ARTICLE 5.201 APPLICATION SUBMITTAL REQUIREMENTS

Application Submittal Requirements of El Paso County Guidelines and Regulations for Areas and Activities of State Interest Article 5.201

Requirement	Location in this Document/Permit Application
5.201 Application Submittal Requirements In addition to the materials listed at Section 2.303, all applications to locate or construct a major facility of a public utility shall be accompanied by the following information, in the number required by the Director:	Section 5.201
(1) Vicinity map showing the proposed site and the surrounding area. The Project area to be shown shall be defined as follows:	Section 5.201(1); Attachment B: Vicinity Map
(a) If a power plant is proposed, the area within fifty (50) miles radius from the site;	Not applicable
(b) If new transmission lines or pipelines are proposed, provide a map showing all existing transmission lines and pipelines for a distance of two miles radius beyond any reasonable alternative studied.	Section 5.201(1)b; Attachment B: Vicinity Map; Attachment N: Existing Transmission Line Map
(c) For upgrades of existing transmission lines or gas pipelines, a map showing all existing transmission lines and pipelines within one (1) mile on either side of the proposed alignment.	Not applicable
(d) For all other major facilities of a public utility, the area within ten (10) miles radius of the site if another major facility is proposed.	Not applicable
(2) Type of facility - specify where applicable:	Section 5.201(2)
(a) The voltages and lengths of transmission lines.	Section 5.201(2)(a); Letter of Intent Section 5(a)
(b) Type of poles used, with graphic depictions.	Section 5.201(2)(b); Section 5.201(2)(a); Attachment J: Pole Details, Representative Photographs, and Simulations
(c) Power source and generating capacity.	Section 5.201(2)(c)
(d) The functions and sizes of substations.	Section 5.201(2)(d)
(e) The diameters and lengths of pipelines.	Section 5.201(2)(e)
(f) The capacities of the storage tanks and types of petroleum derivative to be stored.	Section 5.201(2)(f)
(g) Corridor locations and dimensions.	Section 5.201(2)(g); Attachment B: Vicinity Map; Attachment X: Typical Cross-Section of Proposed Transmission Line Corridor and El Paso County Road Right-of-Way
(h) Service area.	Section 5.201(2)(h); Letter of Intent Section 1

Requirement			Location in this Document/Permit Application
(3)	Resource area (e.g., source of power being generated or transmitted, source of petroleum derivative being transported).		Section 5.201(3)
(4)	Projected development schedule.		Section 5.201(4)
	(a)	Specify timetable for planning (e.g., federal permits, other State permits, local zoning, etc.).	Section 5.201(4)(a)
	(b)	Estimate beginning and completion of construction and beginning of operation of facility.	Section 5.201(4)(b)
(5)	Hazards and emergency procedures:		Section 5.201(5)
	(a)	Describe hazards, if any, of fire, explosion and other dangers to the health, safety and welfare of employees and the general public.	Section 5.201(5)(a); Attachment T: Fire District Coordination Letters
	(b)	Describe hazards, if any, of environmental damage and contamination due to solid waste, hazardous waste, petroleum products, hazardous, toxic, and explosive substances or materials used at, or activities taking place at, the proposed facility.	Section 5.201(5)(b)
	(c)	Describe emergency procedures to be used in the event of fire, explosion or other event which may endanger the public health, safety and welfare.	Section 5.201(5)(c); Attachment H: Emergency Response Procedures; Attachment T: Fire District Coordination Letters
(6)	The applicant shall supply an analysis of non-structural alternatives to the Project, such as conservation of energy use, no development or management (different scheduling, conservation programs, facility design, land trades etc.), if applicable.		Section 5.201(6)
(7)	The applicant shall supply an analysis of structural alternatives to the Project, such as alternate locations and routes, alternative types of facilities, use of existing rights-of-way, and joint use of rights-of-way with other utilities and upgrading of existing facilities.		Section 5.201(7); Letter of Intent Section 3(b); Attachment C: Routing and Siting Study for Segment 5; Attachment S: Colorado Public Utilities Commission Decision Regarding Certificate of Public Convenience and Necessity and Noise and Magnetic Field Reasonableness for Colorado's Power Pathway
(8)	Detailed description of the need for the proposed development or activity, including but not limited to:		Section 5.201(8)
	(a)	The present population of the area to be served and the total population to be served when the project is operating at full capacity.	Section 5.201(8)(a)
	(b)	The predominant type of users or communities to be served by the proposal.	Section 5.201(8)(b)
	(c)	The percentage of the design capacity at which the current system is now operating.	Section 5.201(8)(c); Section 5.201(8)(e)
	(d)	If the proposal is for construction of a new facility and the capacity of that facility exceeds a ten-year projected increase in demand, a detailed explanation of the excess service capacity and the cost of the excess capacity.	Section 5.201(8)(d); Attachment S: Colorado Public Utilities Commission Decision Regarding

Requirement	Location in this Document/Permit Application
	Certificate of Public Convenience and Necessity and Noise and Magnetic Field Reasonableness for Colorado's Power Pathway
(e) The relationship of the proposal to the applicant's long-range planning and capital improvement programs.	Section 5.201(8)(e)
(f) A description of the user needs and user patterns to be fulfilled by the proposed Project.	Section 5.201(8)(f); Attachment S: Colorado Public Utilities Commission Decision Regarding Certificate of Public Convenience and Necessity and Noise and Magnetic Field Reasonableness for Colorado's Power Pathway
(g) A description of the relationship of the Project to other existing and planned utility facilities of a similar nature, other communication or energy generation and transmission facilities, local government capital improvement programs and special district expansion programs.	Section 5.201(8)(g); Letter of Intent Section 1
(9) Environmental impact analysis.	Section 5.201(9)
(a) Land use: (i) Specify how the proposed development will utilize existing easements or rights-of-way for any associated distribution or collector networks.	Section 5.201(9)(a)(1); Attachment F: Land Use and Zoning Map; Attachment N: Existing Transmission Line Map
(b) Information regarding other utility facilities:	Section 5.201(9)(b)
(i) A map showing each existing major facility of a public utility within the County of the type proposed for development.	Section 5.201(9)(b)(1); Attachment N: Existing Transmission Line Map
(ii) The design capacity of each such facility, the excess capacity of each such facility and the percentage of capacity at which each such facility operates.	Section 5.201(9)(b)(2); Section 5.201(8)(e); Attachment N: Existing Transmission Line Map
(iii) Whether present facilities can be upgraded to adequately accommodate a ten-year projected increase in demand for services to be offered by the proposed project.	Section 5.201(9)(b)(3); Section 5.201(8)(e)
(10) Applicants seeking a permit for the site selection and construction of a power plant shall submit, in addition to those requirements set forth above, a map locating and describing resource areas to be utilized as sources of energy.	Not applicable
(11) Applicants seeking a permit for the site selection and construction of transmission lines or substations shall submit the following additional documents and information:	Section 5.201(11)
(a) Computer modeled electromagnetic field measurement within the proposed transmission line easement for that portion of the transmission line between substations or transition sites; and	Section 5.201(11)(a); Attachment E: Noise and EMF Study;

Requirement	Location in this Document/Permit Application
	Attachment S: Colorado Public Utilities Commission Decision Regarding Certificate of Public Convenience and Necessity and Noise and Magnetic Field Reasonableness for Colorado's Power Pathway
(b) Measures taken to comply with the concept of prudent avoidance with respect to planning, siting, construction and operation of transmission lines, which may be those steps taken to comply with CCR 723-3 Section 3206{9){b) or similar authority, for projects where other similar authority is applicable.	Section 5.201(11)(b); Attachment C: Routing and Siting Study for Segment 5; Attachment S: Colorado Public Utilities Commission Decision Regarding Certificate of Public Convenience and Necessity and Noise and Magnetic Field Reasonableness for Colorado's Power Pathway

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TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

1041 permit	Permit to locate and construct major facilities of a public utility
APEN	Air Pollutant Emissions Notice
Application	1041 Permit Application
BMP	Best Management Practice
CPCN	Certificate of Public Convenience and Necessity
CPUC	Colorado Public Utilities Commission
EMF	Electric and Magnetic Fields
IEEE	Institute of Electrical and Electronics Engineers
kV	Kilovolt
mG	Milligauss
NESC	National Electrical Safety Code
Pathway	Colorado's Power Pathway
ROW	Right-of-Way
Xcel Energy	Public Service Company of Colorado, a Colorado corporation conducting business as Xcel Energy

5.201 APPLICATION SUBMITTAL REQUIREMENTS

In addition to the materials listed at Section 2.303, all applications to locate or construct a major facility of a public utility shall be accompanied by the following information, in the number required by the Director:

5.201(1) Vicinity map showing the proposed site and the surrounding area. The Project area to be shown shall be defined as follows:

5.201(1)(a) If a power plant is proposed, the area within fifty (50) miles radius from the site;-

5.201(1)(b) If new transmission lines or pipelines are proposed, provide a map showing all existing transmission lines and pipelines for a distance of two (2) miles radius beyond any reasonable alternative studied.

5.201(1)(c) For upgrades of existing transmission lines or gas pipelines, a map showing all existing transmission lines and pipelines within one (1) mile on either side of the proposed alignment.

5.201(1)(d) For all other major facilities of a public utility, the area within ten (10) miles radius of the site if another major facility is proposed.

Attachment B provides a vicinity map of Colorado's Power Pathway (Pathway).

5.201(2) Type of Facility – specify where applicable:

5.201(2)(a) The voltages and lengths of transmission lines.

The new 345-kilovolt (kV) double circuit transmission line will be approximately 45 miles long in El Paso County. The new 345-kV double circuit transmission line will be constructed using steel poles. A single pole will be used for most transmission pole locations; however, two transmission poles will be required in certain locations where the weight of the conductor requires extra structural support. These are typically 'angle locations' where the line changes direction. Each transmission pole will be placed on a concrete foundation. Voltage, conductor sag, pole type, terrain, length of span between transmission poles, and minimum clearances of existing buildings influence the necessary height of transmission pole. The transmission poles will be weathering steel and a brown or rust color. The anticipated physical characteristics of a double-circuit

pole are summarized in Table 4 of the Letter of Intent, and a representative transmission pole with line is shown in Figure 4 of Section 5(a) of the Letter of Intent (pages 17 - 18).

5.201(2)(b) Types of Poles Used, with graphic depictions.

See Section 5.201(2)(a) of this document for the description of the transmission poles. Pole details, representative photographs, and simulations are provided in Attachment J.

5.201(2)(c) Power source and generating capacity.

No generation is proposed.

5.201(2)(d) The functions and sizes of substations.

Substations are not proposed as part of Pathway in El Paso County.

5.201(2)(e) The diameters and lengths of pipelines.

Pipelines are not proposed as part of Pathway.

5.201(2)(f) The capacities of the storage tanks and types of petroleum derivative to be stored.

No petroleum derivative will be stored permanently. Fuel tanks equipped with spill protection will be stored temporarily at laydown yards during construction.

5.201(2)(g) Corridor locations and dimensions.

The proposed transmission line corridor subject to this permit to locate and construct major facilities of a public utility (1041 Permit) Application (Application) is shown on the Vicinity Map in Attachment B. The proposed transmission line route in El Paso County is generally oriented in a north to south direction in the area south of Simla, near the El Paso/Lincoln county line. The new transmission line will be constructed within a 150-foot-wide right-of-way (ROW). A typical cross-section of the proposed transmission line corridor and El Paso County road ROW is provided in Attachment X.

5.201(2)(h) Service area.

Colorado's Power Pathway supports the state-mandated goal of an 80% reduction in carbon emissions by 2030, which all electric utilities are required to comply with. Colorado has an open transmission system, so Public Service Company of Colorado, a Colorado corporation conducting business as Xcel Energy (Xcel Energy)'s transmission lines also carry electricity generated by other utilities and cooperatives around the state, benefitting everyone who uses electricity. All transmission providers in Colorado will

have access to Pathway to deliver clean, renewable energy to its customers, who will still be serviced by their current power provider. Because Colorado's open transmission system carries electricity generated by multiple utilities that is distributed to homes and businesses by local power companies, both electric utilities and electricity users around the state benefit from this Project.

Pathway is an addition to Colorado's backbone transmission system. As such, it will serve as an integral part of Colorado's open transmission system carrying electricity not only generated by Xcel Energy but by utilities and cooperatives around the state, benefiting everyone who uses electricity. A map of Pathway is included in Section 1 of the Letter of Intent (Figure 1; page 2).

5.201(3) Resource area (e.g., source of power being generated or transmitted, source of petroleum derivative being transported).

No generation is proposed. Pathway does not connect to a specific power source. Facilities in El Paso County are part of the larger Pathway that creates a transmission "loop" to provide additional transmission capacity. Pathway is being routed through some of the best wind and solar resource zones in Colorado. New renewable energy generation is anticipated to be developed in these zones. The location of these new generation resources is currently unknown until Xcel Energy's Electric Resource Plan process has been completed. Generally, new generation resources are expected to interconnect at substations located at segment endpoints.

5.201(4) Projected development schedule.

5.201(4)(a) Specify timetable for planning {e.g., federal permits, other State permits, local zoning, etc.}.

All necessary land use, environmental, and construction permits, approvals and authorizations will be obtained prior to the start of and maintained during construction as required and may include but are not limited to major land use permits, ROW permits, road use agreements, access permits, oversize/overweight permits, grading permits, and stormwater permits. A list of the El Paso County permits that will likely be applicable to Pathway, and status of each permit, is provided in Table 1.

Table 1: El Paso County Permit Requirements Applicable to Pathway

Title	Trigger	Statutory Reference	Status
1041 Permit	Proposed development of an activity of state interest (major facility of a public utility) in El Paso County	El Paso County Land Development Code Appendix B: Guidelines and Regulations Governing Areas and Activities of State Interest	Submitted June 2024
Site Development Plan	Required for all multifamily, commercial and industrial development within unincorporated the County	El Paso County Engineering Criteria Manual Chapter 5, Section 5.9 Site Development Plan	To be obtained prior to construction
Work in Right-of-Way Permit	Obstruct, excavate, or install facilities in El Paso County right-of-way	El Paso County Engineering Criteria Manual Chapter 5, Section 5.5 Work in the Right-of-Way Permit	To be obtained prior to construction
Driveway Permit	Construct, reconstruct, pave, alter, enlarge or change the use of any driveway intersecting a County road; install, re-install, replace, or move a culvert associated with a driveway intersecting a County road; or verify a driveway location is on a private road	El Paso County Engineering Criteria Manual Chapter 5, Section 5.4 Driveway Permit	To be obtained prior to construction

Title	Trigger	Statutory Reference	Status
Construction Permit	Construction, alteration or reconstruction of public improvements within any County right-of-way or easement; construction, alteration or reconstruction of common development improvements covered by the Engineering Criteria Manual, Land Development Code, development agreement, or subdivision improvement agreement; and site preparation activities including grading, stripping of soil or vegetation, depositing fill material, and trenching or excavating.	El Paso County Engineering Criteria Manual Chapter 5, Section 5.3 Construction Permit	To be obtained prior to construction
Erosion and Stormwater Quality Control Permit	Construction activities that result in land disturbance of greater than or equal to 1 acre or that is less than one acre, but is part of a larger common plan of development or sale that would disturb 1 acre or more	El Paso County Engineering Criteria Manual Chapter 5, Section 5.6 Erosion and Stormwater Quality Control	To be obtained prior to construction
Special Transport Permit	Transporting a load or vehicle on a County road where overall dimensions or weight of the load or vehicle exceed the established limits	El Paso County Engineering Criteria Manual Chapter 5, Section 5.7 Special Transport Permit	To be obtained prior to construction
Floodplain Development Permit	Construction or development within any area of special flood hazard	Pikes Peak Regional Building Code RBC313.14	To be obtained prior to construction

5.201(4)(b) Estimate beginning and completion of construction and beginning of operation of facility.

The estimated construction timeline for each segment and related substation, and anticipated in-service dates are shown in Table 2.

Table 2: Estimated Individual Segment and Substation Construction and In-Service Dates

Segment & Substation	Construction	In-Service Year
Segment 1 & Fort St. Vrain Substation Equipment Additions	Spring 2024–Spring 2026	Spring 2026
Segment 2 & New Canal Crossing & Goose Creek substations & Pawnee Substation Equipment Additions	Spring 2023–Spring 2025	Spring 2025
Segment 3 & New May Valley Substation	Spring 2023–Spring 2025	Spring 2025
Segment 4, Tundra Substation Expansion & New Sandstone Substation	Spring 2025–Spring 2027	Spring 2027
Segment 5, Harvest Mile Substation Equipment Additions	Spring 2025–Spring 2027	Spring 2027

Transmission line Segment 5 is anticipated to be completed in 2027. Many variables factor into the schedule for projects of this magnitude. The construction schedule is contingent on acquiring all necessary land rights, permits, labor, and materials. Pathway will be constructed and placed in-service in phases.

Table 3 shows the estimated maximum number of employees, number of shifts, and employees per shift during the construction and operation and maintenance phases of Pathway.

Table 3: Employees and Shifts per Phase (Estimated)

Construction Phase	Employees	Shifts	Employees per Shift
Construction	Up to 95 employees for transmission line	One 12-hour shift (Monday to Saturday)	Up to 95 employees
Operations	None; the facilities are unstaffed with the exception of remote monitoring	Remotely monitored 24/7/365	None
Maintenance	2-6 employees	1 to 2 times a month, as needed	2 to 6 employees

5.201(5) Hazards and emergency procedures.

5.201(5)(a) Describe hazards, if any, of fire, explosion and other dangers to the health, safety and welfare of employees and the general public.

Transmission lines are built and maintained to meet or exceed safety standards, such as those specified by the National Electrical Safety Code (NESC) and the North American Electric Reliability Corporation. Every effort is made to ensure safety in

construction, operation, and maintenance of transmission lines. Transmission lines are designed to withstand extreme weather conditions and protective devices at line terminals stop the electricity flow under abnormal operating circumstances. The transmission poles will be equipped with shield wires above the energized line; this equipment provides protection against lightning strikes.

Xcel Energy's transmission lines are monitored 24/7/365 for line contact, the term describing when an object comes in contact with the transmission line conductors. If there is an unanticipated event in the line, the line is isolated from the system to protect the public and the line from operating under unsafe conditions. Xcel Energy's transmission lines are inspected annually to check for line connections and damage. For the safety of the general public, unauthorized personnel are not permitted to come in contact with the transmission line conductor wire.

Xcel Energy and their construction contractor will comply with Occupational Safety and Health Administration requirements and worker safety plans to address employee safety. In the rare event of a fire emergency, Xcel Energy will likely be aware of an issue before the general public or emergency responders. Nevertheless, the public is encouraged to contact Xcel Energy's emergency number: 800-895-1999. In the event of an outage or equipment failure, the affected equipment is immediately de-energized and Xcel Energy personnel are dispatched to the site. Xcel Energy personnel receive safety training for emergency situations relating to high-voltage electrical equipment. Xcel Energy will coordinate with each Fire District crossed by Pathway in El Paso County. Copies of the Fire District Coordination Letters are provided in Attachment T.

5.201(5)(b) Describe hazards, if any, of environmental damage and contamination due to solid waste, hazardous waste, petroleum products, hazardous, toxic, and explosive substances or materials used at, or activities taking place at, the proposed facility.

Chemicals that may be used during construction and operation 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. Enclosed containment will be provided for trash disposal. Construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, will be removed and taken to a disposal facility authorized to accept such materials. No hazardous materials will be used, stored, or generated on site of Pathway facilities. Pathway will not require transportation of hazardous materials.

Construction, operation, and maintenance activities will comply with applicable federal, state, and local laws and regulations regarding the use of hazardous substances.

Construction activities will be performed using methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other pollutants and wastes into flowing streams or dry watercourses, lakes, and underground water sources. Activities will follow best management practices (BMPs) for the management of wastes to avoid and minimize effects from potential spills or other releases to the environment.

Short-term, temporary increases in fugitive dust and construction equipment exhaust (fumes) are anticipated during construction activities. These are not expected to degrade air quality. Transmission line operations will not require on-site staff and will be monitored remotely. Visits from personnel will be limited to emergencies or maintenance and inspection activities. As a result, increased dust or exhaust are not expected during operations.

Xcel Energy will apply for a Colorado Department of Public Health and Environment Air Pollutant Emissions Notice (APEN) for land development prior to construction and follow state standards to control the release of fugitive dust related to construction, if necessary. The APEN will be required for a disturbance greater than 25 contiguous acres and land development activities longer than 6 months.

Pathway will be constructed and operated in a manner to not cause hazards of environmental damage and contamination due to solid waste, petroleum products, or hazardous, toxic, and explosive substances and materials.

5.201(5)(c) Describe emergency procedures to be used in the event of fire, explosion or other event which may endanger the public health, safety and welfare.

Xcel Energy's facilities are designed, constructed, operated, and maintained to meet or exceed all applicable requirements of the Institute of Electrical and Electronics Engineers (IEEE) standards and accepted industry standards and practices including IEEE 979, Guide for Substation Fire Protection. Applicable fire laws and regulations, as outlined in CRS 31-15-601, will be observed during construction and normal operation of the transmission line.

Xcel Energy's substations and powerlines are monitored and controlled remotely from an operations center where event response is coordinated. In the rare event of an emergency, Xcel Energy will likely be aware of an issue before the general public or emergency responders. Nevertheless, the public is encouraged to contact Xcel Energy's emergency number: 800-895-1999 to report an emergency. Unauthorized personnel, including emergency responders, should not approach the facilities and should not touch the electric lines or anyone or anything in contact with them. In the

event of an outage or transformer failure, the affected substation equipment is immediately de-energized by the breaker equipment and Xcel Energy personnel are dispatched to the site. Xcel Energy personnel receive safety training for emergency situations relating to high-voltage electrical equipment. Xcel Energy also coordinates closely with local fire departments and first responders and consults with them to discuss any concerns within their response area. Xcel Energy offers free online safety training to fire departments and first responders that is based on national standards through the Responding to Utility Emergencies Program. In the rare event of a fire emergency, Xcel Energy will likely be aware of an issue before the general public or emergency responders. Nevertheless, the public is encouraged to contact Xcel Energy's emergency number: 800-895-1999. In the event of an outage or equipment failure, the affected equipment is immediately de-energized and Xcel Energy personnel are dispatched to the site. Xcel Energy personnel receive safety training for emergency situations relating to high-voltage electrical equipment. Xcel Energy will coordinate with each Fire District crossed by Pathway in El Paso County. Copies of the Fire District Coordination Letters are provided in Attachment T. Xcel Energy's Emergency Response Procedures, including Fire Prevention Plan and Fire Prevention and Mitigation training for Pathway, are provided as Attachment H. Xcel Energy's powerlines are monitored and controlled remotely from an operations center where event response is coordinated.

5.201(6) The applicant shall supply an analysis of non-structural alternatives to the Project, such as conservation of energy use, no development or management (different scheduling, conservation programs, facility design, land trades etc.), if applicable.

The purpose of Pathway is to create a network transmission system that can integrate new generation resources needed to meet Colorado's clean energy goals. The existing infrastructure is not adequate to meet demand. Therefore, no non-structural alternatives are viable.

5.201(7) The applicant shall supply an analysis of structural alternatives to the Project, such as alternate locations and routes, alternative types of facilities, use of existing rights-of-way, and joint use of rights-of-way with other utilities and upgrading of existing facilities.

Pathway routing and siting efforts were divided by segment and documented in a series of Routing and Siting studies. Each Routing and Siting Study is interrelated due to the overlap in segment Study Areas and shared substation endpoints. Each Routing and

Siting Study documents the process utilized to review and consider reasonable siting and routing alternatives for the new major electrical facilities (pursuant to Colorado Revised Statutes 29-20-108(4)(a) and (b)). The Routing and Siting Study for Segment 5 is included in Attachment C and provides an alternatives analysis to address the requirement.

Determining the location of the preferred route was accomplished through an extensive process described in Section 3(b) of the Letter of Intent (page 7) that included engaging the public, landowners and other stakeholders. Cultural and historic resources, technical and engineering requirements, environmental constraints, existing and planned land use, and other factors were evaluated and compared to establish the transmission line route options. The preferred route chosen has the highest percentage (63%) of co-location with existing linear infrastructure, including existing transmission lines, roads, rail and pipelines for its entire length and is less impactful to the landscape compared to other route alternatives. This route was considered based on feedback from the public, jurisdiction staff and Colorado Parks and Wildlife. Access for construction and maintenance is favorable along this route option given its proximity to existing infrastructure. Generally, this route option balances impacts across resources due to its co-location with other existing infrastructure. For these reasons, the Project as proposed in this Application is the preferred alternative among those analyzed in the Routing and Siting Study for Segment 5 (Attachment C).

Undergrounding of the electric transmission line was evaluated. Burying lines is 10 to 50 times higher in cost than installing overhead lines, and there are other significant issues, such as operation and maintenance. Underground transmission lines require insulated underground cables and a concrete trench with truck-size manholes along the length of an underground line. Unlike lower-voltage distribution power lines which deliver electricity to homes and business, higher-voltage transmission lines are not frequently installed underground because of several factors, including the higher material costs for insulated cables and concrete duct banks and the higher specialized labor costs for splicing. An underground transmission line would result in a much wider area of disturbance with concrete installed along the entire route. The visual impact of an underground transmission line would not be completely negated because the required above-ground riser structures are visible.

Who benefits and who pays for undergrounding is an important issue, sometimes involving third-party cost sharing. While underground transmission lines are expected to have fewer weather-related outages, underground lines can still fail. And when outages occur, it takes longer to repair an underground line than an overhead line, given the scarce availability of the specialized materials needed. Also, the lifespan of underground lines is estimated to be about half that of overhead lines.

The Colorado Public Utilities Commission (CPUC)'s written approval provides Xcel Energy the authority and direction to move forward as designed with Segments 1-5 of Colorado's Power Pathway. The CPUC's order confirms the 345-kilovolt transmission line, associated substations, and the 'transmission loop' the new infrastructure will provide, will allow Xcel Energy to deliver new renewable energy, help meet Colorado's carbon reduction requirements and deliver electric reliability for the region.

In the written approval, the CPUC determined that undergrounding of the transmission line is not in the public interest due to cost and other factors. The CPUC Decision for a Certificate of Public Convenience and Necessity (CPCN) for Pathway is provided as Attachment S.

5.201(8) Detailed description of the need for the proposed development or activity, including but not limited to:

5.201(8)(a) The present population of the area to be served and the total population to be served when the project is operating at full capacity.

Pathway will provide bulk electric transmission capacity in eastern Colorado and will not change local electric service providers. The purpose of Pathway is to create a network transmission system that can integrate new generation resources needed to meet Colorado's clean energy goals. Pathway is a backbone transmission system that will connect generation sources in eastern Colorado to demand throughout Colorado. The current electric transmission facilities in the Eastern Plains do not have adequate capacity to meet the forecasted demand. Pathway facilities proposed in El Paso County are part of the larger Project that creates a transmission "loop" to provide additional transmission capacity. Pathway will be able to integrate approximately 5,500 megawatts of electric power output from new generation; the energy capacity provided by Pathway is the equivalent of powering 2,500,000 Colorado homes, annually. Colorado has an open transmission system, so Xcel Energy's power lines also carry electricity generated by other utilities and cooperatives around the state, benefitting everyone who uses electricity. All transmission providers in Colorado will have access to Pathway to deliver clean, renewable energy to its customers, who will still be serviced by their current power provider

5.201(8)(b) The predominant type of users or communities to be served by the proposal.

Pathway is an addition to Colorado's backbone transmission system and part of Xcel Energy's $1.7 billion investment to improve the state's electric grid and enable future renewable energy development around the state. As an essential addition to Colorado's

open transmission system, Pathway will carry electricity not only generated by Xcel Energy but by utilities and cooperatives around the state, benefiting everyone who uses electricity.

5.201(8)(c) The percentage of the design capacity at which the current system is now operating.

The current electric transmission facilities in the Eastern Plains region of Colorado do not have adequate capacity to meet the forecasted demand of 5,500 megawatts. Pathway will upgrade the state's high-voltage transmission system serving all (co-op, municipal) energy providers and Xcel Energy customers. It will unlock significant renewable energy development opportunities within Colorado's eastern plains.

5.201(8)(d) If the proposal is for construction of a new facility and the capacity of that facility exceeds a ten-year projected increase in demand, a detailed explanation of the excess service capacity and the cost of the excess capacity.

As provided in the CPCN filing to the CPUC, Pathway is being designed to meet the needs described in that application. In March 2021, Xcel Energy filed a CPCN to the CPUC describing the purpose, need, and public benefits of constructing Pathway. In June 2022, CPUC provided written approval of the CPCN for Segments 1 through 5. The CPUC determined that:

- Meeting 2030 carbon emission reduction targets depends on the timely completion of the transmission line.
- The Project is appropriately sized to accommodate injection of up to 5,500 megawatts of new generation.
- The looped transmission line configuration provides additional resiliency and reliability benefits while avoiding costs.
- Cost estimates and timelines for the Project, along with magnetic field and noise level requirements, are reasonable.
- Undergrounding is not in the public interest due to cost and other factors.

The CPUC Decision for a CPCN for Pathway is provided as Attachment S.

The Eastern Plains region of Colorado is one of the nation's best areas for wind and solar energy generation, but it does not currently have a network transmission system that can integrate these new generation resources into the state's interconnected grid system, which is needed to meet Colorado's clean energy goals. Pathway will help to

meet the state's growing electricity needs, improve safety, reliability, and affordability, and enable the transition to clean energy. Pathway will allow developers of energy generation projects to interconnect energy resources located in the areas of the state that are underserved by backbone transmission lines and allow Xcel Energy to deliver energy to electric customers.

5.201(8)(e) The relationship of the proposal to the applicant's long-range planning and capital improvement programs.

Pathway will support Xcel Energy's Clean Energy Plan (Xcel Energy 2021) that is estimated to deliver as much as an 85 percent reduction in carbon dioxide emissions by 2030 and add approximately 6,500 megawatts of new wind, solar, and other resources. Pathway is a $1.7 billion investment proposed by Xcel Energy to improve the state's electric grid and enable future renewable energy development around the state. Pathway will upgrade the state's high-voltage transmission system serving all (co-op, municipal) energy providers and Xcel Energy customers. It will unlock significant renewable energy development opportunities within Colorado's eastern plains.

5.201(8)(f) A description of the user needs and user patterns to be fulfilled by the proposed Project.

In March 2021, Xcel Energy filed a CPCN to the CPUC describing the purpose, need, and public benefits of constructing Pathway. In June 2022, CPUC provided written approval of the CPCN for Segments 1 through 5. The CPUC determined that:

- Meeting 2030 carbon emission reduction targets depends on the timely completion of the transmission line.
- The Project is appropriately sized to accommodate injection of up to 5,500 megawatts of new generation.
- The looped transmission line configuration provides additional resiliency and reliability benefits while avoiding costs.
- Cost estimates and timelines for the Project, along with magnetic field and noise level requirements, are reasonable.
- Undergrounding is not in the public interest due to cost and other factors.

The CPUC Decision for a CPCN for Pathway is provided as Attachment S.

The Eastern Plains region of Colorado is one of the nation's best areas for wind and solar energy generation, but it does not currently have a network transmission system that can integrate these new generation resources into the state's interconnected grid

system, which is needed to meet Colorado's clean energy goals. Pathway will help to meet the state's growing electricity needs, improve safety, reliability, and affordability, and enable the transition to clean energy. Pathway will allow developers of energy generation projects to interconnect energy resources located in the areas of the state that are underserved by backbone transmission lines and allow Xcel Energy to deliver energy to electric customers.

5.201(8)(g) A description of the relationship of the Project to other existing and planned utility facilities of a similar nature, other communication or energy generation and transmission facilities, local government capital improvement programs and special district expansion programs.

Pathway is a backbone transmission system that will support Xcel Energy's Clean Energy Plan (Xcel Energy 2021) that is estimated to deliver as much as an 85 percent reduction in carbon dioxide emissions by 2030 and add approximately 6,500 megawatts of new wind, solar, and other resources. Pathway will help to meet the state's growing electricity needs, improve safety, reliability, and affordability, and enable the transition to clean energy. Pathway will upgrade the state's high-voltage transmission system serving all (co-op, municipal) energy providers and Xcel Energy customers. Pathway will allow developers of energy generation projects to interconnect energy resources located in the areas of the state that are currently underserved by backbone transmission lines. Colorado has an open transmission system, so Xcel Energy's transmission lines also carry electricity generated by other utilities and cooperatives around the state, benefitting everyone who uses electricity. All transmission providers in Colorado will have access to Pathway to deliver clean, renewable energy to its customers, who will still be serviced by their current power provider. See additional discussion in Section 1 of the Letter of Intent (pages 1 – 4).

Pathway is not related to local government capital improvement programs or special district expansion programs.

5.201(9) Environmental Impact Analysis

5.201(9)(a) Land use

5.201(9)(a)(i) Specify how the proposed development will utilize existing easements or rights-of-way for any associated distribution or collector networks.

Where feasible, the Pathway route through El Paso County is co-located along existing infrastructure to minimize impacts to the surrounding area. Approximately 25 miles of

the Pathway transmission line in El Paso County are co-located along existing roads and electric transmission infrastructure. Pathway is sited in areas already encumbered by linear facilities and does not prohibit adjacent development. A map showing existing transmission lines (115-kV or greater) within El Paso County is provided as Attachment N. The proposed transmission line route in El Paso County is generally oriented in a north to south direction in the area south of Simla, near the El Paso/Lincoln county line and is co-located along the following existing roads: Oil Well Road, Harrisville Road, Simla Highway, Rush Road, Holtwood Road, S Johnson Road, and Whittemore Road.

5.201(9)(b) Information regarding other utility facilities:

5.201(9)(b)(i) A map showing each existing major facility of a public utility within the County of the type proposed for development.

A map showing existing transmission lines (115-kV or greater) within El Paso County is provided as Attachment N.

5.201(9)(b)(ii) The design capacity of each such facility, the excess capacity of each such facility and the percentage of capacity at which each such facility operates.

The current electric transmission facilities in the Eastern Plains region of Colorado do not have adequate capacity to meet the forecasted demand of 5,500 megawatts. Pathway will upgrade the state's high-voltage transmission system serving all (co-op, municipal) energy providers and Xcel Energy customers. Pathway will be able to integrate approximately 5,500 megawatts of electric power output from new generation; the energy capacity provided by Pathway is the equivalent of powering 2,500,000 Colorado homes, annually. All transmission providers in Colorado will have access to Pathway to deliver clean, renewable energy to its customers, who will still be serviced by their current power provider. The operating capacity of the existing transmission lines is reflected in the map of the existing transmission system in Attachment N. See additional discussion in Section 5.201(8)(e) of this document.

5.201(9)(b)(iii) Whether present facilities can be upgraded to adequately accommodate a ten-year projected increase in demand for services to be offered by the proposed project.

The current electric transmission facilities in the Eastern Plains region of Colorado do not have adequate capacity to meet the forecasted demand of 5,500 megawatts. The

existing transmission lines between Pueblo and Denver along I-25 have already been rebuilt to the maximum corridor capacity in terms of voltage and available right-of-way space. A separation is required between transmission lines for reliability and safety, and there is not enough space for a new line adjacent to existing lines. Segment 5 of Pathway, which includes the proposed facilities in El Paso County, provides a new transmission corridor separate from the existing lines along I-25 that provides additional capacity and system reliability in the event the other 345-kV lines are not operating. See additional discussion in Section 5.201(8)(e) of this document.

5.201(10) Applicants seeking a permit for the site selection and construction of a power plant shall submit, in addition to those requirements set forth above, a map locating and describing resource areas to be utilized as sources of energy.

Pathway is not a proposed power plant; therefore, this requirement does not directly apply to Pathway.

5.201(11) Applicants seeking a permit for the site selection and construction of transmission lines or substations shall submit the following additional documents and information:

5.201(11)(a) Computer modeled electromagnetic field measurement within the proposed transmission line easement for that portion of the transmission line between substations or transition sites; and

Pathway facilities will be designed, constructed, operated, and maintained to meet or exceed applicable standards of design and performance set forth in the NESC.

Electric and magnetic fields (EMF) exist wherever electricity is produced or used, including around any electric appliance or wire that conducts electricity. Electric fields are created by voltage—the higher the voltage, the stronger the field. Anytime an electric appliance is plugged in, even if it is not on, an electric field is created in its vicinity. Electric fields are easily blocked by walls, trees, clothes, and skin. The farther the distance from the source of the electric field, the weaker it becomes. EMF extend outward from the conductor wire and decrease rapidly with distance from the conductor. There is no federal standard for transmission line EMF. Additional information is available online at Transmission-EMF-Fact-Sheet.pdf (coloradospowerpathway.com).

A Noise and EMF Study was conducted for Pathway and submitted as part of Pathway's CPCN application and is included as Attachment E. The study concluded that magnetic field levels at the edge of the Pathway transmission line ROW are projected to be 54.7 milligauss (mG). These levels are below 150 mG and were deemed reasonable by the CPUC. The CPUC Decision Regarding CPCN and Noise and Magnetic Field Reasonableness for Pathway is provided as Attachment S.

5.201(11)(b) Measures taken to comply with the concept of prudent avoidance with respect to planning, siting, construction and operation of transmission lines, which may be those steps taken to comply with CCR 723-3 Section 3206(9)(b) or similar authority, for projects where other similar authority is applicable.

The routing and siting study process used to locate Pathway facilities in El Paso County is provided in Attachment C of this 1041 Application. In June 2022, the CPUC provided written approval for the CPCN for Pathway Segments 1 through 5, determining Pathway is in the public interest and in compliance with relevant CPUC rules and regulations. The CPUC Decision for a CPCN for Pathway is provided as Attachment S.

5.201 References

Xcel Energy. 2024. Colorado Clean Energy Plan. Available online at: https://corporate.my.xcelenergy.com/s/sustainability/plans/colorado-plan. Accessed August 2024.