From:	Lehman, Grant
To:	Tri-State Transmission Planning
Subject:	FW: Lamar-Front Range Transmission Project
Date:	Tuesday, November 29, 2011 2:04:29 PM
Attachments:	Transmission Planning Stakeholder Meeting.docx

From: Russell, Scott [mailto:sprussell@fs.fed.us]
Sent: Tuesday, November 29, 2011 8:26 AM
To: Lehman, Grant
Subject: RE: Lamar-Front Range Transmission Project

Grant,

Thank you for the additional information/map regarding the Lamar-Front Range Transmission Project. I wanted to provide to you a copy of our response regarding the Planning Meeting scheduled for Dec 2nd (see attached). Due to time constraints and our understanding (at this point), that the transmission project will not impact the Comanche National Grassland, we do not expect to attend the Planning Meeting. However, if future Project siting should impact the Grassland, we would certainly need to be involved.

I hope you have a very joyous and safe holiday season.

Thanks again,
Scott Russell
Physical Resources Officer
Pike & San Isabel National Forests
Cimarron & Comanche National Grasslands
2840 Kachina Dr.
Pueblo, CO 81008
719-553-1417
e-mail: sprussell@fs.fed.us

From: Lehman, Grant [mailto:glehman@tristategt.org]
Sent: Monday, November 21, 2011 9:38 AM
To: Russell, Scott
Cc: Tri-State Transmission Planning
Subject: Lamar-Front Range Transmission Project

Mr. Russell,

Thank you for your call regarding Tri-State's planned transmission planning meeting and webinar on December 2nd, 2011, and specifically on the Lamar-Front Range Transmission Project, which has a planned transmission connection from the Lamar area to the Pueblo area. You expressed concern with any potential route south of La Junta that would affect the Comanche National Grassland. As this project has not reached the stage of line siting, there have been no specific routes or corridors identified at this time. As mentioned on the phone also, the final connection

configuration in the Pueblo area is still under study and we welcome any feedback or potential alternatives to the proposed Project. Attached is a map depicting the presently planned line termination points, please let me know if you have additional questions or comments.

Thanks,

Grant Lehman, PMP
Tri-State G&T Association
Office: 303-254-3232
Mobile: 303-519-4803
Fax: 303-254-3566
glehman@tristategt.org
www.tristate.coop

City of Greeley Colorado
Great. From the Ground Up.

December 21, 2011

Tri-State Generation and Transmission Association, Inc.
Transmission Planning
P.O. Box 33695
Denver, CO 80233-0695

Re: Review of the Promontory Park-Weld 230 kV Line Project

To Whom it May Concern:

Attached with this letter are review comments from City staff regarding the Promontory Park-Weld 230 kV Line project. Please address and incorporate the necessary revisions into the 10-year transmission plan.

Please call Brad Mueller at (970) 350-9786 or me at (970) 350-9798 with any questions you may have.

Sincerely,

Derek Glosson, P.E.
Engineering Development Manager

cc: Brad Mueller, Planning Manager

Attachment

Project Review Comments

Date: 12/21/2011

Project Name: Tri-State Transmission Line (Promontory Park)

Location: Promontory Park

Reviewed By: Derek Glosson **Phone:** (970) 350-9798

Submittal Date 11/30/2011 **Department** Eng Development Review

City ID# 2156 **Submittal #:** 1

General

Page		
☐	New	The City of Greeley's 2035 Comprehensive Transportation Plan calls for the future extension of 4th Street to the west. The proposed Weld-Promontory Park transmission line improvements will need to be coordinated with the City's plans for the future extension of 4th Street.
☐	New	Will the existing poles be utilized, or will new ones be installed?
☐	New	Is it possible to underground the new lines?
☐	New	From the information provided, the proposed improvements are unclear. It appears that the improvements will consist of transmission line upgrades to the existing east/west running transmission lines and a new substation at the west end of the proposed improvements. Are improvements being proposed to the existing north/south running trnasmission lines labeled as *2, *3, or *4?

Project Review Comments

Date: 12/21/2011

Project Name: Tri-State Transmission Line (Promontory Park)

Location: Promontory Park

Reviewed By: Brad Mueller **Phone:** (970) 350-9786

Submittal Date 11/30/2011 **Department** Planning

City ID# 2156 **Submittal #:** 1

Page

☐ The City of Greeley has an interest in the Promontory Park section included in the Tri-State Generation Ten-Year Transmission Plan. Specifically the City would like to better understand and analyze any proposed changes to the Windsor-Kodak spur (2.5 miles?) running due north of the existing Windsor substation. This line appears to be in the view corridor from the Missle Park, a regional park located at the top of the bluffs, with views to Windsor and mountain ranges to the west. While currently only moderately utilized, this park could be a significant regional destination in the future. We will coordinate with the Town of Windsor and Weld County on a coordinated response, as more information about potential changes and impacts from the line are further understood.

From:	Derek L. Glosson
To:	Transmission Planning
Cc:	Brad Mueller
Subject:	Promontory Park-Weld 230 kV Line Project - City of Greeley Comments
Date:	Wednesday, December 21, 2011 2:32:01 PM
Attachments:	Promontory Park-Weld 230 kV Line Project - 12.21.11 Review Comments.pdf

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To Whom it May Concern:

Attached are City of Greeley review comments regarding the Promontory Park-Weld 230 kV Line project. Please address and incorporate the necessary revisions into the 10-year transmission plan. Thank you for the opportunity to review the project. We look forward to future reviews.

Derek Glosson

Derek Glosson, P.E., CFM
Engineering Development Manager
City of Greeley
1100 10th Street, Suite 402
Phone: 970-350-9798
Fax: 970-336-4170
Derek.Glosson@greeleygov.com

From: derek.glosson@greeleygov.com [mailto:derek.glosson@greeleygov.com]
Sent: Wednesday, November 30, 2011 7:36 PM
To: Thornton, Jonathan
Subject: Public Comments Transmission Planning (Derek Glosson)

Transmission Planning Comments were submitted on 30-Nov-11 at 07:36 PM:

Name: Derek Glosson
Address: 1100 10th Street, Suite 402
City: Greeley
State: CO
Zip: 80631
Email: derek.glosson@greeleygov.com
Phone:
Company/Affiliation: City of Greeley
Are you a member of an electric coop? No
Do your comments reflect your personal interest or that of a special interest group? Special Interest
The following issues concern you most with Tri-State's Transmission plans:
10-year Capital Construction Plan transmission additions
Please provide your comments:
I'm putting together comments from the City of Greeley regarding the Promontory Park-Weld 230 kV Line project and have a few initial questions: Do you have a list of City of Greeley personnel that received the November 16th notice regarding the stakeholder meeting? From the information provided, it appears that the improvements will consist of transmission line upgrades to the existing east/west running transmission lines and a new substation at the west end of the proposed improvements. It does not appear that any improvements are proposed to the existing north/south running transmission lines labeled as *2, *3, or *4. Is that correct? I assume that it's not cost effective to try to underground the new lines, so the new lines will be overhead. Is that correct? Do you plan to use the existing poles, or will new ones be installed? Thanks Derek Glosson, P.E., CFM Engineering Development Manager City of Greeley 1100 10th Street, Suite 402 Phone: 970-350-9798 Fax: 970-336-4170 Derek.Glosson@greeleygov.com

From:	Rod Cook
To:	Tri-State Transmission Planning
Cc:	Spears, Laurie; Weeds
Subject:	Thank you for the Webinar
Date:	Friday, December 02, 2011 11:37:44 AM

Hi,

This morning's Webinar was very professional. Thanks for inviting me to attend. We look forward to assisting your staff with any noxious weed issues. Once the final ROW is determined, we have a pretty good GIS noxious weeds layer that we can provide for the La Plata County, Colorado portion of the ROW. We also offer weed management consulting services.

Best of luck with your project,

Rod Cook
La Plata County
Weed Manager
2500 Main
Durango, CO 81301
970.382.6470
970.247.2365 Fax
email: cookrd@co.laplata.co.us
web: www.laplataweeds.org

From: Carlisle, Sarah
Sent: Monday, January 09, 2012 3:28 PM
To: 'Derek.Glosson@greeleygov.com'
Subject: Public Comments Transmission Planning

Hi Derek,

I just left you a voicemail, but wanted to send along the answers to your questions regarding the Promontory Park transmission project . Please find the answers to your questions below. We look forward the coordinated response from the City of Greeley, the Town of Windsor, and Weld County as the project progresses. Feel free to contact me if you have any questions.

Sincerely,

Sarah Carlisle
Public Affairs Coordinator
Tri-State Generation and Transmission Association, Inc.
Direct 303.254.3396
Cell 303.263.7056
scarlisle@tristategt.org

Do you have a list of City of Greeley personnel that received the November 16th notice regarding the stakeholder meeting?

Yes. Here is the list of other personnel that should have received the November 16th notice, including a general mailing to the City of Greeley Parks Department that did not have a particular contact identified:

City of Greeley Parks Department			
Greeley*	Tom	Norton	Mayor
Greeley*	Betsy	Holder	City Clerk
Greeley*	Roy	H. Otto	Greeley City Manager
Greeley*	Becky	Safarik	Planning Director
Greeley*	Bruce	Biggi	Economic Development Manager

From the information provided, it appears that the improvements will consist of transmission line upgrades to the existing east/west running transmission lines and a new substation at the west end of the proposed improvements. It does not appear that any improvements are proposed to the existing north/south running transmission lines labeled as *2, *3, or *4. Is that correct?

Yes, that is correct, at least as pertains to the currently proposed scope of this project at this point in time. This particular project happens to be early in the development stage and many details have yet to

be worked out. The need for minor reroute and construction in this area will largely depend upon where a feasible substation site might be identified and approved for construction. It is unlikely that any major reconstruction of the north/south sections of the 115 kV line serving the jointly owned Western Area Power Administration/Poudre Valley REA Whitney/Kodak substation would be required.

I assume that it's not cost effective to try to underground the new lines, so the new lines will be overhead. Is that correct?

You are correct that the lines are planned to be overhead lines and that the additional cost of undergrounding 230 kV transmission lines is certainly a factor to be considered, but there are also other criteria and factors which drive the decision. Attached for your reference is a fact sheet that was developed in conjunction with another of Tri-State's proposed new transmission line projects which explains in more detail some of the issues associated with the overhead vs. underground construction comparison at a similar voltage level.

Do you plan to use the existing poles, or will new ones be installed?

As mentioned previously, this project is still early in the planning and development stages so all structure types are not presently determined. Wherever possible, existing poles and structures that are still in satisfactory condition and meet the design needs of the new project would remain in place during what would ideally be a minor reroute of only a few spans of the existing lines to connect to a new substation (for the 115 kV portion of the project and line sections). New short sections of line may also need to be constructed that would require new poles or structures. Any rebuild of the existing double circuit 115 kV line from Weld to Promontory Park to accommodate new 230 kV circuits would require steel structures for the entire length to accommodate the dual circuits. However, an additional line on adjacent right-of-way to Xcel and WAPA's double circuit 115 kV line has also not been ruled out for proposal. Until the scope of the project is more defined and Tri-State has determined whether other area transmission providers may jointly participate, the type of structures is still somewhat undefined.



Southern Colorado Transmission Improvements

San Luis Valley – Calumet – Comanche Transmission Project

Overhead vs. Underground

Information about Undergrounding High-Voltage Transmission Lines

Working on underground lines in a typical 8' x 8' x 24' vault

Tri-State Generation and Transmission Association (Tri-State) and Public Service Company of Colorado (PSCo), an Xcel Energy company, are jointly proposing to construct the San Luis Valley–Calumet–Comanche Transmission Project, which would be owned and operated by the two companies.

The proposed project would be constructed by the utilities and include the following components:

- Approximately 95 miles of new double-circuit 230-kilovolt (kV) transmission line from the existing San Luis Valley Substation, north of Alamosa, to a new Calumet Substation near Walsenburg
- A new 230/345-kV Calumet Substation at a location six miles north of Walsenburg on property owned by Tri-State and expansion of three existing substations
- Approximately 45 miles of new double-circuit 345-kV transmission line between the proposed Calumet Substation and the existing Comanche Substation near Pueblo
- Approximately six miles of new 230-kV transmission line between the proposed Calumet Substation and the existing Walsenburg Substation
- Proposed communication facilities to support operation and maintenance of the transmission lines

High-voltage overhead transmission lines are a reliable, low cost, easily maintained, and established method to transport bulk electricity across long distances. In 2006, there were approximately 160,000 miles of 230-kV or greater high-voltage transmission lines in the United States. The percentage of existing underground transmission is estimated at between 0.5 and 0.6 percent of this total. Line crews have a top-notch performance and safety record at repairing and maintaining this extensive overhead infrastructure.

Construction of high-voltage transmission lines underground is appropriate in densely urban and suburban settings or, in some instances, where sufficient right-of-way is not available for an overhead line. Tri-State and PSCo have separate policies on undergrounding transmission lines.

When an electric utility considers whether or not to construct high-voltage underground transmission facilities, it must evaluate the following considerations:

Power Outages

While underground transmission lines are somewhat immune to weather-related failures, any damage is difficult to pinpoint and repair, and required repairs may take a couple of weeks to several months to complete. Damage to overhead lines is easy to locate and typically takes several hours or days to repair.

Network vs. Radial Installations

Underground transmission lines in a radial system require more cables to meet the same reliability as an overhead line. The additional components translate to a higher cost and can reduce overall system reliability.

Line-Length Challenges

Underground lines would require additional equipment to compensate for voltage rise along the distance of the transmission line. The additional equipment translates to a higher overall cost, limits the length of the underground installation, and increases the likelihood of failure because of the additional components.

Multiple Cables and Forced Cooling Options

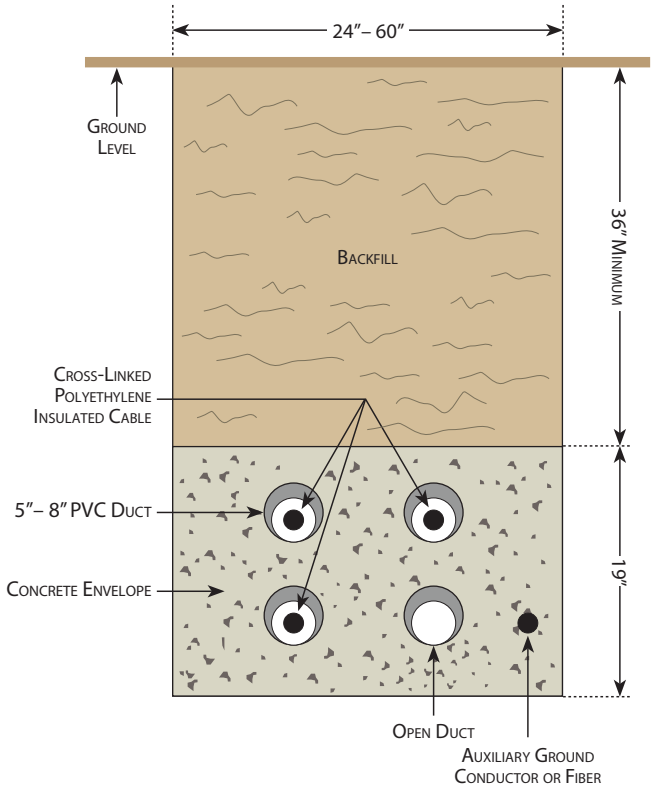
Depending on the type of cable system used, cooling equipment may be required at underground transmission line substations. The cooling equipment increases noises above ground. Overhead lines are air cooled and widely spaced for safety.

Underground cable and smaller overhead conductor

Construction Impacts

The environmental impacts of construction are greater for an underground transmission line than for a comparable overhead line. Depending on the types of overhead structures used, an overhead line typically requires one or more augured foundations that may be several feet in diameter. Such a foundation would be required at every structure location, and each foundation can vary from 600 to more than 1,000 feet apart. At a minimum, an underground transmission line would require a continuous trench at least 5 feet in width at the bottom and 5 feet deep. Considerable clearing and grading would be expected in suburban and rural settings, and dust and noise from construction would last 3 to 6 times the duration of an overhead line. Concrete manholes or large splice vaults are needed at recurring intervals. During repairs, a whole segment between these vaults may need to be excavated again.

Typical Underground Cable Installation



Easement Requirement

An overhead line typically has a wider easement footprint than an underground line.

Life Expectancy

The life expectancy of an underground line is about half that of an overhead line.

Costs

An underground line is expected to be 4 to 15 times the cost (depending on voltage) of an overhead line due to time, materials, process, and the use of specialized labor. An underground line must also be routed to avoid other underground installations such as water, gas, and sewer lines. Unstable slopes, hazardous material sites, wetlands, and bedrock must be avoided. Going under a road, highway, or river requires expensive construction techniques such as directional boring. All these aspects of underground transmission construction lead to a much higher cost than overhead line construction.

Electric and Magnetic Fields

Underground transmission lines do not mitigate electric magnetic fields (EMF) because the earth does not provide shielding. EMF intensity levels may be higher above an underground installation as compared to overhead lines.

TRI-STATE Generation and Transmission Association, Inc.
A Touchstone Energy® Cooperative

For more information:

Please call 1-877-482-7881 or visit www.socotransmission.com

Email: info@socotransmission.com

Project Contacts: Nicole Korbe (Tri-State) or Keary Hallack (Xcel Energy)

Xcel Energy®

-----Original Message-----
From: Rich Crawford [mailto:midwestwindresources@gmail.com]
Sent: Thursday, January 12, 2012 10:51 AM
To: Ray, Rocky
Subject: Re: FW: TSGT Response to Request for Info on 230 kV Big Sandy to Calhan Project

Thanks for your prompt response to my inquiry, Mr. Ray. This will be very helpful in ensuring we do not overstate progress on transmission facilities.

I'll continue to monitor progress on transmission upgrades as it becomes public information. Feel free to keep me on your list of folks who desire updates on this and other transmission lines in southern and eastern Colorado that might have an impact on wind generation. The Lamar - Front Range Project is another one which crossed my screen, but appears to be even further out into the future.

The parcel of land in Sections 14 & 23, T9S, R60W near intersection of Colorado Hwy 86 and Elbert County Road 125 is near our current project boundary. Records show this land is owned by TriState G & T, so we'd be interested in hearing when any definitive plans are formulated and made public regarding this site, too.

Again, thanks for sharing this information. I look forward to keeping in touch as these projects evolve.

Rich Crawford

On Thu, Jan 12, 2012 at 10:21 AM, Ray, Rocky <rray@tristategt.org> wrote:
> Mr. Crawford:
>
> As per your request for information directed to Joe Costello
> concerning Tri-State's proposed 230 kV Big Sandy-Calhan project,
> please recognize that this project is still very much in the
> conceptual planning stage, and is consequently very undefined. The
> description posted in conjunction with Tri-State's CO Rule 3627 filing
> was only one variation of the project which Tri-State will be
> evaluating over the next couple of years as our Association weighs the
> costs and benefits and feasibility of the project versus the alternatives which will best serve our Membership as a whole.
> Tri-State must also fulfill Mountain View Electric Association's
> (MVEA) transmission service and reliability concerns and goals (since
> MVEA is the owner of the existing 69 kV Calhan-Limon line and Simla
> Substation) in whichever project alternative is chosen to eventually proceed with.
>
> In response to your other questions:
>
> Is this an active project with a project number assigned? No, not at
> this time.
>

> Are any more dates on its timeline available beyond that shown on
> brief project summary on website? No, the dates indicated for this
> project are only very tentative, and will remain so until the scope is
> better defined later in 2012 and 2013.
>
> Is the upgrade of Simla substation from 69kV to 230kV included within
> the project? One of the project alternatives would include this
> potential upgrade, but others would retain MVEA's existing 69 kV service to
Simla.
>
> How much of the capacity of this proposed 230kV upgrade is already
> spoken for? There is no allocation of capacity at this time, nor can
> there be since this is only a conceptual project. Transmission
> service requests for capacity from new generation facilities
> requesting interconnection are addressed through application to
> Tri-State through its Open Access Transmission Tariff (OATT) and
> specifically its Generation Interconnection Procedures (GIP) process.
>
> Following is a brief overview of the GIP process. I have also
> attached Tri-State's GIP Interconnection Request Application for your
convenience.
>
> For more information, please visit Tri-State's website at:
>
> http://www.tristategt.org/
>
> http://www.oatioasis.com/tsgt/index.html
>
> You may also contact Tri-State's Transmission Interconnection
> Administrator with additional questions:
>
> Ray A. LaPanse, P.E.
> Transmission Interconnection Administrator Power System Planning
>
> Tri-State Generation and Transmission Assoc., Inc.
> HQ Bldg., 1100 W. 116th Ave.
> Westminster, CO 80233-0695
> E-mail: rlapanse@tristategt.org
> Direct: (303) 254-3154
> Cell: (720) 346-5617
> Main: (303) 452-6111
>
>
> Respectfully,
>
> Rocky Ray
> Transmission Planning Coordination Engineer Tri-State G&T
> rray@tristategt.org
>
>

--

Rich Crawford
Midwest Wind Resources
10685 Burgess Road
Colorado Springs, CO 80908
(719) 495-4468
(712) 261-4044 cell