Northern Colorado Area Plan: WAPA Ault Substation to Graham Creek Substation 230kV Transmission/Substation Project

1041 Areas and Activities of State Interest
Major Facilities of a Public Utility
Amended Section 1041 Permit Application
Submitted to Weld County

Submitted to: Weld County Planning and Zoning
              Department of Planning Services
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              Greeley, CO 80631

Submitted by: Public Service Company of Colorado

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Amended Weld County Section 1041 Permit Application for Areas and Activities of State Interest
Northern Colorado Area Plan 230kV Transmission/Substation Project

Submitted by Public Service Company of Colorado
1800 Larimer Street, 4th Floor
Denver, Colorado 80202

NOTICE OF APPLICATION AMENDMENT

On behalf of Public Service Company of Colorado (“PSCo” or “Company”), I am writing to amend the Section 1041 Permit Application (“1041 Application”) (USR18-0100) submitted on August 13, 2018 regarding the Company’s Northern Colorado Area Plan (“Project”). Additional information requested by Weld County was submitted on September 11, 2018 which resulted in a determination by County staff on September 24, 2018 that the 1041 Application was complete. Weld County subsequently distributed the 1041 Application for referral agency comments.

Weld County and PSCo received a total of 20 comment letters on the application. In a meeting held on March 7, 2019 and in response to agency and landowner comments, PSCo and the Weld County Planning Staff agreed to continue the Planning Commission and Board of County Commissioners public hearings set for the 1041 Application to allow PSCo sufficient time to amend the application. Appendix I contains a summary of PSCO’s responses to the agency and landowner comment letters.

This amended 1041 Permit Application (“Amended 1041 Application”) reduces the scope of the Project to the section from the existing Western Area Power Administration (“WAPA”) Ault substation to, and including, the new proposed Graham Creek Substation as reflected on Appendix A, Map 1. PSCo has removed from the 1041 Application the section of transmission line from the new Graham Creek Substation to the Cloverly Tap.

The Amended 1041 Application remains unchanged from the August 2018 application for the WAPA Ault to Husky and Husky to Graham Creek transmission line segments, and the Graham Creek Substation. Through the Amended 1041 Application, PSCo respectfully requests that the Weld County Planning Commission and Board of County Commissioners review and approve a Section 1041 Permit to construct, operate, and maintain approximately 10.4 miles of 230kV transmission line and one new substation in Weld County.

Two other items of note for this amended application:

- As discussed in our consultation meeting on January 18, 2018 with County staff, the Project is part of the long-term transmission plan for northern Colorado. On March 9, 2017, PSCo filed an application for a Certificate of Public Convenience and Necessity (CPCN) with the Colorado Public Utilities Commission (PUC) to construct and operate the Project. On March 1, 2018, PSCo’s Application for a CPCN was granted by the PUC. Details about the PUC’s decision can be found on the Colorado PUC website under Proceeding #17A-0146E.

- Additionally, the Husky Substation application was approved on February 13, 2019 by the Town of Ault Board of Trustees and is not part of this Amended 1041 Application.
PSCo appreciates the County’s consideration of this Amended 1041 Application and we look forward to continuing to work together on the permitting process. Please let me know if I can provide additional information or assistance. I can be contacted directly via telephone at 303-571-7089 or email at larry.claxton@xcelenergy.com.

Kindest regards,

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# Table of Contents

List of Acronyms ............................................................................................................................. vi

Executive Summary ....................................................................................................................... vii

Project Description........................................................................................................................... 1  
  Introduction ............................................................................................................................... 1  
  Public Service Company of Colorado ....................................................................................... 1  
  Purpose and Need .................................................................................................................... 1  
  Project Description .................................................................................................................... 1  

Alternatives to the Project ............................................................................................................... 7  
  Transmission System Alternatives ............................................................................................ 7  
  Transmission Line and Substation Siting Alternatives .............................................................. 7  

Use by Special Review (USR) Questionnaire ................................................................................ 9  
  Planning Questions .................................................................................................................. 9  
  Engineering Questions ........................................................................................................... 12  
  Environmental Health Questions ............................................................................................ 13  
  Building Questions .................................................................................................................. 14  

Areas and Activities of State Interest — 1041 Application Requirements ................................ 15  
  21-3-330 Application Submittal Requirements ................................................................... 15  
    21-3-330.A—Application Requirements for a Major Facility of a Public Utility ............... 15  
    21-3-330.B—Application Submittal Requirements ............................................................... 15  
      21-3-330.B.1—Map Requirements ...................................................................................... 15  
      21-3-330.B.1.a—Name and Acreage of Proposed Use .................................................. 15  
      21-3-330.B.1.b—Map Requirements .............................................................................. 15  
      21-3-330.B.1.c—Applicant and Consultants ................................................................. 15  
      21-3-330.B.2—Title Information .................................................................................... 15  
      21-3-330.B.2.a—Surface Property Owners and Real Property Interests ...................... 15  
      21-3-330.B.2.b—Project Access ................................................................................... 16
21-3-330.B.2.c—Real Property Interests ................................................................. 16
21-3-330.B.2.d—Mineral Interests ........................................................................ 16
21-3-330.B.3—Application Submittal Requirements ........................................... 17
21-3-330.B.3.a–c—Map Requirements ................................................................ 17
21-3-330.B.3.d—Section 1041 Permit Map and Vicinity Map ............................... 17
21-3-330.B.4—Plot Plan ...................................................................................... 17
21-3-330.B.5—Other Items and Information .......................................................... 17
21-3-330.B.5.a—Present Use and Zoning .............................................................. 17
21-3-330.B.5.b–d—Sketch or Map ........................................................................ 17
21-3-330.B.5.e—Type of Facility ......................................................................... 17
21-3-330.B.5.f—Projected Development Schedule .............................................. 18
21-3-330.B.5.g—Hazards and Emergency Procedures .......................................... 19
21-3-330.B.5.h—Name, Address, and Telephone of Applicant ............................ 19
21-3-330.B.5.i—Name and Address of the Fee Owners of the Property ............. 19
21-3-330.B.5.j—Legal Description of the Property under Consideration .......... 20
21-3-330.B.5.k—Total Acreage of the Parcel, ROW, or Corridor under Consideration ............................................................................................................. 20
21-3-330.B.5.l—Existing Land Use ..................................................................... 20
21-3-330.B.5.m—Existing Land Uses of All Properties Adjacent to Parcels ....... 20
21-3-330.B.5.n—Zoning and Overlay Zones ....................................................... 20
21-3-330.B.5.o—Signatures of the Applicant and Fee Owners or Their Authorized Legal Agent ............................................................................................................. 20
21-3-330.B.6—Natural and Socioeconomic Environmental Constraints Affecting Site Selection and Construction ................................................................. 20
21-3-330.B.7—Natural and Socioeconomic Environmental Impacts Due to Site Selection and Construction of the Project ................................................................. 21
21-3-330.B.8—Long-Term Effects upon Physical and Socioeconomic Development ............................................................................................................. 31
21-3-330.B.9—Mitigation of Adverse Impacts / Maximization of Positive Impacts 31
21-3-330.B.10—Non-Structural Alternatives ....................................................... 31
21-3-330.B.11—Structural Alternatives ................................................................ 31
List of Appendices

Appendix A 1041 Maps
- Map 1 Vicinity Map
- Map 2 Recreation Map
- Map 3 Zoning, Special Districts, and Parcels
- Map 4 Existing Land Uses
- Map 5 Prime Farmland and Slope
- Map 6 Wetlands and Surface Hydrology
- Map 7 Floodplains
- Map 8 Land Cover
- Map 9 Soil Erodibility by Water
- Map 10 Soil Erodibility by Wind
- Map 11 Soil Shrink/Swell Potential in the Project Siting Area
- Map 12a Graham Creek Substation Plot Plan
- Map 12b Graham Creek Substation General Arrangement Drawing

Appendix B Transmission Routing and Substation Siting Study
Appendix C Environmental Protection Measures for Construction Projects
Appendix D 2017 Biological Resources Report
Appendix E 2016 Raptor Nest Survey Report
Appendix F Emergency Management Plan
Appendix G Graham Creek Substation Preliminary Drainage Assessment
Appendix H List of Surface Property Owners, Real Property Interests, Title Commitment, and Mineral Interests
Appendix I Summary of PSCo’s Responses to Referral Agency and Landowner Comment Letters
List of Tables

Table 1  Project Schedule ......................................................... 18
Table 2  Compliance with Weld County Comprehensive Plan Goals and Policies .......... 35

List of Figures

Figure 1  Photograph of Typical 230kV Structure (Illustrative only)................................. 4
Figure 2  Typical Structure Type – 230kV Double Circuit Tangent (Illustrative only) .......... 5
Figure 3  Typical Structure Type – 230kV Double Circuit Deadend (Illustrative only) .......... 6
Figure 4  Land Use Conflict Avoidance Examples............................................................... 22
Figure 5  Land Use Conflict Avoidance Examples (continued)............................................. 23
Figure 6  Simulation Photograph Location........................................................................ 28
Figure 7  Existing Proposed Transmission Line Area......................................................... 29
Figure 8  Proposed Transmission Line Area ....................................................................... 29
## List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>APLIC</td>
<td>Avian Power Line Interaction Committee</td>
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<td>Applicant</td>
<td>Public Service Company of Colorado</td>
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<tr>
<td>BMP</td>
<td>Best Management Practice</td>
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<td>CDPHE</td>
<td>Colorado Department of Public Health and Environment</td>
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<td>CNHP</td>
<td>Colorado Natural Heritage Program</td>
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<td>CPCN</td>
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<td>Colorado Parks and Wildlife (formerly CDOW)</td>
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<td>Mega Volt ampere reactive</td>
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<td>Western Area Power Administration</td>
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Executive Summary

Public Service Company of Colorado (PSCo), dba Xcel Energy, is amending the 1041 Application for the Northern Colorado Area Plan, which is being proposed to increase safety and service reliability in Weld County, including the communities of Ault and Eaton. The primary objective of the Project is to replace the existing, antiquated, and non-standard 44kV system in northern Weld County. PSCo anticipates continuing electrical load growth resulting from oil and gas production and development of residential and commercial areas in this transmission-constrained region.

The Project includes improvements to the existing WAPA Ault Substation, a new WAPA Ault Substation to Husky Substation 230kV Transmission Line, a new Husky Substation (within the Town of Ault), a new Husky Substation to Graham Creek Substation 115kV/230 kV Transmission Line, and a new Graham Creek Substation, as described further under Project Description on page 1. The 1041 Application only addresses the Project components located in unincorporated Weld County (County) near the towns of Ault and Eaton. The Husky Substation and a total of 1.05 miles of transmission line are located within the Town of Ault and have been approved by the town. The existing PSCo Ault and Eaton Substations will be decommissioned after the new transmission line and substations are constructed and operational.

As defined in the Weld County Charter and County Code (“Code”), the Project is a Major Facility of a Public Utility and subject to Chapter 21 – Areas and Activities of State Interest (Section 1041 Regulations) of the Code. This submittal provides Project information, appendices, and materials, which are hereby incorporated into and made part of the Amended 1041 Application package in order to comply with the County’s Section 1041 Permit approval requirements.

The existing 44kV transmission system has reached its capacity limit and is experiencing reliability and performance issues due to aging transmission infrastructure and increasing customer demand for electricity. Due to the age of the system, it is also at a higher risk of damage in the event of severe weather conditions, which are common in Colorado. The Project also will allow for a future interconnected grid system to other planned transmission and generation facilities in the area by creating a higher voltage “backbone” transmission system, as described in Colorado Revised Statutes § 29-20-108.

The transmission line route would originate at the WAPA Ault Substation, which is located approximately 14 miles east of I-25 between county roads (CR) 84 and 86, and connect to the Graham Creek Substation at CR 74½ and 33. A Project siting area that is approximately 10 miles wide and 12 miles long was defined to identify and evaluate suitable locations for the Project alternatives (Appendix A, Map 1, Vicinity Map). Following a thorough siting study analysis, PSCo has identified a preferred Project substation location and transmission line route in unincorporated Weld County. This Amended 1041 Application provides the required information pursuant to the Code on the substation location and transmission line route. All maps associated with this application are contained in Appendix A, and the Siting Study in Appendix B.

Subject to County approval, construction is anticipated to begin in 2019. Please contact the following party with questions concerning the submittal or other considerations related to this Amended 1041 Application:

<table>
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<tr>
<th>Applicant</th>
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Northern Colorado Area Plan: WAPA Ault Substation to Graham Creek Substation 230kV Transmission/Substation Project

Project Description

Introduction

This application is being submitted by PSCo to request review of the Project under the provisions of the Weld County Section 1041 Regulations. This submittal includes the purpose, need and description of the Project, which is situated on privately-owned and municipal properties (e.g., City of Thornton) in Weld County, Colorado.

Public Service Company of Colorado

Public Service Company of Colorado, an Xcel Energy company, provides a comprehensive portfolio of energy-related products and services to approximately 1.4 million electric customers and 1.3 million natural gas customers in Colorado.

Purpose and Need

The Project is an electric transmission line and substation project designed to increase safety and reliability in Weld County, including the communities of Ault and Eaton. The Project will replace the existing aging 44kV electric infrastructure throughout the region with higher voltage facilities. The 44kV system is one of the oldest transmission assets owned by PSCo, with infrastructure dating back to the early 1900’s. PSCo anticipates continuing load growth resulting from oil and gas production and development of residential and commercial areas in this transmission-constrained region. If the Project is not constructed, PSCo will continue to have electric safety and reliability issues with the existing 44kV transmission system resulting in intermittent power interruptions to customers, higher operations and maintenance costs during outages, and reduced reliability.

Project Description

The overall Northern Colorado Area Plan has been a part of PSCo long-range transmission plans since 2013, and documented in a CPCN and annual Rule 3206 Reports and Rule 3627 Plans pursuant to Colorado PUC requirements.

Public outreach in the form of introductory phone calls; plan introduction and access permission letter mailings; and public open house meetings with landowners have been ongoing since 2013. A website for the Northern Colorado Area Plan was established by PSCo in October 2017. Additional information about the Project can be found at www.xcelenergy.com/northerncolorado.

The Project is located within unincorporated Weld County. PSCo has obtained development permit approvals with the Town of Ault for the Husky Substation. No Project facilities are located within the incorporated area of the Town of Eaton; therefore, no land use permit is required from this community.

The Project includes the following:

- Overhead electrical transmission lines, transmission line structures, electric substation improvements at the WAPA Ault substation, two new electric substations (Husky and Graham Creek), and other necessary interconnection facilities;
- Decommissioning and removal of the existing (PSCo) Ault and Eaton Substations;
- Construction and maintenance access roads; and
- Temporary construction material storage and assembly yards.
After approval of the Project, PSCo will commence negotiations for non-exclusive easements to permit construction, operation, and maintenance of the transmission line. Upon execution, the transmission line easements will be recorded with the Weld County Clerk and Recorder. In addition to acquiring non-exclusive easements for the transmission line, PSCo will purchase in fee property for the Graham Creek substation.

The Project will connect the WAPA Ault Substation to the Graham Creek Substation (Appendix A, Map 1, Vicinity Map). This includes approximately 10.4 miles of new 230kV capable transmission line in unincorporated Weld County between the WAPA Ault Substation, located approximately five miles northwest of the Town of Ault, and connecting to the Graham Creek Substation. The Project consists of the following components:

WAPA Ault Substation

- Improvements will be made within the fence to upgrade the existing WAPA Ault Substation to accommodate the double-circuit 230kV transmission line.

WAPA Ault Substation to Husky Substation 230kV Transmission Line

- The transmission line will be built from the existing WAPA Ault Substation to a new PSCo Husky Substation. The transmission line will be approximately 3.65 miles long in unincorporated Weld County and built double-circuit 230kV capable. Only one circuit will initially be operated at 230kV.
- This new Husky Substation is located within the Town of Ault and is not subject to review and approval by Weld County. Therefore, the Husky Substation is not a part of this application.
- The existing PSCo Ault Substation will be decommissioned because its use will no longer be needed at the completion of the Project. The decommissioning of transmission lines is dependent on an evaluation of the line condition and electrical system needs.

Husky Substation to Graham Creek Substation 115kV/230 kV Transmission Line

- The transmission line between the Husky and Graham Creek substations would be approximately 6.77 miles long in unincorporated Weld County and would be built double-circuit 230kV capable. Only one circuit would initially operate at 115kV.

Graham Creek Substation

- The Graham Creek Substation will be located near the Town of Eaton in unincorporated Weld County.
- This substation will replace PSCo’s 44kV Eaton Substation (within the Town of Eaton municipal boundary), which would be decommissioned because its use will no longer be required at the completion of the Project. The decommissioning of transmission lines is dependent on an evaluation of the line condition and electrical system needs.
- The Graham Creek Substation will be constructed to accommodate distribution upgrades and improve system safety and reliability.

Steel monopole structures are planned for the Project because steel has a longer lifespan than wood, and is more suited for the engineering design criteria of the transmission line. The structures
will range in height from 80 to 130 feet. Monopoles generally have a smaller footprint area than other types of support structures. The transmission line easement will be 100- to 150-feet-wide. The typical span length between transmission line structures is 800 feet, but longer spans of up to 1,000 feet can be achieved to traverse environmental or sensitive resources or certain land uses. The new transmission structures will be constructed of galvanized steel. Typical structures are illustrated in Figures 1, 2, and 3.

The Project will also include the decommissioning of the old 44kV substations in the area. This includes the existing (PSCo) Ault Substation near the Town of Ault, and Eaton Substation within the town of Eaton. Decommissioning will result in all assets at these facilities being fully retired or brought out of service.

Electric distribution substations are a key component of any electric delivery system because they are the main transition point between the high voltage transmission levels and lower voltage distribution levels. Distribution substations receive electric power from high voltage transmission lines and “step-down” high voltage levels to lower voltage levels. Once the voltage is reduced, it is distributed to customers by way of electric distribution lines or “feeders.” Two new substations would replace PSCo’s Ault 44kV Substation and PSCo’s Eaton 44kV Substation. These two existing substations will no longer be needed upon completion of the Project. Reuse and upgrading of the facilities were not considered due to the need for larger parcels to accommodate the special needs of the new higher voltage equipment and their proximity to existing development.

Substations typically contain a number of electrical components and related physical supporting structures including: 1) dead-end structures and static masts; 2) voltage modification devices called transformers, regulators, and capacitors; 3) circuit protection and control devices called switches, relays, and circuit breakers; and 4) high voltage cables or rigid tubing typically referred to as a bus, which carry electricity between components of the substation. The heart of all substations is the transformer. The transformer and all other associated equipment are referred to as a transformer bay.

To accommodate the substation components, up to 10 acres will be graded and fenced at the Graham Creek Substation (see Plot Plan). The substation will contain an electric equipment enclosure, transformer, capacitor bank, bus, switches to support the distribution feeders and a security fence. Typically, approximate heights for the structures inside the substation yard are 60 feet for dead-end structures and static masts, 35 feet for bus structures and 15 feet for the electrical enclosures. A bus structure is the most basic structure found inside a substation. Its main purpose is to provide support for switching equipment. These heights are required to meet all applicable industry standards to assure safe operation of the facility.

The total site footprint depends on the existing topography, required offsets from existing easements (e.g., pipeline and road), and visual screening requirements. The substation will require access from a public road capable of supporting delivery of the transformers, which can weigh in excess of 135,000 lbs. The typical substation access road width is 24 feet, with maximum slopes of 6 to 8 percent.

The anticipated start of construction for the Project is 2019.
Figure 1  Photograph of Typical 230kV Structure (Illustrative only)
Figure 2  Typical Structure Type – 230kV Double Circuit Tangent (Illustrative only)
Northern Colorado Area Plan: WAPA Ault Substation to Graham Creek Substation 230kV Transmission/Substation Project

Figure 3 Typical Structure Type – 230kV Double Circuit Deadend (Illustrative only)

**230kV**

**DOUBLE CIRCUIT DEADEND**
**VERTICAL WITH ARMS, ANCHOR BOLT FOUNDATION**

**SRDAHS00**
Alternatives to the Project

This section satisfies 21-3-330.B.11 and 21-3-330.C.2 of the Code.

Transmission System Alternatives

The No Action Alternative would not meet the purpose and need for the Project. No viable alternatives exist to increase the capacity of the existing 44kV transmission line in the area. There are currently no viable contingency plans; therefore, reliable electric service may not be available to the area for existing and proposed developments under varying scenarios of growth and outages.

Transmission Line and Substation Siting Alternatives

Transmission line and substation site alternatives are thoroughly discussed in the Transmission Routing and Substation Siting Study (Appendix B). PSCo uses an open and comprehensive process when siting new substations and transmission lines. This process considers electric system planning, economics, the natural, cultural, and visual environment, public involvement, regulatory issues, land rights, and engineering criteria. Typically substations are sited first, and are located close to existing substations and to the existing and projected energy load, which is described as the current and anticipated energy use areas. Site selection is followed by development and evaluation of potential transmission routes. The overall siting study process for defining and analyzing substation site and transmission route alternatives is summarized below and presented in detail in Appendix B. The Siting Study process includes the following steps:

- Step 1: Develop utility engineering requirements and establish the siting area;
- Step 2: Analyze existing policy framework and guidance;
- Step 3: Collect relevant land use and environmental data;
- Step 4: Develop opportunities and constraints;
- Step 5: Define preliminary substation sites and alternative transmission routes;
- Step 6: Gather public input;
- Step 7: Develop community-based evaluation criteria;
- Step 8: Additional data collection, substation site and transmission route refinement; and
- Step 9: Rank and document results.

Following a review of relevant policy guidance and data, including the Weld County Comprehensive Plan 1041 regulations, the Town of Ault Comprehensive Plan, and 2018 Town of Eaton Comprehensive Plan, a series of siting guidelines were applied. These include the following:

- Avoid removal of occupied buildings;
- Minimize transmission line and substation encroachment in established residential areas and proximity to individual residences;
- Minimize the number of agricultural pivot and drip irrigation systems potentially affected;
- Minimize affecting existing infrastructure including operational oil and gas facilities;
• Use existing rights-of-way (ROWs) and joint use of ROWs wherever uses are compatible;
• Minimize impacts on wetlands and other sensitive habitats; and
• Minimize the length and number of angles in the transmission line alignment, which not only increase Project costs but also result in increased land use impacts and increased visual effects due to taller and/or bulkier structures.
• Consider sensitive and constrained land uses and natural and cultural resources once the preferred substation sites are identified, to shape a reasonable range of transmission route alternatives. These alternatives achieve the required connections between each of the preferred substations.

Once the substation sites and a network of alternative transmission routes had been defined, they were evaluated against a set of comparative criteria to identify the advantages and disadvantages of each alternative. Factors considered included effects on agricultural and residential uses, wetlands and other habitat values, and conflicts with other developed land uses, including operational oil and gas development. A large number of preliminary alternatives were considered but subsequently eliminated upon determining that they had land use or resource conflicts that could not be readily avoided or otherwise satisfactorily mitigated. A complete discussion of the alternative evaluation process and the results of that evaluation are presented in Appendix B.

Based on the evaluation results, the preferred transmission line route and substation sites were identified. The preferred alternatives have a lower level of adverse effects on important land use and resource conditions, and comply with the guidance identified in the Weld County Comprehensive Plan and the decision criteria contained in Weld County’s Section 1041 Regulations.

Appendix B, Maps 4 and 5 show the preferred and alternative substation sites that were considered for both the Husky and Graham Creek sites. In total, 8 sites were considered for the Husky Substation and 6 sites for Graham Creek. Below are details on the number of routes evaluated for each transmission line segment.

• WAPA Ault Substation to Husky Substation: Three routes were studied (Segment 1 maps in Appendix B). Route AH1 is the preferred alternative because it has the lowest number of conflicts with existing agricultural and residential uses, and it also offers the most engineering advantages, including the lowest number of transmission line angles >45 degrees.

  Alternative AH1 extends to the east from the WAPA Ault Substation and follows the half-section line for the first mile before making a slight turn to the north to avoid proximity to a residence. For approximately the next 0.75 mile the route continues to the east, turning southeast to the half-section line after crossing the Collins Lateral. For the remaining 1.5 miles east, the transmission route generally follows the half-section line to its termination point at the Husky Substation.

• Husky Substation to Graham Creek Substation: Several routes were studied (Segment 2 maps in Appendix B). Routes located north and east of the towns of Ault and Eaton exhibited a substantially greater number of conflicts with existing agricultural and residential uses. One alternative east of the Town of Ault and three alternatives located west of the
Town of Ault were carried forward for further analysis. Route HGC1 is the preferred alternative with the lowest number of existing residences within 200 feet and within 0.25 of the potential transmission route centerline.

After exiting the Husky Substation site, Alternative HGC1 heads south before turning west to follow a route along the north side of CR 84, then turning south. For the next 3.5 miles, Alternative HGC1 generally follows the half-section line, diverting only once to avoid proximity to a group of residences located along CR 82. At a point 0.5 mile south of CR 78, the route turns to the east for 0.5 mile before turning south to follow CR 33 for most of the remaining distance to the Graham Creek Substation site.

**Use by Special Review (USR) Questionnaire**

This information is being provided at the request of the Weld County Planning Department and is supplemental information to the Section 1041 Regulations.

**Planning Questions**

1. *Explain, in detail, the proposed use of the property.*
   
   See the Project Description above.

2. *Explain how this proposal is consistent with the intent of the Weld County Code, Chapter 22 of the Comprehensive Plan.*

   The Comprehensive Plan is a document that serves as the foundation of all land use and development regulations in the County. Supplemental to the Comprehensive Plan are the zoning ordinances, development standards and requirements, subdivision procedures, policies and other documents, all of which combine to make the framework used by County government to manage land use in the County. The proposed Project is consistent with the Weld County Code, Chapter 22, Comprehensive Plan. In particular, the Project was carefully sited to minimize conflicts with agricultural uses, important wildlife habitats and other sensitive areas such as wetlands, and residential uses. A thorough discussion of how the Project is consistent with the Comprehensive Plan is provided in Table 2. In addition, a comprehensive set of environmental protection measures will be applied to the Project (Appendix C).

3. *Explain how this proposal is consistent with the intent of the Weld County Code, Chapter 23 (Zoning) and the zone district in which it is located.*

   Chapter 23 provides a unified regulatory system for land use in the County. It is designed to promote the health, safety, convenience, morals, order, and welfare of the present and future inhabitants of the County. All of the land crossed by the proposed transmission line in unincorporated Weld County is zoned for Agriculture. Utility facilities, including electric transmission lines and substations, are an allowed use in this zone district subject to the requirements of Section 23-3-40, Uses by Special Review and Section 23-4-420 Public Utilities Facilities. See Section 21-3- 330.B.5.a—Present Use and Zoning.

4. *Describe what type of land uses surround the site. Explain how the proposed use is consistent with and compatible with surrounding land uses.*

   The majority of the land use crossed by the proposed transmission line is agricultural. Secondary land uses in the siting area include oil and gas development, rural residential uses,
and existing utility transmission and distribution lines. The Graham Creek Substation and preferred route is outside of the Town of Eaton’s Urban Growth Area and approximately .5 mile west of planned residential uses within the annexed northwest portion of that community (Comprehensive Plan, 2018). Irrigation canals are present throughout the siting area and would be crossed by the transmission line. In the Siting Study (Appendix B), siting criteria included avoiding residences and residential areas, commercial areas, and other uses perceived to be incompatible. More details on land uses in areas crossed by the proposed transmission lines are provided in Appendix B.

The Graham Creek Substation site is also currently in agricultural use. The Plot Plan for the Graham Creek Substation site demonstrates that the substation has been configured to maintain use of the existing agricultural pivot irrigation system with minor, if any, adjustments (Appendix A, Maps 12A and 12B, Graham Creek Substation Plot Plan).

5. What are the hours and days of operation?  
(e.g., Monday thru Friday 8:00 a.m. to 5:00 p.m.)

Not applicable. Note that the Project will be operated continuously; however, neither the transmission line nor the substations require on-site staffing. Instead, the facilities will be operated remotely from existing, centralized operations centers. Construction of the Project will typically occur during daylight hours.

6. List the number of full time and/or part time employees proposed to work at this site.

Not applicable; see response to number 5.

7. If shift work is proposed include the number of employees per shift.

Not applicable.

8. List the number of people who will use this site. Include contractors, truck drivers, customers, volunteers, etc.

Not applicable; see response to number 5.

9. If this is a dairy, livestock confinement operation, kennel, etc., list the number and type of animals.

Not applicable.

10. Describe the type of lot surface and the square footage of each type. (e.g. asphalt, gravel, landscaping, dirt, grass, buildings)

The transmission line will be built within a non-exclusive easement that provides for construction, operation and maintenance of the Project. The base of each transmission structure will occupy approximately 64 square feet. At 5 to 6 structures per mile and a total distance of approximately 10.4 miles, the transmission line structure will occupy less than 0.1 acre over the entire length of the line. Apart from substations, no other buildings or structures are required for the transmission line and the land within the non-exclusive easement (ROW) would typically continue in its current use.

The Graham Creek Substation site, which consists of up to 10 acres, will have a variety of surface types, including gravel (see the Plot Plan). Much of the site will be occupied by substation equipment, (e.g., transformers, switches and breakers).
11. How many parking spaces are proposed? How many handicapped (ADA) parking spaces are proposed?

Not applicable.

12. Explain the existing and proposed landscaping for the site.

The existing conditions of the transmission line are highly varied agricultural landscapes or landscapes compatible with agricultural use such as oil and gas facilities. As part of PSCo’s transmission line clearance program, PSCo is required to keep transmission facilities and ROWs clear of all tall-growing trees, brush, and other vegetation that could grow too close to conductors. During construction, this is accomplished through tree removal and pruning. Areas disturbed during construction of the transmission line will be restored to a condition generally similar to that which existed prior to construction.

During operation, minimum clearance guidelines have been established that are to be maintained at all times to comply with regulatory and legal requirements. Generally, this concept allows for different yet compatible vegetation types in three separate zones:

- **Wire Zone**: Area directly underneath the conductors. Vegetation in the wire zone comprises low-growing forbs and grasses. All types of crops are permissible under the conductors.
- **Border Zone**: Area that begins at the outside edge of the wire zone and extends to the edge of the easement. The border zone may contain additional low-growing woody plants and trees.
- **Areas outside the border zone**: Must be patrolled for encroachment of hazard trees.

Crews performing the work consider the tree or plant species, growing environment, regrowth rate, maintenance cycle length, etc. to determine the amount of clearance required at the time of the work.

The Graham Creek Substation site is currently used for agricultural purposes and is not landscaped. No landscaping is proposed at the Graham Creek Substation site.

13. Describe the type of fence proposed for the site (e.g., 6-foot chain link with earth tone slats)

Not applicable with respect to the transmission line. The perimeter of the Graham Creek Substation will have a 10-foot chain link fence.

14. Describe the proposed screening for all parking and outdoor storage areas. If the site is located in a floodplain outdoor storage is restricted.

Not applicable with respect to the transmission line.

No outdoor storage areas or parking will be located at the Graham Creek Substation site and the site is not within a designated floodplain.

15. Explain any proposed reclamation procedures when termination of the USR activity occurs.

When the transmission line reaches the end of its useful life, which is anticipated to be in excess of 50 to 100 years, the transmission structures would either be replaced with new structures or removed. If replaced with new structures, the landowner would continue to use the ROW in a manner consistent with operation of a transmission line. In most cases, this
would mean continuing agricultural use. If the transmission line structures were removed and the easement abandoned, the landowner would have the ability to use the ROW in whatever manner they saw fit subject to zoning and other applicable land use requirements.

16. **Who will provide fire protection to the site?**

The transmission line will be designed and operated in accordance with industry standards, including all applicable safety standards (i.e., overhead ground wires and grounded towers to protect the system from becoming damaged by lightning). The need for fire protection for steel transmission line structures is non-existent.

In the event of an emergency at the Graham Creek Substation, (e.g., a fire or other emergency situation), PSCo crews will respond immediately and local fire personnel are encouraged not to go into the substation. See [Appendix F](#), Emergency Management Plan.

17. **List all proposed on-site and off-site improvements associated with the use (e.g., landscaping, fencing, buildings, drainage, turn lanes, etc.) and a timeline of when you will have each one of the improvements completed.**

[Appendix A, Map 12A](#) is a plot plan for the Graham Creek Substation. In addition to an outline of the substation footprint, Map 12A lists adjacent landowners, topography at 1-foot contour intervals, existing ROWs, easements, hydrographic features, and other information enumerated in the 1041 submittal requirements. As shown on Maps 9, 10, and 11 (Appendix A), the site has low to moderate soil erodibility and low shrink swell potential. The site is not located in a flood hazard area (See [Appendix A, Map 7, Floodplains](#)).

[Appendix A, Map 12B](#) is a more detailed map showing the arrangement of substation equipment, site ingress and egress, and site circulation. Also shown on Map 12B is the location of the extended detention basin; a Storm Water Management Plan for the site is provided in [Appendix G](#).

**Engineering Questions**

1. **Describe how many roundtrips/day are expected for each vehicle type: Passenger Cars/Pickups, Tandem Trucks, Semi-Truck/Trailer/RV (Roundtrip = 1 trip in and 1 trip out of site)**

   Estimated construction traffic will be approximately 15 to 20 vehicles per day. Because of the low number of vehicles requiring access to the transmission line, minimal impacts are anticipated. County road use and crossings would be coordinated with the Weld County Road and Bridge Department, as necessary. The Project will be operated remotely and only occasional travel to Project facilities will be required by PSCo personnel.

2. **Describe the expected travel routes for site traffic.**

   During the construction phase of the Project, travel routes will vary depending upon the segment of the Project that is under construction and the locations of the contractors and material suppliers. Construction traffic will utilize state highways until reaching county roads with direct access to the ROW. During operations, traffic on county roads will be limited to maintenance vehicles, when required, and occasional patrol trucks to inspect the Project facilities.

3. **Describe the travel distribution along the routes (e.g., 50% of traffic will come from the north, 20% from the south, 30% from the east, etc.)**
See response to 2, above.

4. **Describe the time of day that you expect the highest traffic volumes from above.**

   During the construction phase of the Project, traffic will be higher during the morning and late afternoon periods when workers travel to and from the job site.

   During operations, Project traffic on all routes at all times of the day will be minimal (e.g., two vehicles per week).

5. **Describe where the access to the site is planned.**

   As shown on the Plot Plan (Appendix A, Maps 12A and 12B, Plot Plan), access to the Graham Creek Substation site will extend off of CR 33.

6. **Drainage Design: Detention pond summarized in a drainage report is required unless the project falls under an exception to stormwater detention requirements per code section 23-12-30 F.1.**

   A. **Does your site qualify for an exception to stormwater detention?**

      The site does not qualify for an exception to Stormwater detention.

   B. **Does your site require a stormwater detention pond? If so, the following applies:**

      1. A drainage report summarizing the detention pond design with construction drawings and a maintenance plan shall be completed by a Colorado Licensed Professional Engineer (PE) and adhere to the drainage related sections of the Weld County Code.

         A preliminary drainage assessment is included with this application as Appendix G. All drainage design has been completed in accordance with this criteria set forth in the Weld County Drainage Criteria and the UDFCD.

      2. The drainage report must include a certification of compliance stamped and signed by the PE which can be found on the engineering website.

         A final drainage report, stamped and signed by the PE will be submitted at the time final design has been completed in conjunction with an application for a building permit.

**Environmental Health Questions**

1. **What is the drinking water source on the property?**

   Not applicable. During construction, bottled water would be located on site. During operations, the facilities will not be staffed and a permanent drinking water source is not required.

2. **What type of sewage disposal system is on the property?**

   Not applicable. During construction, portable toilets would be located on site. During operations, the facilities will not be staffed and a sewage disposal system is not required.

3. **If storage or warehousing is proposed, what type of items will be stored?**

   Not applicable.
4. Describe where and how storage and/or stockpile of wastes, chemicals, and/or petroleum will occur on this site.

Oil is used in substation equipment such as transformers. Appropriate storage and safety precautions are described in Appendix F, Emergency Management Plan. Secondary containment is provided in appropriate areas with berms and other methods.

5. If there will be fuel storage on site indicate the gallons and the secondary containment. State the number of tanks and gallons per tank.

Not applicable.

6. If there will be washing of vehicles or equipment on site indicate how the wash water will be contained.

Not applicable.

7. If there will be floor drains indicate how the fluids will be contained.

Not applicable.

8. Indicate if there will be any air emissions. (e.g., painting, oil storage, etc.)

Not applicable.

9. Provide a design and operations plan if applicable. (e.g., composting, landfills, etc.)

Not applicable.

10. Provide a nuisance management plan if applicable. (e.g., dairies, feedlots, etc.)

Not applicable.

11. Additional information may be requested depending on type of land use requested.

See additional information provided for the Areas and Activities of State Interest — 1041 Application Requirements.

Building Questions

1. List the type, size (square footage), and number of existing and proposed structures. Show and label all existing and proposed structures on the USR drawing. Label the use of the building and the square footage.

The Graham Creek Substation is described in Section 21-3-330.B.5.e and on the Plot Plan, Maps 12A and 12B in Appendix A.

2. Explain how the existing structures will be used for this USR?

Not applicable.

3. List the proposed use(s) of each structure.

Not applicable.
Northern Colorado Area Plan: WAPA Ault Substation to Graham Creek Substation 230kV Transmission/Substation Project

Areas and Activities of State Interest — 1041 Application Requirements

21-3-330 Application Submittal Requirements

21-3-330.A—Application Requirements for a Major Facility of a Public Utility

These submittal requirements apply to this application for a development permit for a major facility of a public utility, as defined in Chapter 21-3-20 of the Weld County Code.

21-3-330.B—Application Submittal Requirements

21-3-330.B.1—Map Requirements

21-3-330.B.1.a—Name and Acreage of Proposed Use

The Project’s proposed use includes approximately 10.4 miles of 230kV transmission line that would connect from the WAPA Ault Substation to the Graham Creek Substation (Appendix A, Map 1, Vicinity Map). The permanent surface area for the newly constructed transmission structures and substations would total approximately 11 acres (up to 10 acres for the Graham Creek Substation; and less than 1 acre for structure locations along the transmission lines). Between 126-189 acres will be required for the transmission line easement ROW in unincorporated Weld County, depending upon site specific conditions that will determine ROW width, which will vary from 100 to 150 feet. The Project also requires temporary staging areas used for the duration of construction to store equipment and stage construction activities. The locations of temporary staging areas are yet to be determined. Each staging area will house construction trailers, multiple storage containers, and other associated equipment.

21-3-330.B.1.b—Map Requirements

All map requirements, including scale and content required by Weld County, have been met.

21-3-330.B.1.c—Applicant and Consultants

Applicant: Public Service Company of Colorado
Larry Claxton
Siting and Land Rights, Principal Agent
1800 Larimer Street, Suite 400
Denver, CO 80202
P: 303-571-7089
C: 303-887-8402
E: larry.claxton@xcelenergy.com

Consultant: Logan Simpson
Attention: Jeremy Call
213 Linden Street, Suite 300
Fort Collins, Colorado 80524
P: 970-449-4100
E: jcall@logansimpson.com

21-3-330.B.2—Title Information

21-3-330.B.2.a—Surface Property Owners and Real Property Interests

The names and addresses of all surface property owners of the Project site and within 500 feet on either side of the centerline of the proposed transmission line alignment and 1,320 feet of the Graham Creek Substation are presented in Appendix H.
21-3-330.B.2.b—Project Access

Substation— The Graham Creek Substation will require permanent access from the adjoining Weld County Road 33. Following approval of this permit application, PSCo will submit an Access Road Permit application that will comply with all County design standards.

Transmission Line – Construction and maintenance access for the transmission line will be determined following approval of this permit application. Only a small portion of the transmission line ROW would be disturbed for structure installation and vehicle access. Much of the proposed ROW can be accessed from existing county roads. Once in the ROW, the access will follow the ROW when possible. In areas where construction access is required outside of the ROW, temporary construction easements will be secured to support construction. No easements or other forms of access agreements have been acquired at this time.

The transmission line route will cross and be parallel to portions of 8 County Roads. The following County Roads would be crossed: CR29, CR31, CR33, CR82 (also Hwy14), and CR84. The transmission line route will be parallel to the following County Roads: CR29 (<0.12 mile), CR 78 (0.5 mile on section line), and CR 84 (1 mile). Of these, CR 29 is proposed for ROW expansion; specifically to a width of 140 feet.

21-3-330.B.2.c—Real Property Interests

The names and addresses of all persons or entities with an interest in any real property proposed to be physically disturbed or crossed by the Graham Creek Substation and within 500 feet of the transmission line are provided in Appendix H.

21-3-330.B.2.d—Mineral Interests

The mineral interests requirement is not applicable to electric transmission line projects pursuant to Colorado Revised Statutes, 24-65.5-102(2)(a).

Mineral interests for the Graham Creek Substation are provided below:

The mineral estate is vested in the surface owner: KTC Farm, LLC, by virtue of the Personal Representatives Deed from the estate of Duane A. Wilson, deceased, to KTC Farm LLC, recorded April 4, 2016 at Reception No. 4192874.

The following documents affect the mineral interests:

Oil and Gas Lease, granted to Duane A. Wilson and Frances E. Wilson to T. S. Pace, dated May 5, 1970 and recorded July 13, 1970 in Book 629 at Reception No. 1551149-2.

Northern Colorado Area Plan: WAPA Ault Substation to Graham Creek Substation 230kV Transmission/Substation Project

21-3-330.B.3—Application Submittal Requirements

21-3-330.B.3.a–c—Map Requirements

Maps required for this Section 1041 Permit are included electronically in PDF format in Appendix A at a scale of 24 inches x 36 inches. These maps will be delineated on reproducible material upon the County’s request. The maps are consistent with the requirements of Section 21-3-330.B.3 and the relevant subsections thereof.

21-3-330.B.3.d—Section 1041 Permit Map and Vicinity Map

The Project Section 1041 Permit Map / Vicinity Map is provided in Appendix A, Map 1, Vicinity Map.

21-3-330.B.4—Plot Plan

The Plot Plan of the Graham Creek Substation is included in Appendix A, Maps 12A and 12B, Graham Creek Substation Plot Plan.

For purposes of analysis, a preliminary centerline was defined for each of the alternative transmission routes. The preliminary centerlines were used to calculate distances from operational oil and gas facilities, residences, and the other considerations included in the route evaluation criteria (See Table 4-1 in Appendix B). It should be recognized that these preliminary centerlines are subject to adjustment following further consultation with landowners and more detailed Project design. In order to provide a reasonable degree of flexibility to accommodate landowner preferences and minimize potential conflicts, a corridor was defined with a width of 500 feet on either side of the preliminary centerlines (See Appendix A, Map 1, Vicinity Map). This application to Weld County under the Section 1041 Regulations requests approval of the proposed corridors with an allowance for centerline adjustments within these defined corridors, if merited.

21-3-330.B.5—Other Items and Information

21-3-330.B.5.a—Present Use and Zoning

The Project is located almost entirely within unincorporated Weld County on property in the A (Agricultural) Zone District (Appendix A, Map 3, Zoning, Special Districts, and Parcels Map). The Husky Substation will be within the limits of the Town of Ault and will be permitted through the Town’s CUP. Section 23-3-40.D.3 of the Code identifies Major Facilities or Public Utilities as a USR.

Existing land uses in the Project siting area are primarily agricultural, residential, and energy development (oil and gas facilities), depicted in Appendix A, Map 4, Existing Land Uses.

21-3-330.B.5.b–d—Sketch or Map

In Appendix A, Map 4, the Existing Land Uses Map shows existing transmission lines of 115kV or greater within 2 miles of the siting area. There are no existing electric substations within five miles of the Graham Creek Substation or the proposed Husky Substation.

21-3-330.B.5.e—Type of Facility

The Project would involve construction of approximately 10.4 miles of new 230kV double-circuit transmission line originating at the existing WAPA Ault Substation and terminating at the Graham Creek Substation. The new transmission line would be constructed on monopole steel structures within a 100- to 150-foot ROW. The transmission line would consist of approximately 62 structures,
with up to six conductors, a shield wire, and an optical ground wire for internal PSCo communications. One circuit between the proposed Husky Substation and the Graham Creek Substation will be operated at 115kV.

The Graham Creek Substation is an approximately 10-acre site and would convert the 115kV transmission voltage to 12.47kV distribution voltage. The lower voltage electric energy would then be distributed to the community from the substation via electric distribution lines. Improvements within the fence of the WAPA Ault Substation will convert electric power to 230kV voltage and then transmit to the Project transmission line.

At full build-out, the Graham Creek Substation will have the necessary capacity to accommodate 115kV terminations and equipment including:

- Up to three new 115kV/12.47kV, 50 MVA distribution transformers;
- Termination equipment for the 115kV transmission line to the proposed Husky Substation;
- Termination equipment for the 115kV transmission line to the transmission line to Cloverly Substation;
- Termination equipment for the 115kV line to the Retail Customer; and
- Miscellaneous substation equipment associated with protection, communication, etc.

Project approval will also include up to four staging areas used for the duration of construction to store equipment and stage construction activities. Storage for the Project related to the construction of Husky Substation may also require a staging area in Weld County jurisdiction. Each staging area would house any necessary construction trailers, multiple storage containers, and other associated equipment. The locations of the staging areas will be determined following approval of this application.

21-3-330.B.5.f—Projected Development Schedule

A tentative Project schedule is presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Project Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Milestone</strong></td>
<td><strong>Date</strong></td>
</tr>
<tr>
<td>File Local, State, and Federal Permits</td>
<td>2019</td>
</tr>
<tr>
<td>Begin Construction of Substation</td>
<td>2019</td>
</tr>
<tr>
<td>Begin Construction of Transmission Line</td>
<td>2020</td>
</tr>
<tr>
<td>Project Completed</td>
<td>2021</td>
</tr>
<tr>
<td>Decommissioning of Existing 44kV Substations</td>
<td>2022</td>
</tr>
</tbody>
</table>
21-3-330.B.5.g—Hazards and Emergency Procedures
The Project involves the use of voltages up to 230kV. In order to protect the health, safety and welfare of the public, the substations and transmission lines will be constructed in accordance with all applicable State and Federal laws and regulations. Appendix F presents the information regarding response procedures for utility emergencies. Substation equipment can contain a great deal of oil. The hazards are the flammability of heated oils and the danger of energized equipment. Secondary containment will be implemented in appropriate areas with berms and other appropriate measures.

The Project will be in compliance with Colorado PUC requirements regarding EMF levels adjacent to the transmission line ROW. The Colorado PUC EMF limits are 150 mG (milligauss) at the edge of the ROW, one meter above ground. The Project's transmission line alignments have been designed to limit potential human exposure to EMF.

Enclosed containment will be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials will be removed from the site and transported to a disposal facility authorized to accept such materials. There would be no significant amount of hazardous materials stored in the Project area.

Construction, operation, and maintenance activities will comply with all applicable Federal, State, and local laws and regulations regarding the use of hazardous substances. The only hazardous chemicals expected to be used on site are those found in diesel fuel, gasoline, coolant (ethylene glycol), and lubricants in machinery. Hazardous materials will not be drained onto the ground or into streams or drainage areas. The PSCo contract with the construction contractor will specify that it will hold a required pre-construction meeting with the contractor to ensure all applicable laws and PSCo procedures will be followed. PSCo Environmental Protection Measures for Construction Projects are included in Appendix C.

Any use of hazardous material during construction or operations and maintenance activities will be temporary and stored in a safe manner according to all applicable State and Federal laws and regulations.

In the event of an emergency within the Project substations that may endanger the public health, safety and welfare, PSCo crews will respond immediately and local fire personnel are encouraged not to go into the substation. No known natural hazards are present within the Project limits.

21-3-330.B.5.h—Name, Address, and Telephone of Applicant
Public Service Company of Colorado
Larry Claxton
Siting and Land Rights, Principal Agent
1800 Larimer Street, Suite 400
Denver, CO 80202
P: 303-571-7089
C: 303-887-8402
E: larry.claxton@xcelenergy.com

21-3-330.B.5.i—Name and Address of the Fee Owners of the Property
The fee owners are the same as those listed in section 21-3-330.B.2.c of this application.
21-3-330.B.5.j—Legal Description of the Property under Consideration

The final legal descriptions for properties impacted by the Project will be provided after approval of the Project, but no later than the start of construction. The legal descriptions for the non-exclusive electric transmission line easements will be recorded with the Weld County Clerk and Recorder before construction commences. A conveyance deed will also be recorded for the property required to construct the Graham Creek substation. Since the property for the Graham Creek substation is under a purchase option and a final legal description has not yet been generated, below is an approximate legal description.

Between 8 and 10 acres located in the Southwest Quarter (SW ¼) of the Northwest Quarter (NW ¼) of Section 35, Township 7 North, Range 66 West of the 6th Principal Meridian, Weld County, State of Colorado.

21-3-330.B.5.k—Total Acreage of the Parcel, ROW, or Corridor under Consideration

The surface area for the newly constructed transmission line structures and Graham Creek Substation on private and municipal land (e.g., City of Thornton) would total approximately 10 acres. Between 126 and 189 acres will be required for the 100- to 150-foot transmission line ROW.

21-3-330.B.5.l—Existing Land Use

The Project would be constructed on private and municipal land (e.g., City of Thornton). Land uses in the siting area are agricultural and also include exempt (municipally-owned, current use is agriculture), electric transmission, and oil and gas production and storage.

21-3-330.B.5.m—Existing Land Uses of All Properties Adjacent to Parcels

The primary land use on adjacent parcels is agricultural.

For the Graham Creek Substation, one adjacent property is in commercial use (oil and gas; rural occupation).

For the transmission route, supporting residential uses are present, including farmsteads and smaller acreage estates. There are multiple existing electrical distribution and transmission lines on the properties, as well (Appendix A, Map 4, Existing Land Uses). More details on land uses in areas crossed by the proposed transmission line or occupied by the new substation are provided in Appendix B.

21-3-330.B.5.n—Zoning and Overlay Zones

All of the parcels within the transmission route corridor and Graham Creek Substation are zoned Agricultural.

21-3-330.B.5.o—Signatures of the Applicant and Fee Owners or Their Authorized Legal Agent

See Section 1041 Permit Application Form.

21-3-330.B.6—Natural and Socioeconomic Environmental Constraints Affecting Site Selection and Construction

As previously discussed under “Alternatives to the Project”, a variety of natural, land use, and other constraints were considered and avoided in the development and selection of proposed routes and sites for the Project. These included residential, commercial, industrial, and agricultural uses as well as a variety of natural and cultural resource considerations.
21-3-330.B.7—Natural and Socioeconomic Environmental Impacts Due to Site Selection and Construction of the Project

The effects of the Project on the natural and socioeconomic environment of the impact area and methods to minimize and mitigate these impacts are described below and in Appendix B and Appendix C. Further, PSCO will work with all landowners to microsite the transmission facilities and easement to minimize negative impacts on residential and commercial uses and agricultural and oil and gas operations. Typical examples of how PSCo will work to avoid conflicts are shown in Figure 4.

a. Land Use Impacts

The Weld County Code, Chapter 22, Comprehensive Plan, has been reviewed and the Project is consistent with the intent of the Comprehensive Plan, including land use and environmental resources. The Project would be located in an area that is primarily used for agriculture. Project facilities have been sited to minimize effects on agricultural uses and to assure that only a minor, localized effect would occur. Where possible, the transmission line was sited along the edge of cultivated areas, following road edges, fence lines, and other linear features in order to minimize effects on cultivation, particularly in areas irrigated with center pivot. Agricultural activities can continue within the transmission line ROW and only a small amount of land would be taken out of production as a result of Project construction and operation. In total, the Project would result in the location of approximately 31 transmission structures within or at the edge of cultivated lands. Each transmission structure would occupy an area of approximately 64 square feet around each pole (8 feet x 8 feet), which amounts to less than 0.1 acre of land lost to cultivation.

As shown in Appendix A, Map 5, Prime Farmland and Slope, some of the lands affected by the Project are designated as farmlands of statewide importance and prime farmlands (if irrigated), both of which are randomly distributed throughout the siting area. As noted above, only a small amount of these types of designated farmlands would be affected by the Project.

Additional effects on agricultural use would result from the construction of the Graham Creek Substation. This substation, located near the town of Eaton, is currently in agricultural use. Development of a substation at this site would remove up to 10 acres from non-irrigated agricultural production. The substation has been uniquely designed to minimize impacts to the existing pivot irrigated area as shown on the Plot Plan.
Figure 4. Land Use Conflict Avoidance Examples

1) 60’ County Road R.O.W.
2) 80’ Future County Road R.O.W.

3) Pivot Irrigation Avoidance
4) Oil/Gas and Pivot Irrigation Avoidance
Figure 5. Land Use Conflict Avoidance Examples (continued)

5) Oil/Gas and Pivot Irrigation Avoidance  6) Oil/Gas and Pivot Irrigation Avoidance

7) Oil/Gas, Pivot Irrigation & Building Avoidance
In all cases, landowners will be compensated for any land rights acquired for the Project and other damages, when appropriate, resulting from Project construction.

Impacts on agricultural operations would be further reduced by implementing the following mitigation measures:

**Modify Structure/ROW Location and Construction Timing**

- Mitigation measures will be implemented as necessary to avoid cultivated areas and other land use conflicts. Typically, micro-siting and spanning can be used to reduce potential operational and maintenance impacts. Construction will also be timed, where practical, to minimize disruption of normal seasonal activities for cropland (planting and harvesting). During periods of heavy precipitation, construction activities may be temporarily halted, barring an emergency situation.

**Maintain and Repair Fences, Gates and Other Improvements**

- To minimize impacts on grazing operations, fences and gates will be replaced or repaired substantially to their original condition as required by the landowner in the event that they are removed, damaged, or destroyed by construction activities. Temporary gates or enclosures will be installed in cooperation with landowners or land management agency, and will be removed following construction. Temporary gates will be kept closed and locked, depending on agreements with the landowners.

**Coordinated Livestock Management**

- During Project construction, it may be necessary to relocate livestock from areas where heavy equipment operations are taking place. Arrangements will be made with landowners and livestock owners to keep livestock out of these areas during the specific construction periods.

In addition, **Appendix C** presents Environmental Protection Measures for the Project. Through careful siting of Project features, direct effects to residential, commercial, institutional, and other land uses were minimized. Over the entire distance between the WAPA Ault Substation and the Graham Creek Substation, only one residence would be located within 200 feet of the transmission line. Crossings of other land uses, including feedlots and industrial areas, were also minimized; no major conflicts with these uses would result from Project construction and operation.

No direct impacts on any State or local parks, trails, or other recreational use areas will occur as a result of the Project.
b. Water Resources Impacts

Wetlands and surface hydrology features are shown in Appendix A, Map 6, Wetlands and Surface Hydrology Map. Construction and maintenance of the Project would not measurably impact surface water or groundwater quality. Additionally, there would be no long-term impacts to surface water or groundwater hydrology as a result of construction or operation of the Project. The Project would not impact hydrologic flow of either surface water or groundwater, nor will it affect groundwater recharge. Prior to construction, a Storm Water Permit for Construction Activities will be acquired from the Colorado Department of Public Health and Environment (CDPHE), where required.

Minimal amounts of water will be used during Project construction. Water for construction purposes, including concrete foundations and dust control, will be brought in from off-site sources by a construction water provider. The source of the construction water will be from either a private well owned by the construction water company or from a municipality. No existing water rights will be impacted, and there would be no long-term use of water. If water is needed for revegetation around transmission structures or temporary access roads, the construction water provider will supply the water. No water will be required for the on-going operation of the transmission line or substations.

It is unlikely that the Project will affect groundwater. No water wells will be drilled for the Project. Excavations for transmission structures and other Project facilities may contact very shallow groundwater; however, the groundwater contact would be unlikely to adversely impact this resource because of Best Management Practices (BMPs) that will be implemented during construction. Techniques to avoid and minimize groundwater impacts would include properly maintaining equipment and cleaning up any spills. After application of mitigation measures and BMPs, impacts to groundwater will be negligible and temporary in duration.

Wetlands, flood plains, streambed meander limits, recharge areas, and riparian areas:

Wetlands, floodplains and related information are shown in Appendix A, Map 7, Floodplains Map. Transmission line and substation structures will not be placed in wetlands, streambeds, recharge areas, or riparian areas. Therefore, little to no anticipated adverse impacts would occur to surface water resources. Potential indirect impacts to water resources could occur from construction-related erosion and sediment movement, which are covered by BMPs and the applicable Stormwater Management Plan. The potential impacts would range from negligible to minor due to the ability to span water features and avoid impacts during construction.

Regulated floodplains have been avoided by the preferred route. Project structures will also be designed to withstand unforeseeable flood events.

The Project is not anticipated to impact vested water rights because minimal water will be utilized. All water used for Project construction will come from existing, commercial sources, which will be identified and secured prior to construction.

c. Discussion of Impacts on Additional Resources Including Significant Environmentally Sensitive Factors (satisfies 21-3-330.C.2c and 21-3-330.C.2e)

Vegetation

Land cover within the siting area is shown in Appendix A, Map 8, Land Cover Map. As previously noted, the great majority of the area is comprised of cropland with minor amounts of other cover
types, including hay/pasture, urban development, open water and several other types. Effects to vegetation will be minimal and largely short-term during the construction phase of the Project.

- Construction will occur primarily in areas that have been previously disturbed and impacts to native vegetation communities are expected to be minimal.

- Access for construction and maintenance activities will primarily be via existing roads. The availability of access roads combined with the fact that very little native vegetation remains in the siting area assure that vegetation disturbance would be minimal. No drainages or wetlands will be impacted by the Project.

- A minimal amount of vegetation removal will occur at the base of each transmission structure and within the fenced portion of the substations.

- Temporary impacts to vegetation will also result in periodic compaction of existing vegetation and soil from construction and maintenance traffic within the transmission line ROW and designated access roads. These impacts will be short-term in duration and focused in location, and the disturbed areas will be re-seeded with approved local, native seed mixes after clearing.

Wildlife

The siting area supports a variety of common wildlife, such as big game, small predators (e.g., coyote, fox), prey species (e.g., rabbits, black-tailed prairie dogs) and birds (e.g., waterfowl, raptors, passerines). In addition, a variety of special status species have potential to occur in the siting area. There is no designated critical wildlife habitat in the siting area, although suitable habitat may exist for the state-listed (threatened) western burrowing owl. Chapter 3 of Appendix B presents a thorough discussion of wildlife and special status species. Appendix C also presents avoidance and mitigation measures implemented by PSCo to protect wildlife species and habitats. Appendix D presents the 2017 Biological Resources Report and Appendix E presents the 2016 Raptor Survey Report.

Seeley Lake was formerly leased by the Colorado Division of Wildlife (now CPW) and was maintained as a State Wildlife Area. The area is now closed to the public but continues to provide important wildlife habitat even though it is no longer a designated State Wildlife Area.

The Colorado Natural Heritage Program identifies a network of Conservation Areas and Potential Conservation Areas in the State. The siting area contains a part of the South Platte River Potential Conservation Area at Seeley Lake. The Western High Plains and Pawnee Grassland Conservation Areas are close to the siting area to the north and east (CNHP 2017).

PSCo will follow applicable CPW and USFWS guidelines to minimize impacts on wildlife, such as conducting pre-construction nest surveys, establishing appropriate nest buffer zones, and conducting pre-construction presence/absence surveys for state-listed species. Impacts to surface vegetation can reduce foraging habitat from direct disturbance as well as indirectly from increases in noxious weeds; and habitat fragmentation. However, the potential for the introduction and/or spread of noxious weeds will be minimized by implementing BMPs such as ensuring construction equipment is cleaned, using weed-free seed mixes and controlling noxious weeds within the ROW and substation areas. The potential for the introduction and/or spread of invasive non-native species (including noxious weeds) will be minimized by the implementation of BMPs during the construction period and reclamation efforts.
Impacts to Soil Resources

The Project would create short-term, localized impacts on soil resources, which could result in the potential reduction of surficial soil quality. Surface disturbance during construction may increase the potential for erosion, such as removal of protective vegetation and expose soil to potential wind and water erosion. Impacts may result from soil disturbance due to heavy machinery traveling along the transmission line ROW and substation parcels. General construction traffic would be limited to designated access roads in an effort to minimize impacts to soils.

The areas affected by construction will be reclaimed as soon as possible, which may include regrading and revegetation with an approved seed mix, per the requirements under the applicable Stormwater Management Plan. Implementation of a Stormwater Management Plan and use of appropriate soil mitigation measures and BMPs would be used to reduce the effects of erosion.

In Appendix A, Maps 9 and 10, the Soil Erodibility by Water and Soil Erodibility by Wind Maps display the soil erodibility by water and wind, respectively, based on factor K within the siting area. The factor K is a measurement of the soil’s susceptibility to sheet and rill erosion by water; it is calculated as a function of an average diameter of the soil particles. Factor K is one of six factors used in the Revised Universal Soil Loss Equation to predict annual rate of soil loss in tons per acre per year. Factor K values range from 0.02 to 0.69, with higher values indicating higher losses. As shown in Appendix A, Soil Erodibility by Water, most soils in the siting area have low to moderate risk of erosion from water. However, soils in the siting area have a higher degree of susceptibility to wind erosion. The BMPs provided in Appendix C are intended to minimize erosion.

Map 11 in Appendix A, the Soil Shrink/Swell Potential Map displays the linear extensibility, or soil shrink/swell potential, in the siting area. Shrink/swell potential of a soil is based on the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. The majority of the soils in the siting area have a high shrink/swell potential, which can be readily addressed with proper foundation design.

Unique Areas of Geologic, Historic, or Archaeological Importance Impacts

PSCo conducted a file search through the Colorado State Historical Protection Office database to identify previously recorded cultural resource sites within the siting area. A pedestrian survey was also conducted on selected properties where survey permission had been granted. No effects to any historic properties are anticipated to result from Project construction or operation. There are no areas of geologic importance in the siting area.

d. Visual Impacts

Priority consideration was given to siting the Project away from residences, planned residential areas, and recreation areas to the extent possible to reduce visibility. The preferred transmission line route has the lowest number of residences located within 200 feet and within 0.25 mile of all alternatives considered. Only one residence is located within 200 feet and 24 residences are located within 0.25 mile of the alignment over the entire distance between the WAPA Ault Substation to the Graham Creek Substation.

The preferred route also does not cross through any planned residential subdivision, an evaluation criteria accounting for future foreseeable visual impacts, or the potential for ROW restrictions to reduce the number of buildable lots or complicate site planning. “Planned residential subdivisions” are defined as locations within or through residential areas according to Comprehensive Plans,
zoning, and entitled yet undeveloped subdivisions. While it is common for agricultural landowners to speculate about the potential of future residential growth on their properties; their speculation is both unquantifiable and undocumentable in a siting study without local governmental approval.

The Project will contribute incrementally to alteration of the visual quality of the siting area. Extensive oil and gas development, existing transmission lines, and other types of development have already occurred and are prominent elements of the landscape in many locations. **Figures 4** presents the photographic point location. **Figures 5 and 6** present the photographic simulation of the proposed transmission line from a point looking west/southwest from the Great Western Trail on the north side of the Eaton Recreation Center. Structures shown are 130 feet tall, the actual height would be between 80 and 130 feet tall. Final design and construction may result in slight changes to pole locations and/or spans along the preferred route. The simulated transmission line is approximately 0.5 miles from the viewer.

The Project will not be located within any designated scenic areas or other areas protected to maintain their natural qualities. One Scenic Byway, the Pawnee Pioneer Trails, begins at U.S. Hwy 85 and extends east along State Hwy 14. The Project is located west of U.S. Hwy 85 in the vicinity of the Town of Ault and would have little or no visibility from this Scenic Byway.

Visual impacts will be reduced through the use of non-specular conductors that will reduce potential glint and glare associated with standard aluminum conductors (wires).

**Figure 6 Simulation Photograph Location**
Figure 7  Existing Proposed Transmission Line Area

Figure 8  Proposed Transmission Line Area
e. Transportation Impacts

Minimal additional vehicular traffic will occur on public roads in the siting area as a result of construction, operation, and maintenance of the Project. Estimated construction traffic will be approximately 20 to 25 vehicles per day, at the peak of transmission line construction. Because of the low number of vehicles requiring access to the transmission line ROW, minimal impacts are anticipated. County road use and crossings will be coordinated with the Weld County Department of Public Works, as appropriate.

The County’s Functional Transportation Map has been reviewed for existing county road ROWs and future county road ROW expansions. The Project’s transmission structures will meet required setbacks, measured from the existing and future ROW line. In limited situations to minimize construction or operations impacts on residences, oil and gas, or agricultural assets, the Project may request sharing county road ROWs. PSCo will work closely with the Weld County Department of Public Works to assure that the Project is compatible with current and planned county road ROWs and consistent with all relevant policies and procedures.

No adverse effects on county roads are anticipated. PSCo would work with the Weld County Department of Public Works to determine the appropriate access to the construction area. All mobile construction equipment will be certified to operate on Interstate highways. There may be short periods of time when traffic would be halted on county roads to allow construction vehicles to enter and exit the construction area. No improvements to Weld County roads would be required.

f. Socioeconomic Impacts

The communities nearest to the siting area are Ault, Pierce, Eaton, Lucerne, and Greeley. These communities will benefit from the Project through improved electric safety, reliability, increased electric capacity, and fewer outages. The communities will be better positioned to accommodate the electrical demands of their projected population and employment growth. This Project is consistent with the Economic Development Goals and Policies described in the Weld County Comprehensive Plan (Weld County 2008).

It is anticipated that construction of the Project will also have a beneficial impact to the local economies of these municipalities. Construction contractors would likely spend money in these communities for fuel, food, lodging, and other supplies. During the construction period, the local economy may see a small increase in sales tax revenue. The footprint of the transmission structures and up to 10 acres at Graham Creek Substation will be the only land removed from current use. Land between the transmission structures would remain available for farming, grazing, or other operations that do not interfere with safe and reliable operation of the Project.

The Project will not cause adverse economic effects in Weld County. Additional tax revenues would be generated by the Project through the local purchase of materials, fuel, food, and housing during the construction period. An upgrade to electrical system capacity and reliability will enhance long-term economic development for the region. Landowners with the transmission line on their property would receive a lump sum payment in exchange for the executed easement. PSCo would be responsible for maintenance, repair, upgrades, or decommissioning of the transmission and substation assets associated with the Project.
The siting area is located within District 1 of the Weld County Sheriff’s Department and is within the jurisdiction of the following Fire Protection Districts (FPD):

- Eaton FPD
- Ault-Pierce Fire Department

The nearest hospitals to the siting area are in Greeley. None of these services is expected to be affected, unless emergency situations occur.

Approximately 80 construction workers would be employed during the course of the approximately 36-month construction period. The maximum number of construction workers at any one time would be approximately 40; however, the workers would likely be dispersed along the ROW. After construction, the Project would generate infrequent trips to the transmission line and substations during operation; the line would be inspected annually and occasionally for maintenance.

21-3-330.B.8—Long-Term Effects upon Physical and Socioeconomic Development

Long-term effects of the Project would be beneficial to economic development as the increased reliability and capacity would support increased employment and population.

Long-term effects of the Project's site selection and construction are expected to be minimal or negligible for the majority of the physical and socioeconomic resources due to the implementation of BMPs and mitigation measures described above.

As further described in this Application, the Project will not have significant effects on the environment and will not significantly degrade the environment with the exception of visual resources which will be moderately impacted in the vicinity of the Project corridor as a result of the transmission line’s visibility against the landscape.

21-3-330.B.9—Mitigation of Adverse Impacts / Maximization of Positive Impacts

PSCo’s Environmental Protection Measures for Construction Projects, included as Appendix C, addresses site reclamation of disturbed areas.

21-3-330.B.10—Non-Structural Alternatives

There are currently no viable contingency plans; therefore, reliable electric service will not be available to the region for existing and proposed developments under varying scenarios of growth and outages without a structural (facilities) solution.

21-3-330.B.11—Structural Alternatives

See the section Alternatives to the Project.

21-3-330.B.12—Air and Water Pollution Impacts and Control Alternatives

Project construction would last for approximately 24 to 36 months. Construction activities associated with the Project would generate less than significant amounts of particulate matter from soil disturbances and diesel-powered equipment, and less than significant amounts of carbon monoxide and the precursor pollutants to ozone formation from tailpipe emissions. Any air pollutants generated would be widely dispersed across the siting area, short-term in duration, and minimized by the small scale of construction operations for the substation, and excavating foundations for transmission structures. Air pollutants also would be minimized through
implementation of dust suppression and proper vehicle maintenance. Therefore, Project construction is not expected to impact the air quality status in the area. There would be no long-term air quality effects associated with routine operation and maintenance of the Project. Once construction activities have been completed, but before vegetation has been re-established, some minor amount of additional dust could occur. Weld County is an attainment area for all measured pollutants, including particulate matter smaller than 10 micrometers in diameter.

Effects on water resources were previously discussed under Section 21-3-330.B.7.a.

21-3-330.B.13—Design Alternatives: Access, Landscaping, and Architecture

Potential construction and permanent access roads were analyzed as part of the Project siting/routing study. The preferred alternative was selected in part because it is located in proximity to many public roads in order to facilitate access to the Project ROW and substations. PSCo will establish two-track roads in the ROW from the County Roads. From these points this will be the only road allowed for construction traffic use in the ROW. PSCo will use mats in areas that are prone to water retention. It is PSCo’s preference to keep the two-track roads intact after construction to use for patrolling the line. If it is necessary to restore the road, PSCo will coordinate with the landowner on the method, as long as the request does not violate the Stormwater Management Plan. All temporary access roads will be re-vegetated following construction. Where ground disturbance is substantial, surface preparation and reseeding would occur. The method of restoration would normally consist of loosening the soil surface and reseeding.

21-3-330.B.14—New or Upgraded Services

New or upgraded services are not applicable to and not required for the Project.

21-3-330.B.15 – Hydrologic, Atmospheric, Geologic, Pedologic, Biotic, Visual, and Noise Impacts

Hydrologic

Surface water, riparian areas, wetlands, and floodplains are discussed in Section 21-3-330.B.6, Part b, Water Resources Impacts. Hydrology is also addressed in Appendix B.

Atmospheric

Construction activities associated with the Project would not generate significant amounts of air pollution or particulate matter from soil disturbances. There will be no long-term air quality effects associated with routine operation and maintenance of the proposed transmission line and substation.

Geologic

Construction and operation of the transmission line and substation would not affect the geology of the Project area. The Project does not occur within a Geologic Hazard Area.

Pedologic

The Project would not adversely affect any of the soil types in the Siting Area. Construction of the Project would cause some localized soil compaction and potential erosion. Long-term impacts would be avoided or minimized through implementation of Environmental Conservation Measures (Appendix C). Also see Appendix A, Maps 9, 10, and 11, Soil Erodibility by Water and Soil Erodibility by Wind and the Soil Shrink/Swell Potential, respectively.
Biotic


Visual

See 21-3-330.B.7—Natural and Socioeconomic Environmental Impacts from Construction of the Project.

Noise

The Project would be constructed and maintained in accordance with Colorado Revised Statutes 25-12-101 et seq. (Noise Abatement) and Article IX, Section 14-9-10 et seq. of the Weld County Code. However, corona may result in audible noise being produced by the transmission lines. Corona is the electrical ionization of the air that occurs near the surface of the energized conductor due to very high electric field strength. The amount of corona produced by a transmission line is a function of the voltage of the line, the diameter of the conductors, the locations of the conductors in relation to each other, the elevation of the line above sea level, the condition of the conductors and hardware, and the local weather conditions. Irregularities (such as nicks and scrapes on the conductor surface or sharp edges on suspension hardware) concentrate the electric field at these locations and thus increase the electric field gradient and the resulting corona at these spots. Raindrops, snow, fog, and condensation accumulated on the conductor surface are also sources of surface irregularities that can increase corona.

Audible noise levels are expected to be below 14 decibels (dBA) (roughly comparable to normal breathing) at the edge of the 115kV ROW in rainy conditions, and below 45 dBA (roughly comparable to a refrigerator humming) at the edge of the 230kV ROW in rainy conditions. The audible noise in fair conditions would be negligible at the edge of the 115kV ROW and below 20 dBA at the edge of the 230kV ROW.

Odor

The Project will not contribute to odor impacts in Weld County.

21-3-330.B.16 – Surface and Subsurface Drainage

Subsurface drainage will not be impacted by the transmission line or substation. Project construction would not create runoff in excess of previous levels and would not adversely affect drainage. Appendix C presents Environmental Protection measures for the Project. Prior to construction, a Stormwater Management Plan will be acquired from the CDPHE, where required. Appendix G presents the Preliminary Drainage Report and Detention Pond Design for the Graham Creek Substation.

21-3-330.B.17 – Decommissioning Plan

When a substation is decommissioned, the equipment is removed and the site is restored according to current business practices. No decommissioning plan is provided with this application.

21-3-330.B.18 – Other Information

(See USR Questionnaire, attached)
21-3-330.C-Specific Submittal Requirements
Not applicable.

21-3-330.D- Waiver of Submittal Requirements
Not applicable.

List of Future Permits and Plans

State of Colorado
- Colorado Discharge Permit
- Stormwater Management Plan
- Colorado Department of Transportation Utility Crossing Permit

Weld County
- Stormwater Pollution Prevention Plan
- Final Drainage Plan
- County Road ROW Access / Driveway Permits
- Grading Permit
- Improvement and Road Maintenance Agreements
- Final ROW Transmission Plats
- Recorded Exemption for Graham Creek Substation

Town of Ault
- Town Road ROW Access / Driveway Permits
- Stormwater Pollution Prevention Plan
- Conditional Use Permit for Husky Substation
- Site Plan for Husky Substation

Western Area Power Administration
- Categorical Exclusion
- National Historic Preservation Act Section 106 Review

Other Development Permits / Reviews
- Railroad Crossing Permit
- Pipeline Coordination
- Irrigation Ditch District Coordination
- Migratory Bird Treaty Act
### Compliance with Weld County Comprehensive Plan Policies

**Table 2** presents Project compliance with applicable Weld County Comprehensive Plan Goals and Policies.

**Table 2  Compliance with Weld County Comprehensive Plan Goals and Policies**

<table>
<thead>
<tr>
<th>Goals and Policies</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. The intent of the agricultural goals is to support all forms of the agricultural industry and, at the same time, to protect the rights of the private property owners to convert their agricultural lands to other appropriate land uses.</td>
<td>The Project will provide improved electrical capacity and reliability for both current agricultural uses and potential development on private agricultural lands.</td>
</tr>
<tr>
<td>C. Land use regulations in the County should protect the infrastructure used for the delivery of water to users.</td>
<td>The Project will use micro-siting to avoid impacts to canals, access to water infrastructure, wells, irrigation systems, and water pipelines.</td>
</tr>
<tr>
<td>F. Land use policies should support a high-quality rural character which respects the agricultural heritage and traditional agricultural land uses of the County.</td>
<td>The Project will provide electricity to residential and other land development in the County.</td>
</tr>
<tr>
<td>F. The natural landscape and vegetation predominate over the built environment.</td>
<td>The Project was sited to minimize visibility from residences and other sensitive viewpoints. Land crossed by the transmission line will remain in agricultural use.</td>
</tr>
<tr>
<td>F. Agricultural land uses and development provide the visual landscapes traditionally found in rural areas and communities.</td>
<td>The Project will be designed to blend with the natural landscape as much as possible. Less intrusive tubular steel structures will be used on the Project.</td>
</tr>
<tr>
<td>B. A. Goal 2. Continue the commitment to viable agriculture in Weld County through mitigated protection of established (and potentially expanding) agricultural uses from other proposed new uses that would hinder the operations of the agricultural enterprises.</td>
<td>PSCo will work with affected landowners to reduce effects in agricultural uses.</td>
</tr>
<tr>
<td>H. A. Goal 8. Ensure that adequate services and facilities are currently available or reasonably obtainable to accommodate the requested new land use change for more intensive development.</td>
<td>The Project will provide improved electrical capacity and reliability for development.</td>
</tr>
<tr>
<td>Right to Farm Statement: Agricultural users of the land should not be expected to change their long-established agricultural practices to accommodate the intrusions of urban users into a rural area.</td>
<td>PSCo will work with affected landowners to reduce effects in agricultural uses.</td>
</tr>
<tr>
<td>Section 22-2-110 – Residential Development C. Supporting utilities and public services and related facilities are essential to any residential development.</td>
<td>The Project will provide improved electrical capacity and reliability for development.</td>
</tr>
<tr>
<td>Goals and Policies</td>
<td>Discussion</td>
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<td>----------------------------------------------------------------------------------</td>
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<tr>
<td>Section 22-2-120 – Residential Development Goals and Policies</td>
<td>The Project will provide improved electrical capacity and reliability for development.</td>
</tr>
<tr>
<td>A. R. Goal 2. Promote cost-effective delivery of facilities and services to residential development.</td>
<td></td>
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<tr>
<td><strong>Article III Land Use</strong></td>
<td></td>
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<tr>
<td>Section 22-3-40 – Public Facility and Services</td>
<td>The Project will provide improved electrical capacity and reliability for development.</td>
</tr>
<tr>
<td>A. P. Goal 1. Promote efficient and cost-effective delivery of public facilities and services.</td>
<td>The Project will provide improved electrical capacity and reliability for Weld County.</td>
</tr>
<tr>
<td>B. P. Goal 2. Require adequate facilities and services to assure the health, safety and welfare of the present and future residents of the County.</td>
<td>The Project will provide improved electrical capacity and reliability for Weld County.</td>
</tr>
<tr>
<td><strong>Article IV – Environmental Resources</strong></td>
<td></td>
</tr>
<tr>
<td>Section 22-4-10 – A. Air, water, waste, noise and other public health impacts from proposed land uses should be considered.</td>
<td>The Project will implement BMPs relative to noise and public health considerations in the immediate vicinity of the transmission lines. The Project will use micro-siting to avoid impacts to public health or incremental contributions to noise pollution.</td>
</tr>
<tr>
<td>Section 22-4-60 – Noise. Noise is a source of environmental pollution. Exposure to excessive noise levels over prolonged periods can be a threat to public health.</td>
<td>The Project will implement BMPs relative to noise and public health considerations in the immediate vicinity of the transmission lines. The Project will use micro-siting to avoid impacts to public health or incremental contributions to noise pollution.</td>
</tr>
<tr>
<td><strong>Article V – Natural Resources</strong></td>
<td></td>
</tr>
<tr>
<td>Section 22-5-20 – Wildlife</td>
<td>The Project will implement BMPs, Avian Power Line Interaction Committee (APLIC) guidelines, pre-construction surveys, avoidance measures, and micro-siting to avoid impacts to wildlife species and habitats. Mitigation and monitoring measures will be implemented, as appropriate. The Project will have minor impacts on wildlife species and habitat loss, degradation, and fragmentation.</td>
</tr>
<tr>
<td>A. W. Goal 1. New development should be located and designed to conserve critical ecosystem components, including wetlands, significant wildlife habitats and migration corridors.</td>
<td>The Project will implement BMPs, APLIC guidelines, pre-construction surveys, avoidance measures, and micro-siting to avoid impacts to wildlife species and habitats. Mitigation and monitoring measures will be implemented, as appropriate. The Project will have minor impacts on wildlife species and habitat loss, degradation, and fragmentation.</td>
</tr>
<tr>
<td>W.Policy 1.2. Conflicts with fish and wildlife habitats and migration routes should be considered in land development. Developments adjacent to rivers and streams, waterfowl areas and important or critical wildlife areas should incorporate reduced densities, adequate setbacks and buffered areas.</td>
<td>The Project will implement BMPs, APLIC guidelines, pre-construction surveys, avoidance measures, and micro-siting to avoid impacts to wildlife species and habitats. Mitigation and monitoring measures will be implemented, as appropriate. The Project will have minor impacts on wildlife species and habitat loss, degradation, and fragmentation.</td>
</tr>
<tr>
<td>W.Policy 1.3. Identify and attempt to protect critical or unique habitat areas of high public value, such as habitats of endangered or unique species, significant viewing areas and breeding and spawning areas.</td>
<td>The Project will not impact any identified unique habitat areas or endangered species.</td>
</tr>
</tbody>
</table>
Table 2 Compliance with Weld County Comprehensive Plan Goals and Policies

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<tbody>
<tr>
<td>Section 22-5-120 – Other Natural Resources Goals and Policies C. NR. Goal 3. 1. NR.Policy 3.1. Support efforts to limit the loss of soil through wind and water erosion.</td>
<td>The Project will incorporate BMPs and micro-siting to avoid impacts to soil resources. Potential impacts to soil resources will occur during Project construction and maintenance.</td>
</tr>
<tr>
<td>F. NR. Goal 6. Support efforts to record and preserve archeological, cultural and historic resources.</td>
<td>The Project will use appropriate field and desktop surveys and micro-siting to avoid impacts to archeological, cultural and historic resources.</td>
</tr>
<tr>
<td>Section 22-6-20. Economic Development Goals and Policies. A. ECON. Goal 1. Encourage the expansion of existing businesses and the location of new industries that will provide employment opportunities in the County.</td>
<td>The Project will provide improved electrical capacity and reliability for development and creation of new employment opportunities.</td>
</tr>
<tr>
<td>3. ECON.Policy 1.3. Maintain and improve basic County services and infrastructure, in order to ensure that the County is a viable candidate for attracting businesses, labor and capital.</td>
<td>The Project will provide improved electrical capacity and reliability for development and attraction of new businesses, labor, and capital.</td>
</tr>
<tr>
<td>B. ECON. Goal 2. Support and facilitate public and private economic development efforts that are consistent with the Goals and Policies of the County.</td>
<td>The Project will provide improved electrical capacity and reliability for development and attraction of new businesses, labor, and capital.</td>
</tr>
</tbody>
</table>

Compliance with Town of Eaton Comprehensive Plan

In August 2018 the Town of Eaton updated and adopted their Comprehensive Plan. Consistent with the Comprehensive Plan at the time of this application submittal, the Project does not enter either the Town of Eaton’s municipal boundary or Urban Growth Boundary. The preferred and alternative Graham Creek Substation sites and supporting transmission lines would lie within the Town of Eaton’s Comprehensive Planning Area. While there is no mention of transmission lines, electric lines, or substations in the plan, the Project is compatible with the Comprehensive Plan’s goals and policies, which include the following:

- Per the Land Use Map, future urban land uses are only proposed within the Urban Growth Area.
  - The Project lies outside of the Urban Growth Area in the Comprehensive Plan.
- **Goal 4.6:** “Support the preservation of prime agricultural lands outside the Town of Eaton Urban Growth Boundary (p. 22).”
  - The Project is compatible and seeks to minimize effects to agricultural lands outside of the Urban Growth Boundary.
- The Town of Eaton’s Comprehensive Plan recommends that “areas designated Agricultural in the Planning Area (and outside the Urban Growth Area) should remain as agricultural and should not be annexed into the Town of Eaton. Outside of the Urban Growth Area, this Plan recommends a continuance of the existing non-urban agricultural uses. More
intensive urban and suburban uses should only be allowed inside the Urban Growth Area” (page 43).
  o The Project does not propose annexation into the Town of Eaton.

- “The Urban Growth Boundary is land that the community has determined to be appropriate for urban growth and annexation. Development outside of the designated Urban Growth Boundary is strongly discouraged” (p. 47).
  o The Project has been sited to avoid areas designated for urban growth and annexation.

- “To ensure that annexations are in keeping with State statute, the Land Use Plan, and the goals and policies established in this Comprehensive Plan, the Town should require proposed development to meet the following criteria: It lies within the Urban Growth Boundary” (p. 48).
  o The Project has been sited outside of the Urban Growth Boundary and does not propose annexation into the Town of Eaton.

- **Goal 3:** “Develop gateways into Eaton that will strengthen the identity of the Town and create a strong, favorable visual impression for those entering Eaton (p. 11)… The intersection of U.S. 85 and Collins St. should be developed as the primary southern gateway into Eaton…Additional secondary gateways should be developed on the northern end of Town at the intersection of U.S. 85 and County Road 76 and at the west end at the intersection of Collins St. and Fall Line Rd. (WCR 74 & 35).”
  o The Project is sited away from primary and secondary gateways near Highway 85. The Graham Creek Substation would be located more than one mile northwest of Collins St. and Fall Line Rd. (WCR 74 & 35).

- **Policy 4.1.3:** Prohibit the development of permanent structures within the floodway (p. 21).
  o No structures would be located within the floodway.

In summary, the Project is compatible with the Town of Eaton’s Comprehensive Plan. During the Comprehensive Plan’s timeframe (5 to 7 years), private lands along the preferred route would not be annexed or subdivided into the Town of Eaton.

**Conformance with 1041 Permit Decision Criteria**

**Sec. 21-3-340.A – Approval of Permit Application.**

1. **The health, welfare and safety of the citizens of the County will be protected and served.**

   The Project is entirely based on the need to enhance electric service for residents of Weld County and its communities. This enhancement will be accomplished in a manner that does not adversely affect the health, welfare and safety of county residents.

2. **The natural and socio-economic environment of the County will be protected and enhanced.**

   A comprehensive effort was made to identify alternative transmission line routes and substation sites that would have the least potential impact on natural and socio-economic
3. All reasonable alternatives to the proposed action, including use of existing rights-of-way and joint use of rights-of-way wherever uses are compatible, have been adequately assessed and the proposed action is compatible with and represents the best interests of the people of the County and represents a fair and reasonable utilization of resources in the impact area.

A complete discussion of the alternatives development and evaluation process is presented in Appendix B. Multiple alternatives were identified for all Project components and these alternatives were evaluated against a set of criteria that reflect the policy guidance contained in the Weld County Comprehensive Plan and Section 1041 regulations. The preferred routes follow existing public ROWs to the extent practical and were sited in a manner that minimizes adverse effects on agriculture, residential uses, and the natural setting. The alternatives represent a fair and reasonable utilization of resources in the impact area.

4. A satisfactory program to mitigate and minimize adverse impacts has been presented.

See Appendices B and C.

5. The nature and location or expansion of the facility complies with all applicable provisions of the master plan of this County, and other applicable regional, metropolitan, state and national plans.

The Project complies with applicable provisions of the Weld County Master Plan (Table 2) and the comprehensive plans of the communities of Ault and Eaton. The Project is necessary to accommodate residential and commercial growth proposed by Weld County and the communities of Ault and Eaton in their comprehensive plans. In addition, other local plans were reviewed, including the Weld County Transportation Plan. No conflicts with any of these plans were identified.

6. The nature and location or expansion of the facility does not unduly or unreasonably impact existing community services.

The Project will enhance community services through the provision of safe and reliable electric energy, and greater capacity to support residential and commercial growth in Weld County. During both the construction and operational phases the Project will have minimal effects on community services.

7. The nature and location or expansion of the facility will not create an expansion of the demand for government services beyond the reasonable capacity of the community or region to provide such services, as determined by the Board of County Commissioners.

The Project will have little demand for government services, including water, sewer, roads, and other services. Employment demands on government services to construct and operate the Project will be minimal.

8. The facility site or expansion area is not in an area with general meteorological and climatological conditions which would unreasonably interfere with or obstruct normal operations and maintenance.

The Project will be designed to effectively and safely operate under expected meteorological conditions. The preferred Graham Creek Substation is outside of the 500-year floodplain. The
preferred transmission line would not cross or be located at the edge of any defined 100 year floodplain.

9. The nature and location of the facility or expansion will not adversely affect the water rights of any upstream, downstream or agricultural users, adjacent communities or other water users.

The Project has minimal water needs and its construction and operation will not adversely affect any water rights.

10. Adequate water supplies are available for facility needs.

See number 9 above.

11. The nature and location of the facility or expansion will not unduly interfere with existing easements, rights-of-way, other utilities, canals, mineral claims or roads.

PSCo does not anticipate that the Project will interfere with existing easement, ROWs, other utilities, canals, or mineral interest. PSCo will consult with utilities, easement holders, and canal ownership bodies to not unduly interfere with use of the property subject to the crossing. Refer to Section 21-3-330.B.2.b—Project Access for additional information regarding County Road ROWs.

12. Adequate electric, gas, telephone, water, sewage and other utilities exist or shall be developed to service the site.

The Project is critical to enhancing the safety, reliability and capacity of electrical utilities in Weld County. As previously discussed, the Project, including the new substations, will have no need for utility services.

13. The nature and location for expansion of the facility will not unduly interfere with any significant wildlife habitat or adversely affect any endangered wildlife species, unique natural resource or historic landmark within the impact area.

A careful inventory of wildlife habitat, cultural resources, and other sensitive areas was conducted. The Project avoids all locations with sensitive resources and no effects on these resources are anticipated (see 21-3-330.B.7—Natural and Socioeconomic Environmental Impacts from Construction of the Project). No designated or high quality habitat areas will be impacted by the Project. No federally or state listed species are known to occur in the siting area and impacts are not anticipated. Appropriate avoidance measures and Environmental Protection Measures (Appendix C) will be implemented during construction to avoid sensitive wildlife habitats such as raptor or migratory bird nests and wetland areas. The Project is designed to implement, as necessary, APLIC electrocution and collision guidelines during operation.

14. The nature and location or expansion of the facility, including expected growth and development related to the operation and provision of service, will not significantly deteriorate water or air quality in the impact area.

No long-term effects to water or air quality will result from construction and operation of the Project. The Project will be designed to minimize the risk of adverse effects on water and air quality resources during construction (Appendix C).

15. The geological and topographic features of the site are adequate for all construction, clearing, grading, drainage, vegetation and other needs of the facility construction or expansion.
No geologic hazards or steep slopes occur within the siting area. The Project will be designed to minimize adverse effects on soil, vegetation and agricultural resources (Appendix C) and all Project structures will be designed to accommodate the geotechnical and soil conditions that occur within the Project area.

16. **The existing water quality of affected state waters will not be degraded below state and federal standards or established baseline levels.**

The Project will have no direct stormwater discharges. Construction and operation of the Project will incorporate measures intended to minimize accidental discharges or any adverse effects on water quality. See 21-3-330.B.16 – Surface and Subsurface Drainage and Appendix C. A detention pond has been incorporated into the Graham Creek Substation design for County review.

17. **The proposed project will not have a significantly adverse net effect on the capacities or functioning of streams, lakes and reservoirs in the impact area, nor on the permeability, volume, recharge capability and depth of aquifers in the impact area.**

The Project has minimal water needs during construction and no water needs during operations. The Project will not result in any direct discharges, and will not result in disturbance to any streams, lakes, or reservoirs. Surface drainage features will be spanned and no effects to groundwater or aquifers will result from Project construction or operation.

18. **The benefits of the proposed developments outweigh the losses of any natural resources or reduction of productivity of agricultural lands as a result of the proposed development.**

The Project will have only minimal effects on natural resources, including wildlife habitat, wetlands, and other natural features (see 21-3-330.B.7—Natural and Socioeconomic Environmental Impacts from Construction of the Project). The Graham Creek Substation site is currently in agricultural use in an urbanizing area of the County, and development of the substation will result in the conversion of less than 11 acres of cultivated land to an industrial use. The transmission line component of the Project will have minor effects on agricultural use. To the extent practical, the transmission line has been sited to avoid conflicts with agricultural center pivot irrigation systems, locating structures at the edge of the pivot where structures would not interfere with operation of the system. Further, PSCo will work with affected landowners in an effort to minimize adverse effects on agricultural use, including transmission structure placement and other construction and operational practices.

The risk of adverse effects to natural resources and agricultural lands would be mitigated through application of Environmental Protection Measures (Appendix C).

19. **The applicant has obtained or will obtain all property rights, permits and approvals necessary for the proposed project, including surface, mineral and water rights and easements for drainage, disposal, utilities, access, etc. If the applicant has not obtained all necessary property rights, permits and approvals, the Board may, at its discretion, grant the permit conditioned upon completion of the acquisition of such rights prior to issuance of a zoning or building permit by the County.**

PSCo has acquired a land right for the Graham Creek Substation in the form of an option to purchase. PSCo has not acquired the necessary land rights for the Project transmission lines. Following the Board’s approval of this Section 1041 Permit application PSCo will acquire all land rights needed to construct and operate the Project. All of the land rights will be recorded
with the Weld County Clerk and Recorder prior to the start of the construction. PSCo cannot commence construction until the necessary land rights have been secured.

20. The proposed project (nonlinear facilities) will not present an unreasonable risk of exposure to or release of toxic or hazardous substances within the impact area. The determination of effects of the project shall include the following considerations:

The means by which outdoor storage facilities for fuel, raw materials, equipment and related items are adequately enclosed by a fence or wall.

The likelihood of hazardous materials or wastes being moved off the site by natural causes or forces.

Containment of inflammable or explosive liquids, solids or gases.

The Graham Creek Substation will not store toxic or hazardous substances and does not present an unreasonable risk of exposure to or release of these substances. The substation will be surrounded by a 10-foot fence. See Section 21-3-330.B.5.g—Hazards and Emergency Procedures. The Project transmission line is a linear facility; therefore, not applicable. See Appendix C and Appendix F for applicable protection measures.

21. The scope and nature of the proposed Project will not unnecessarily duplicate existing services within the County.

No duplication of existing services would result from the Project.

22. If the purpose and need for the proposed project are to meet the needs of an increasing population within the County, the area and community development plans and population trends demonstrate clearly a need for such development.

The population of Weld County has grown by approximately 28 percent per decade since the mid-1900’s, which is more than triple the national average. Between 2000 and 2010, the county’s population increased by almost 40 percent. Weld County was the fastest growing county in the nation during the period from 2000 to 2004 according to the U.S. Census Bureau. The population of Weld County is predicted to increase to over 500,000 by the year 2035, adding approximately 215,000 people over the current level (Weld County 2016). The Project will serve the increasing population of Weld County as well as growing energy demands associated with the expansion of business and commerce, including oil and gas operations and pivot irrigation. The Colorado PUC certified the need for the Project through issuance of a CPCN (Proceeding 17A-0146E).
References


