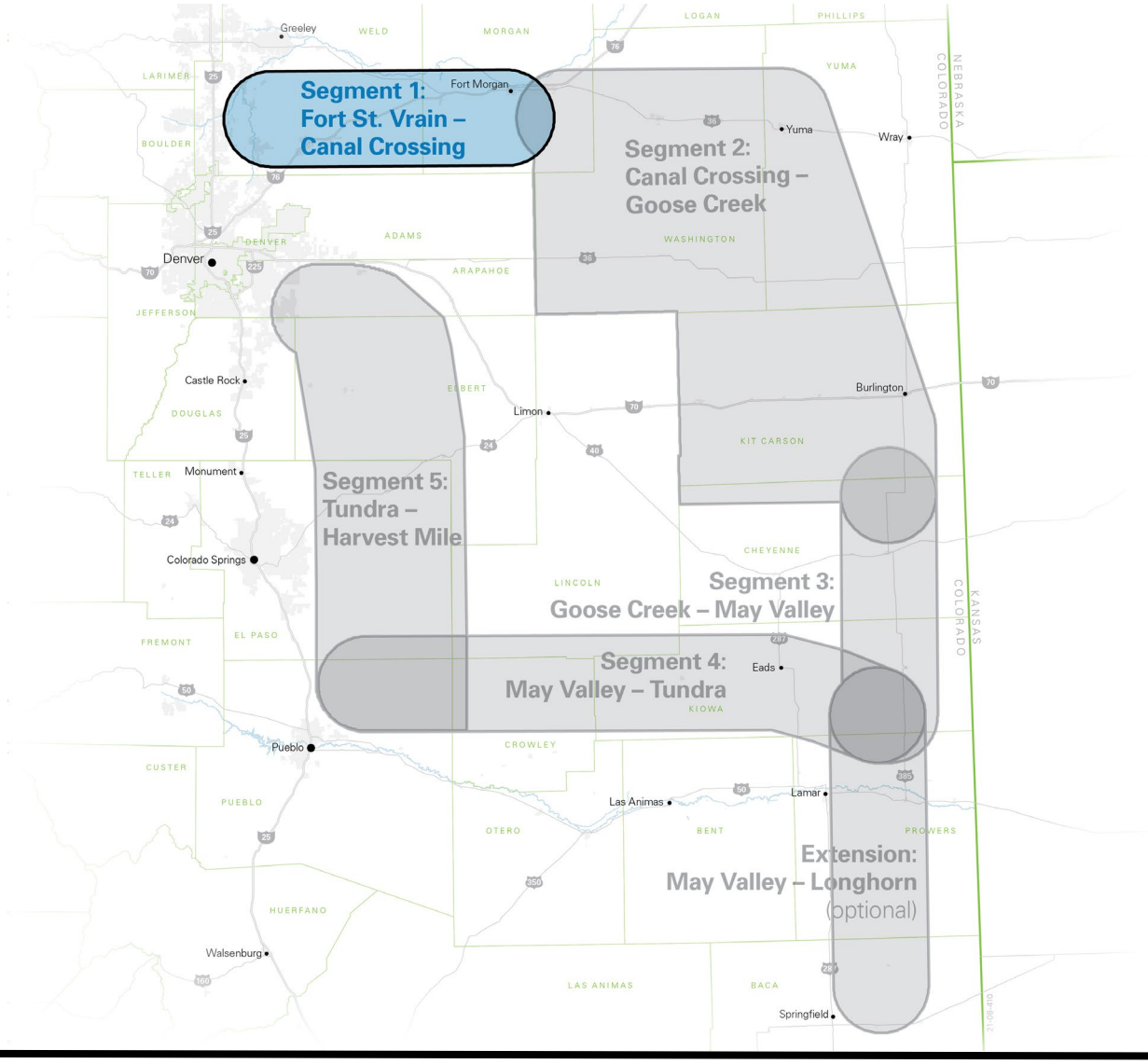
Colorado's Power Pathway

Routing and Siting Study

Segment 1: Fort St. Vrain – Canal Crossing



TETRA TECH

June 2022

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
CHAT	Crucial Habitat Assessment Tool
CPCN	Certificate of Public Convenience and Necessity
CPUC	Colorado Public Utilities Commission
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
I-76	Interstate 76
kV	kilovolt
LPC	Lesser Prairie-Chicken
Pathway	Colorado's Power Pathway
PTC	Production Tax Credit
ROW	Right-of-way
SWA	State Wildlife Area

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1.0 Introduction

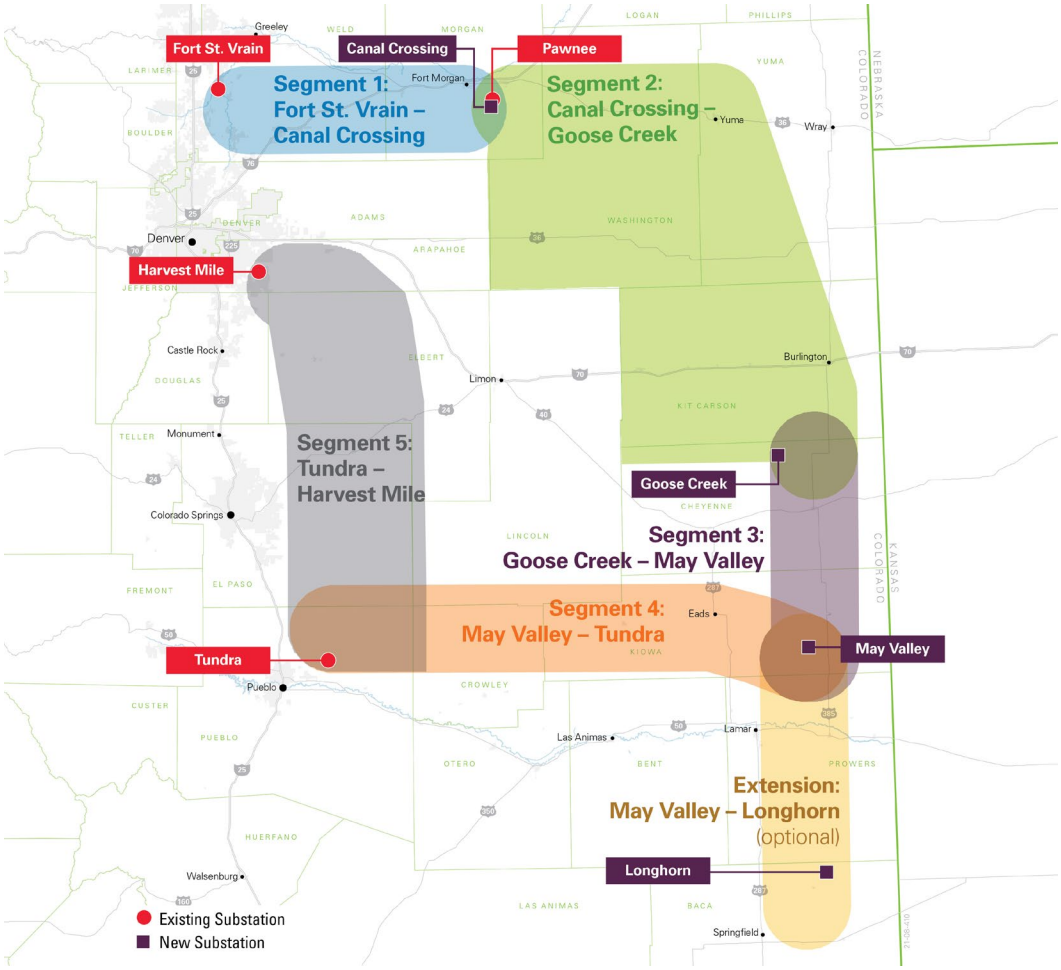
1.1 Colorado's Power Pathway

Public Service Company of Colorado, a Colorado corporation doing business as Xcel Energy (Xcel Energy), proposes to construct, maintain, and operate Colorado's Power Pathway (Pathway) in eastern Colorado. Pathway is a $1.7 to $2 billion investment proposed by Xcel Energy to improve the state's electric grid and enable future renewable energy development around the state. Pathway will ensure safe, reliable and economical electric service to the public, boost the regional economy, and create jobs during its construction. Pathway includes:

- Installation of approximately 560 to 650 miles of new 345-kilovolt (kV) double-circuit transmission line in 13 to 14 counties (depending on final route selection)
- Construction of four new electric substations (Canal Crossing, Goose Creek, May Valley, and Longhorn)
- Expansion of, or equipment additions at, four existing electric substations (Fort St. Vrain, Pawnee, Harvest Mile, and Tundra)

Pathway will be constructed in five segments, with an optional sixth segment (Extension), with each new or expanded electric substation serving as endpoints for the transmission line segments.

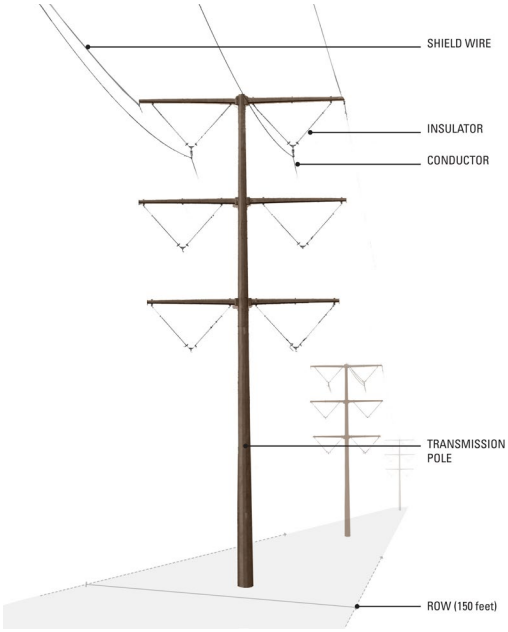
The transmission line segment Study Areas, existing substation locations and approximate locations of new electric substations are shown in the following graphic. These are discussed in more detail in Section 3 of this document.



Colorado's Power Pathway Overview

A fifth new substation (Sandstone Substation) may be constructed near the western end of Segment 4 and southern end of Segment 5 if an additional substation is determined to be necessary in this area to provide a location for future generation interconnections. A decision regarding the need for this substation will likely be made in early 2023.

The new 345-kV double circuit transmission line will be constructed using steel poles. A single pole will be used at most locations; however, two poles will be required for certain high loading locations, such as at angles where the line changes direction. Each pole will be placed on a concrete foundation except for certain poles located in sandy soils in the northern portion of Segment 2; these may be placed using vibratory caissons. Voltage, conductor sag, pole type, terrain, length of span between transmission poles, and minimum clearances of existing buildings influence the necessary height of transmission poles. The transmission poles will be weathering steel and a brown or rust color. A representative transmission line is shown in the following graphic.



Representative Transmission Line

The typical transmission line characteristics are provided in Table 1.

Table 1: Typical 345-kV Double Circuit Transmission Line Characteristics

Characteristic	Anticipated Design
Typical height	105–140 feet
Right-of-way	150 feet total, 75 feet on either side of the centerline
Span length	Typically, 950 feet between transmission poles
Material/color	Weathering steel, brown or rust color
Clearance	Maintain all clearances as required by National Electric Safety Code

Transmission substations are essential components of the electric transmission grid and are connection points for two or more transmission lines and for generation interconnections for wind, solar, natural gas, and other energy sources. Transmission substations include electrical equipment located inside a fenced area. Pathway involves expansion of, or equipment additions, at four existing electric substations (Fort St. Vrain, Pawnee, Tundra, and Harvest Mile) and construction of new electric substations (Canal Crossing, Goose Creek, May Valley, and Longhorn). Each new electric substation will be constructed on a parcel of land owned in fee by Public Service Company of Colorado.

The existing electric substations (Fort St. Vrain, Pawnee, Tundra, and Harvest Mile) will be expanded or equipment added within the existing fence line to accommodate the new transmission lines and the associated equipment needed to operate the lines. The four new electric substations (Canal Crossing, Goose Creek, May Valley, and Longhorn) will be 345-kV switching stations. A switching station is a type

of electric substation that operates at a single voltage level and, therefore, does not have transformers that change or "transform" voltage from one voltage level to another.

1.2 Purpose and Need

The Eastern Plains region of Colorado is one of the nation's best areas for wind and solar energy generation, but it does not currently have a network transmission system that can integrate new generation resources into the state's interconnected grid system which is needed to meet Colorado's clean energy goals. Pathway will support Xcel Energy's Clean Energy Plan (Xcel Energy 2021) that is estimated to deliver as much as an 85 percent reduction in carbon dioxide emissions by 2030 and add approximately 5,000 megawatts of new wind, solar, and other resources. Pathway will help meet the state's growing electricity needs, improve reliability, safety and affordability, and enable the transition to clean energy (Xcel Energy 2021). Pathway will allow developers of new energy generation projects to interconnect energy resources located in the areas of the state that are underserved by backbone transmission infrastructure and also allow Xcel Energy to deliver that energy electric customers.

Transmission line Segment 2 and Segment 3 and associated new electric substations and substation expansions will be completed in 2025, assuming required approvals are obtained. These segments will provide interconnection locations for qualified renewable energy resources that become commercially operational by the end of 2025 to take advantage of the Federal Production Tax Credit (PTC) program. The PTC is currently set to expire at the end of 2025. Taking advantage of the PTC will lower the cost of installing new renewable generation facilities, thereby benefiting all Colorado electric customers. With these new projects come jobs, lease revenue, and increased tax revenue for rural communities.

In March 2021, Xcel Energy filed a Certificate of Public Convenience and Necessity (CPCN) application with the Colorado Public Utilities Commission (CPUC) describing the purpose, need and public benefits of constructing Pathway. In February 2022, the CPUC provided verbal approval, and in June 2022, CPUC provided written approval of the CPCN for Segments 1–5, and conditional approval for the Extension, based on a determination that Pathway is in the public interest. While the CPUC determines a public need for Pathway, it does not approve the location of specific project facilities. The location and land use approvals will be made through easement negotiations with landowners and the land use approval process in the applicable jurisdictions where the Pathway facilities will be located.

1.3 Schedule

Many variables factor into the schedule for projects of this magnitude. The construction schedule is contingent on acquiring all necessary land rights and permits.

Pathway will be constructed and brought in-service in phases. The estimated construction timeline for each segment and substation and anticipated in-service dates are shown in Table 2.

Table 2: Pathway Schedule

Segment & Substation	Construction	In-Service
Segment 1 & Fort St. Vrain Substation expansion	Spring 2024–Spring 2026	Spring 2026
Segment 2 & New Canal Crossing & Goose Creek substations & Pawnee Substation equipment additions	Summer 2023–Fall 2025	Fall 2025
Segment 3 & New May Valley Substation	Summer 2023–Fall 2025	Fall 2025
Segment 4 & Tundra Substation expansion	Spring 2025–Spring 2027	Spring 2027
Segment 5 & Harvest Mile Substation expansion	Spring 2025–Spring 2027	Spring 2027
Extension & New Longhorn Substation	To be determined	To be determined

2.0 Overview

Pathway routing and siting analysis is divided by segment and documented in a series of six Routing and Siting studies. Each Routing and Siting Study is interrelated because of the overlap in segment Study Areas and shared electric substation endpoints. Each Routing and Siting Study documents the process used to review and consider reasonable routing and siting alternatives for the new major electrical facilities (pursuant to Colorado Revised Statute 29-20-108 (4) (a) and (b)). The Routing and Siting studies do not identify specific construction-related components, such as laydown/staging yards, access routes and haul routes. The Routing and Siting studies also do not assess the siting of the substation expansions and equipment additions as the substations are existing and, in these cases, new substations are not needed from system planning and cost perspectives. Table 3 outlines Pathway components discussed in each Routing and Siting Study. This Routing and Siting Study documents the process used to identify the preferred transmission line route for Segment 1.

Table 3: Routing and Siting Study Index

Routing and Siting Study	Components [1]	Counties Within Study Area
Segment 1	Segment 1 Transmission routing	Weld County Morgan County
Segment 2	Segment 2 Transmission Line routing New Canal Crossing Substation siting New Goose Creek Substation siting	Morgan County Washington County Kit Carson County Cheyenne County Yuma County
Segment 3	Segment 3 Transmission Line routing New May Valley Substation siting	Kit Carson County Cheyenne County Kiowa County Prowers County
Segment 4	Segment 4 Transmission Line routing	Kiowa County Prowers County Lincoln County Crowley County El Paso County Pueblo County
Segment 5	Segment 5 Transmission Line routing	Pueblo County El Paso County Lincoln County Elbert County Arapahoe County
Extension	Extension Transmission Line routing New Longhorn Substation siting	Kiowa County Prowers County Baca County

1 Expansions and equipment additions at existing substations are not covered in the Routing and Siting studies as the work locations are predetermined.

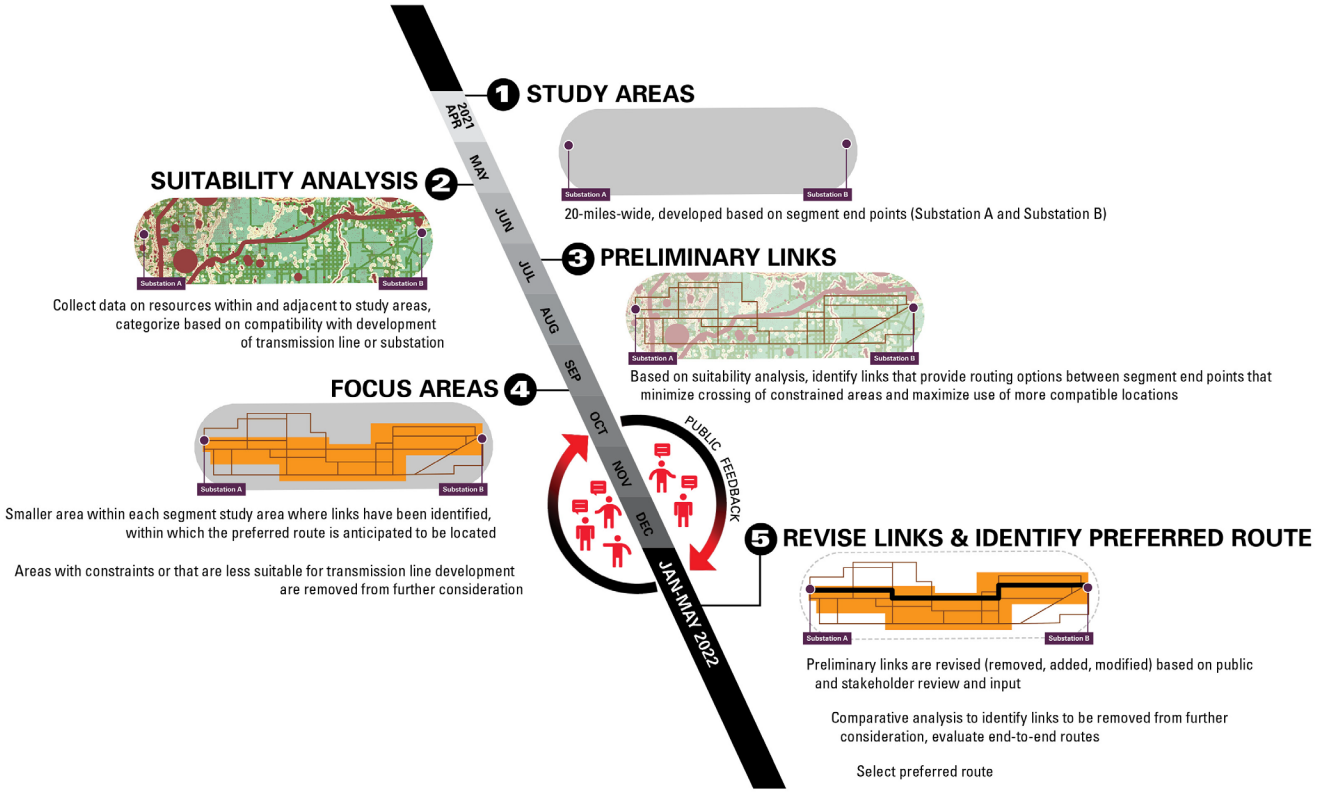
2.1 Segment 1 Description

Segment 1 involves construction of approximately 69 miles of new 345-kV double circuit transmission line from the existing Fort St. Vrain Substation to the new Canal Crossing Substation (Figure 1). The Segment 1 Study Area (discussed in Section 3.1.1) spans two counties in eastern Colorado: Weld County and Morgan County. The existing Fort St. Vrain Substation will be expanded, and a new 345-kV station arrangement will be established on land currently owned by Public Service of Colorado.

Construction of the Segment 1 transmission line and expansion activities at the Fort St. Vrain Substation are anticipated to begin in 2024 and be complete in 2026.

3.0 Routing and Siting

Routing a transmission line requires a comprehensive review of factors including electric system planning, project costs, environmental and cultural resources, public involvement, regulatory compliance, existing and planned land use, land rights and system engineering. As shown in the following graphic, the five-step routing and siting process assesses constraints and opportunities between segment endpoints to ultimately identify the preferred route location for the transmission line. Each step is further discussed in Sections 3.1 through 3.5.



Routing and Siting Process

3.1 Step 1: Study Area

Study Areas are broad corridors used to assess the constraints and opportunities between segment endpoints and to ultimately identify the locations of alternative and preferred transmission line links. The Study Areas initially identified for each segment were generally 20 miles wide and were developed based on the location of the substation endpoints. Substation Siting Study Areas are located at the junction of adjacent segments where new substations will serve as interconnection points.

The Study Area for Segment 1, discussed in Section 3.1.1, and the existing Fort St. Vrain Substation are shown in Figure 1. This Routing and Siting Study does not assess the siting of the expansion at the Fort St. Vrain Substation as the substation is existing and the expansion will be located on Xcel Energy's property. The new Canal Crossing Siting Area was evaluated in the Segment 2 Routing and Siting Study and resulted in the selection of the Canal Crossing Substation location.

3.1.1 Transmission Line Study Area

The area between the existing Fort St. Vrain Substation and the new Canal Crossing Substation is located within Weld and Morgan counties. The 20-mile-wide Segment 1 Study Area extends east to west and is roughly bounded by Frontier Street (Weld County Road 15) to the west, the South Platte River to the north, the Weld/Adams county line to the south, and State Highway 71 to the east. The Study Area is bisected by Interstate 76 (I-76) running northeast/southwest. The existing Fort St. Vrain Substation is located northwest of the Town of Platteville near the western edge of the Study Area.

3.1.2 Public Outreach – Virtual Introductory Meetings

Three virtual introductory meetings were held in June 2021 to provide a platform to inform the public and key stakeholders about Pathway, gather feedback, and address questions and concerns. These meetings were held virtually due to restrictions on large gatherings due to COVID-19. Prior to the virtual introductory meetings, a website, email address, and telephone hotline were developed to share information about Pathway and to provide multiple ways for the public and stakeholders to communicate with representatives. A total of 62,770 postcards were sent to all mailing addresses within the segment Study Areas ahead of the meetings to provide information on meeting dates, times, and connection information. Fourteen newspaper ads, two social media postings (one Facebook, one Twitter), and hotline, email, and website updates also announced the meetings to the interested public. Attendance at the three virtual introductory meetings is shown in Table 4.

Table 4: Virtual Introductory Meeting Attendance

Meeting	Attendance
June 22, 9 a.m.	104 attendees
June 29, noon	72 attendees
June 29, 6 p.m.	35 attendees

A PowerPoint presentation was provided during each meeting to introduce the Pathway team, Xcel Energy as a company, and provide information on the need, community and electric system benefits, regulatory review, routing and siting process, and schedule. A Question and Answer (Q&A) session was held after the presentation to discuss topics including cost, design and engineering, siting and land rights, vegetation management, and construction. Over the three meetings, a total of 113 questions were asked by meeting attendees and covered the following topics:

- Project benefits
- Routing and Siting
- Health and safety
- Resource planning and renewables
- Landowner compensation and property values
- Vegetation management and wildfire mitigation
- Access to presentation and maps
- Project timeline and communication channels
- Project cost and funding

3.2 Step 2: Suitability Analysis

The comprehensive Suitability Analysis involved gathering and mapping resource, land use, and infrastructure data for the Study Area and Siting Study Area; determining routing and siting criteria based on compatibility with the proposed electric infrastructure; and visiting the Study and Siting Study Areas to verify mapped data and to meet with local jurisdictions and key stakeholders to gather feedback. Upon review of the data generated from these activities, level of suitability was mapped across the Study and Siting Study Areas. The stages and results of the Suitability Analysis for Segment 1 are further described in Sections 3.2.1 through 3.2.4.

3.2.1 Data Collection

Publicly available resource data, including existing transmission corridors, land use, oil and gas infrastructure, surface water, critical habitat, jurisdiction and formally designated lands, and conservation easements were mapped to aid in the review of the Study and Siting Study Areas. The resource data identified major constraints and opportunities along Segment 2 that served as an indicator of routing and permitting complexity.

The resource data were mapped to determine the presence of compatible and incompatible resources and understand the area's physical characteristics. Resource maps are included in Appendix A. Resources within the Study Area are described in Table 5.

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Table 5: Resource Data Presence in Study Area [1]

Resource Map Page Number	Data Collected	Data Source(s)	Location in Study Area
1	2021 Aerial	National Agriculture Imagery Program Imagery (2021)	Primarily agricultural with pivot irrigation in the western portion of the Study Area, southeast of Keenesburg, and around Fort Morgan. Developed urban area on west side of Study Area, along U.S. Highway (US) 85 corridor. Smaller towns and city of Fort Morgan along I-76. Very little development within remaining Study Area. **Notable Features** Pivot irrigation
2	Jurisdiction	Colorado Ownership, Management, and Protection (2019) DOLA (2021)	Western Study Area within Weld County. Eastern Study Area within Morgan County. State land parcels checkered throughout Study Area. State Wildlife Areas located southwest of Keenesburg and east of Pawnee Substation. Conservation easements northeast of Wiggins, east of Keenesburg, and west of Platteville. Bureau of Land Management land northeast of Wiggins. Local parks near Fort Lupton and Platteville. **Notable Features** Centennial Valley State Wildlife Area (SWA), Brush Prairie Ponds SWA, properties managed by The Nature Conservancy, and conservation easements.
3	NLCD Land Cover	National Land Cover Database (2019)	Dominated by cultivated crops, shrub/scrub, and herbaceous. Some scattered areas of hay/pasture.
4	Zoning	Weld County (2021) Morgan County (2021)	Primarily agriculture. Areas of Planned Development on the eastern region of the Study Area, around Fort Morgan, and along Colorado State Highway (CO) 39. City zoning located northwest of Keenesburg. Heavy Industrial at Fort St. Vrain Substation, east of Platteville, west of Fort Morgan, and at existing the Pawnee Substation. Commercial Zones and Mobile Home Zones near Wiggins and Fort Morgan.

Resource Map Page Number	Data Collected	Data Source(s)	Location in Study Area
5	State Wildlife Action Plan	Colorado Parks and Wildlife (2015)	Crucial Habitat Assessment Tool (CHAT) category 1 found in the western portion of the Study Area north of the Fort St. Vrain Substation. CHAT categories 3, 4, and 5 found throughout the Study Area.
6	Public Institutions	Homeland Infrastructure Foundation-Level Data (2021)	Police Departments within Gilcrest, Platteville, Fort Lupton, Wiggins, Log Lane Village, and Fort Morgan. Public Schools near Gilcrest, Platteville, Fort Lupton, Hudson, Keenesburg, south of Keenesburg, Wiggins, and Fort Morgan. Nursing Homes in Fort Lupton, Keenesburg, and Fort Morgan. Hospital in Fort Morgan.
7	Historic Places	National Register of Historic Places (NRHP; 2020)	Recognized historic places are found near Platteville, Fort Lupton, Wiggins, and Fort Morgan. National Historic District within Study Area along US 34.
8	Avian Species Habitat	Colorado Parks and Wildlife (2021)	Bald Eagle nests, roost sites, and winter concentration areas along the South Platte River, east of Fort Lupton, east of Hudson, and near the Pawnee Substation. Bald Eagle roost site and active nest east of Platteville. Greater Prairie-chicken overall range in the southeast portion of the Study Area.
9	Ground Transportation	Colorado Department of Transportation (2021) Bureau of Transportation Statistics (2020)	Major east/west roadways throughout the Study Area include I-76, US 34, and CO 52. North/south roadways throughout the Study Area include US 85, CO 39. East/west railroad and Amtrak Route paralleling I-76 through the Study Area. Scenic Byway extending north from Fort Morgan. **Notable Features** I-76, US 85, US 6
10	Air Transportation	Federal Aviation Administration (2021)	Private airports are found within the eastern portion of the Study Area south of I-76 and east of US 85. One private airport found east of Wiggins. Public airport east of Fort Lupton. Private heliport within Fort Morgan.

Resource Map Page Number	Data Collected	Data Source(s)	Location in Study Area
11	Water Resources	National Hydrography Dataset (2020) Federal Emergency Management Agency (FEMA; 2021) National Wetland Inventory (2020) Playa Lakes Joint Venture (2019)	Seven FEMA 100-year floodplains run north/south through the Study Area along NHD Perennial Streams and Waterbodies. Intermittent and perennial streams are found throughout the Study Area. NWI wetlands are found throughout the northern portion of the Study Area. Few playa lakes are scattered throughout the Study Area, including by the Pawnee Substation. **Notable Features** South Platte River.
12	Water Wells	Colorado Division of Water Resources (2021)	Active water wells occur in large numbers throughout the Study Area, especially near and within population centers.
13	Oil and Gas Facilities	Colorado Oil and Gas Conservation Commission (2021) Ventyx (2021)	Major oil pipelines run northwest/southeast and east/west through Study Area. Natural Gas pipelines run north/south and east/west through Study Area. **Notable Features** Dense oil and gas wells in western portion of Study Area and scattered in eastern portion of Study Area.
14	Extractive Industries and Landfills	Homeland Infrastructure Foundation-Level Data (2021) Colorado Division of Reclamation Mining and Safety (2021)	Several sand and gravel operation locations are found throughout the Study Area, especially east of US 85 and near Fort Morgan. Other extractive operations are located on I-76 and US 85. One landfill is located north of Keenesburg.
15	Topography	U.S. Geological Survey (2020)	The Study Area is flat with little variation in topography.
16	Slope	U.S. Geological Survey (2020)	Slopes throughout the Study Area fall largely within the range of 0 to 5%; few areas slopes exceed 15%.

Resource Map Page Number	Data Collected	Data Source(s)	Location in Study Area
17	Existing Electric Infrastructure	Public Service Company of Colorado (2020) Homeland Infrastructure Foundation-Level Data (2021)	Several existing 115kV and 230kV transmission lines running north/south and east/west through the Study Area. One existing 345kV transmission line running southwest/northeast through western portion of Study Area. Five solar facilities in eastern portion of Study Area. Two power plants and 10 substations in eastern portion of Study Area and 1 power plant and 1 substation in western portion of Study Area. **Notable Features** Solar arrays in western portion of Study Area.
18	Communication Facilities	Homeland Infrastructure Foundation-Level Data (2021)	Several Land Mobile Private Transmission facilities are found throughout the Study Area, especially near the city of Fort Morgan. Microwave service towers and cellular towers are found within the Study Area.
19	Agricultural Areas	U.S. Department of Agriculture (2020) U.S. Environmental Protection Agency (2021)	Dense irrigated lands are found in the western, southern, and northeastern portions of the Study Area. Several Concentrated Animal Feeding Operations are found along the I-76 and US 85 corridors.
20	Parcels	Weld County (2021) Morgan County (2021)	For informational purposes only.
21	Residential and Other Structures	Microsoft (2021) Homeland Infrastructure Foundation-Level Data (2021)	Residences are sparse within the more rural parts of the Study Area. Residential areas are concentrated near the municipalities of Gilcrest, Platteville, Fort Lupton, Hudson, Keenesburg, Roggen, Wiggins, Fort Morgan and Log Lane Village. Mobile home parks are found near Gilcrest, Platteville, Fort Lupton, Hudson, Wiggins, Fort Morgan and Log Lane Village.
22	Public Land Survey	Bureau of Land Management (2020)	For informational purposes only.
23	Prime Farmland	Natural Resources Conservation Service (2020)	Prime farmland if irrigated is found along tributaries across the Study Area, especially south of I-76 in Weld County. Farmland of local and statewide importance is found within the majority of the Study Area. Areas not designated as prime farmland or no data available are found throughout the Study Area, especially in Morgan County

Resource Map Page Number	Data Collected	Data Source(s)	Location in Study Area
24	EPA Registered Facilities	U.S. Environmental Protection Agency (2021)	Facilities registered by the U.S. Environmental Protection Agency are concentrated in the western portion of the Study Area and near Fort Morgan
25	Karst	U.S. Geological Survey (2017)	Evaporate basin is found in the central and northeastern portions of the Study Area
26	Wildlife Species Habitat	Colorado Parks and Wildlife (2021)	Preble's Meadow Jumping Mouse Overall Range is found throughout the Study Area, especially in Weld County. A Mule Deer Migration Corridor is found along the South Platte River, west of US 85 and east of Hudson along a perennial stream. Mule Deer Concentration Areas are found throughout the Study Area, including east of the Fort St. Vrain and Pawnee substations. A Pronghorn Concentration Area is found in the southeast portion of the Study Area.
27	Recreation	Colorado Parks and Wildlife (2020)	One trail is found within the Study Area, north of Fort Morgan along the South Platte River
28	Soil Erodibility	Natural Resources Conservation Service Soil Survey Geographic Database (2020)	The majority of soils in the Study Area have low to moderate erodibility. Soils south of I-76 in Weld County have high erodibility, as do the soils in the southeastern portion of the Study Area.

1 Resource maps and data evaluation are based on the best available data. The accuracy of the data may vary.

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3.2.2 Routing Criteria

Resource data were categorized as suitable, sensitive or exclusion areas based on assessed compatibility with development of electric infrastructure. After categorizing each of the resources described in Table 5 and applying the criteria included in Appendix B, suitable areas were identified as areas that are less likely to be negatively impacted by construction and/or operation of transmission lines and substations and features compatible adjacent land uses and a lack of sensitive resources. Suitable areas included land proximate to existing roads; existing land owned by Public Service Company of Colorado; areas of lesser sensitive species habitat value; undeveloped areas; and state, federal, and privately owned land with compatible uses. Sensitive areas were those where environmental impacts and/or land use conflicts may occur with the construction and/or operation of transmission lines and substations. Impacts in these areas can often be mitigated. Exclusion areas were locations with the highest level of sensitivity and the greatest potential environmental, social, and economic impacts; permitting requirements; or prohibition by state or federal regulations. While it is not possible to avoid all impacts, classification of resources in this manner helps maximize the utilization of compatible areas and minimize the impacts to exclusion areas. Resource maps depicting the location of the data that influenced these criteria are included in Appendix A. The suitable, sensitive and exclusion criteria are shown in Appendix B for transmission line routing.

3.2.3 Mobilization and Coordination

Throughout the Routing and Siting Study process, the Pathway team repeatedly visited the Study Area to ground-truth map data and understand current land uses. During the ongoing review of the area, the team also met with Weld and Morgan county staff to introduce Pathway, discuss local resources and concerns to consider during routing, gather feedback and confirm expected permitting requirements.

The Pathway team also met with agency representatives from Colorado Parks and Wildlife, U.S. Fish and Wildlife Service and the State Land Board to discuss unique agency concerns to consider during the Routing and Siting Study process. Table 6 summarizes the key topics discussed during the county and agency meetings.

Table 6: Agency Meeting Topics

Meeting	Key Topics Discussed
County Meetings	Locations of meteorological towers Permitted and proposed solar facilities Concerns over interference with emergency communications towers Planned residential and business development Planned major crude oil pipelines Proposed water pipeline project
Colorado Parks and Wildlife	Recommendation for collocating with existing impacts across South Platte River Recommendation for flight diverters near South Platte River, perennial rivers, wetlands and riparian areas Post-construction revegetation and preferred native seed mixes Mule Deer Winter Range and Pronghorn Winter Conservation areas and recommendations regarding construction timelines

Meeting	Key Topics Discussed
U.S. Fish and Wildlife Service	Locations of Lesser Prairie-chicken (LPC) 60% connectivity areas Anticipated listing of the LPC and potential surveys and mitigation Provision of Pathway shapefiles to better assess preferred route Follow up meeting to discuss more detailed comments from the U.S. Fish and Wildlife Service
State Land Board	Right-of-way through Stewardship Trust Land Minimizing diagonal routing Solar leases on State Land Board land Wind and solar planning areas

3.2.4 Transmission Line Study Area

The Study Area is primarily characterized by agriculture uses and oil and gas infrastructure (wells and pipelines), and a developed urban area is present on the west side near the Fort St. Vrain Substation. Areas that were more suitable and less suitable for transmission line routing were identified based on the mapped resource data and the routing criteria. These areas served as an indicator of routing complexity. The presence of more areas less suitable for routing could potentially result in an increase in transmission line miles when compared to the direct, straight-line distance between the segment endpoints. Table 7 provides the results of the Suitability Analysis and identifies key resources that influenced suitability within the Study Area. A map depicting the suitability of the Study Area is included as Figure 2.

Table 7. Resources Impacting Suitability in Study Area

	Resources Present
Segment 1	• I-76, US 85, and US 6 • Pivot irrigation • Dense oil and gas wells • Centennial Valley SWA, Brush Prairie Ponds SWA, properties managed by The Nature Conservancy, and conservation easements • Solar arrays in western portion of Study Area • North of Study Area: South Platte River and US 34

No siting or analysis of alternative sites is anticipated for the expansion of the existing Fort St. Vrain Substation as it will be located on Public Service Company of Colorado's property. The land is currently zoned as heavy industrial; as such, the existing land use will not change.

3.3 Step 3: Preliminary Transmission Line Links

Based on the Suitability Analysis and mapping, field reconnaissance, and routing objectives, possible transmission line links were identified throughout the Study Area. Link locations generally minimized crossing less suitable and exclusion areas and maximized the use of areas ranked as more suitable.

Within the Study Area, 35 links were identified that when pieced together created complete route options (Figure 3). In total, these 35 links created 189 miles of route options throughout the Study Area. Given the

location of the substation end points, the transmission line must cross the South Platte River, US 85, I-76, and several county roads. Crossing locations were identified based on the Suitability Analysis and mapping and field reconnaissance. Preference was given to crossing locations with an existing disturbance and areas where development is sparse on either side.

Two options to exit the Fort St. Vrain Substation were identified at the southern end of the substation site. Link 101 exists the site and heads directly east, paralleling an existing 115kV transmission line across the South Platte River. Link 101 continues to follow the existing transmission line east across US 85 and a railroad, north of Platteville. Link 102 exits the substation site and heads south, crossing existing transmission lines then paralleling an existing 115kV transmission line for approximately 1 mile. Link 102 splits from the existing transmission line to parallel County Road 21, then turns east to follow an access road to the South Platte River, where Link 102 creates a new river crossing. Link 102 continues east to create a new US 85 and railroad crossing south of Platteville.

Transmission links continue east, with northern, central, and southern options maneuvering around pivots and oil and gas infrastructure. These links feed into Links 113 and 119, which create a northern route, and Links 116 and 117, which create a southern route, through the more rural portion of the Study Area and across I-76. Link 118 connects these two route options. Link 117 follows section lines at its new crossing of I-76 and the railroad, approximately 3 miles northeast of Keenesburg. Link 119 bisects section lines at its new crossing of I-76, approximately 5.5 miles northeast of Roggen. Link 119 creates a new crossing at the railroad approximately 6 miles east of its I-76 crossing. These two route options converge southeast of Wiggins for approximately 11.5 miles before diverging again and creating northern, central, and southern options to enter the Canal Crossing Siting Area.

3.4 Step 4: Focus Areas

Ongoing discussions with jurisdictions, feedback from the public during open houses, additional field review, and continued preliminary transmission line link evaluation resulted in areas and links with multiple constraints and areas less suitable for transmission line development being removed from further consideration. The location of the remaining links defined the location of the Focus Area, a smaller area within the segment Study Area and within which the preferred route is anticipated to be located.

The Focus Area for Segment 1 is generally focused on the central portion of the Study Area, north of the populated areas of Keenesburg, Hudson, and Fort Lupton and south of Wiggins, Fort Morgan, and Log Lane Village. The central portion of the Study Area continued to prove favorable over the northern and southern areas as it provides a more direct route to the Canal Crossing Substation Siting Area and avoids several population centers. The Segment 1 Focus Area is shown in Figure 4.

3.4.1 Public Outreach – September 2021 Virtual Public Meetings

Two virtual routing and siting public meetings were held on September 23, 2021, for stakeholders to learn about the progress made on Pathway, including the development of Focus Areas for identification of transmission line routes and substation sites. These meetings were held virtually due to restrictions on large gatherings due to COVID-19. A total of 63,982 postcards were sent to all mailing addresses within the segment Study Areas announcing the meeting dates, times, and connection information. Thirty-six newspaper ads, a social media post on Facebook, an e-newsletter, and the hotline, email, and website

also informed the interested public of the meetings. Attendance during the two meetings is shown in Table 8.

Table 8: Routing and Siting Public Meeting Attendance

Meeting	Attendance
September 23, noon	184 attendees
September 23, 6 pm	81 attendees

A PowerPoint presentation provided information about need and benefits, routing and siting process updates, and upcoming in-person public open houses. A Q&A session was held after the presentation to answer questions. In total, 65 questions were asked and covered the following topics:

- Health and safety
- Project cost and funding
- Landowner compensation and property values
- Resource planning and renewables
- Access to presentation and maps

3.4.2 Public Outreach – Fall 2021 Public Open Houses

Fifteen public open houses were held in October and November 2021 to provide an update on identifying preliminary transmission line links and substation site options and to solicit feedback from stakeholders. The preliminary transmission line links and Focus Area that were shared with the public and agencies for comment are shown in Figure 3 and Figure 4, respectively. Two of these public open houses were held within the Segment 1 Study Area. In total, 4,462 direct mail postcards were sent to mailing addresses within the Focus Areas. Thirty-six newspaper ads, a social media post on Facebook, an e-newsletter, and hotline, website, and email updates announced the open houses to the interested public. Attendance at the open houses within Segment 1 is summarized in Table 9.

Table 9: Fall 2021 Public Open House Attendance [1]

Date	Location	Public Attendance
Monday, November 1	Platteville Community Center, Platteville	37 attendees
Tuesday, November 2	Fort Morgan Field House, Fort Morgan	23 attendees

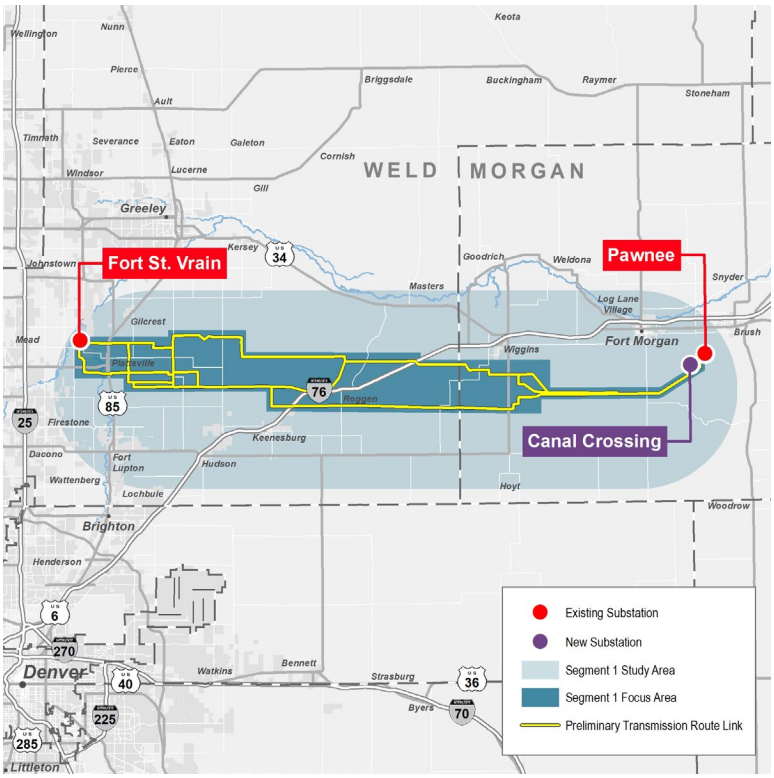
1 Meetings were held in additional locations outside of the Segment 1 Study Area. Invitees were encouraged to attend any of the meetings.

The Focus Areas, preliminary transmission line routes, and substation Siting Areas were shown on large-scale 60-inch-by-38-inch color sheet maps. Attendees were asked to note any factors that should be considered in a particular area directly on the maps using a Sharpie. A formal public comment period ran from October 5 to November 24 in conjunction with the open houses. A paper comment form was distributed at the open houses and was available for download on the Pathway website. An electronic version of the comment form was also available on the website and included a copy of the interactive project map so users could drop a pin to comment on a specific location. A total of 367 comment forms

were submitted during the formal comment period, 64 comments pertained to Segment 1. Common topics included:

- Health and safety
- Link locations
- Landowner compensation and property values
- Resource planning and renewables
- Project support or opposition

Link-specific feedback provided at the open house and resulting modifications from that feedback is included in Appendix C. The following graphic shows all of the preliminary transmission line links shown at the fall 2021 open houses.



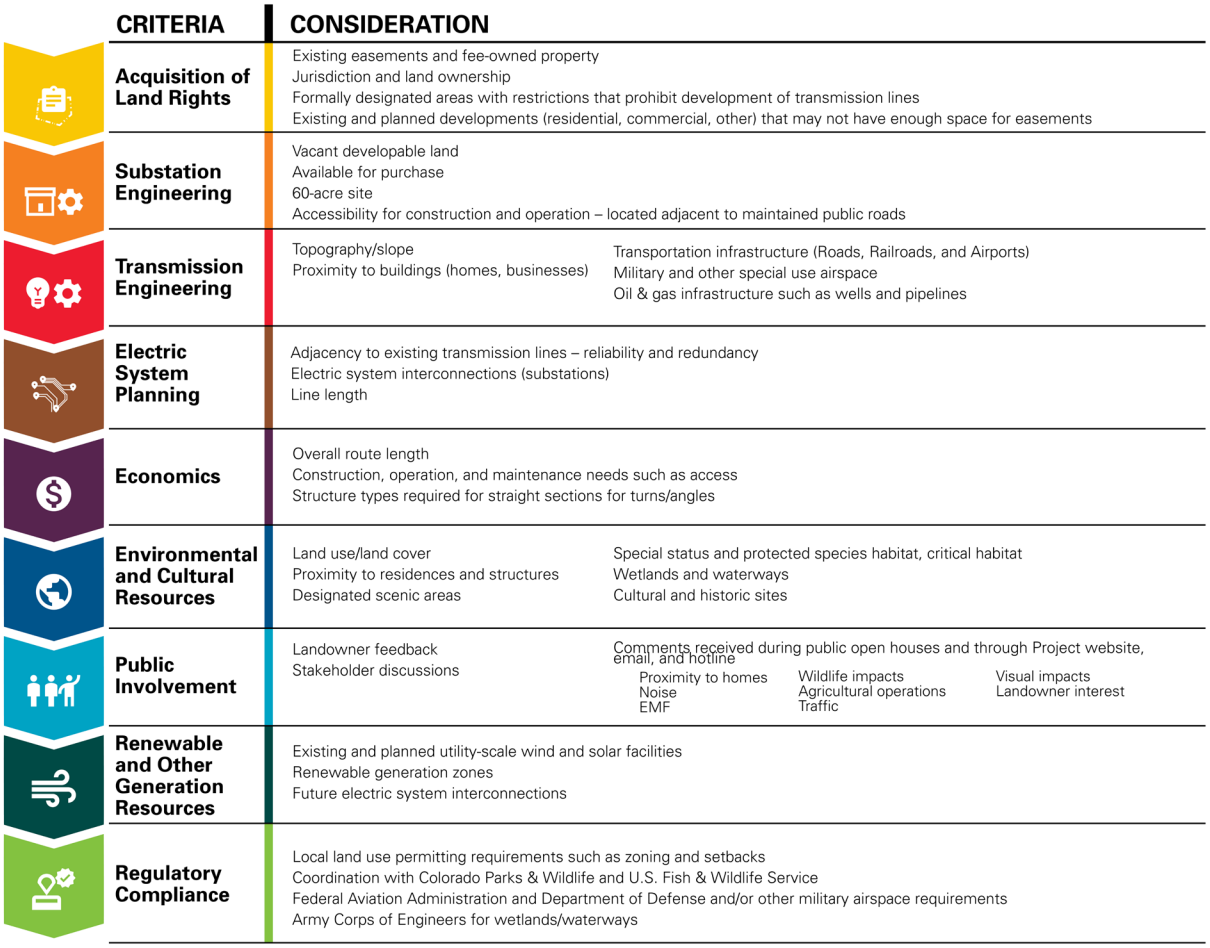
Fall 2021 Preliminary Transmission Line Links

3.5 Step 5: Revise Links and Identify Preferred Route

The resource data collected in the early stages of the Comparative Analysis were used along with information gathered during field reviews, conversations with jurisdictions, and public feedback to generate a comparative data matrix. The matrix was used as a tool to compare the preliminary transmission line links, or series of links, to each other. This comparison was based on numerical results of criteria such as engineering factors, jurisdiction/land use factors, presence of homes and other buildings, natural resources and cultural resources. Preliminary transmission line links were also revised

(removed, added, or modified) based on continued link evaluations and public and key stakeholder review and input; record of the revisions is provided in Appendix C. Key decisions resulting from the comparative matrix analysis and public feedback are discussed in the following sections.

Identifying the location of the preferred route for Segment 1 was accomplished through a process that included engaging the public, landowners and other stakeholders. Cultural and historic resources, technical and engineering requirements, environmental constraints, existing and planned land use and other factors that stakeholders have told Xcel Energy are important to consider are evaluated and compared for transmission line route options. These factors are further described in the following graphic. The preferred route selected balanced all these factors.



Routing and Siting Considerations

3.5.1 Transmission Line

Oil and gas infrastructure, agriculture pivots, residential subdivisions and planned development were major factors in identifying the preferred and alternative routes. The size of the Focus Area and number of preliminary transmission line links resulted in numerous end-to-end link combinations. Instead of

comparing all possible end-to-end combinations against each other, series of links that served the same purpose of moving through a particular region of the Focus Area were compared against each other. Looking at these series of links at a local level enabled a more granular analysis of impacts and links that not only minimized, but balanced impacts across resources were chosen as the preferred. Alternative options to some preferred transmission line links were also identified. Other additional links were eliminated from further consideration, and the Focus Area was revised to accommodate additional routing options to the Canal Crossing Siting Area. As preferred links were successively identified at a local level, the overall preferred route was pieced together. The preferred end-to-end route was then compared to the end-to-end alternative routes. The revised Focus Area and preliminary preferred and alternative routes are shown on Figure 5.

3.5.2 Public Outreach—Winter 2022 Public Open Houses

Fifteen public open houses were held in January and February 2022 to share up-to-date preliminary transmission line links, Focus Areas and routing decisions with the public, and gather feedback. Two open houses were held within the Segment 1 Study Area. A total of 14,825 direct mail postcards were sent to all property owners within the Focus Areas. Thirty-six newspaper ads, 12 radio ads, a social media post on Facebook, an e-newsletter, and hotline, website, and email updates announced the open houses to the interested public. Attendance at the open houses within Segment 1 Study Area is summarized in Table 10.

Table 10: Winter 2022 Open House Attendance

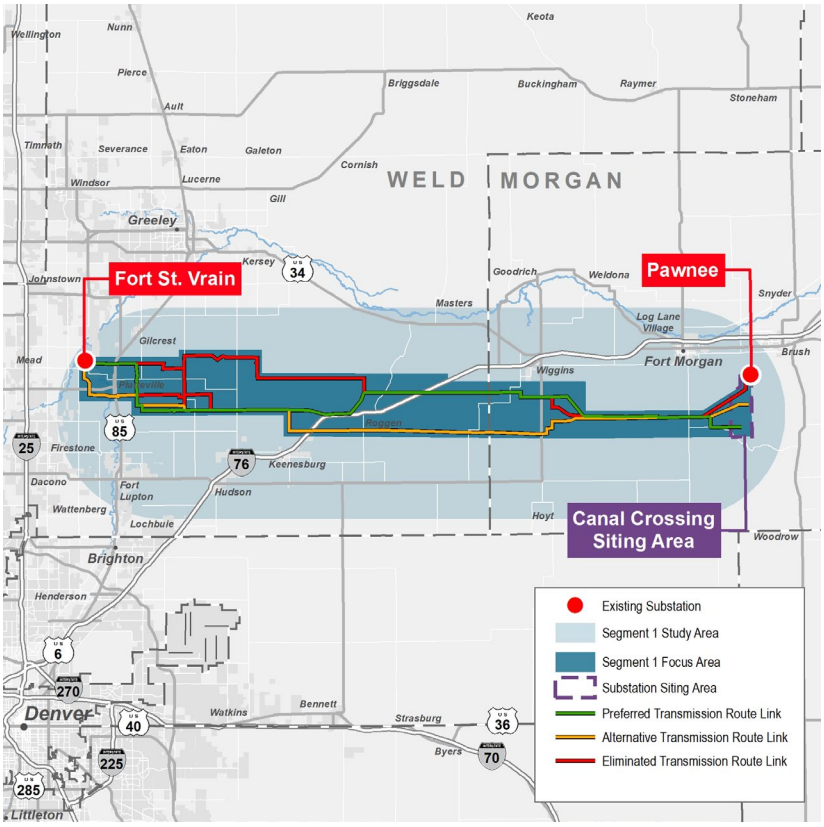
Date	Location	Public Attendance
Monday, January 24	Platteville Community Center, Platteville	34 attendees
Tuesday, January 25	Fort Morgan Field House, Fort Morgan	28 attendees

1 Meetings were held in additional locations outside of the Segment 1 Study Area. Invitees were encouraged to attend any of the meetings.

The preferred Segment 1 transmission line route was displayed on large-scale 60-inch-by-38-inch color sheet maps. Attendees were asked to note any factors that should be considered in a particular area directly on the maps using a Sharpie and to submit comment forms. A formal public comment period ran from January 21 to March 17, 2022, in conjunction with the open houses. A paper comment form was distributed at the open houses and was available for download on the Pathway website. An electronic version of the comment form was also available on the website and included a copy of the interactive Pathway map so users could drop a pin to comment on a specific location. A total of 498 comment forms were submitted during the formal comment period; 12 comments pertained to Segment 1. Common topics included:

- Health and safety
- General project support and opposition
- Link and substation site locations
- Wildlife and environmental impacts
- Resource planning and renewables
- Landowner compensation and property values

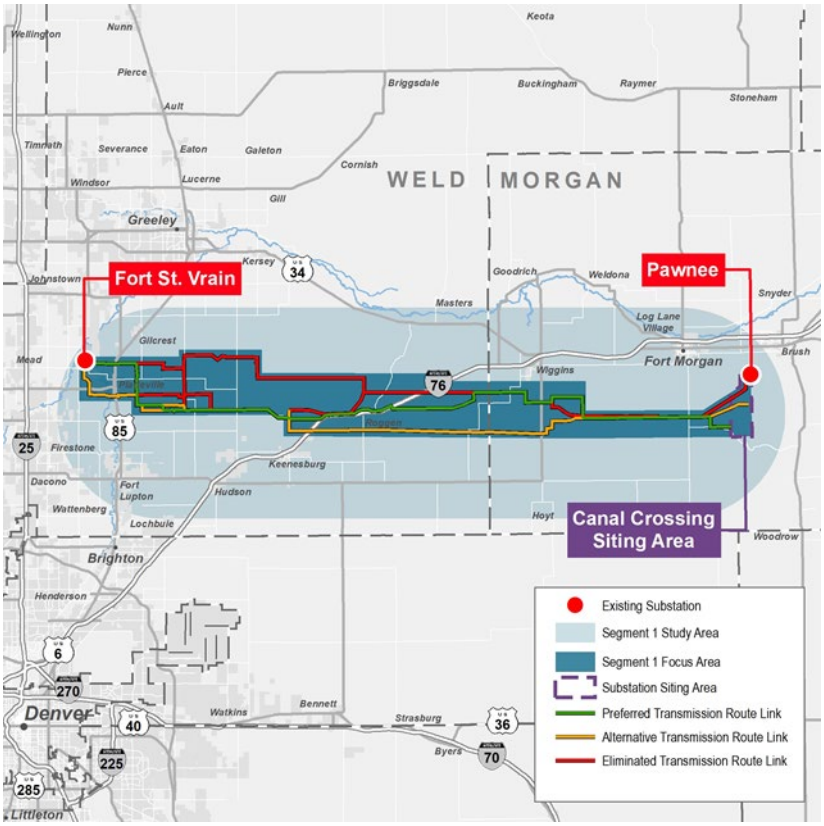
Link-specific feedback provided at the open house and resulting modifications from that feedback is included in Appendix C. The following graphic depicts the links shown at the Winter 2022 Open Houses.



Winter 2022 Transmission Line Links

3.5.3 Revised Preferred Route

Based on public and landowner feedback received during and following the Winter 2022 Open Houses, the preferred route was revised and additional modifications were made to the alternative and eliminated links. The revised preferred and alternative routes are shown on Figure 6 and the following graphic. The complete comparative route matrix is provided in Appendix D.



Revised Preferred Route Links

The preferred route utilizes Link 101, heading east out of the existing Fort St. Vrain Substation for approximately 5 miles before traveling south to County Road 26. The preferred route follows County Road 26 east and moves through the central portion of the Focus Area around oil and gas infrastructure and pivots, maximizing distance along existing linear corridors and minimizing numbers of landowners and parcels crossed. Existing access roads and section lines are utilized to travel east to I-76 where the preferred route jogs north around the community of Roggen. The preferred route crosses I-76 as it follows Link 119 and continues east to the Canal Crossing Siting Area, where it follows Links 125 and 126 to dip south. Distance from homes is maximized where possible. Additional statistics on the preferred and alternative route are provided in Table 11.

Table 11: Segment 1 Preferred and Alternative Route Statistics

Metric	Preferred Route	Alternative Route
Overall Length	69 miles	61.3 miles
Landowners Crossed	73 landowners	87 landowners
Parcels Crossed	140 parcels	139 parcels
Counties Traversed	2 (Weld, Morgan)	2 (Weld, Morgan)
Road Adjacency (within 200 feet)	7.8 miles (11% of entire route)	7.2 (11.7% of entire route)
Length Adjacent to Existing Transmission Lines	11.9 miles (17.2% of entire route)	8.1 miles (13.2%)

Metric	Preferred Route	Alternative Route
Residences within 150 feet	0 residences	3 residences
Residences within 0.25-mile	31 residences	50 residences
Number of subdivisions within 0.25-mile	4 subdivisions	2 subdivisions
Length crossing 100-year floodplains	5.5 miles	5.91 miles

Note: Green highlighting indicates the route with the least amount of impact.

4.0 Next Steps

4.1 Ongoing Local Government, Key Stakeholder, and Public Outreach

The Pathway website, email address, and hotline will continue to be updated with the latest information on routing decisions, opportunities for public involvement, permitting, and construction. These resources will continue to serve as ways for the public and stakeholders to stay informed about progress and communicate with representatives. Information presented during the virtual and in person open houses is provided on the Pathway website for ongoing reference.

No additional open houses are planned within Segment 1 at this time since the preferred transmission line route has been chosen. Any open houses and/or public hearings required by Segment 1 permitting entities will be conducted as Pathway progresses through the permitting phase.

4.2 Final Design, Permitting, Construction, and In Service

4.2.1 Final Design, Landowner Outreach and Micrositing

Transmission poles vary in height depending on voltage (size of line), terrain, length of span between transmission poles, sag of the conductor, pole type, and minimum electrical clearance prescribed by the National Electric Safety Code. Anticipated design of the transmission poles constructed for Pathway is discussed in Section 1. Final design and location of the transmission poles is still ongoing and will be finalized prior to material order placement and construction.

Final route refinement will occur at the local level as easements are secured with landowners and Pathway proceeds to the permitting phase. Landowner preferences, jurisdictional input, and locations of sensitive resources may influence the exact locations of the transmission poles, pole design, and the ultimate location of the transmission line and substations.

4.2.2 Permitting

Federal, state, and local permits/approvals may be required prior to construction. Any necessary construction-related authorizations, which are typically administrative in nature, will be obtained between the time local land use permits are approved and when construction begins. State approvals may include, for example, permits for road, bridge, and highway crossings or road occupancy permits from the Colorado Department of Transportation; and stormwater discharge permits and Air Pollution Emissions Notice from the Colorado Department of Public Health and Environment. Federal permits may be required for construction related impacts to wetland or waterbodies from the U.S. Army Corps of Engineers.

Jurisdictional outreach was conducted with each county anticipated to be crossed by the transmission line route or where endpoint substations are located to solicit feedback and discuss potential land use permits that may be required for the transmission line and each substation. It is anticipated that land use permitting with jurisdictions crossed by the preferred transmission line route and substation sites will be triggered. These authorizations may include, for example, Special Use Permits, Conditional Use Permits, or House Bill 1041 Areas and Activities of State Interest Permits. The anticipated local land use permits for Segment 1 preferred transmission line route were identified based on a review of local land use code and early coordination with county representatives; these permits are listed in Table 12. Permits for temporary construction laydown and staging areas from local jurisdictions may also be required. All necessary land use and construction-related permits will be acquired from the appropriate county and municipal authorities.

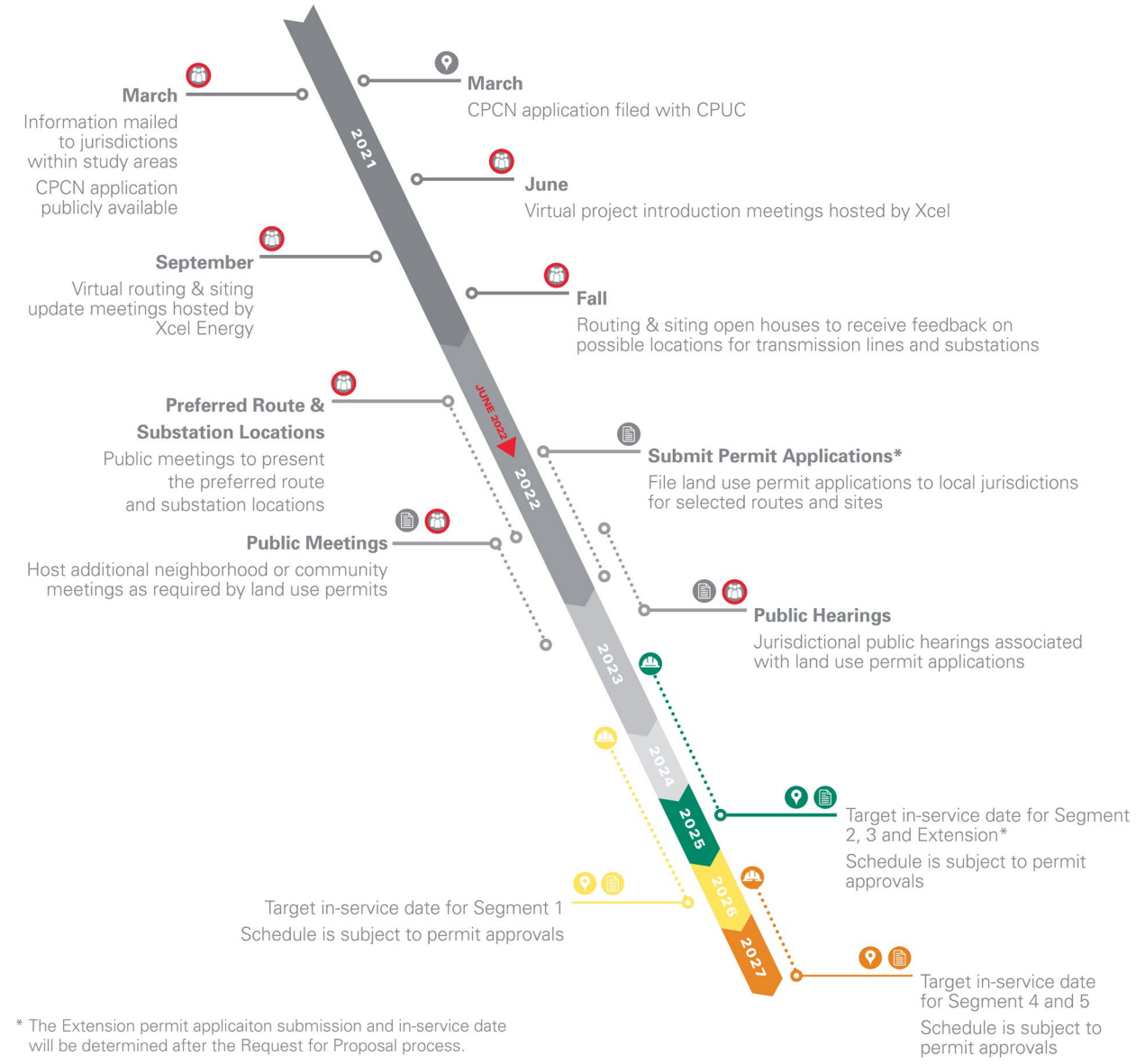
Table 12: Anticipated Segment 1 Land Use Permits

County	Data Source(s)	Permit
Weld	Weld County (2022)	Areas & Activities of State Interest (1041)
Morgan	Morgan County (2021)	Areas & Activities of State Interest (1041)

4.2.3 Construction and In-service

Construction of the Segment 1 transmission line and expansion activities at the Fort St. Vrain Substation are anticipated to begin in 2024 and have an estimated 2-year construction period through 2026. The estimated in-service date for these facilities is 2026.

The estimated schedule for Pathway is displayed in the following graphic. There are many variables that factor into the construction schedule for projects of this magnitude. One key variable that may impact the construction schedule is the timing of approval for final siting and routing for each segment of transmission line and substation and acquiring all necessary land rights and permits. Other construction timing variables include engineering design or scope changes that may occur over the course of Pathway development and the timing of equipment procurement.



Pathway Estimated Schedule

5.0 References

Morgan County. 2021. Guidelines and Regulations for Areas and Activities of State Interest. Accessed March 2022. Available online at: https://morgancounty.colorado.gov/sites/morgancounty/files/State%20Interest%20Regulations-120821.pdf

Weld County. 2022. Charter and County Code. Chapter 21. Accessed March 2022. Available online at: https://library.municode.com/co/weld_county/codes/charter_and_county_code?nodeId=CH21ARACSTIN

Xcel Energy. 2021. Our Energy Future: Destination 2030, 2021 Electric Resource Plan and Clean Energy Plan. March 31, 2021. Available online at: https://www.xcelenergy.com/company/rates_and_regulations/resource_plans/clean_energy_plan. Accessed March 2022.

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FIGURES

Figure 1: Segment 1 Study Area

Figure 2: Segment 1 Study Area Suitability

Figure 3: Segment 1 Preliminary Links

Figure 4: Segment 1 Focus Area

Figure 5: Segment 1 Winter 2022 Preferred Route and Revised Focus Area

Figure 6: Segment 1 Revised Preferred Route

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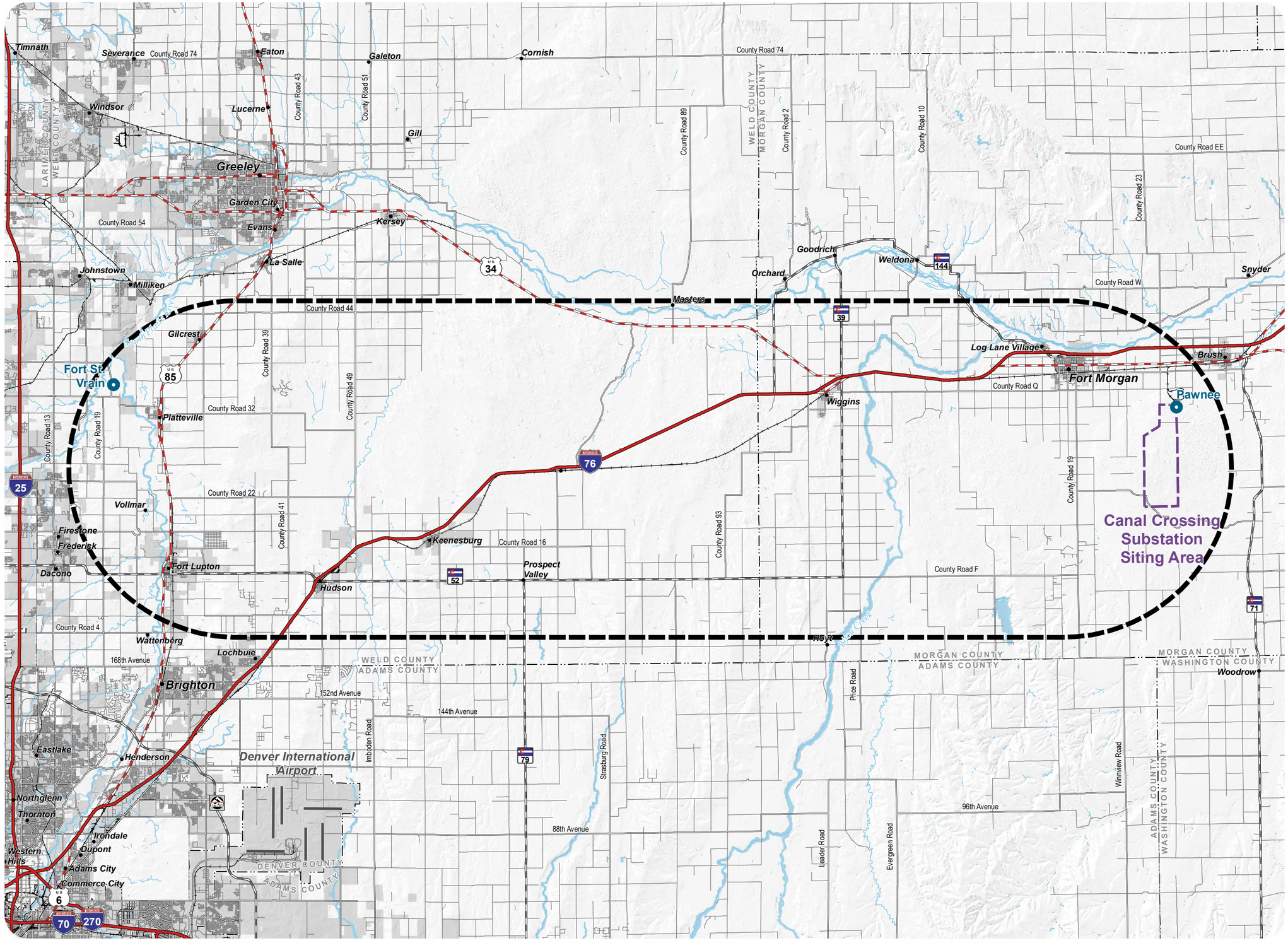

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

0 5 10
Miles

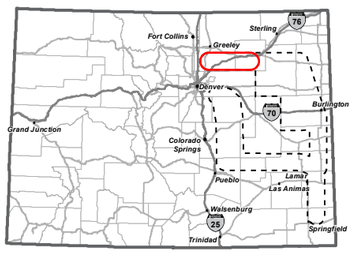

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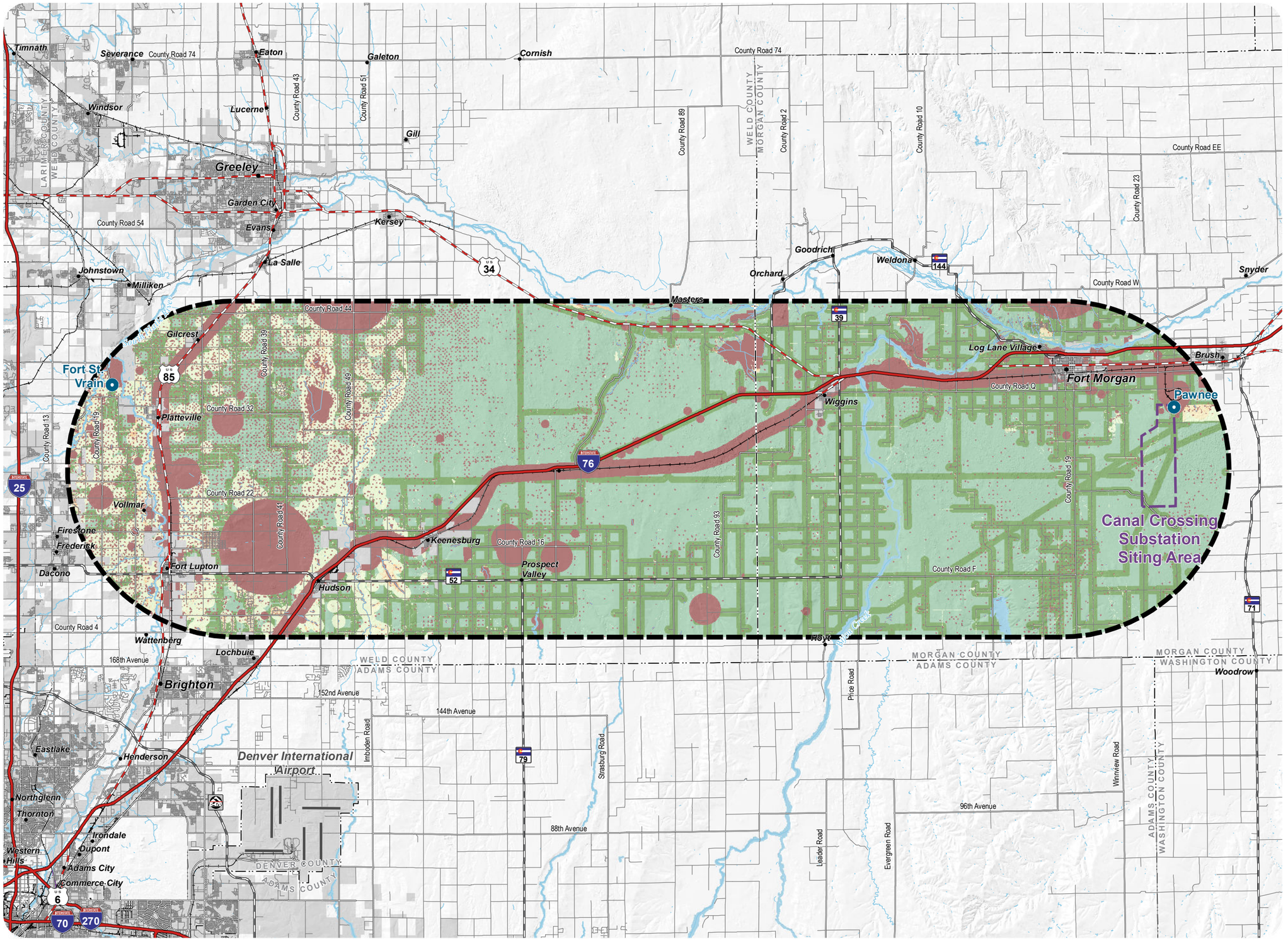
Figure 1: Segment 1 Study Area



Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

Suitability
(May 31th, 2022)

- Most Suitable
- Less Suitable
- Least Suitable
- Exclusion Area

0 5 10
Miles

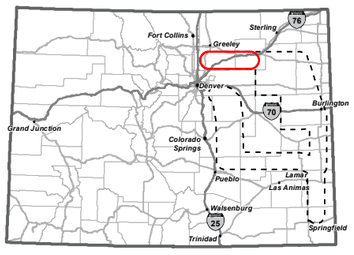


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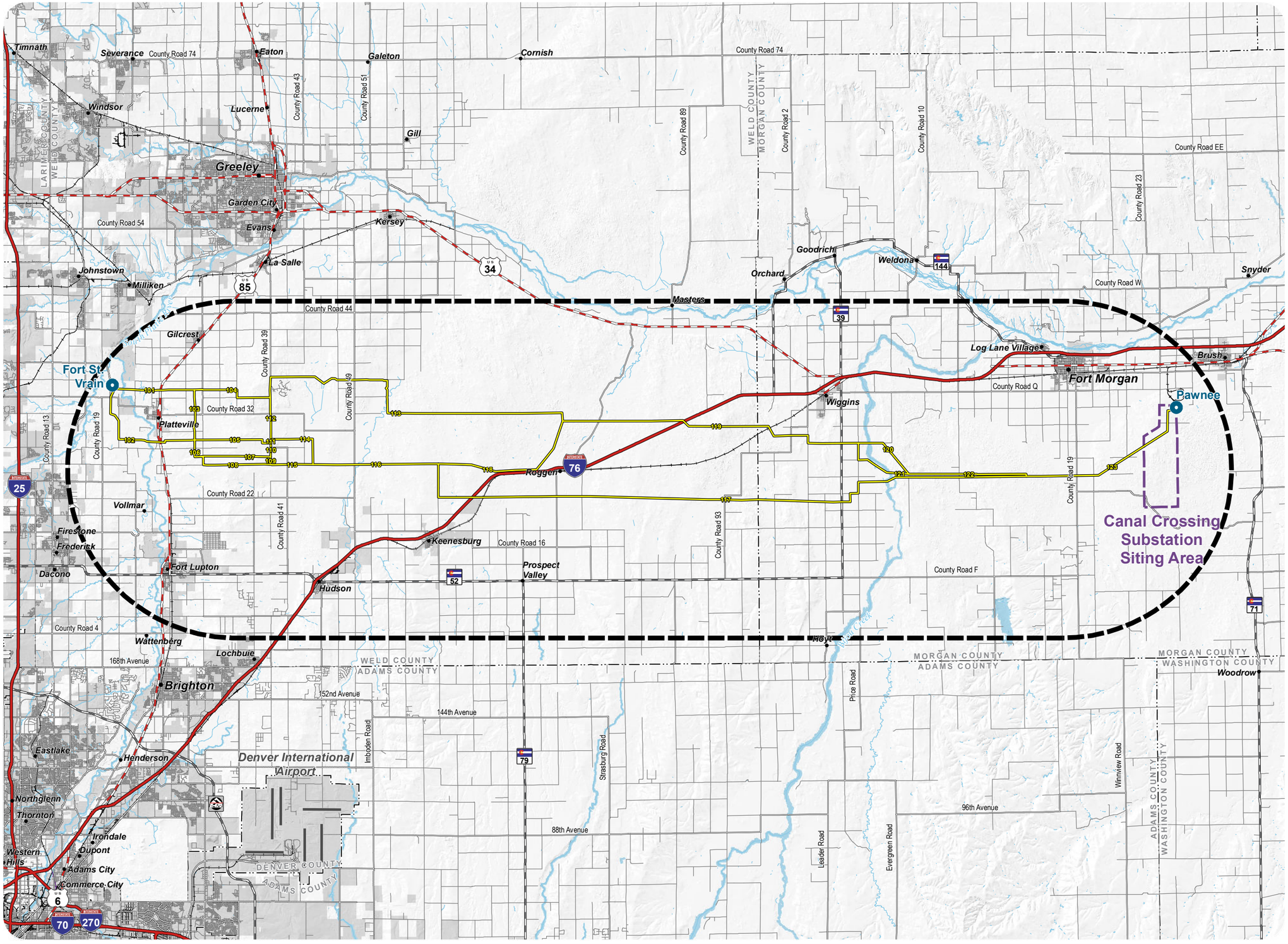
Figure 2: Segment 1 Study Area Suitability



Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area
- Preliminary Transmission Route Link

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

0 5 10
Miles

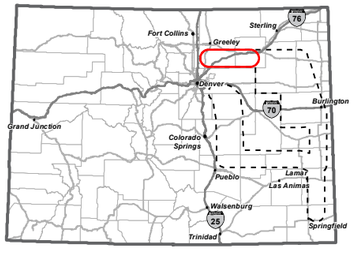


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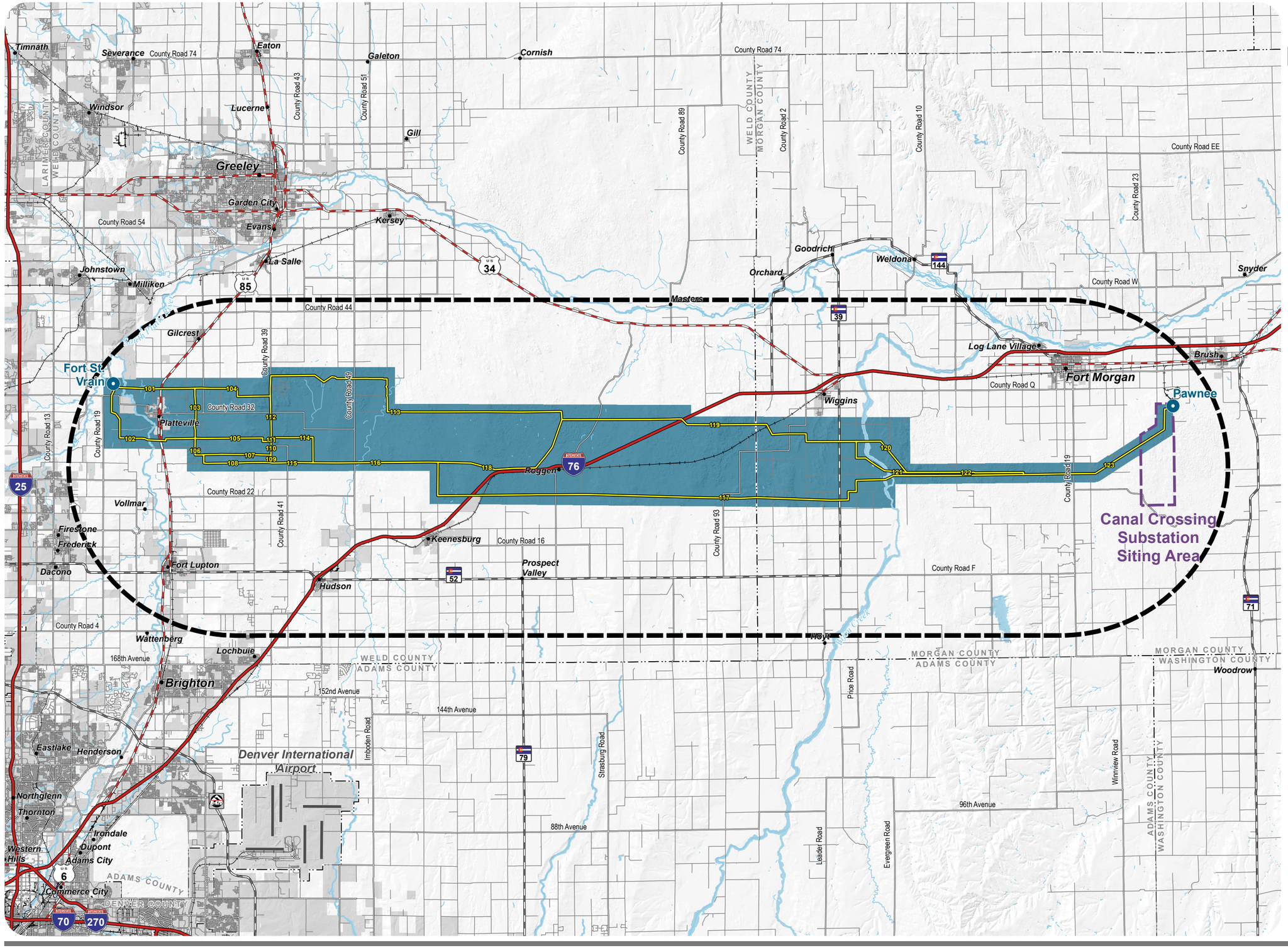
Figure 3: Segment 1 Preliminary Links



Legend

- Existing Substation
- Study Area
- Focus Area
- New 345kV Substation Siting Area
- Preliminary Transmission Link

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

0 5 10
Miles

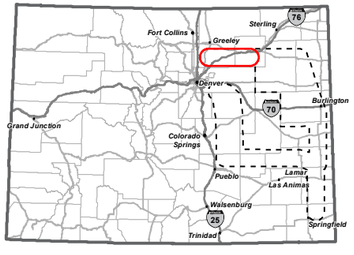


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Figure 4: Segment 1 Focus Area

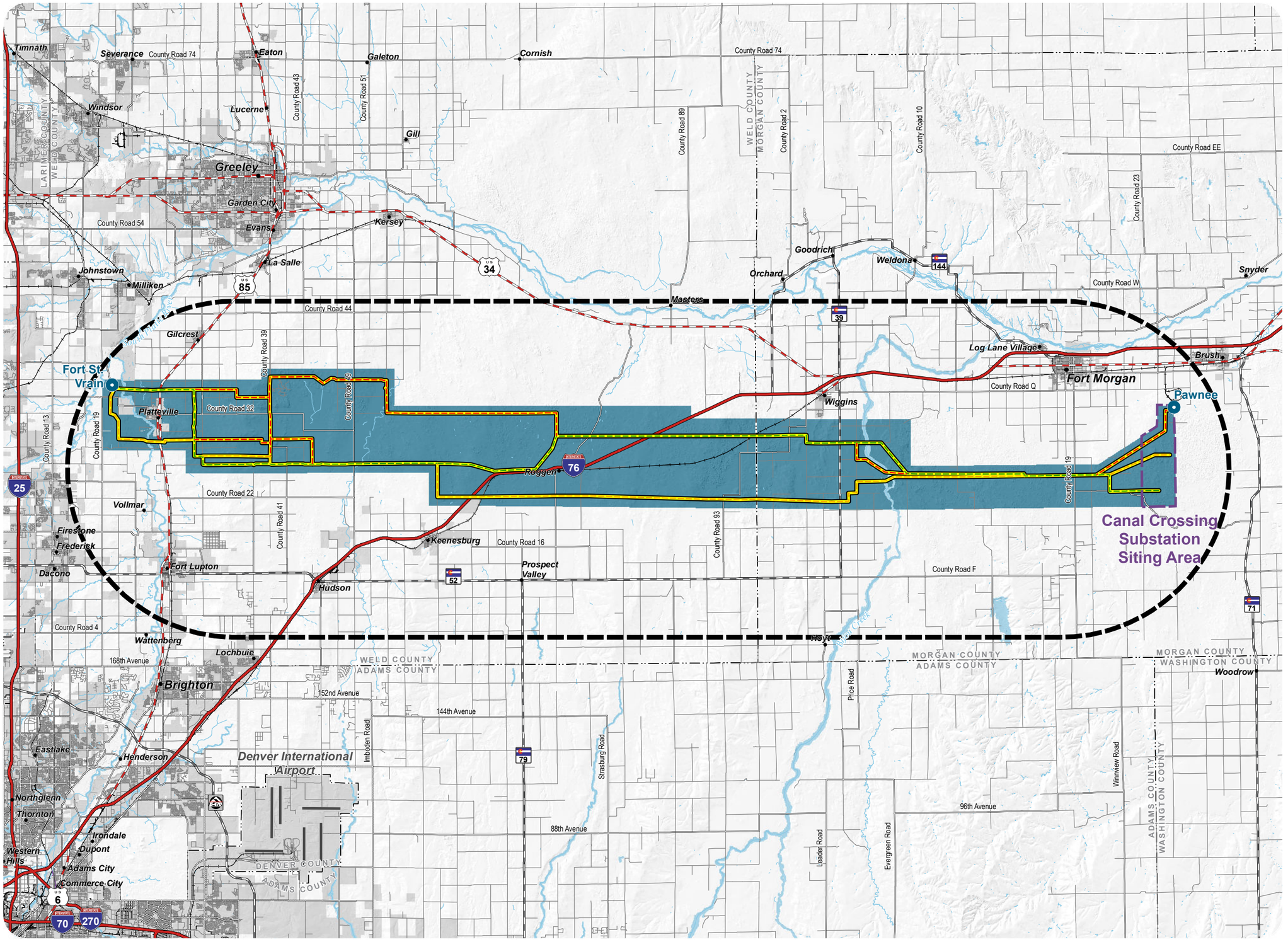

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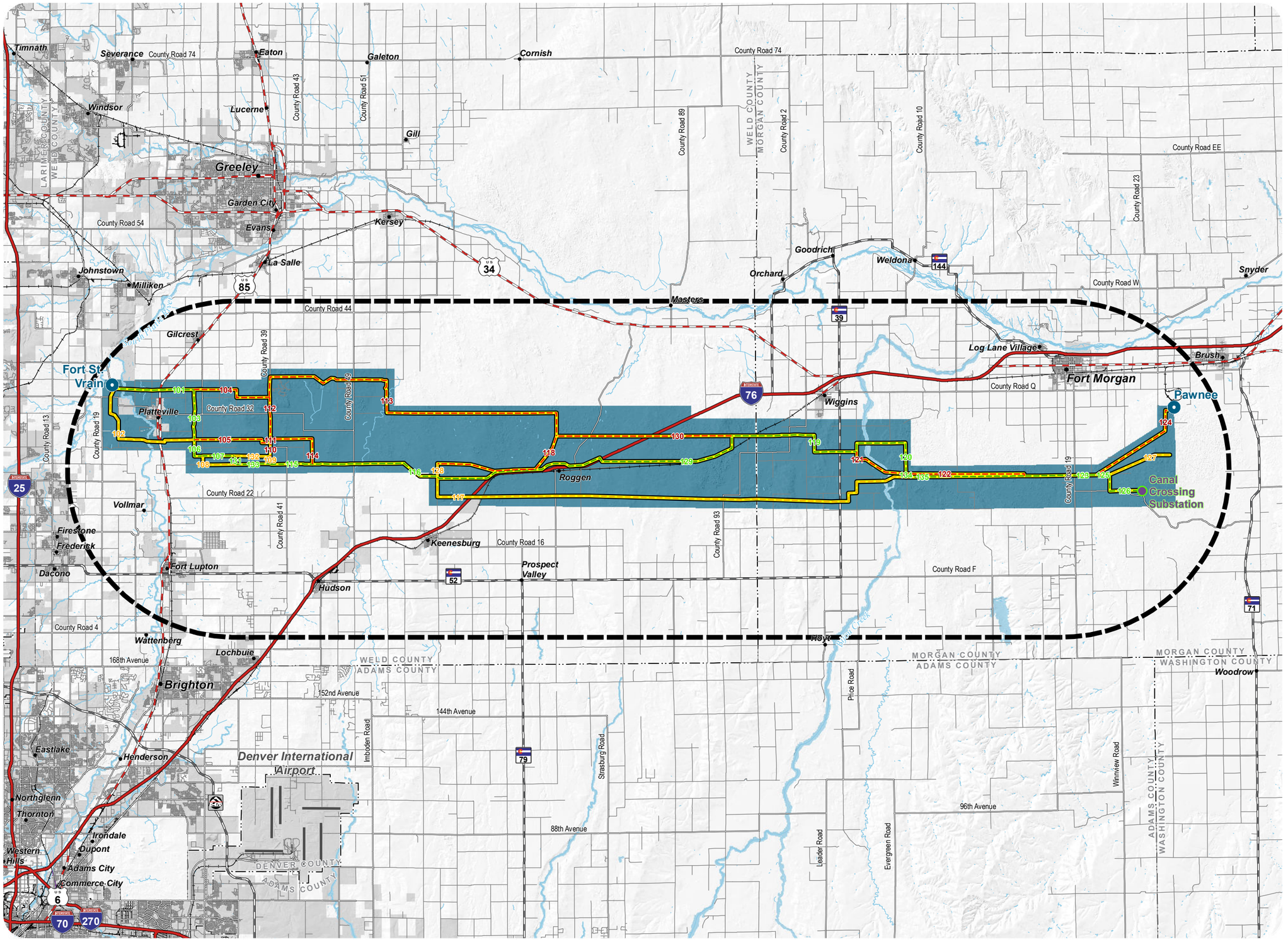
Figure 5: Segment 1 Winter 2022 Preferred Route and Revised Focus Area



Legend

- Existing Substation
- Study Area
- Focus Area
- Proposed Substation Location
- Preferred Transmission Link
- Alternative Transmission Link
- Eliminated Transmission Link

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

0 5 10
Miles

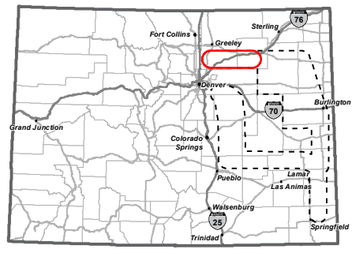


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Figure 6: Segment 1 Revised Preferred Route

Appendix A: Resource Maps

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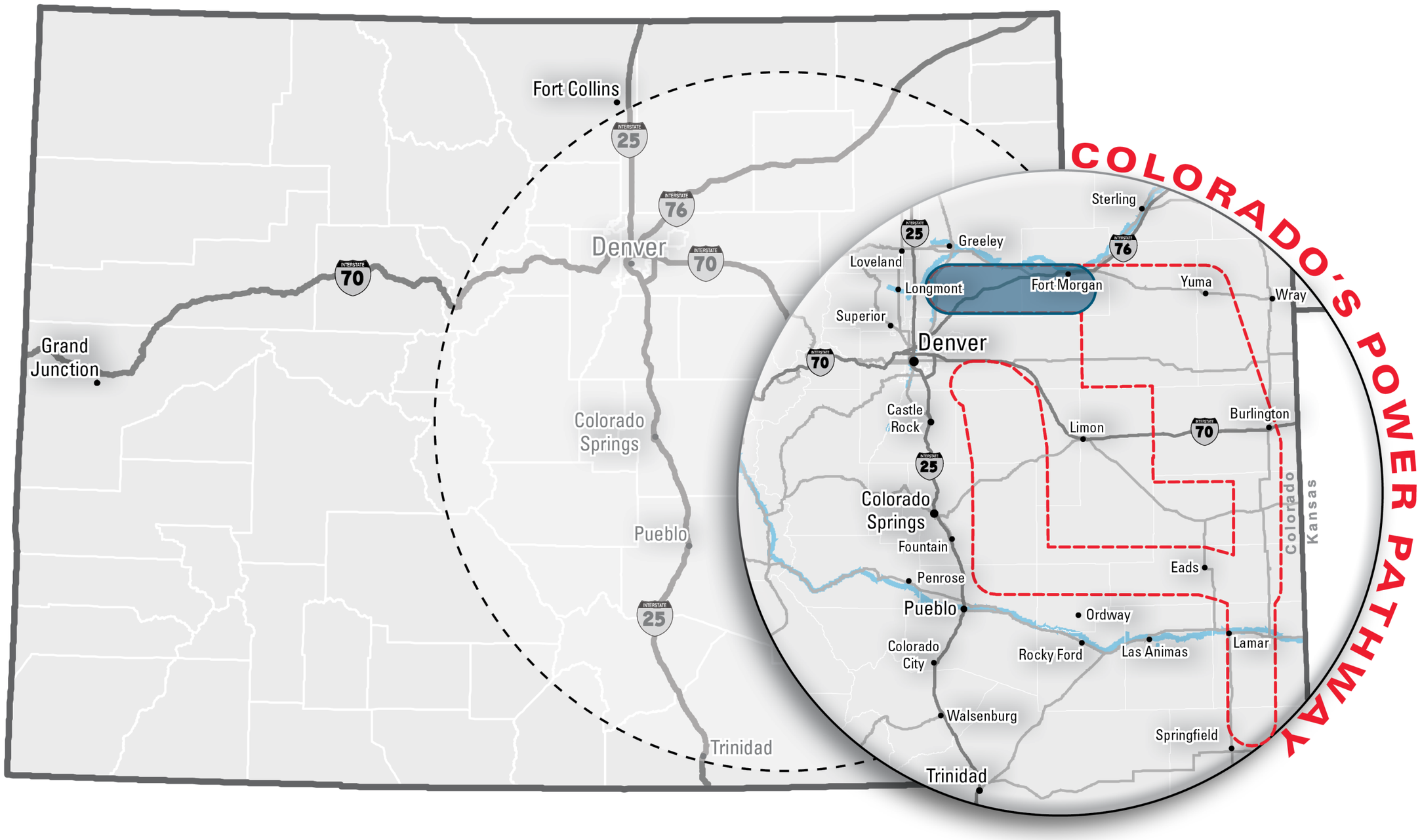

SEGMENT 1 | Fort St. Vrain to Canal Crossing

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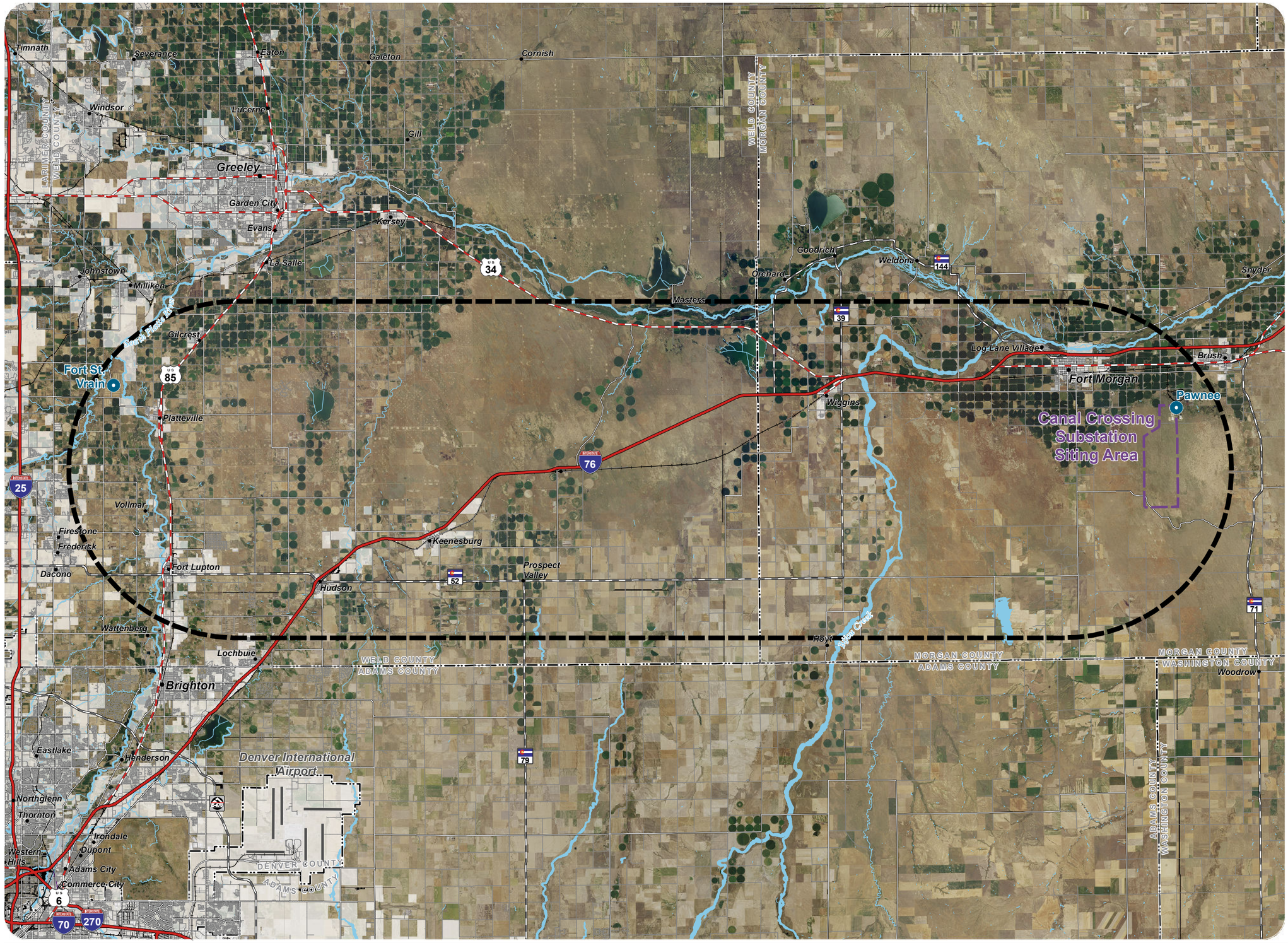
Revised - 06/24/2022



2021 Aerial

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

***Aerial - 2021 NAIP Imagery**

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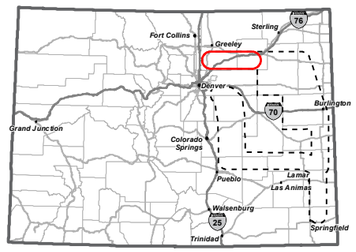

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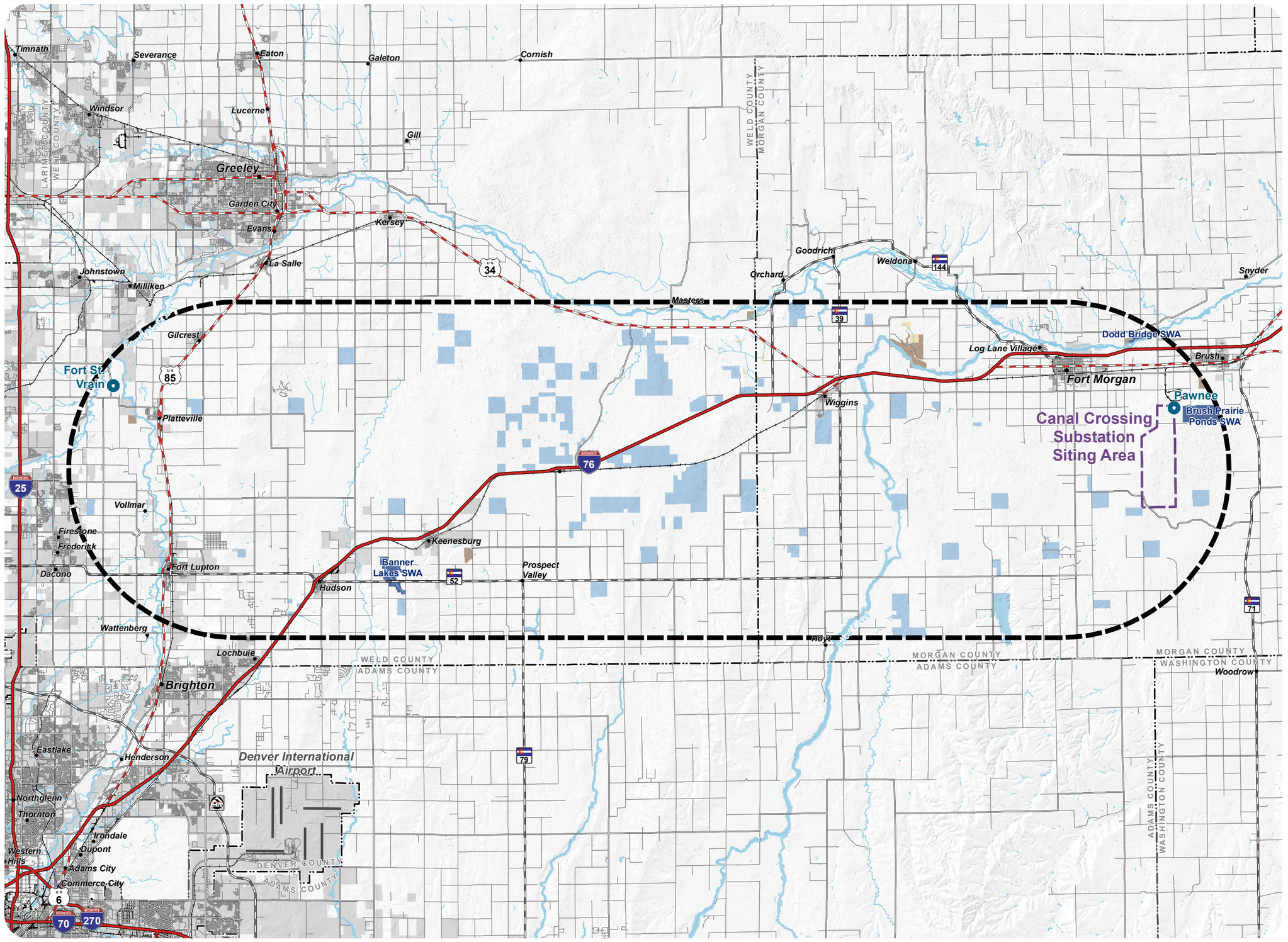

Jurisdiction

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Jurisdiction
(COMap 2019)

- Bureau of Land Management
- CO State Stewardship
- State
- State Wildlife Area
- Conservation Easement
- Local Park

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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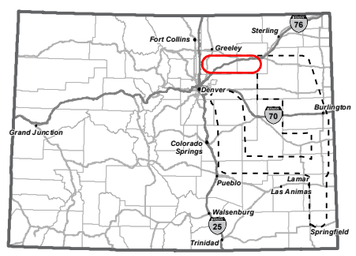

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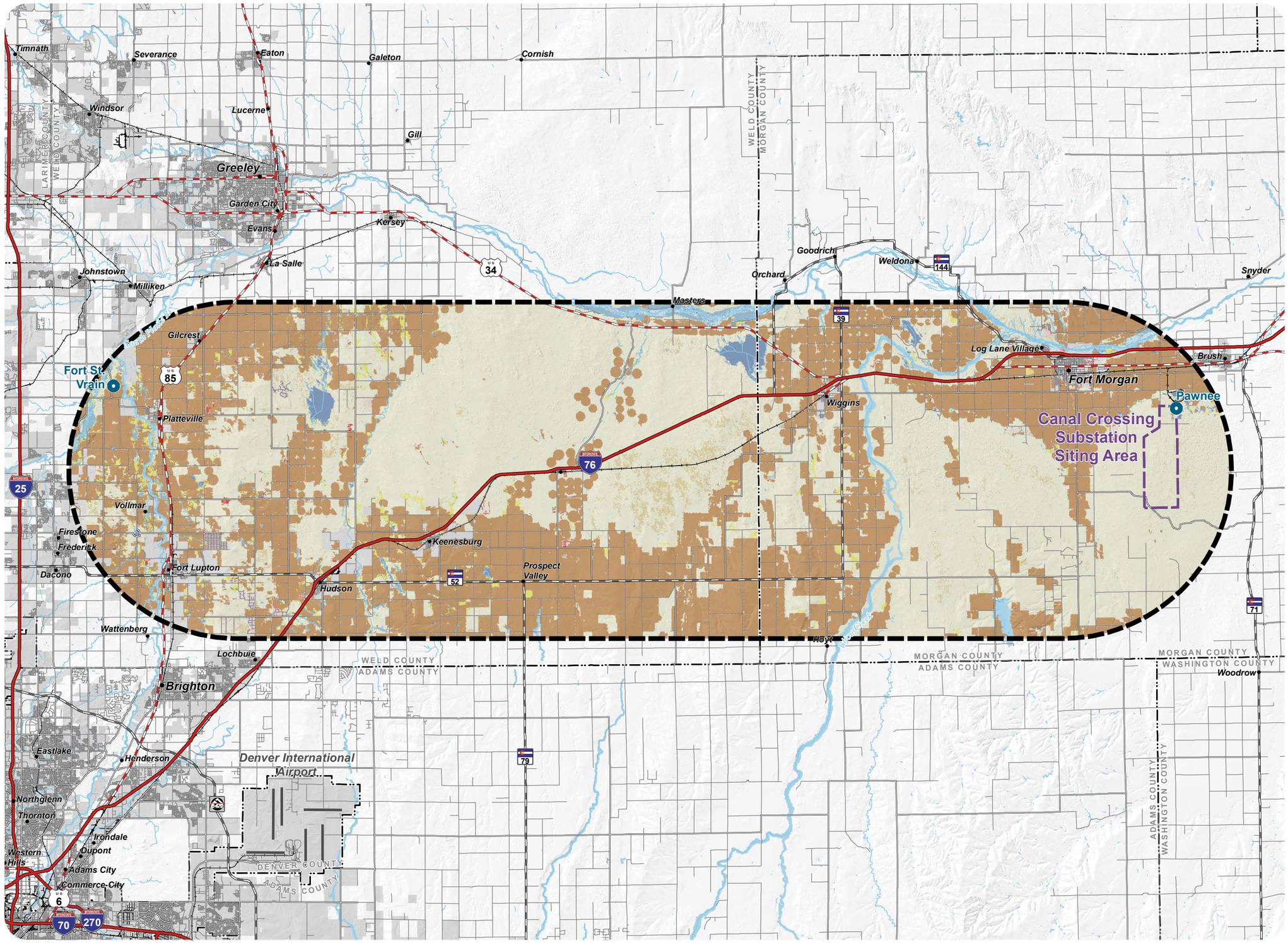

NLCD Land Cover

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

NLCD Land Cover
(NLCD, 2019)

- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

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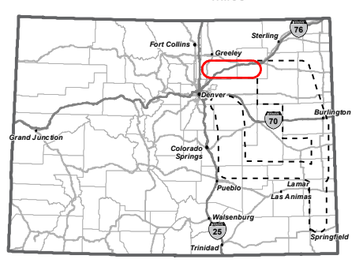

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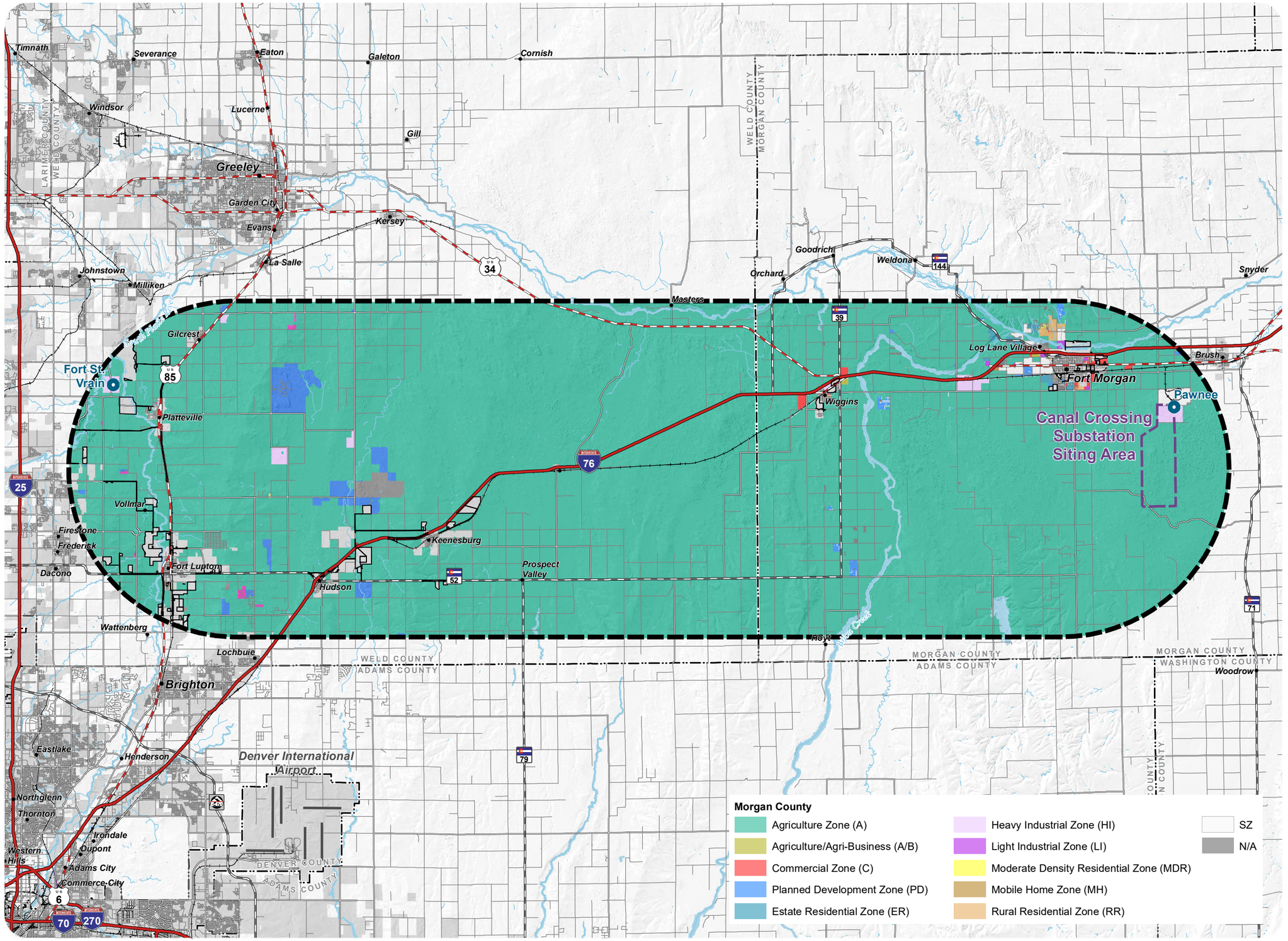

Zoning

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County
- Annexation

Zoning
(Weld County 2021, Morgan County 2021)

Weld County

- Agriculture
- Planned Unit Development
- City
- C-1 (Neighborhood Commercial)
- C-2 (General Commercial)
- C-3 (Business Commercial)
- C-4 (Highway Commercial)
- Estate
- I-1 (Light Industrial)
- I-2 (Medium Industrial)
- I-3 (Heavy Industrial)
- R-1 (Low-Density Residential)
- R-2 (Duplex Residential)
- R-5 (Manufactured Home Residential)

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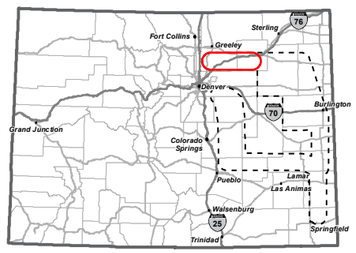

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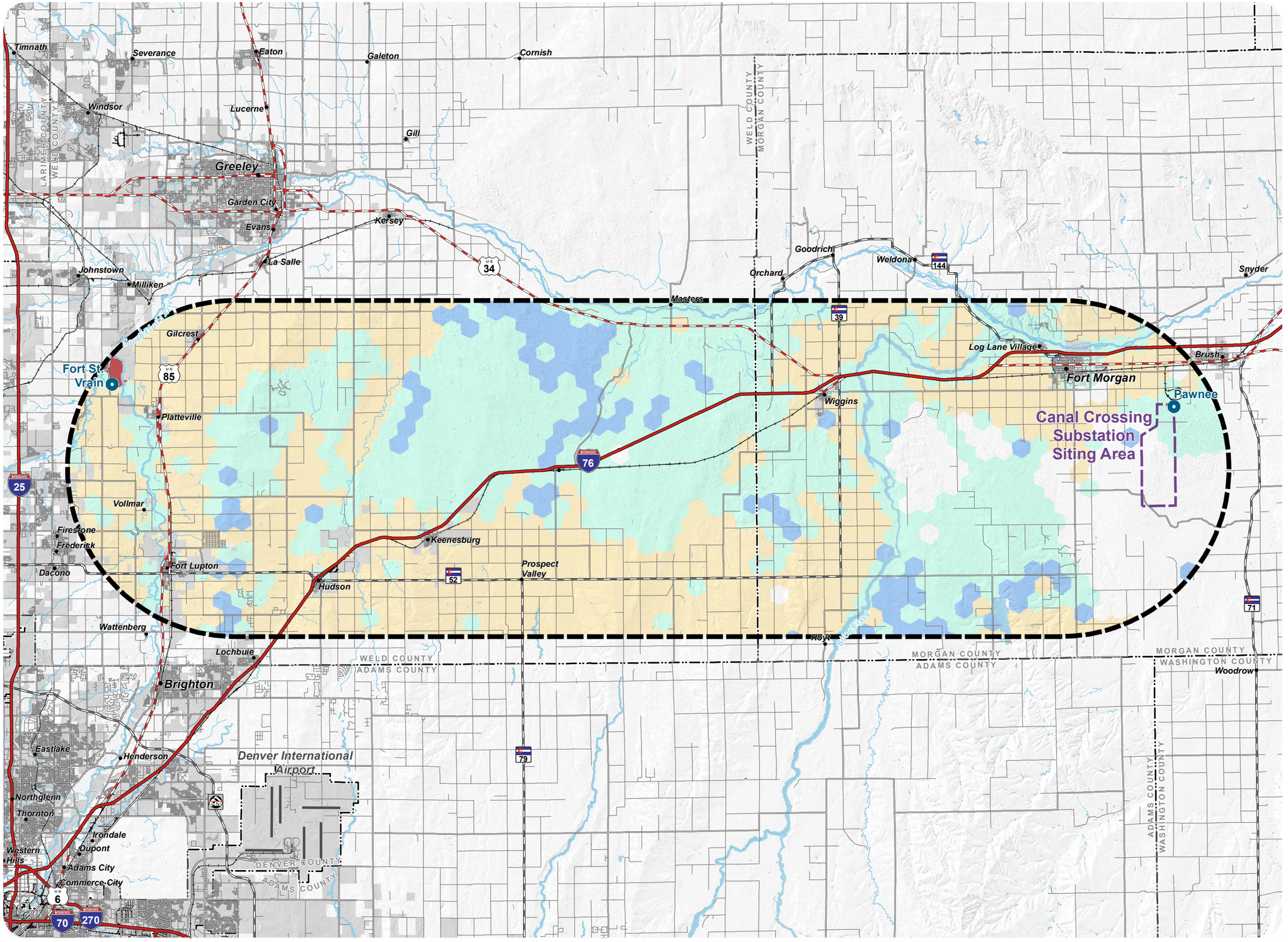

State Wildlife Action Plan

Legend

- Existing Substation to be Expanded
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

Habitat Priority
(CPW 2015)

- Category 1
- Category 3
- Category 4
- Category 5
- Category 6 (No Data)

See Descriptions at:
cpw.state.co.us/Documents/WildlifeSpecies/SWAP/CO_SWAP_FULLVERSION.pdf

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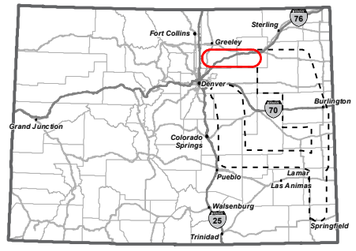

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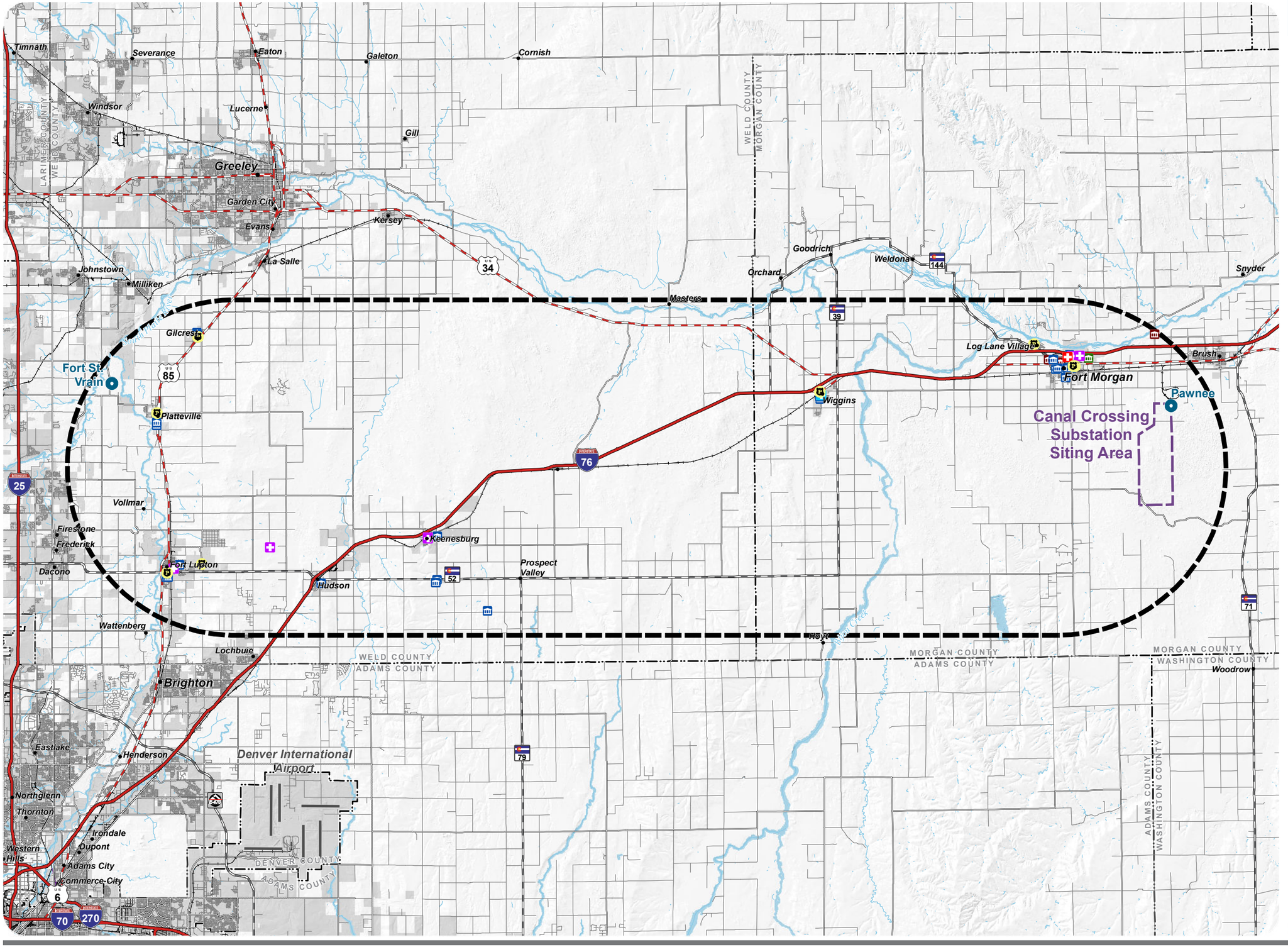

Public Institutions

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Public Institutions
(HIFLD, 2021)

- Police Department
- Hospitals
- Nursing Home
- Urgent Care Facility
- College/University
- Public School
- Private School

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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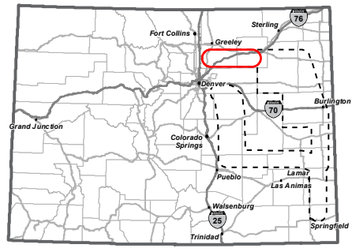

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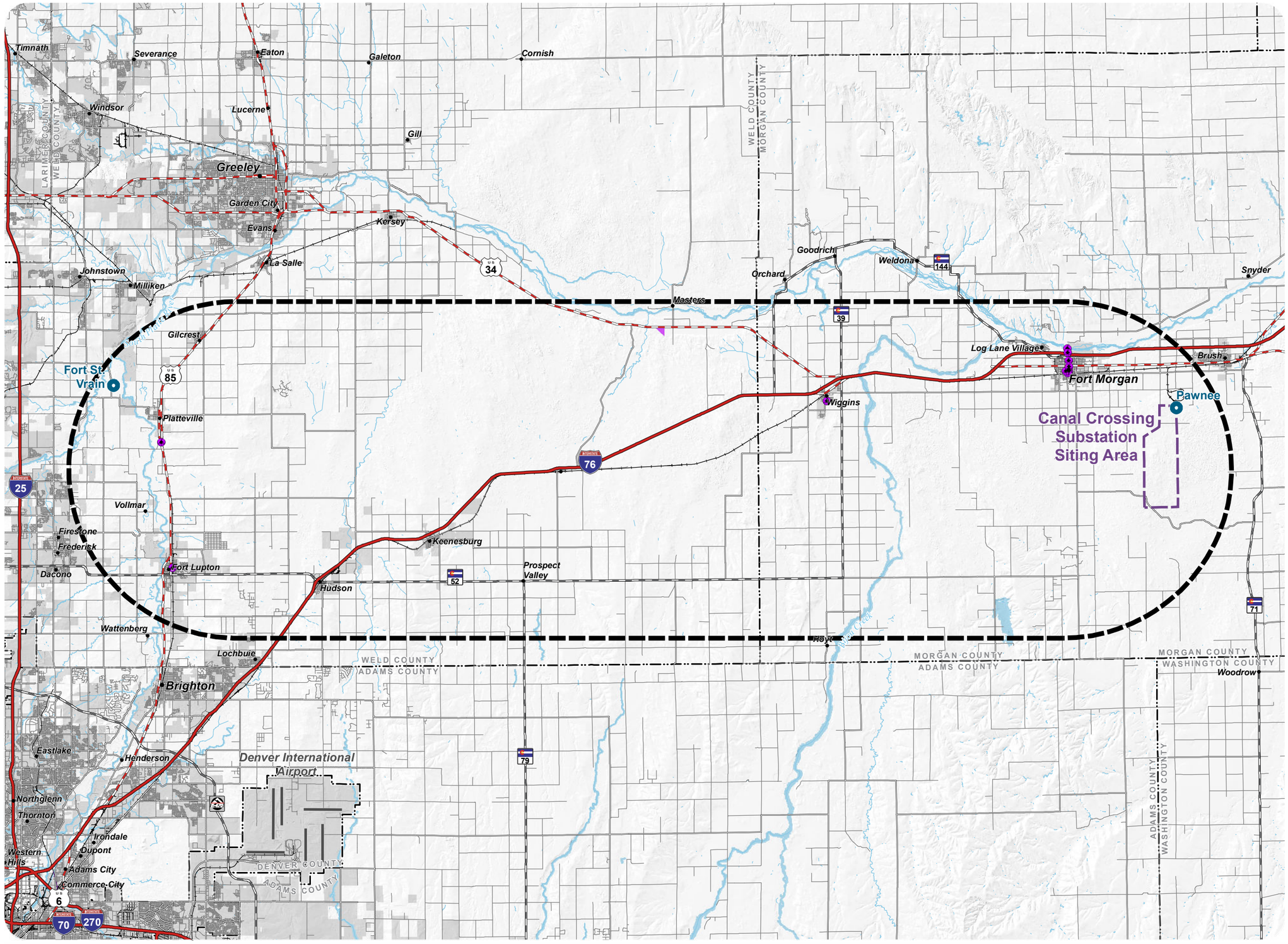

Historic Places

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Historic Places
(NRHP 2020)

- Historic Place
- Historic District

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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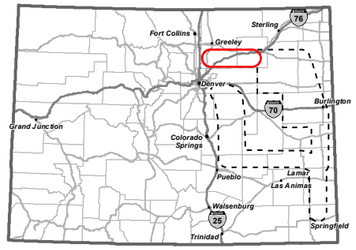

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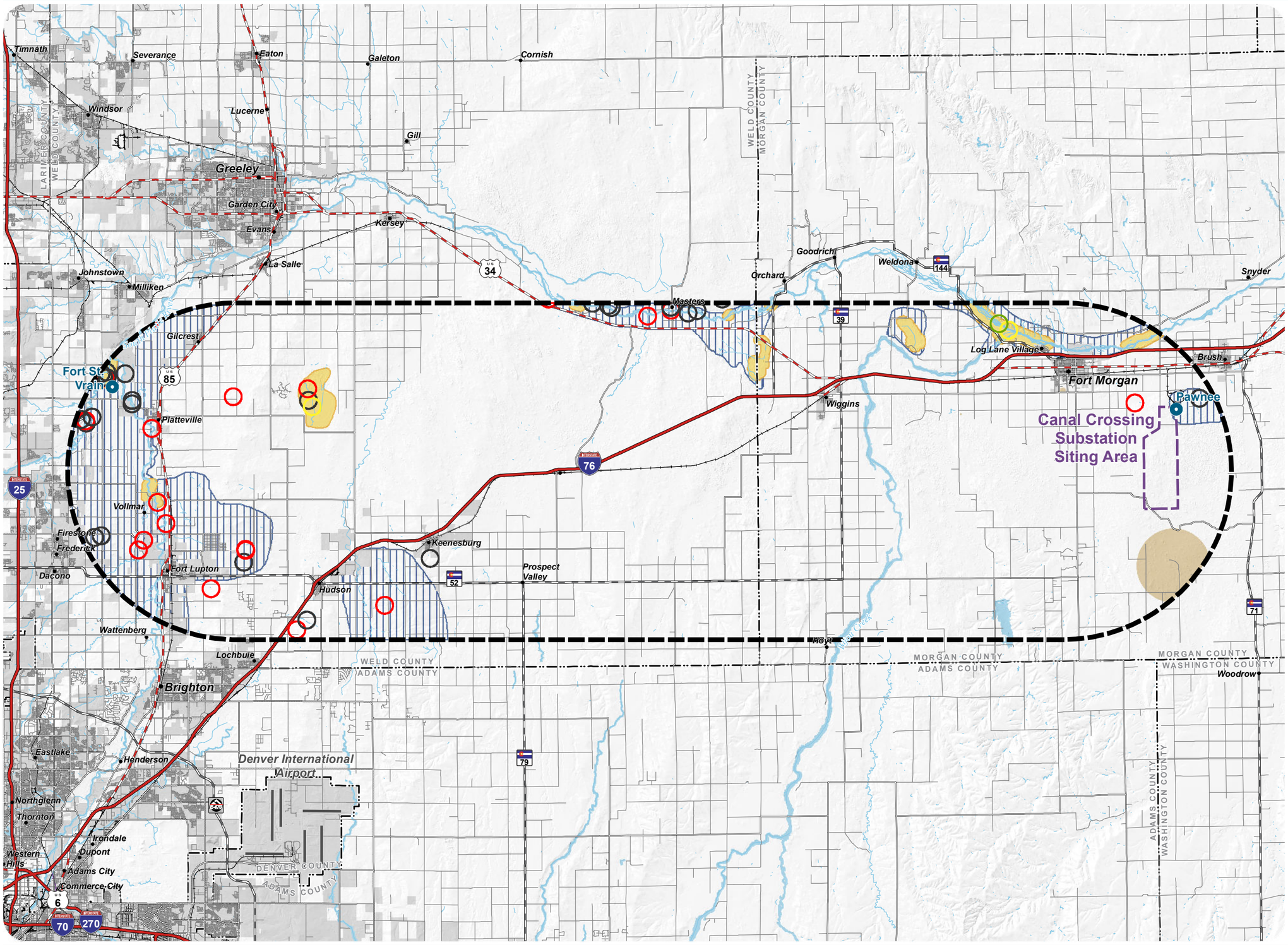

Avian Species Habitat

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Species Habitat
(CPW 2021)

Bald Eagle

- Active Nest
- Destroyed Nest
- Inactive Nest
- Undetermined Nest
- Unknown Nest
- Communal Roost
- Roost Site
- Winter Concentration

Greater Prairie-Chicken

- Overall Range

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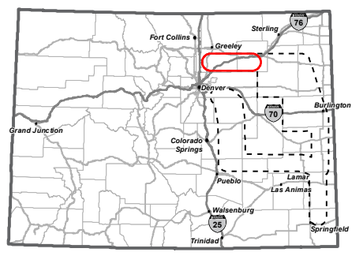

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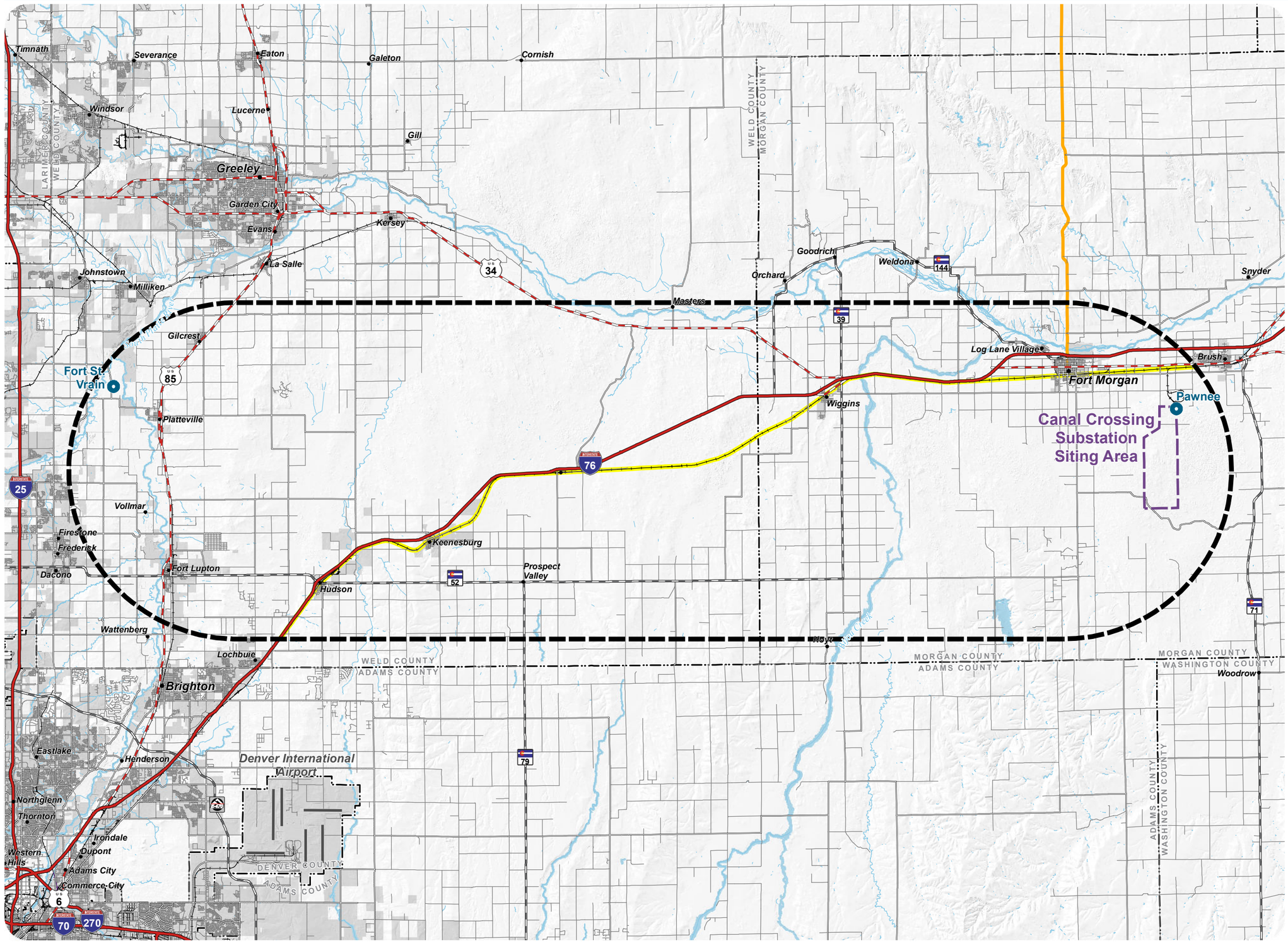

Ground Transportation

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad
- Amtrak Route
- Scenic Byway

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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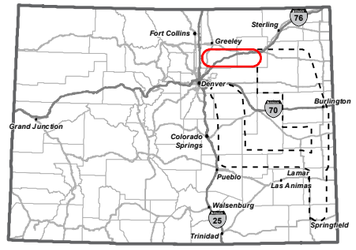

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Air Transportation

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Air Transportation
(FAA, 2021)

- Public Airport
- Private Airport
- Balloon Port
- Private Heliport
- Ultralight Port
- NAVAID Tower

FAA Filed Obstruction

- Solar Panel
- Transmission Line Structure
- Other
- Wind Turbine - No Hazard, Not Built
- Wind Turbine - Hazard, Potentially Built
- Wind Turbine - Filed, Determination in Progress

Transportation
(CDOT 2021, BTS 2020, FAA, 2021)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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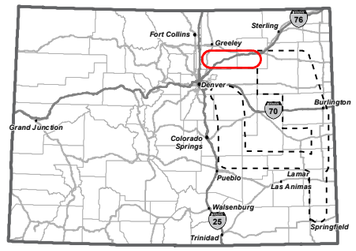

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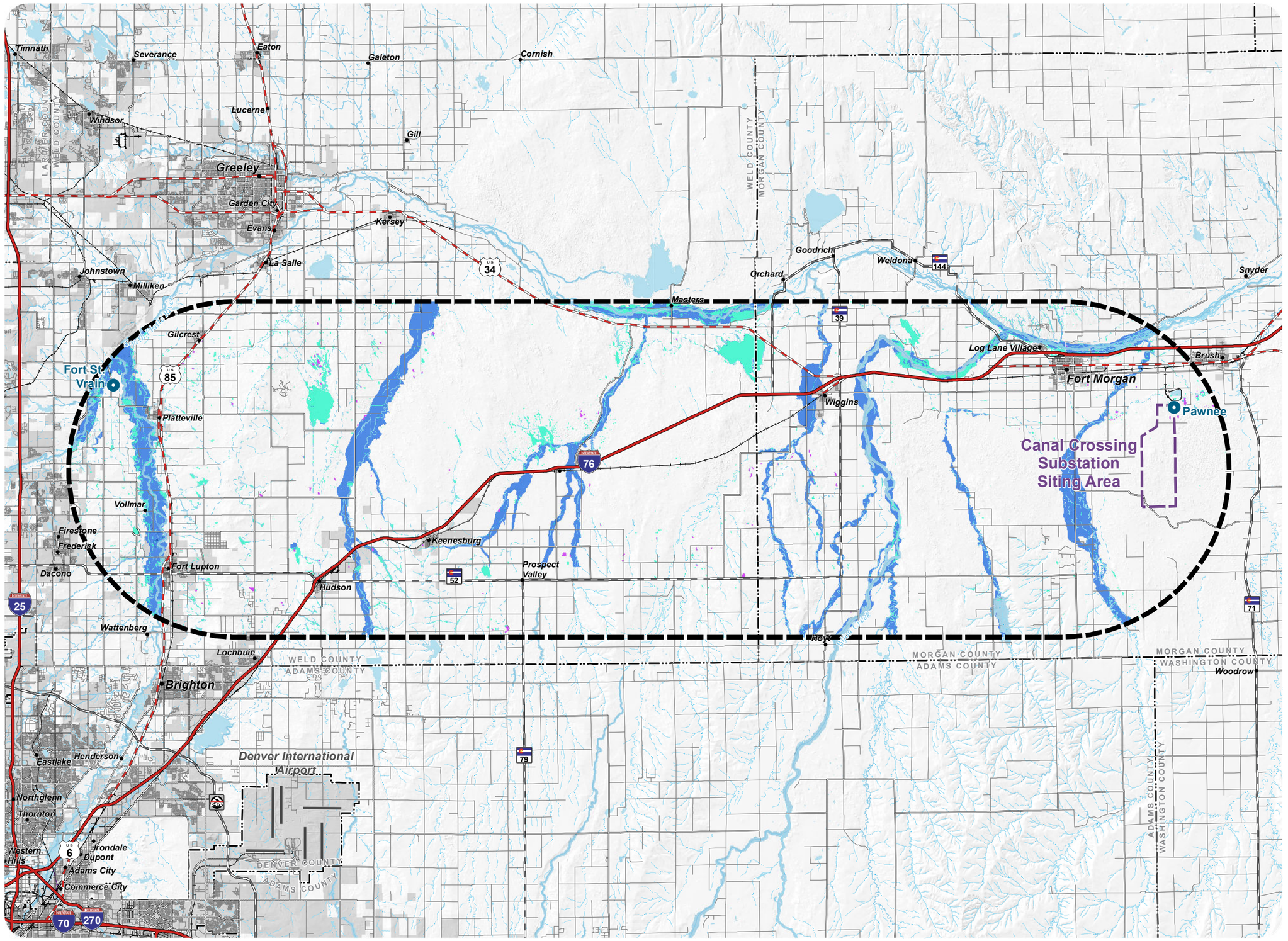

Water Resources

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Water Resources
(NHD 2020, FEMA 2021, NWI 2020, PLJV 2019)

- NHD Perennial Stream
- NHD Intermittent Stream
- NHD Canal/Ditch
- NHD Waterbody
- PLJV Playa
- NWI Wetland
- FEMA 100-year Floodplain

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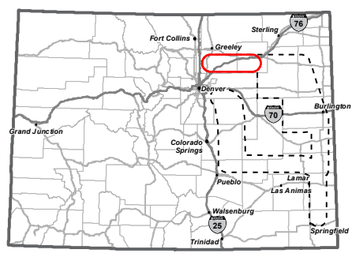

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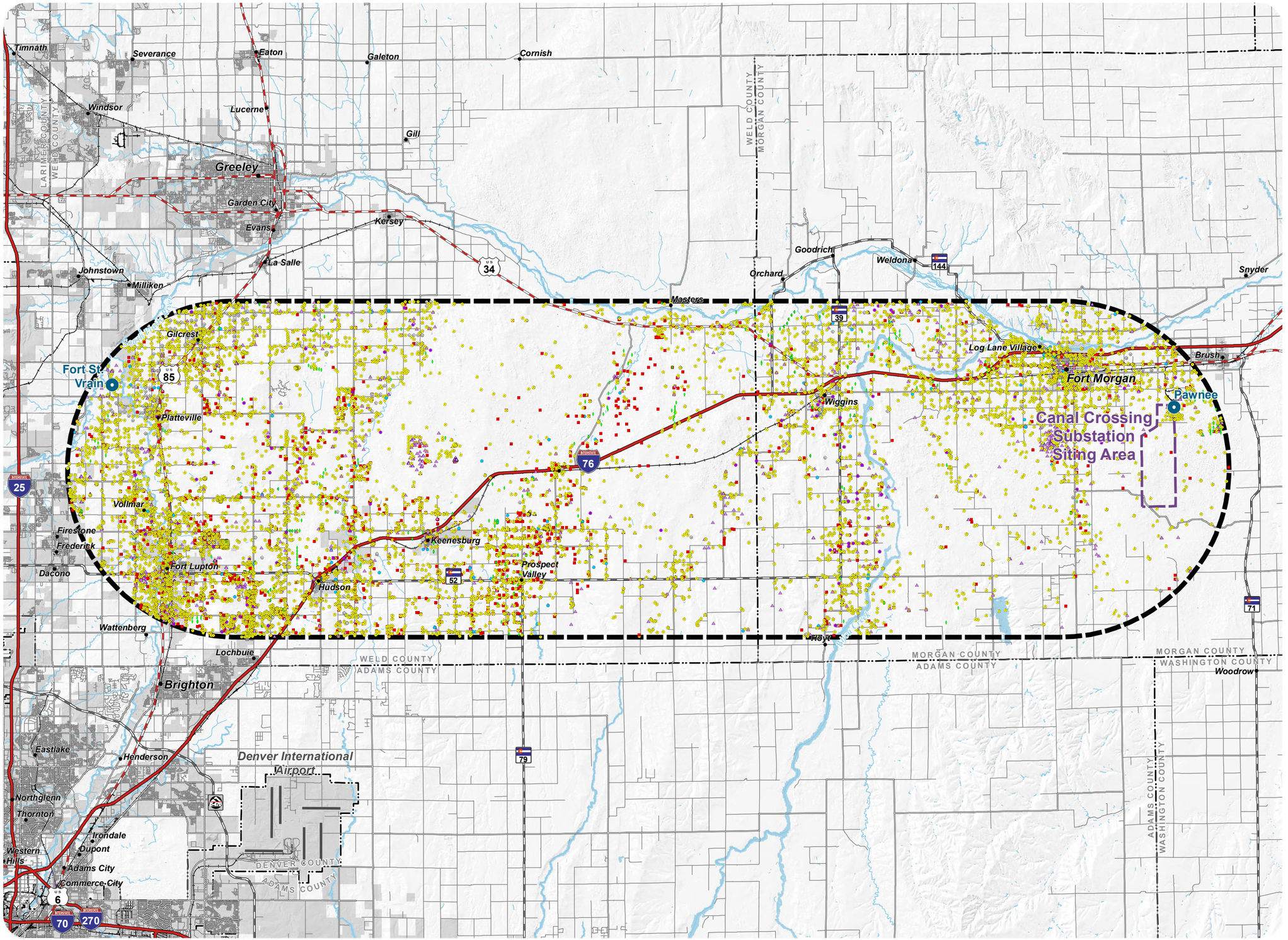

Water Wells

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Water Wells
(CODWR, 2021)

- Well Replaced
- Application Received
- Application Denied, Unacceptable, or Withdrawn
- Permit Canceled or Expired
- Permit Issued or Extended
- Well Abandoned
- Well Constructed
- Unknown

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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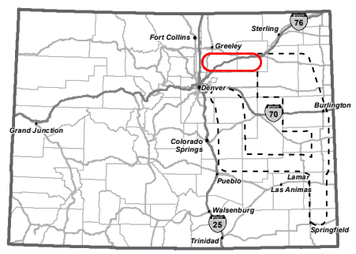

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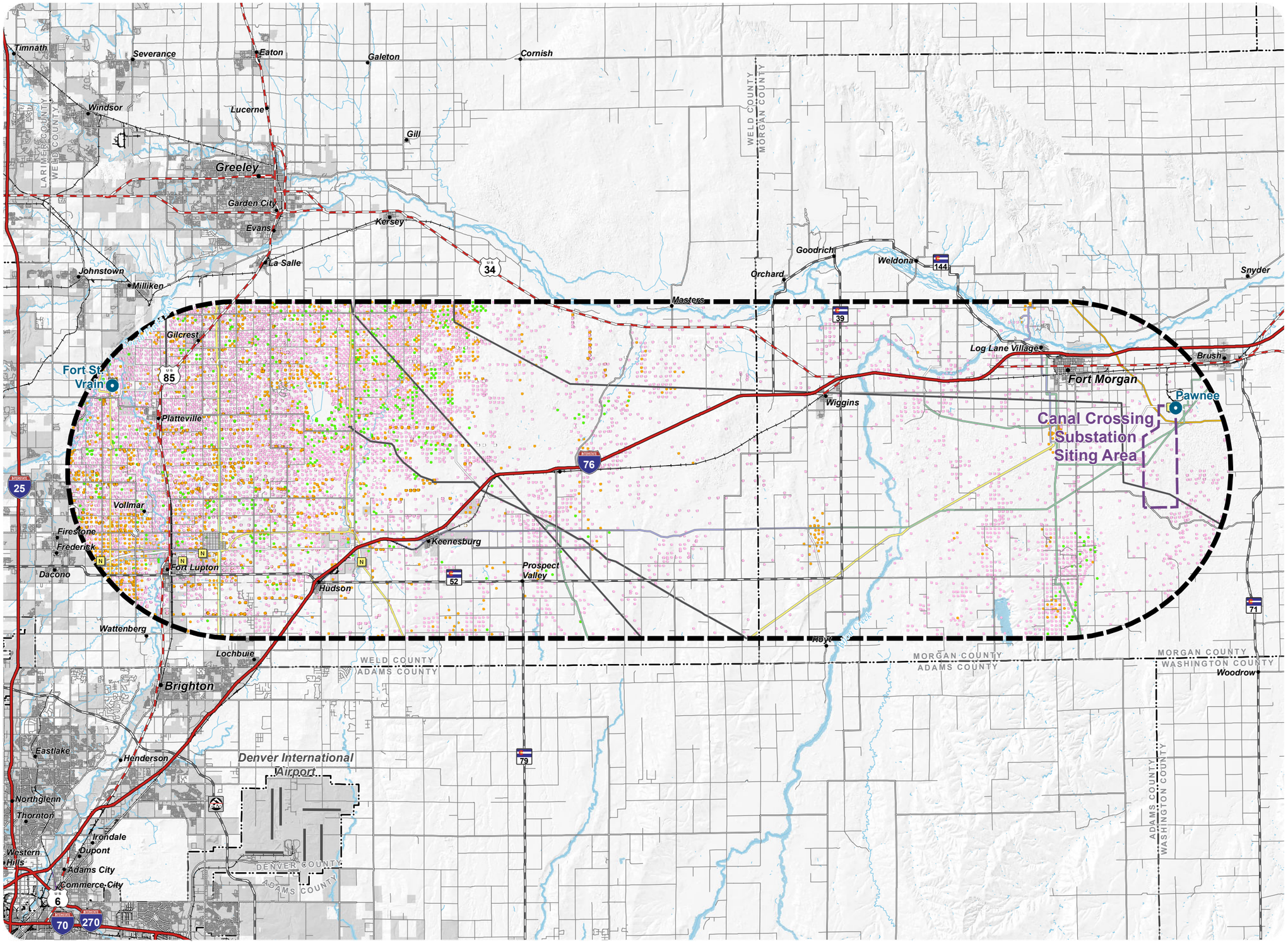

Oil and Gas Facilities

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Oil and Gas Facilites
(COGCC 2021, Ventyx 2021)

- Active Well
- Abandoned Location
- Temporarily Abandoned
- Unknown
- Natural Gas Plant/Facility

Natural Gas Pipelines

- 1-10" Diameter
- 11-20" Diameter
- 21-30" Diameter
- 31-40" Diameter
- Size Unknown

Oil

- Major Oil Pipeline

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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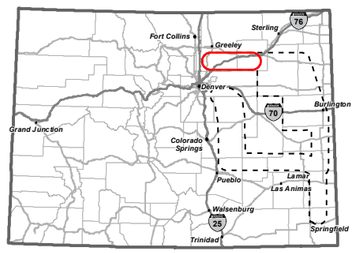

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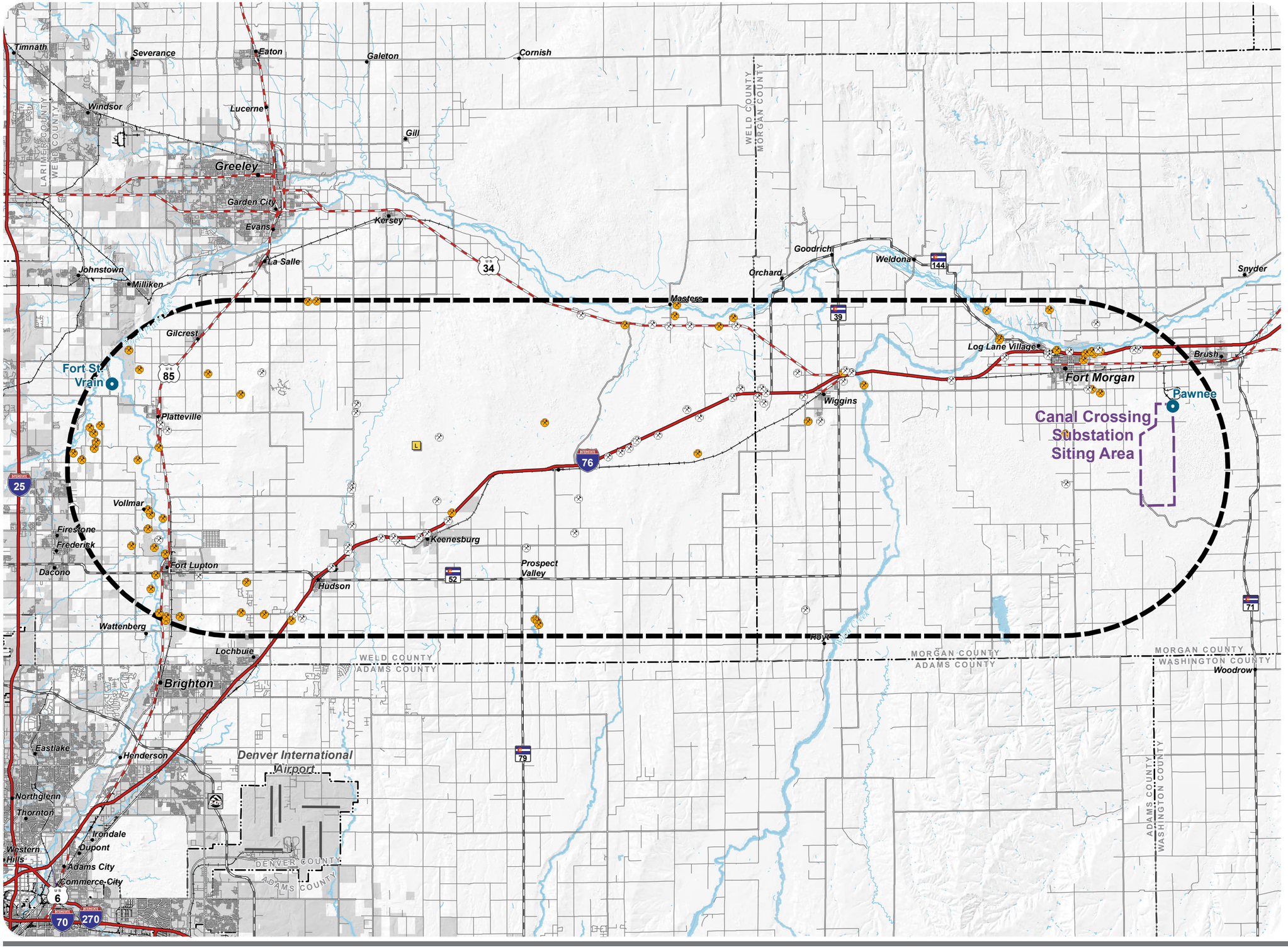

Extractive Industries and Landfills

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Extractive Industries and Landfills
(HIFLD 2021, CO DRMS 2021)

- Sand and Gravel Operation
- Other Extractive Operation
- Landfill

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

PRELIMINARY, SUBJECT TO CHANGE

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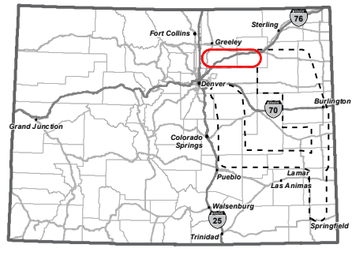
Miles



Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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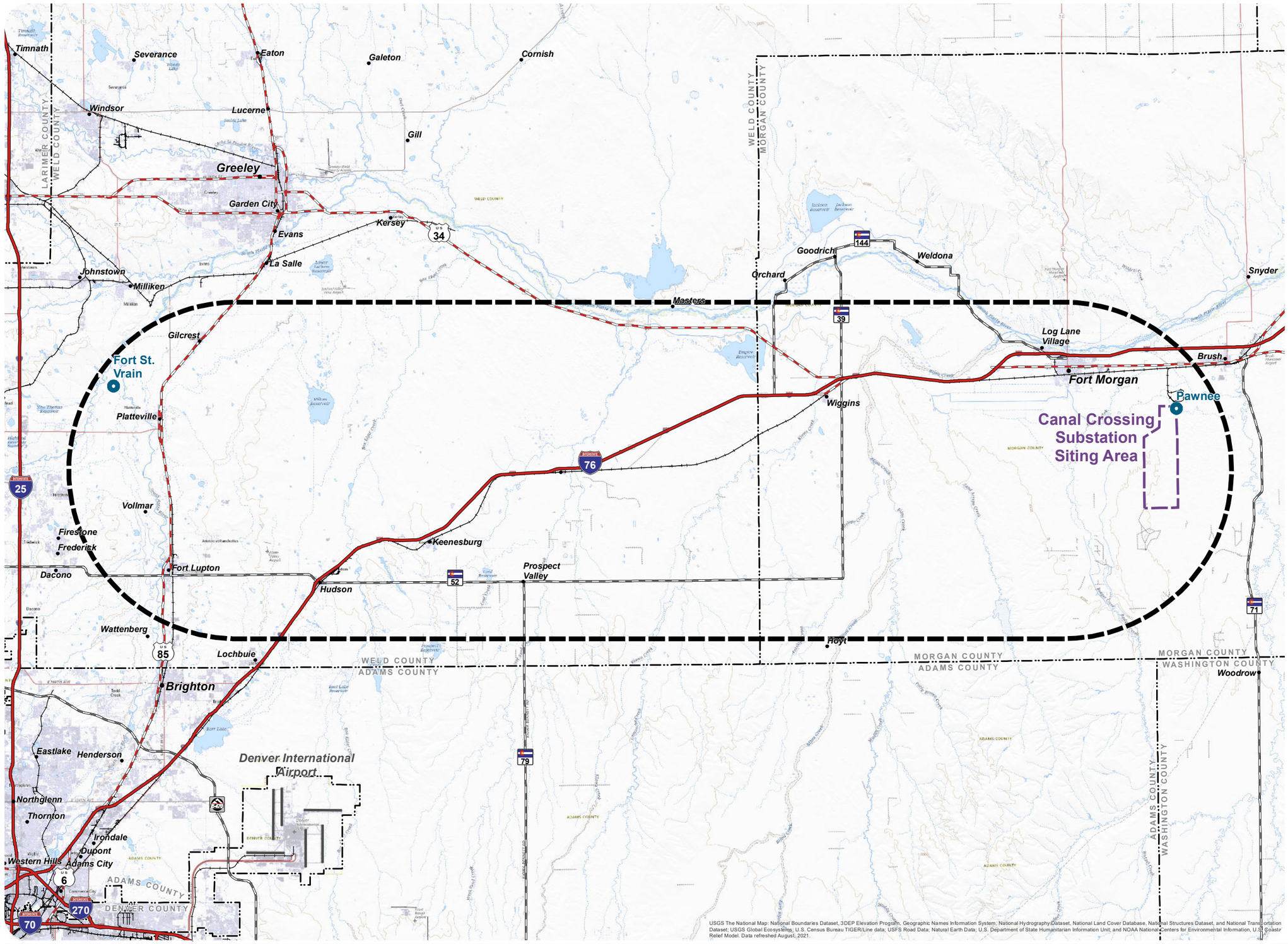

Topographic Map

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021)

- County

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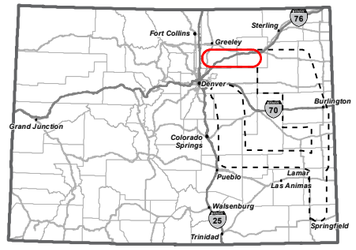

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed August, 2021.

Revised: 6/23/2022 | **NOT FOR CONSTRUCTION**
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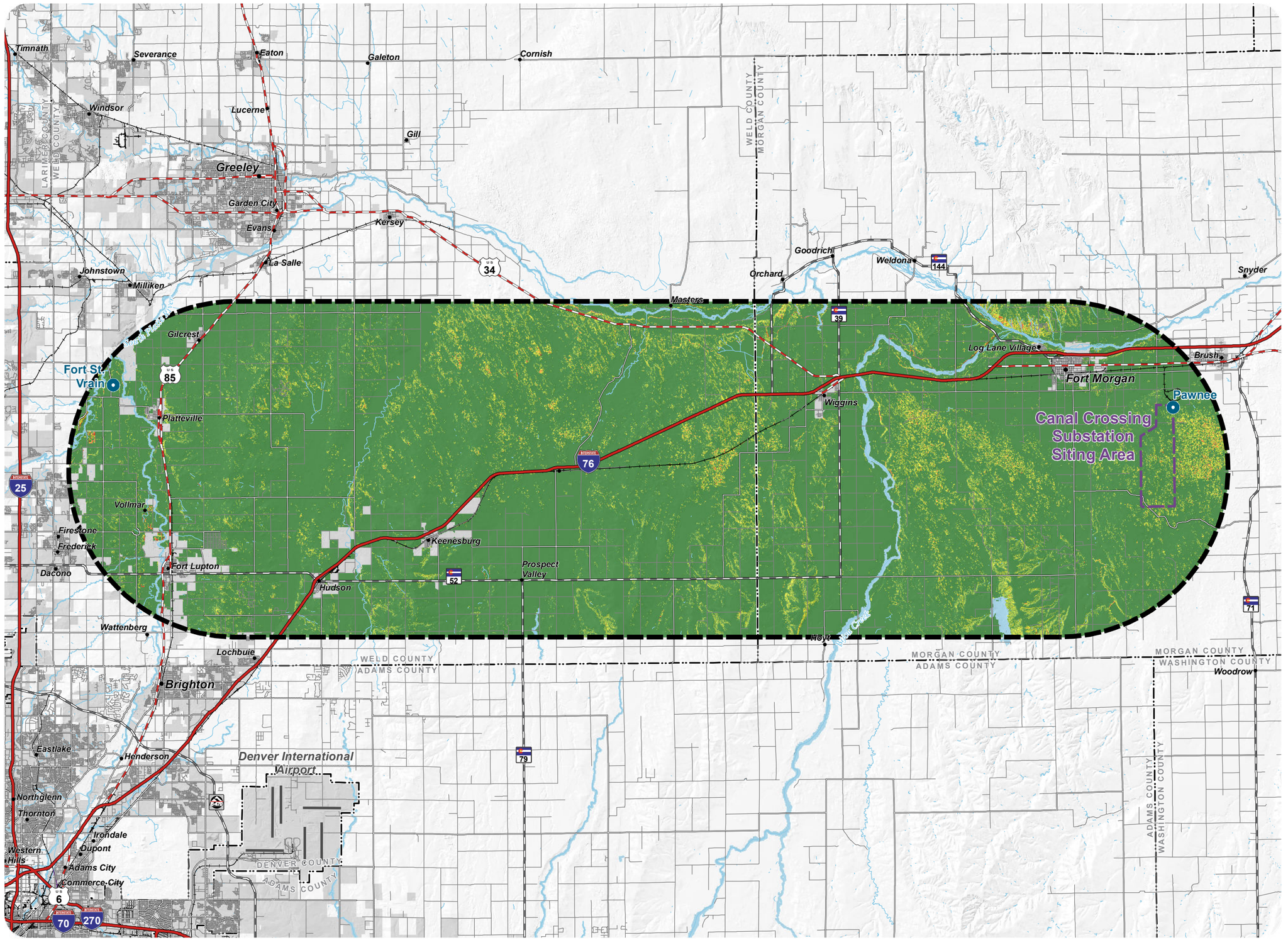

Slope

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

Slope
(USGS 2020)
(Derived from USGS 10-meter DEM)

- 0 - 5%
- 5 - 10%
- 10 - 15%
- 15 - 20%
- > 20%

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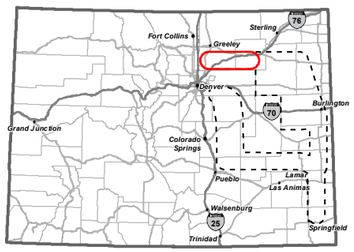
Miles



Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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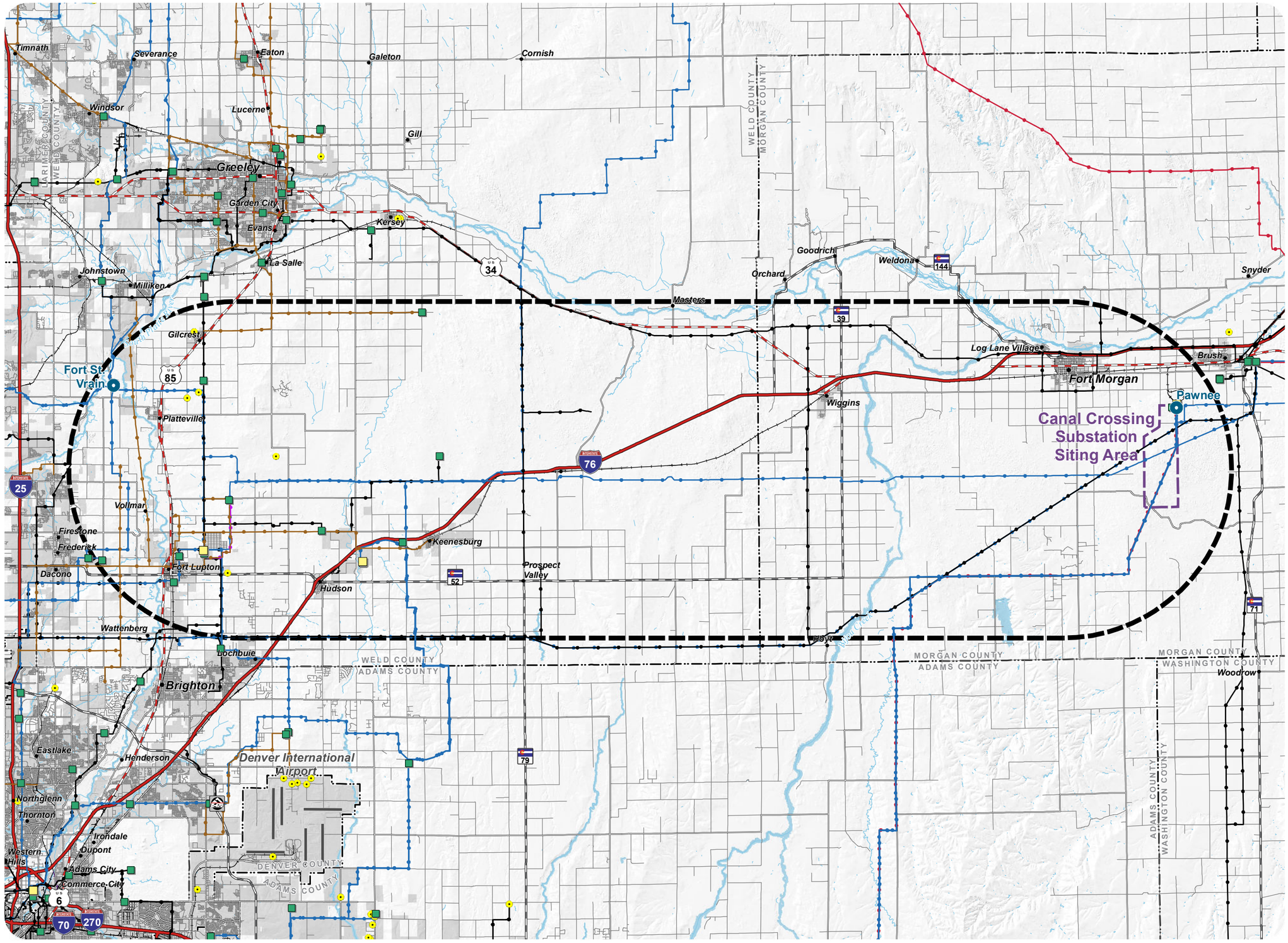

Existing Electric Infrastructure

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Existing Electric Infrastructure
(PSCo 2020, HIFLD 2021)

- Power Plant
- Substation
- Solar Facility
- 115kV Transmission Line
- 230kV Transmission Line
- 345kV Transmission Line

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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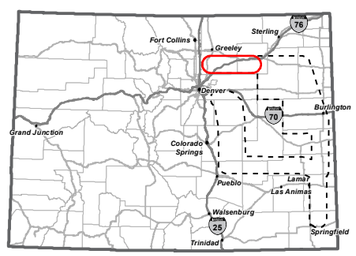

Revised: 6/24/2022 | NOT FOR CONSTRUCTION
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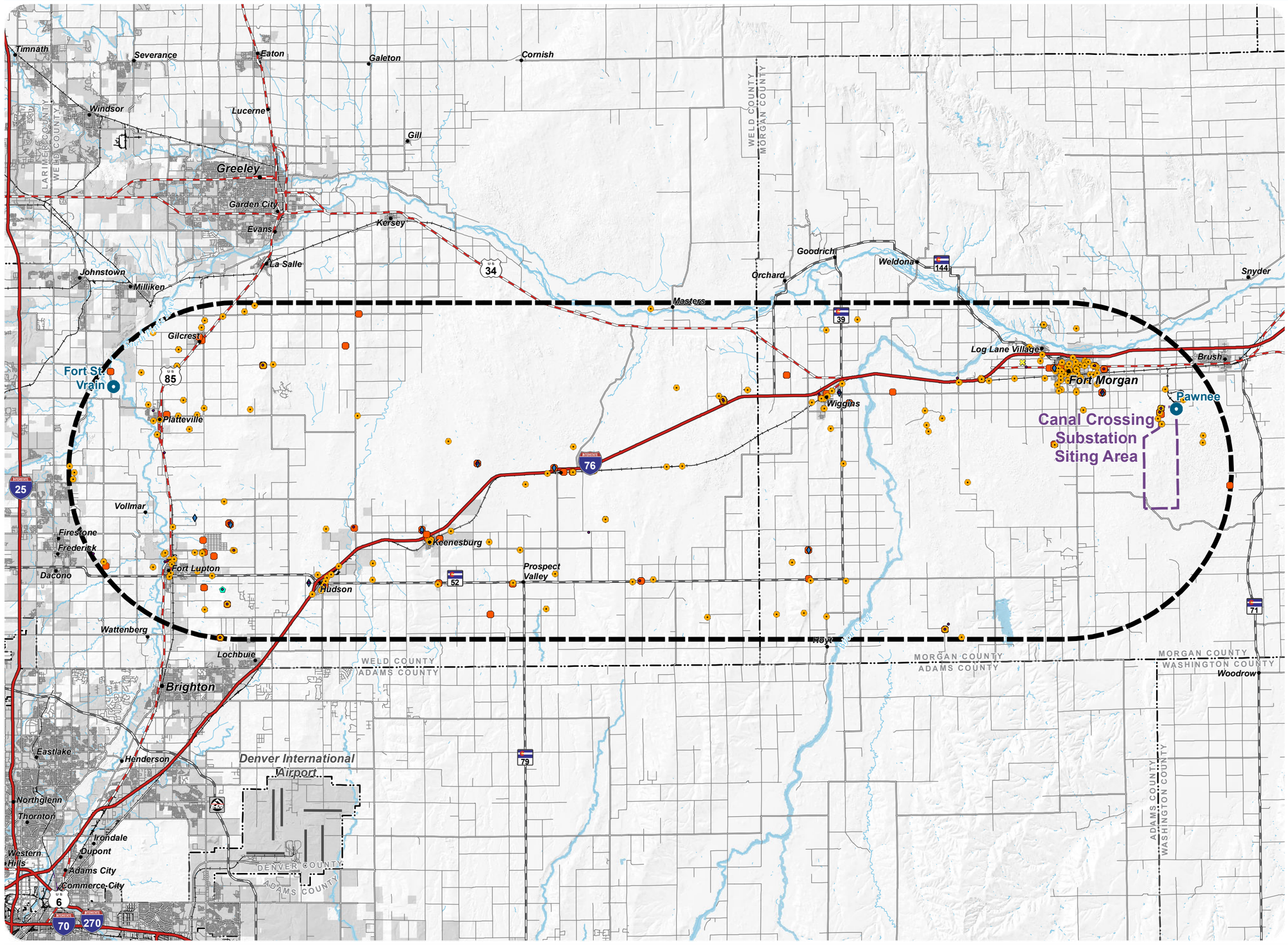

Communication Facilities

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Communication Facilities
(HIFLD 2021)

- AM Transmission Towers
- Antenna Structure
- Cellular Towers
- FM Transmission Tower
- Land Mobile Private Transmission
- Land Mobile Commercial Transmission Tower
- Microwave Service Tower
- Paging Transmission Tower

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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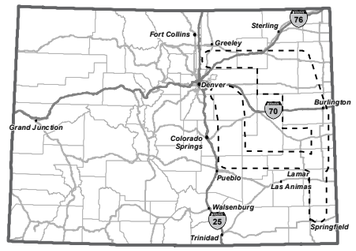

Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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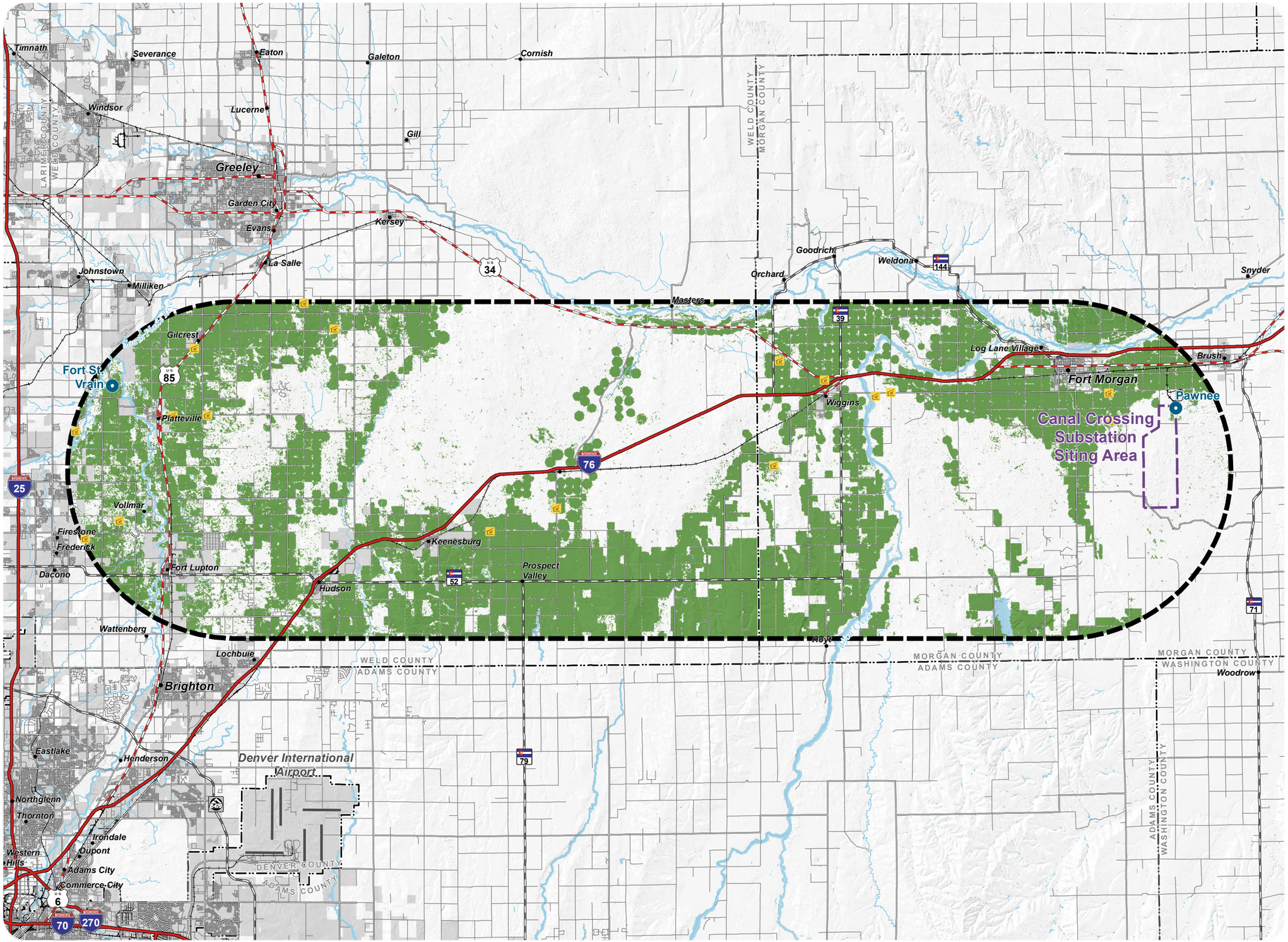

Agricultural Areas

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Agricultural Areas
(USDA, 2020, EPA 2021)

- Concentrated Animal Feeding Operation
- Irrigated Land

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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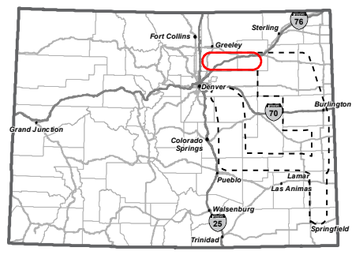

Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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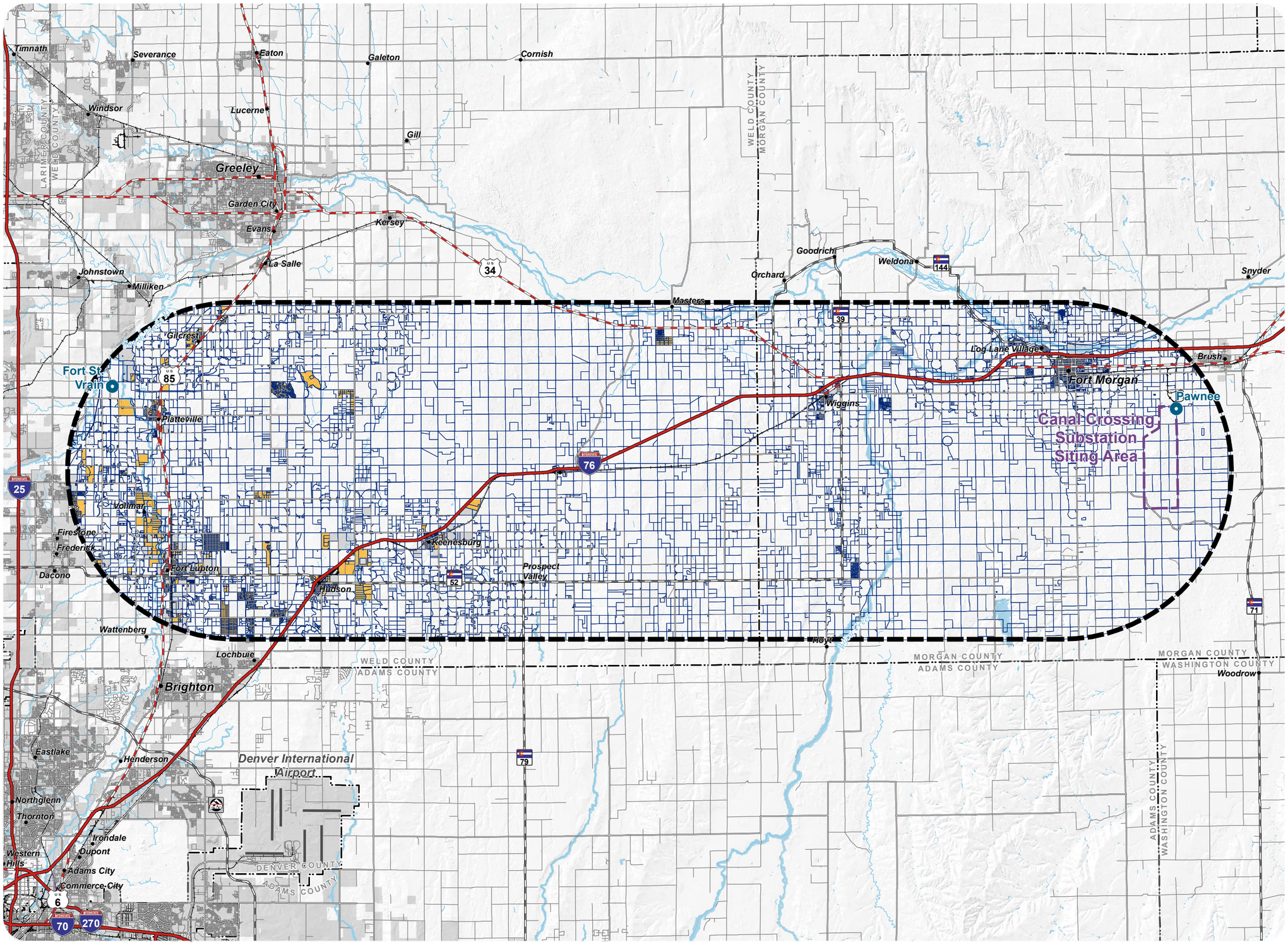

Parcels

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Parcels
(Weld Co 2021, Morgan Co 2021)
- Parcel
- Weld County Subdivision

Transportation
(CDOT 2021, BTS 2020)
- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)
- Municipal Boundary
- County

Hydrology
(NHD 2020)
- Waterbody

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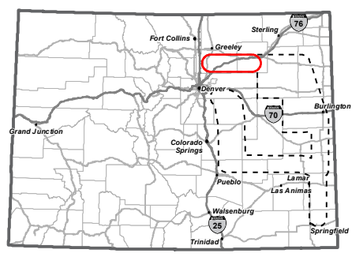

Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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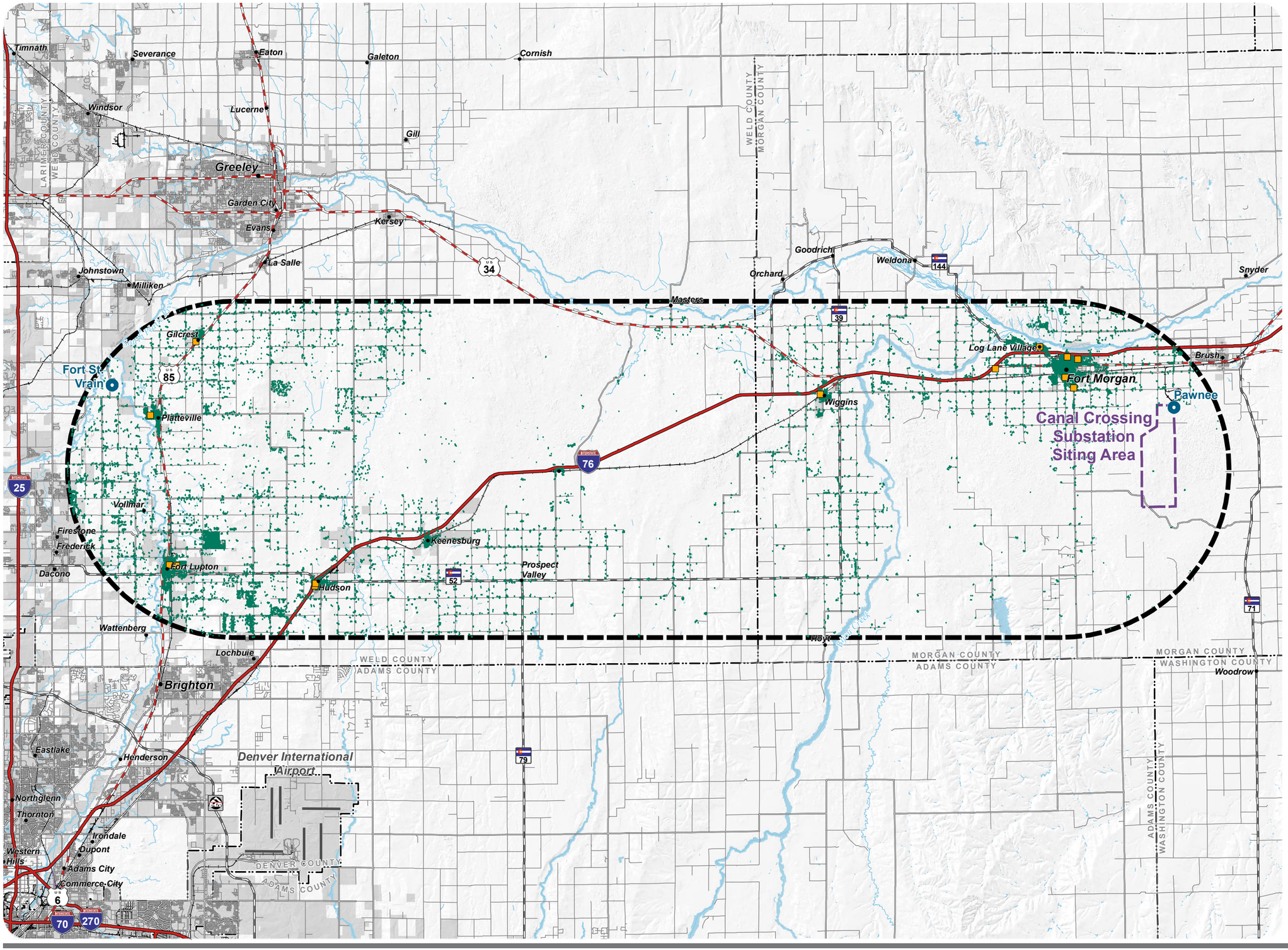

Residential and Other Structures

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Structures
(Microsoft 2021, HIFLD 2021)
- Mobile Home Park
- Residential or Other Structure

Transportation
(CDOT 2021, BTS 2020)
- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)
- Municipal Boundary
- County

Hydrology
(NHD 2020)
- Waterbody

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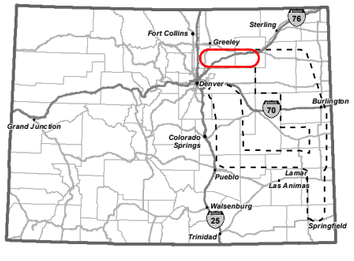
Miles



Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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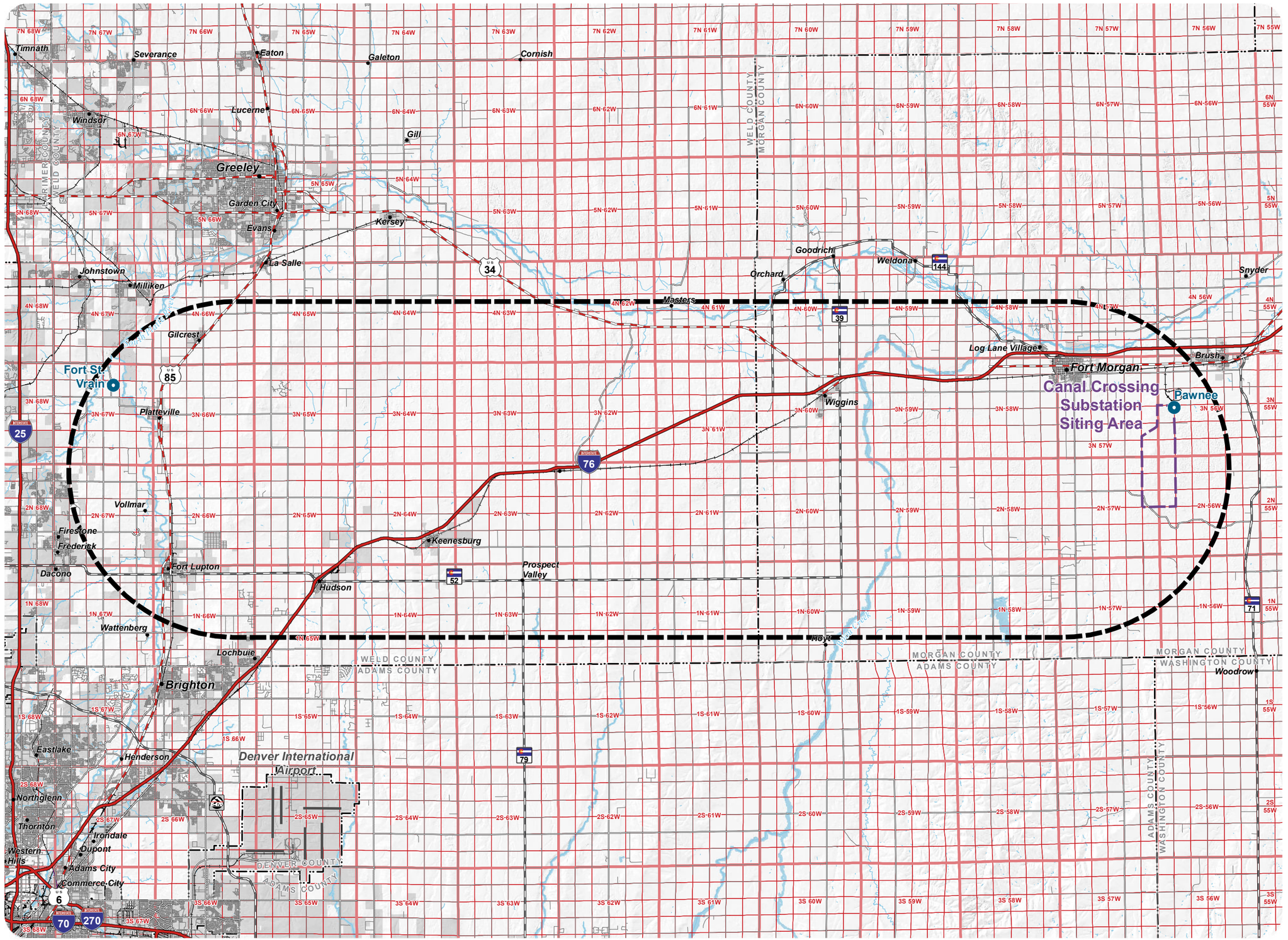

Public Land Survey

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

PLSS
(BLM 2020)
- Township
- Section

Transportation
(CDOT 2021, BTS 2020)
- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)
- Municipal Boundary
- County

Hydrology
(NHD 2020)
- Waterbody

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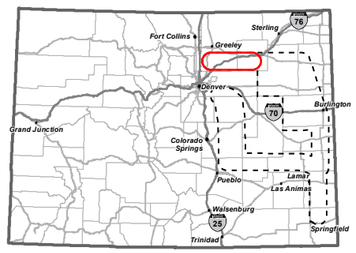

Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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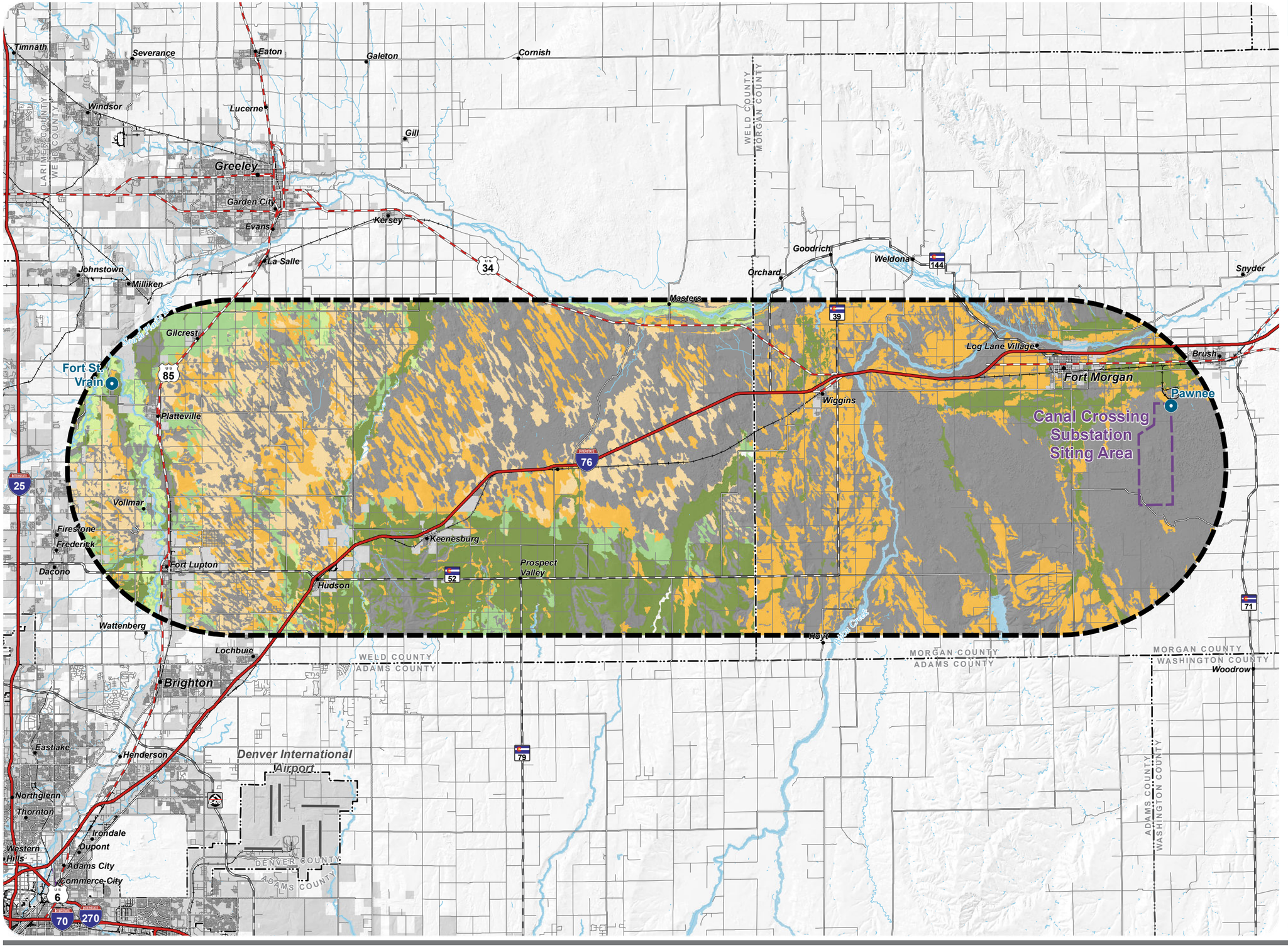

Prime Farmland

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Prime Farmland
(NRCS 2020)

- Farmland of local importance
- Farmland of statewide importance
- Prime farmland if irrigated
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Not prime farmland

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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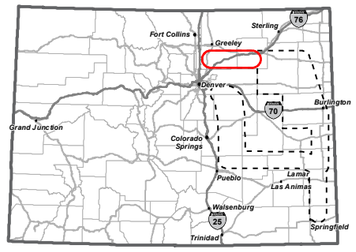

Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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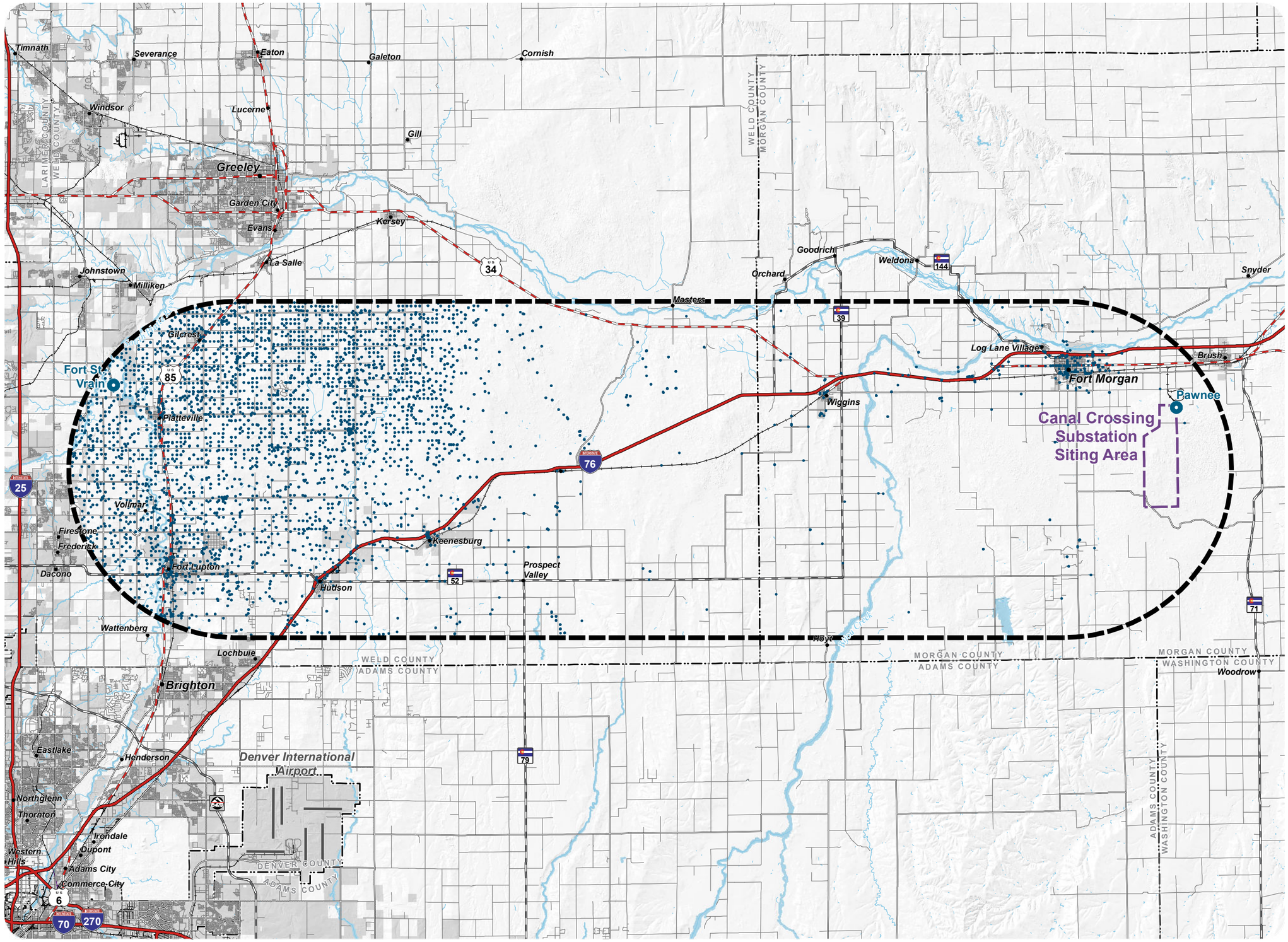

EPA Registered Facilities

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

EPA Registered Facilities
(EPA 2021)
- Registered Facility

Transportation
(CDOT 2021, BTS 2020)
- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)
- Municipal Boundary
- County

Hydrology
(NHD 2020)
- Waterbody

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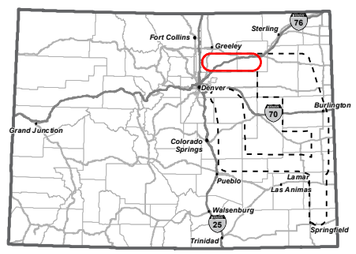

Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
Path: P:\1163_0025_CO_Power_Pathway\GIS\Layouts\Segment_1\Resource_Maps\EPA.mxd

Karst

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Karst Areas
(USGS 2017)

- Evaporite Basin

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

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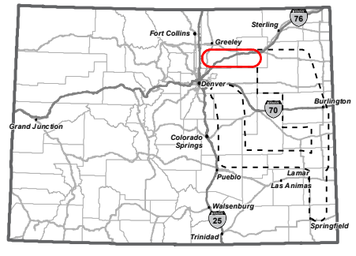

Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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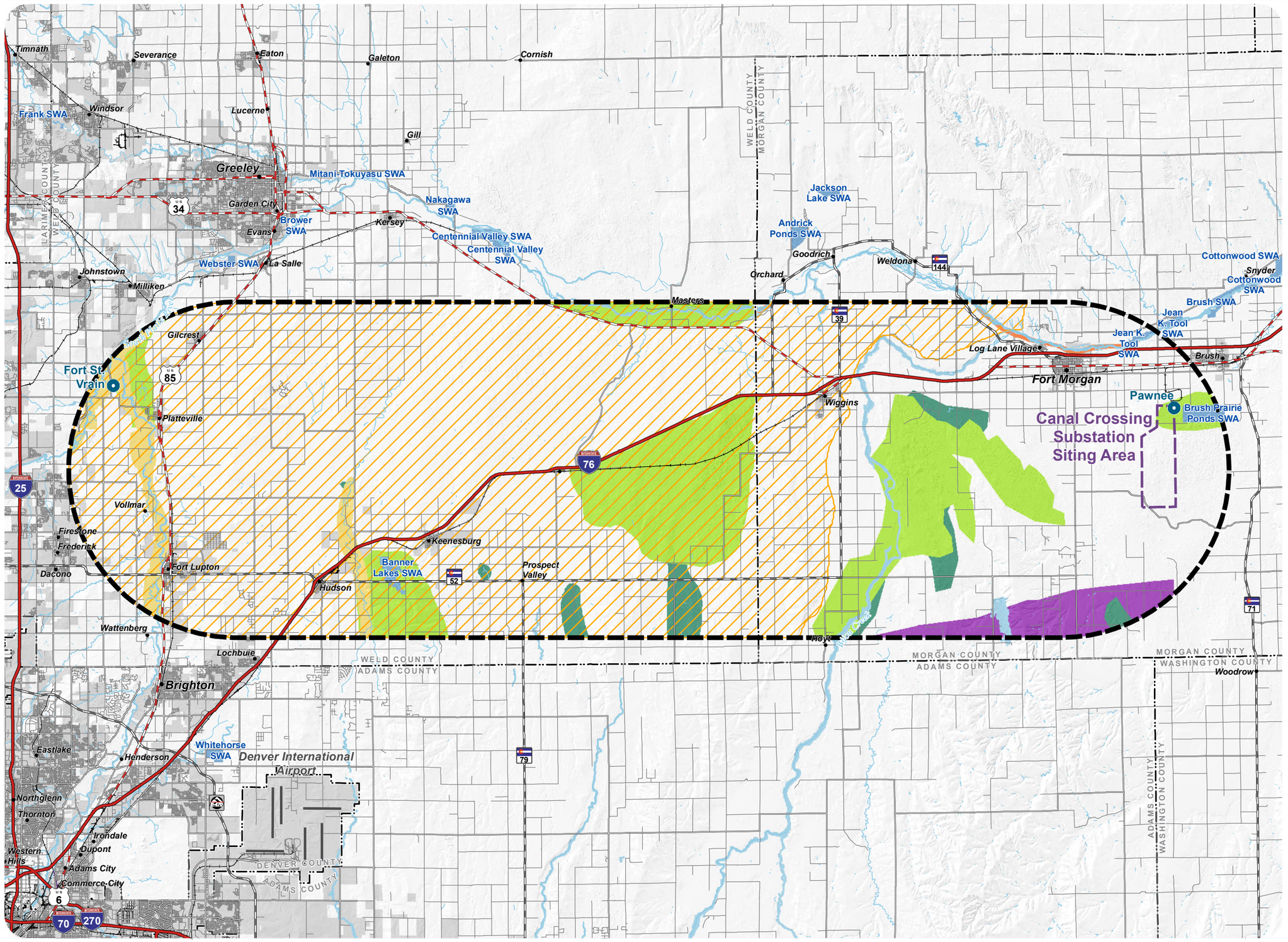

Wildlife Species Habitat

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County
- State Wildlife Area

Hydrology
(NHD 2020)

- Waterbody

Wildlife Species Habitat
(CPW 2021)

Preble's meadow jumping mouse

- Overall Range

Mule Deer

- Migration Corridor
- Concentration Area
- Winter Concentration Area

Pronghorn

- Concentration Area

River Otter

- Overall Range

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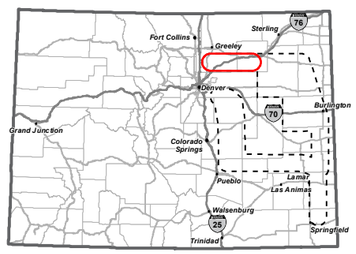

Revised: 6/23/2022 | **NOT FOR CONSTRUCTION**
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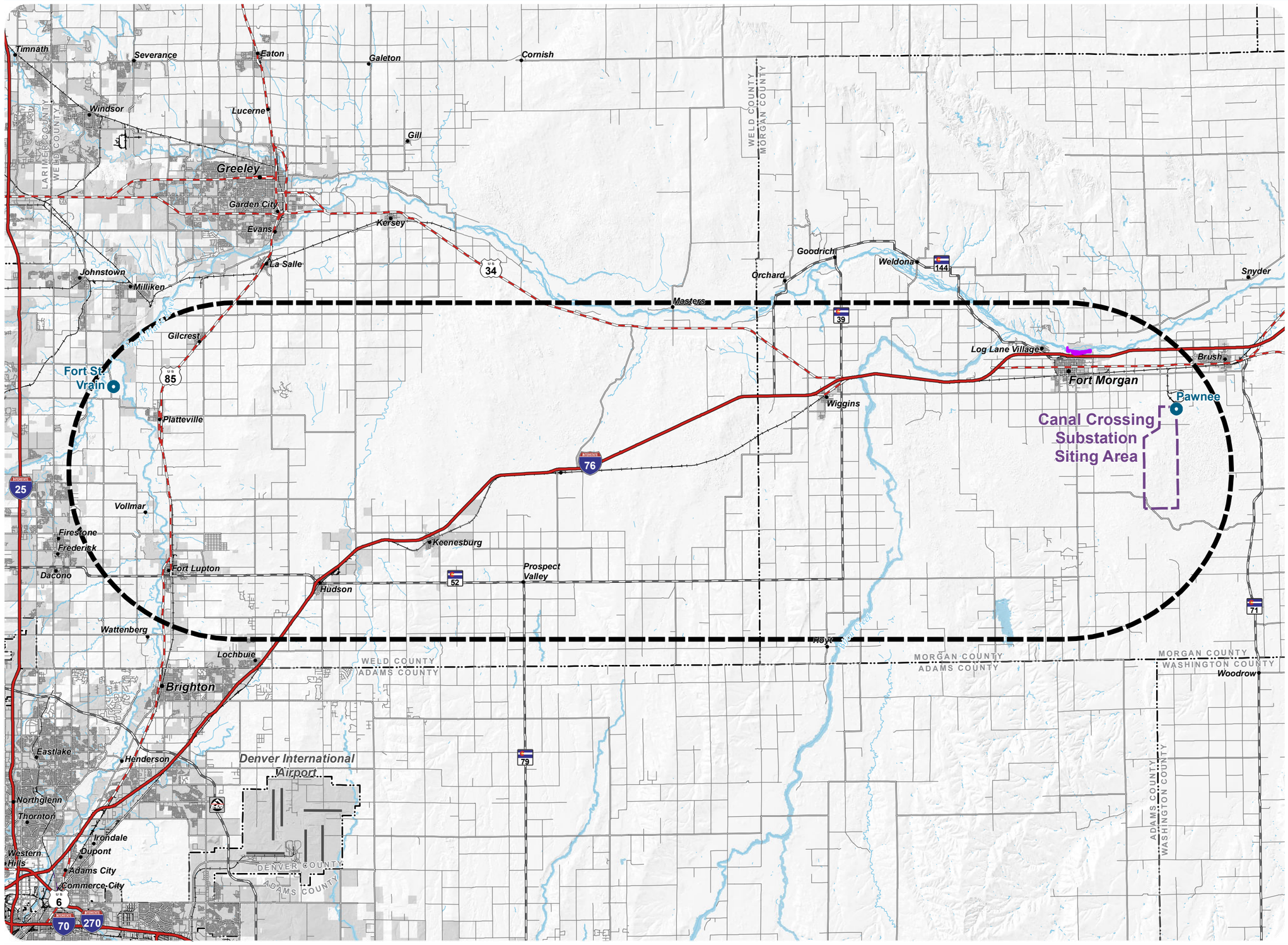

Recreation

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

Recreation
(CPW 2020)

- Trail

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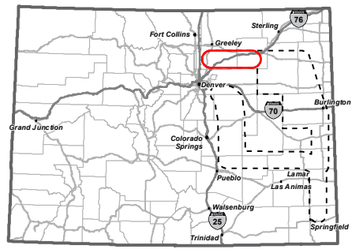
Miles



Revised: 6/24/2022 | **NOT FOR CONSTRUCTION**
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Soil Erodibility

Legend

- Existing Substation
- Study Area
- New 345kV Substation Siting Area

Transportation
(CDOT 2021, BTS 2020)

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Railroad

Boundary
(CDOT 2021, DOLA 2021)

- Municipal Boundary
- County

Hydrology
(NHD 2020)

- Waterbody

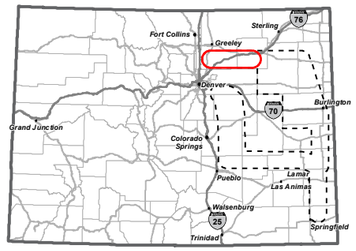
Soil Erodibility (Water Erosion)
(NRCS SSURGO, 2020)

- Low
- Moderate
- High
- No Data

PRELIMINARY, SUBJECT TO CHANGE

The information contained herein is believed to be accurate and suitable for limited internal uses only. Xcel Energy/Public Service Company of Colorado makes no warranty as to the accuracy or suitability of any information contained herein for use by third parties. The accuracy of this map and the information depicted should be verified prior to use. The user shall assume all risk and responsibility for any and all damages, including consequential damages, which may arise from the user's reliance on this information.

0 5 10
Miles



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Appendix B:
Transmission Line Routing Criteria

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Transmission Line Routing Criteria

Categorize resource data based on regulatory requirements and the influence of a resource on the construction and operation of a transmission line.

- **Suitable Area (optimize use):**
  - Less likely to be negatively impacted by transmission line construction and/or operation
  - Includes compatible land uses and lack of sensitive resources

- **Sensitive Area (minimize use):**
  - May incur environmental impacts or result in land use conflicts
  - Preferable to avoid if more suitable areas are available elsewhere
  - If a sensitive area cannot be avoided, impacts can often be mitigated

- **Exclusion Area (when possible, do not use):**
  - Locations with the highest level of sensitivity, including
    - Areas with regulatory or legislative designations
    - Extreme physical constraints not compatible with transmission line construction and/or operation
  - Could result in increased environmental and land use impacts, significantly higher costs or is not feasible from an engineering or constructability perspective

Resource Name	Data Source(s)	Suitable Area (Optimize)	Sensitivity (Minimize)	Exclusion (Exclude When Possible)	Additional Information
2021 Aerial	National Agriculture Imagery Program Imagery (2021)				Informational Purposes only – will be used for route identification/routing
Jurisdiction	Colorado Ownership, Management, and Protection (2019)	Within compatible use portions of the following lands: • Bureau of Land Management (BLM) • U.S. Forest Service (USFS) • U. S. Fish & Wildlife Service • Department of Defense • Bureau of Reclamation • Bureau of Indian Affairs • National Park Service (NPS) • Private land • State land	Within boundary of the following formally designated federal lands: • Areas of Critical Environmental Concern (ACEC) • National Wildlife Refuges • National Conservation Areas • National Land Trust Within boundary of formally designated state lands: • State Land Board Stewardship Trust land • State Wildlife Areas • State Parks or Recreation areas • State Habitat Areas Within boundary of formally designated private property: • Local parks or recreation areas	Within boundary of formally designated federal lands (except those areas listed under “sensitivity” column): • Wilderness areas, wilderness study areas • Inventoried Roadless Areas • Research Natural Areas on NPS and USFS land • National Landmarks • National Monuments • National Recreation Areas • National Historic Sites • Military Reservation/Base Within boundary of Conservation Easements (including Wetland Reserve Program)	Suitable lands are identified as such because there is no legislation precluding utility development on federally managed and privately owned lands with uses compatible to utility development. These lands do not have special designation or management objectives that preclude development of a transmission line. Sensitive areas have unique natural resource or recreation qualities, but legislation does not necessarily preclude use of these lands for utility development. Development of transmission lines within these lands are on a case-by-case basis and are subject to management prescriptions developed by agencies (if the land is held by the state or federal government) or is subject to landowner permissions (if the land is privately held). Excluded land types are typically incompatible with utility development based on formal designation and management objectives for specific goals such as resource protection, conservation, recreation, etc. In general, legislation and formal designation prohibits utility development on these lands. No ACECs in study areas.

Resource Name	Data Source(s)	Suitable Area (Optimize)	Sensitivity (Minimize)	Exclusion (Exclude When Possible)	Additional Information
NLCD Land Cover	National Land Cover Database (2019)	Grassland/herbaceous Shrub/scrub Pasture/hay/cultivated crops Barren land	Developed land Forested areas (evergreen, deciduous, mixed) Wetlands/riparian areas (woody, emergent herbaceous)	Open water	Land Cover data are indicative of certain types of land use in areas that may be more or less compatible with transmission line construction and operation. For example, developed land typically has more intense land uses and a higher concentration of structures.
Zoning	*Source(s) dependent on segment	To be determined for each county on a segment-by-segment basis based on local code requirements			Spreadsheet being developed to identify and specific county considerations to inform these criteria.
State Wildlife Action Plan	Colorado Parks and Wildlife (2015)	Category 3, 4 & 5, No Data	Categories 2	Category 1	Category 1: Habitats, including wildlife corridors, that are rare or fragile and are essential to achieving and/or maintaining wildlife species viability or exceptional diversity. This habitat is considered irreplaceable. Category 2: Habitat, including wildlife corridors, which is limiting to a fish or wildlife community, population, or metapopulation. Loss of any of this habitat or corridor could result in a significant local or population-level decline in species distribution, abundance, or productivity. Category 3: Habitat, including wildlife corridors, that contributes significantly to the maintenance of fish or wildlife communities, populations, or metapopulations. [This category covers broad areas that would not be possible to avoid.] Category 4: Common habitat. Category 5: Habitat significance unknown. Colorado Parks & Wildlife - State Wildlife Action Plan
Public Institutions	Homeland Infrastructure Foundation-Level Data (2021)		150’ of facility location	Area within 75’ of facility location	Buildings are generally considered incompatible with transmission lines, as buildings cannot be built in the transmission line right-of-way (ROW). Smaller buildings can usually be avoided with minor adjustments to the location of transmission infrastructure. Public institutions are generally sited near other high-density land uses, such as residential developments.
Historic Places	National Register of Historic Places (2020)		Within 150’ feet of NRHP sites or districts	Area within 75’ of NRHP site or district	Avoid direct impact by not placing ROW over sites, consider potential visual impact to sites listed due to their visual character.
Avian Species Habitat	Colorado Parks and Wildlife (2021)		Within roosting/communal roosting habitat, lesser prairie chicken priority habitat, Foraging Areas, 1-mile of known raptor nest locations	Within avian production areas	Avian species may be impacted if route is sited near nest locations. CPW buffers and construction timing restrictions may be triggered.
Ground Transportation	Colorado Department of Transportation (2021) Bureau of Transportation Statistics (2020)	Within 0.25 mile of: • Interstates • U.S. highways • State highways • Major and local roads Greater than 0.5 mile away from existing rail line	Within 0.25 mile of scenic byway	Within 0.5 mile of existing rail line (paralleling)	Roads are existing linear corridors that often provide access for construction and maintenance subject to department of transportation (DOT) approvals and adherence to the DOT’s standards and regulations. Federal Highway Administration (FHWA) Scenic Byways Policy: FR May 18, 1995 Volume 60, Number 96. A scenic byway is a public road with special scenic, historic, recreational, cultural, archaeological, and/or natural qualities that have been recognized as such through legislation or some other official declaration. Scenic byways may have associated scenic easements along the ROW that prohibit construction of utility structures or structures that degrade the scenic quality of the road. https://www.fhwa.dot.gov/hep/scenic_byways/index.cfm CDOT typically does not allow transmission lines to be located within interstate highway ROW, but some exceptions are allowed on a case-by-case basis. Construction and maintenance are difficult in or adjacent to interstate, U.S. or state highway ROW due to traffic, safety, and access. Paralleling rail lines at close distances for long lengths can raise concern regarding induced voltage on the rail line.

Resource Name	Data Source(s)	Suitable Area (Optimize)	Sensitivity (Minimize)	Exclusion (Exclude When Possible)	Additional Information
Air Transportation	Federal Aviation Administration (2021)			Within 50,000 feet of military airport Within 15,000 feet of public airport Within 5,000 feet of private airport Within 4,000 feet of heliport, balloon port, glider port	49 CFR Part 77, "Safe, Efficient Use and Preservation of the Navigable Airspace" provides Federal Aviation Administration (FAA) regulations for navigable airspace associated with airports. Federal Regulation Title 14 Part 77 establishes standards and notification requirements for objects affecting navigable airspace.
Water Resources	National Hydrography Dataset (2020) Federal Emergency Management Agency (2021) National Wetland Inventory (2020) Playa Lakes Joint Venture (2019)		Within wetland area Within 2,000' of lakes and perennial streams Within 0.25 mile of Natural River Inventory waterway	Within 100 feet of lakes and perennial streams Waterway (or 100' if not a polygon in water resources data)	Wetlands may be associated with "Waters of the United States" and are regulated under Section 404 of the Clean Water Act. http://water.epa.gov/lawsregs/guidance/wetlands/sec404.cfm Nationwide Rivers Inventory is a listing of free-flowing river segments in the U.S. that are believed to possess one or more "outstanding remarkable" values. Nationwide Rivers Inventory - Rivers (U.S. National Park Service) (nps.gov)
Water Wells	Colorado Division of Water Resources (2021)		Within 75' of water wells		
Oil and Gas Facilities	Colorado Oil and Gas Conservation Commission (2021) Ventyx (2021)			Within 0.5 mile of pipeline (paralleling) Within 250' of facility (well location, tank battery, pigging facilities)	Setback consideration for drilling of wells versus existing/operating wells may be different.
Extractive Industries and Landfills	Homeland Infrastructure Foundation-Level Data (2021) Colorado Division of Reclamation Mining and Safety (2021)			Within 0.25 mile of facility	Expansion plans not always known – follow up with owners/operators of specific facilities if routing nearby.
Topography	U.S. Geological Survey (2020)				Informational Purposes - gentle topography and slopes are desirable for transmission line corridors since steep slopes can present engineering challenges for construction and maintenance.
Slope	U.S. Geological Survey (2020)				Informational Purposes
Existing Electric Infrastructure	PSCo (2020) Federal Aviation Administration (2021) Homeland Infrastructure Foundation-Level Data (2021)	Within 0.25 mile of existing transmission line infrastructure	1,000' of FAA filed, not yet built turbine	Area within solar facility boundary. Area within distance 1.1 times the height of built wind turbine (turbine height assumed to be 500')	These resources provide linear corridors that are already developed and have existing access for construction and maintenance. Consider areas where collocating transmission lines is not preferred due to reliability concerns. Distribution lines are not mapped – aerial and field review to determine if any are routing factors.
Communication Facilities	Homeland Infrastructure Foundation-Level Data (2021)		Area within 300-500' of facility location	Area within 300' of facility location	Communication towers may have large guyed area and/or avoidance around areas the facility.
Agricultural Areas	U.S. Department of Agriculture (2020) U.S. Environmental Protection Agency (2021)			Concentrated Animal Feeding Operation (CAFO) (or within 500' if size not provided in data set)	CAFOs are dense operations that may not have space for transmission ROW, environmental concerns.
Parcels	**Source(s) dependent on segment*				For Informational Purposes
Residential and Other Structures	Microsoft (2021) Homeland Infrastructure Foundation-Level Data (2021)		Area within 75-150' of structure	Area within 75' of structure	Assumes 150' ROW (75' either side of centerline) plus additional for structure/property size.
Public Land Survey	Bureau of Land Management (2020)				30' either side of center line held in reserve for future road expansion – For Informational Purposes

Resource Name	Data Source(s)	Suitable Area (Optimize)	Sensitivity (Minimize)	Exclusion (Exclude When Possible)	Additional Information
Prime Farmland	Natural Resources Conservation Service (2020)				For Informational Purposes – transmission line siting on farmland does prohibit agricultural use of the land. Consider impacts to irrigation ditches and canals that are used for flood irrigation. County/local designations may be a factor if data is identified or during conversations with jurisdictions.
EPA Registered Facilities	U.S. Environmental Protection Agency (2021)		Avoid area within 100' of registered facility		The Facility Registry Services (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest.
Karst	U.S. Geological Survey (2017)				For Informational Purposes – covers too broad of an area to avoid. If known sinkhole locations are identified, they will be avoided.
Wildlife Species Habitat	Colorado Parks and Wildlife (2021)		Within production areas, severe winter range, or similar		
Recreation	Colorado Parks and Wildlife (2020)		Directly above trail, park, or path (assume width of 25' for trails or paths)		Trails/bike paths are not incompatible with electrical infrastructure development when they are located adjacent to such infrastructure. However, it would be preferable to avoid developing substations and transmission lines directly over these uses to limit the impact.
Soil Erodibility	Natural Resources Conservation Service Soil Survey Geographic Database (2020)				Data is not granular enough to support routing decisions – For Informational Purposes
Important Bird Areas	Audubon Society (2020)		Within area		
Critical Habitat	USFWS - None in study areas as of 5/3/21	No Critical Habitat within study areas.			
Wild & Scenic Rivers	None within study areas or nearby as of 5/14/21	No Wild & Scenic Rivers within study areas.			
Existing PSCo Land Rights	Xcel Energy	Utilize existing land rights where possible for all or a portion of the new ROW	n/a	n/a	Xcel provided data
Other Utilities Future Projects	Projects mapped as information became known – used for route identification/refinement as applicable.				
Irrigated Lands	Pivots and other irrigation devices considered during route refinement stage				

Appendix C:
Link Modification Tracker

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Link Modification Tracker

Link	No Change	Eliminated	Modified	Added	Comments
101	•				Preferred When compared to Link 102, Link 101 has a shorter length, avoids more homes, and is within fee owned ROW
102	•				Alternative
103	•				Preferred
104	•	•			Eliminated When compared to Links 105, 107, and 108, Link 104 is proximate to more homes and buildings Future residential development and Planned Unit Development near intersection of County Road 32 and County Road 39
105	•	•			Eliminated
106	•				Preferred
107			•		Modified and split to add Link 131 Formerly alternative, but chosen as preferred to reduce number of existing transmission line crossings Preferred
108			•		Formerly preferred, but chosen as alternative to reduce number of existing transmission line crossings Alternative
109	•				Alternative
110	•	•			Eliminated
111	•	•			Eliminated
112	•	•			Eliminated due to number of homes and buildings in proximity, elimination of Link 104 and 113 and planned residential near intersection of County Road 32 and County Road 39
113	•	•			Eliminated When compared to Link 116, Link 113 is proximate to more homes and natural resources This link would “box in” Pelican Lake Ranch Subdivision on the west and north sides.
114	•	•			Eliminated
115	•				Preferred Routing would consider pole placement relative to Tire Mountain
116			•		Preferred Modified on eastern end to accommodate landowner request to adjust for future Waste Management Facility
117			•		Alternative Split to accommodate addition of Link 128 on western end and Links 134 and 135 on eastern end and to accommodate modifications to Links 116 and 118

					General public preference suggested routing adjacent to I-76
118		•	•		Modified to accommodate addition of Link 130 Formerly preferred, but chosen as eliminated in favor of Link 129 based on landowner requests Modified per landowner request to avoid splitting a planned golf course
119			•		Preferred Modified to accommodate addition of Link 130 and based on landowner request
120			•		Preferred Modified to remove diagonal
121	•	•			Eliminated
122	•	•			Formerly preferred, but eliminated
123			•		Preferred Modified to accommodate addition of Link 124 and 125
124		•		•	Link split from Link 123 to accommodate routing to Canal Crossing Substation Siting Area
125	•			•	Preferred Added to accommodate routing to Canal Crossing Substation Siting Area
126				•	Preferred Added to accommodate routing to Canal Crossing Substation Siting Area
127				•	Added to accommodate routing to Canal Crossing Substation Siting Area
128				•	Split from Link 118 to accommodate modification to Link 116
129				•	Added to accommodate landowner requests associated with Links 118 and 130
130				•	Split from Link 119 to accommodate addition of Link 129
131				•	Added to connect modified Links 107 and 108
132				•	Split from Link 107 to accommodate addition of Link 131
133				•	Split from Link 108 to accommodate addition of Link 131
134				•	Preferred based on landowner feedback
135				•	Preferred based on landowner feedback

Appendix D:
Comparative Matrix

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Link Number	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118
Engineering Factors																		
Overall length (miles)	4.78	8.02	3.01	4.98	4.73	1.41	1.96	2.52	0.44	0.81	0.24	2.48	21.90	4.00	2.52	7.74	30.32	8.24
Existing Electric Infrastructure																		
Number of Existing Transmission line crossings	1	6	3	1	4	0	4	4	0	0	0	0	2	0	0	1	4	2
Length adjacent to Existing Transmission line (within 200ft) (miles)	4.53	1.23	0.06	0.52	0.08	0.00	1.95	0.60	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.07	0.32	0.08
Length along existing PSCo Fee Owned ROW (feet)	4.78	1.62	0.04	0.50	0.04	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percent within existing PSCo Fee Owned ROW	100%	20%	1%	10%	1%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Roads																		
Number of road crossings (Major and Local)	3	3	2	4	2	1	1	2	0	1	0	2	5	1	3	1	9	0
Length adjacent to roads (within 200ft) (miles)	0.23	1.38	0.15	0.79	0.12	0.08	0.08	1.54	0.00	0.29	0.24	2.48	4.02	0.10	1.08	0.08	2.89	0.00
Number of State Highway crossings	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Length adjacent to State Highway (within 200ft) (miles)	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
Number of US Highway crossings	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length adjacent to U.S. Highway (within 200ft) (miles)	0.08	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of Interstate crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0
Length adjacent to Interstate (within 200ft) (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00
Length adjacent to roads (all roads) (within 200ft) (miles)	0.31	1.51	0.15	0.79	0.12	0.08	0.08	1.54	0.00	0.29	0.24	2.48	4.02	0.10	1.08	0.08	3.07	0.00
Percent adjacent to roads (all roads)	6.4%	18.8%	5.1%	15.9%	2.5%	5.4%	3.9%	61.0%	0.0%	36.0%	100.0%	100.0%	18.3%	2.6%	42.9%	1.0%	10.1%	0.0%
Scenic Byway's with 200ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rail																		
Number of railroad crossings	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Length adjacent to railroad (within 75ft) (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landowners and Parcels																		
Number of parcels crossed	9	21	10	11	10	3	8	7	3	4	1	6	42	10	8	17	58	13
Length adjacent to parcel lines (within 75ft) (miles)	4.32	2.39	1.27	4.71	4.04	0.00	1.56	0.06	0.00	0.00	0.07	1.66	12.02	1.97	0.15	2.19	16.93	7.81
Number of landowners crossed	1	12	9	8	8	3	8	5	2	2	1	1	17	5	7	8	34	4
Other Infrastructure																		
Oil and Gas wells within 50ft	0	1	1	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0
Number of gas pipelines crossed	19	8	2	2	2	0	1	1	0	0	0	1	0	1	5	2	4	0
Length adjacent to gas pipeline (within 200ft) (miles)	4.04	0.41	0.08	2.48	0.15	0.00	0.08	0.71	0.44	0.58	0.00	0.08	0.84	0.07	2.52	1.19	2.32	0.00
Water wells within 75ft	2	9	2	1	0	0	0	0	0	0	0	0	5	2	0	3	21	1
Communication Facility within 300ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEXRAD towers within 300ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVAID towers within 300ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Public Institutions within 150ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Transportation																		
Nearest Airport (military, public, private, heliport, balloon port, glider port) (miles)	2.72	1.97	2.00	1.44	1.14	1.14	1.41	1.18	3.32	2.87	2.77	2.53	2.84	2.77	3.62	5.44	2.58	4.13
Number of Military Training Routes Crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Training Areas Crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length Crossing Training Area (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length Crossing Special Use Airspace/MOA (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jurisdiction/Land Use Factors																		
Counties																		
Length in Weld County (miles)	4.78	8.02	3.01	4.98	4.73	1.41	1.96	2.52	0.44	0.81	0.24	2.48	21.90	4.00	2.52	7.74	20.20	8.24
Length in Morgan County (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.12	0.00
Jurisdiction																		
Length crossing Bureau of Land Management (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing State Land (miles)	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.00	0.00	0.00	6.76	2.25
Length crossing Stewardship Trust Land (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing State Wildlife Area (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Conservation Easement (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Department of Defense (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land Use (NLCD Land Cover)																		
Length crossing Open Water (miles)	0.06	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Developed, Open Space (miles)	0.06	0.38	0.04	0.09	0.03	0.04	0.04	0.80	0.39	0.63	0.18	0.58	1.62	0.06	1.03	0.24	1.67	0.00
Length Crossing Developed, Low Intensity (miles)	0.02	0.38	0.00	0.02	0.00	0.00	0.00	0.08	0.00	0.07	0.00	0.07	0.19	0.02	0.00	0.02	0.06	0.00
Length crossing Developed, Medium Intensity (miles)	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.02	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00
Length crossing Developed, High Intensity (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Barren Land (Rock/Sand/Clay) (miles)	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Deciduous Forest (miles)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Evergreen Forest (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Mixed Forest (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Shrub/Scrub (miles)	0.04	0.02	0.00	0.08	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.64	0.04	0.00	0.00	2.39	0.00
Length crossing Grassland/Herbaceous (miles)	0.12	1.00	0.09	2.80	4.42	0.02	1.76	1.19	0.05	0.09	0.05	1.63	17.15	1.14	0.18	6.53	19.18	8.24
Length crossing Pasture/Hay (miles)	0.33	0.67	0.00	0.04	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.02	0.43	0.00
Length crossing Cultivated Crops (miles)	3.99	5.33	2.85	1.94	0.29	1.36	0.06	0.34	0.00	0.00	0.00	0.20	2.05	2.73	1.31	0.93	6.58	0.00
Length crossing Woody Wetlands (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
Length crossing Emergent Herbaceous Wetlands (miles)	0.15	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.02	0.00

Link Number	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118
Residences and Other Buildings																		
Residences																		
Residences within 75ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Residences within 75ft - 150ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Total residences within 150ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Total residences within 500ft	4	4	0	2	1	0	0	1	0	1	0	0	2	1	1	0	7	0
Total residences within 0.25-mile	10	15	1	7	1	0	0	2	0	1	0	0	31	2	2	5	21	0
Other Structures																		
Other Structures/non-residential buildings within 75ft	0	4	1	0	0	2	0	1	0	0	0	1	0	2	1	1	2	0
Other Structures/non-residential buildings within 75 -150ft	2	2	0	0	0	0	0	1	0	1	0	0	2	1	2	0	3	0
Other Structures/non-residential buildings within 150ft	2	6	1	0	0	2	0	2	0	1	0	1	2	3	3	1	5	0
Total Other Structures/non-residential buildings within 500ft	11	21	1	2	6	3	0	2	0	10	4	9	11	20	10	7	14	0
Total Other Structures/non-residential buildings within 0.25-mile	41	76	3	29	14	3	1	4	0	17	15	28	27	38	13	25	43	10
Subdivisions																		
Number of Subdivisions within 0.25-mile	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Natural Resources																		
Length crossing wetlands (feet)	1396.05	2293.69	933.44	84.44	632.61	13.00	256.88	13.82	0.00	0.00	0.00	69.77	2957.88	33.09	33.27	144.66	2444.70	2264.57
Length crossing Waterbody (feet)	372.34	329.36	0.00	204.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.03	0.00	0.00	0.00	1226.67	0.00
Number of perennial waterway crossings	3	1	0	0	0	0	0	0	0	0	0	0	2	0	0	1	1	0
Number of intermittent waterway crossings	0	3	0	0	0	0	0	0	0	0	0	2	3	0	0	2	12	3
Number of canal/ditch waterway crossings	7	12	4	3	3	1	2	1	0	0	0	0	5	1	1	2	4	0
Length crossing 100-year floodplains (miles)	1.56	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	0.00	0.00	1.06	2.69	0.56
Length Crossing Playa Lakes Joint Venture Playas (feet)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife																		
Raptor Nests within 0.5-mile	5	4	4	7	0	0	0	0	0	0	0	1	7	1	1	3	1	0
Length Crossing White Pelican Foraging Area (miles)	0.52	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00	0.00	0.00	0.00	0.00
Lesser Prairie-chicken																		
Number of Southern Great Plains Lek's crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length Crossing Southern Great Plains Lek (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Great Plains Critical Habitat Assessment Too 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Great Plains Critical Habitat Assessment Tool 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Great Plains Critical Habitat Assessment Tool 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Great Plains Critical Habitat Assessment Too 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colorado Parks and Wildlife Lesser Prairie Chicken Priority Habitat	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of Colorado Parks and Wildlife Lesser Prairie Chicken Production area/Lek crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length Crossing Colorado Parks and Wildlife Lesser Prairie Chicken Production area/Lek (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length Crossing U.S. Fish and Wildlife Service 60%			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cultural Resources																		
Number of National Register of Historic Properties, state register and local landmark sites within 75ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Historic Trails Crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Cemeteries with in 0.25 miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Link Number	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
Engineering Factors																	
Overall length (miles)	13.42	5.26	3.63	7.16	4.28	6.21	0.80	2.93	3.82	0.80	13.16	5.42	0.53	2.12	2.06	0.19	7.03
Existing Electric Infrastructure																	
Number of Existing Transmission line crossings	1	0	0	1	0	1	2	0	0	0	4	0	0	0	0	1	0
Length adjacent to Existing Transmission line (within 200ft) (miles)	0.06	0.00	0.00	0.06	3.68	0.11	0.79	0.00	0.09	0.00	2.08	0.00	0.53	0.01	0.01	0.06	0.00
Length along existing PSCo Fee Owned ROW (feet)	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percent within existing PSCo Fee Owned ROW	0%	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Roads																	
Number of road crossings (Major and Local)	3	0	0	1	2	3	0	2	1	0	1	1	0	0	0	0	1
Length adjacent to roads (within 200ft) (miles)	0.65	1.12	0.50	0.08	1.04	0.23	0.08	1.23	0.20	0.00	0.08	0.09	0.00	0.00	0.00	0.00	0.13
Number of State Highway crossings	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length adjacent to State Highway (within 200ft) (miles)	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of US Highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length adjacent to U.S. Highway (within 200ft) (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of Interstate crossings	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length adjacent to Interstate (within 200ft) (miles)	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length adjacent to roads (all roads) (within 200ft) (miles)	0.90	1.12	0.50	0.08	1.04	0.23	0.08	1.23	0.20	0.00	0.08	0.09	0.00	0.00	0.00	0.00	0.13
Percent adjacent to roads (all roads)	6.7%	21.3%	13.7%	1.1%	24.3%	3.6%	10.1%	41.9%	5.2%	0.0%	0.6%	1.7%	0.0%	0.0%	0.0%	0.0%	1.8%
Scenic Byway's with 200ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rail																	
Number of railroad crossings	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length adjacent to railroad (within 75ft) (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landowners and Parcels																	
Number of parcels crossed	26	9	9	11	11	12	2	4	8	1	23	7	2	4	5	2	10
Length adjacent to parcel lines (within 75ft) (miles)	9.65	3.02	2.28	6.77	3.99	5.77	0.77	2.85	3.49	0.80	12.30	5.25	0.16	2.04	0.67	0.16	6.77
Number of landowners crossed	16	4	5	4	8	7	1	2	4	1	5	2	1	4	5	2	3
Other Infrastructure																	
Oil and Gas wells within 50ft	0	0	0	1	0	0	0	0	0	0	2	0	0	1	0	0	0
Number of gas pipelines crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	0	0
Length adjacent to gas pipeline (within 200ft) (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.12	2.06	0.00	0.00
Water wells within 75ft	2	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0
Communication Facility within 300ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEXRAD towers within 300ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVAID towers within 300ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Public Institutions within 150ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Transportation																	
Nearest Airport (military, public, private, heliport, balloon port, glider port) (miles)	5.16	4.15	5.16	6.03	7.00	3.51	7.15	7.34	5.87	5.57	3.85	6.83	2.15	2.15	2.67	6.03	6.22
Number of Military Training Routes Crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Training Areas Crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length Crossing Training Area (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length Crossing Special Use Airspace/MOA (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jurisdiction/Land Use Factors																	
Counties																	
Length in Weld County (miles)	6.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	13.16	5.42	0.53	2.12	2.06	0.00	0.00
Length in Morgan County (miles)	6.95	5.26	3.63	7.16	4.28	6.21	0.80	2.93	3.82	0.00	0.00	0.00	0.00	0.00	0.00	0.19	7.03
Jurisdiction																	
Length crossing Bureau of Land Management (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing State Land (miles)	0.98	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Stewardship Trust Land (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing State Wildlife Area (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Conservation Easement (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Department of Defense (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land Use (NLCD Land Cover)																	
Length crossing Open Water (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Developed, Open Space (miles)	0.26	0.28	0.22	0.02	0.03	0.12	0.00	0.06	0.04	0.00	0.02	0.04	0.00	0.00	0.03	0.00	0.02
Length Crossing Developed, Low Intensity (miles)	0.04	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Developed, Medium Intensity (miles)	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Developed, High Intensity (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Barren Land (Rock/Sand/Clay) (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Length crossing Deciduous Forest (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Evergreen Forest (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Mixed Forest (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Shrub/Scrub (miles)	0.02	0.00	0.01	0.09	0.37	0.00	0.00	0.00	0.00	0.00	0.02	0.11	0.00	0.04	0.00	0.00	0.21
Length crossing Grassland/Herbaceous (miles)	11.25	4.13	2.58	6.19	2.38	6.09	0.80	2.88	3.79	0.80	12.11	5.25	0.53	2.08	2.02	0.19	5.88
Length crossing Pasture/Hay (miles)	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Cultivated Crops (miles)	1.67	0.85	0.83	0.85	1.49	0.00	0.00	0.00	0.00	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.92
Length crossing Woody Wetlands (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length crossing Emergent Herbaceous Wetlands (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Link Number	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
Residences and Other Buildings																	
Residences																	
Residences within 75ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residences within 75ft - 150ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residences within 150ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total residences within 500ft	2	0	0	0	4	0	0	0	0	0	2	0	0	0	0	0	0
Total residences within 0.25-mile	2	0	1	0	7	0	0	0	0	0	2	0	0	0	2	0	0
Other Structures																	
Other Structures/non-residential buildings within 75ft	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Other Structures/non-residential buildings within 75 -150ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Structures/non-residential buildings within 150ft	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Total Other Structures/non-residential buildings within 500ft	5	0	0	0	0	0	0	0	0	0	6	0	0	3	1	0	2
Total Other Structures/non-residential buildings within 0.25-mile	6	0	3	2	5	8	0	0	0	0	8	0	0	4	6	0	2
Subdivisions																	
Number of Subdivisions within 0.25-mile	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
Natural Resources																	
Length crossing wetlands (feet)	172.87	891.89	922.80	33.26	23.38	0.00	13.53	0.00	0.00	0.00	720.81	1027.70	0.00	33.26	35.37	0.00	54.86
Length crossing Waterbody (feet)	0.00	500.39	628.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	95.86	829.71	0.00	0.00	0.00	0.00	0.00
Number of perennial waterway crossings	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Number of intermittent waterway crossings	1	1	1	1	1	0	0	0	0	0	4	1	0	0	0	0	0
Number of canal/ditch waterway crossings	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0
Length crossing 100-year floodplains (miles)	0.13	0.59	1.58	0.25	1.05	0.00	0.00	0.00	0.00	0.00	0.83	0.65	0.00	0.00	0.00	0.00	0.23
Length Crossing Playa Lakes Joint Venture Playas (feet)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wildlife																	
Raptor Nests within 0.5-mile	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0
Length Crossing White Pelican Foraging Area (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lesser Prairie-chicken																	
Number of Southern Great Plains Lek's crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length Crossing Southern Great Plains Lek (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Great Plains Critical Habitat Assessment Too 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Great Plains Critical Habitat Assessment Tool 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Great Plains Critical Habitat Assessment Tool 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Great Plains Critical Habitat Assessment Too 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Colorado Parks and Wildlife Lesser Prairie Chicken Priority Habitat	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of Colorado Parks and Wildlife Lesser Prairie Chicken Production area/Lek crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length Crossing Colorado Parks and Wildlife Lesser Prairie Chicken Production area/Lek (miles)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Length Crossing U.S. Fish and Wildlife Service 60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cultural Resources																	
Number of National Register of Historic Properties, state register and local landmark sites within 75ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Historic Trails Crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Cemeteries with in 0.25 miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0