Office of Energy Projects

May 2020

Columbia Gas Transmission, LLC **Docket No. CP20-12-000**

Leach XPress Amendment Project

Environmental Assessment

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 2
Columbia Gas Transmission, LLC
Leach XPress Project Amendment
Docket No. CP20-12-000

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Leach XPress Project Amendment (Amendment), proposed by Columbia Gas Transmission, LLC (Columbia Gas) in the above-referenced docket. Columbia Gas proposes to amend the Order Issuing Certificate and Approving Abandonment issued on January 19, 2017 in Docket No. CP15-514-000 in order to modify the full-load operation of its Ceredo Compressor Station and modify the noise level requirements for the Ceredo and Crawford Compressor Stations. The Ceredo and Crawford Compressor Stations are located in Wayne County, West Virginia, and Fairfield County, Ohio, respectively.

The EA assesses the potential environmental effects of the Amendment in accordance with the requirements of the National Environmental Policy Act. The FERC staff concludes that approval of the proposed project, with appropriate mitigating measures, would not constitute a major federal action significantly affecting the quality of the human environment.

The Commission sent a copy of the *Notice of Availability* for the EA to federal, state, and local government representatives and agencies; elected officials; and potentially affected landowners in the Amendment area. The EA is only available in electronic format. It may be viewed and downloaded from the FERC's website (www.ferc.gov), on the Environmental Documents page (https://www.ferc.gov/industries/gas/enviro/eis.asp). In addition, the EA may be accessed by using the eLibrary link on the FERC's website. Click on the eLibrary link (https://www.ferc.gov/docs-filing/elibrary.asp), click on General Search, and enter the docket number in the "Docket Number" field, excluding the last three digits (i.e. CP20-12). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659.

Any person wishing to comment on the EA may do so. Your comments should focus on the EA's disclosure and discussion of potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this project, it is important that we receive your comments in Washington, DC **on or before 5:00 pm Eastern Time on June 8, 2020.**

For your convenience, there are three methods you can use to file your comments to the Commission. The Commission encourages electronic filing of comments and has staff available to assist you at (866) 208-3676 or FercOnlineSupport@ferc.gov. Please carefully follow these instructions so that your comments are properly recorded.

(1) You can file your comments electronically using the eComment feature on the Commission's website (www.ferc.gov) under the link to Documents and Filings. This is an easy method for submitting brief, text-only comments on a project;

(2) You can also file your comments electronically using the eFiling feature on the Commission's website (www.ferc.gov) under the link to Documents and Filings. With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "eRegister." You must select the type of filing you are making. If you are filing a comment on a particular project, please select "Comment on a Filing"; or

(3) You can file a paper copy of your comments by mailing them to the following address. Be sure to reference the project docket number (CP20-12-000) with your submission: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.214). Motions to intervene are more fully described at https://www.ferc.gov/resources/guides/how-to.asp. Only intervenors have the right to seek rehearing or judicial review of the Commission's decision. The Commission may grant affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.

Additional information about the Amendment is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website (www.ferc.gov) using the eLibrary link. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to www.ferc.gov/docs-filing/esubscription.asp.

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TECHNICAL ACRONYMS AND ABBREVIATIONS

Amendment	Leach XPress Project Amendment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Commission	Federal Energy Regulatory Commission
Columbia Gas	Columbia Gas Transmission, LLC
dB	decibels
dBA	decibels on the A-weighted scale
EA	Environmental Assessment
FEIS	final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
hp	horsepower
L_{dn}	day-night sound level
LXP Order	Order Issuing Certificates and Approving Abandonment for the Leach XPress Project
LXP	Leach XPress Project
MXP	Mountaineer XPress Project
MXP Order	Order Issuing Certificates and Approving Abandonment for the Mountaineer XPress Project
NEPA	*National Environmental Policy Act of 1969*
NOI	Notice of Intent to Prepare an Environmental Assessment for the Proposed Leach XPress Project Amendment and Request for Comments on Environmental Issues
NSA	noise-sensitive area
OEP	Office of Energy Projects
Secretary	Secretary of the Commission
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency

A. PROPOSED ACTION

The staff of the Federal Energy Regulatory Commission (FERC or Commission) prepared this environmental assessment (EA) to assess the environmental impacts of Columbia Gas Transmission, LLC's (Columbia Gas) request to amend its certificate of public convenience and necessity granted by the Commission in the Order Issuing Certificates and Approving Abandonment (LXP Order) issued on January 19, 2017 in Docket No. CP15-514-000 for the Leach XPress Project (LXP). The request is known as the Leach XPress Project Amendment (Amendment) and involves Columbia Gas's Ceredo and Crawford Compressor Stations located in Wayne County, West Virginia, and Fairfield County, Ohio, respectively. We[1] prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), (Title 40 Code of Federal Regulations [CFR], Parts 1500-1508), and the Commission's implementing regulations (18 CFR 380).

The FERC is the lead federal agency for the preparation of this EA. The assessment of environmental impacts is an important and integral part of the Commission's decision on whether to authorize Columbia Gas's proposed Amendment. The principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that could result from implementation of the proposed amendment;
- identify and recommend reasonable alternatives and specific mitigation measures, as necessary, to avoid or minimize amendment-related environmental impacts; and
- facilitate public involvement in the environmental review process.

1. Purpose and Need, and Proposed Facility Operations

As described in its November 6, 2019 application, Columbia Gas seeks to modify the full-load operation of its Ceredo Compressor Station and modify the LXP Order's noise level requirement for the Ceredo and Crawford Compressor Stations. Specifically, Columbia Gas requests Commission authorization to:

- modify the full-load operation of the Ceredo Compressor Station by limiting the use of the seven existing legacy[2] reciprocating units operating prior to the LXP Order to four units at a given time and to allow for the use of additional horsepower (hp) that is available from existing electric-driven compressor units installed subsequent to issuance of the LXP Order located at this compressor station; and

[1] "We," "us," and "our" refer to the environmental staff of the Office of Energy Projects (OEP).

[2] "Legacy" is a term used in Columbia Gas's application to refer to compressor facilities in operation prior to the Commission's noise regulations. Commission documents have also used the term "grandfathered" to refer to such facilities.

- amend the noise level requirement for the Ceredo and Crawford Compressor Stations to conform to the staff recommendation for these compressor station in the September 2016 final Environmental Impact Statement (FEIS) for the LXP rather than environmental condition 31 of the LXP Order.

Appendix A depicts the location of the two compressor stations.

Columbia Gas states that it substantially reduced noise levels at the Ceredo Compressor Station, and the Amendment would further reduce noise levels, but that is infeasible to further mitigate noise to meet the noise level requirement in the LXP Order. Columbia Gas further states that the design of the legacy facilities at the Ceredo and Crawford Compressor Stations prevent it from attaining compliance with environmental condition 31 of the LXP Order without substantial retirements and replacement of facilities that are required to support Columbia Gas's current system operations. The proposed Amendment would allow Columbia Gas to 1) operate the Ceredo Compressor Station at a lower maximum load noise level, and 2) ensure that operational noise at the Ceredo and Crawford Compressor Stations conform to Commission practice regarding noise levels at legacy compression stations. [3]

As part of its decision, FERC considers all factors bearing on the public convenience and necessity. Occasionally, proposed projects have associated facilities known as non- jurisdictional facilities that do not come under the jurisdiction of the FERC. Such facilities can include electrical transmission lines, water pipelines, or facilities proposed by others. The Amendment does not involve the installation of non-jurisdictional facilities.

2. Public Review and Comment

On February 26, 2020 the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Leach XPress Project (Project) Amendment and Request for Comments on Environmental Issues* (NOI). The NOI was sent to affected landowners; federal, state, and local government agencies; elected officials; and local libraries and newspapers. The Commission received comments in response to the NOI from the U.S. Environmental Protection Agency (USEPA). Comments are addressed below and in the applicable resource-specific sections of this EA.

The USEPA recommends that the EA document how FERC staff and Columbia Gas personnel interfaced with nearby residents regarding existing noise levels and projected

[3] If the noise generated by a legacy (e.g "grandfathered") compressor station exceeds a day-night sound level of 55 decibels on the A-weighted scale at nearby noise-sensitive areas, any proposed modification or expansion of the compressor station should not increase above existing noise levels after installing the new project equipment (*Guidance Manual for Environmental Report Preparation* for applications filed under the Natural Gas Act, February 2017, p.4-133; also see 18 CFR 157.206(b)(5)(ii)(B)).

future noise levels. FERC's regulations in 18 CFR 157.6(d) outline the landowner notification requirements for certificate applications. Per those regulations, Columbia Gas was required to notify all affected landowners; towns and communities; and local, state, and federal governments and agencies involved in the project, within 3 business days of the Commission issuing a notice of the application. The Commission issued its *Notice of Application* for the proposed Amendment on November 19, 2019. On February 26, 2020, the Commission issued its NOI for the Amendment. On April 1, 2020, the Commission issued its *Notice of Schedule* for issuance of the EA. Furthermore, this EA is being issued for public review and comment, and a *Notice of Availability* was issued by the Commission. All Commission notices were posted in the Commission's eLibrary docket for this proceeding, issued in the federal register, and mailed to affected landowners and interested stakeholders.

USEPA also recommends the EA reference a communication plan and disclose how the public could contact company operators and the Commission if questions arise about potential violations or activities occurring at the compressor station facilities during operations. Instructions for reporting concerns to FERC are provided on FERC's website, on the "Natural Gas Project Landowner / Stakeholder Topics of Interest" webpage at https://www.ferc.gov/industries/gas/landowner-topics.asp. FERC's website also contains a brochure titled *"An Interstate Natural Gas Facility on My Land? What do I Need to know?"* containing Landowner Helpline contact information at https://www.ferc.gov/resources/guides/gas/gas.pdf. Columbia Gas was required to provide affected landowners with a copy of this brochure as part of its landowner notification procedures described above.

We also note that prior to constructing the original LXP, Columbia Gas prepared and provided, to all residents within 0.5 mile of the compressor stations, an emergency response plan that it would follow in the event of an emergency. This plan addressed the requirements of 49 CFR 192.615 administered by the U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration. The plan included procedures for communicating with emergency services departments, prompt responses for each type of emergency, response logistics, emergency shut down and pressure reduction procedures, emergency service department notification, and restoration of services.

3. Land Requirements, Construction, Operation, and Maintenance

Given that no ground disturbance or construction would take place within Ceredo or Crawford Compressor Stations, there are no land requirements for the Amendment.

Columbia Gas would continue to operate and maintain the Ceredo and Crawford Compressor Stations in accordance with the applicable safety standards established by the USDOT in accordance with 49 CFR 192. The standards imposed are in accordance with Natural Gas Pipeline Safety Act of 1968, as amended. Changes in Columbia Gas's operation regarding use of legacy and new compressor units and horsepower levels are discussed in section B - Environmental Analysis.

B. ENVIRONMENTAL ANALYSIS

This analysis describes the condition of the existing natural and human environment and the potential impacts on it resulting from Columbia Gas's proposed Amendment. The requested Amendment would occur at Columbia Gas's existing Ceredo and Crawford Compressor Station sites within existing permanent facility boundaries.

Based on our review of the Amendment, no environmental resources other than noise quality would be affected by the Amendment; however, we received comments from the USEPA regarding noise, air quality, and socioeconomics. These resources and the USEPA's respective comments are discussed further in the following sections.

The USEPA recommended we define and distinguish between compressor station, compressor unit, compressor facility, regulator building; identify all the components that make-up a compressor station, compressor unit, compressor facility, regulator building; and explain what constitutes a "modification". In the below sections, we identify all the compressor station components specific to our analysis of the Amendment and all pertinent changes to operations. Further explanation of general terms and components of a generic compressor station arrangement is outside the scope of our NEPA analysis for this Amendment; however, we note https://www.ferc.gov/resources/guides/gas/gas.pdf and https://primis.phmsa.dot.gov/comm/glossary/index.htm#ASTMInternational are resources for additional pipeline-related terminology definitions.

1. Air Quality

The USEPA recommended we assess and disclose potential for increased emissions and air quality impacts to nearby residents from existing and expected future conditions under Columbia Gas's proposed modifications, and identify and discuss mitigation measures, if applicable. Columbia Gas proposes to restrict operations of reciprocating compressor units at the Ceredo Compressor Station and uprate the horsepower of the LXP-installed electric motor-driven centrifugal compressor units. Electric motor-driven compressor units do not have localized air emissions whereas reciprocating units powered by combustion engines vent exhaust emissions into the atmosphere. Therefore, limiting use of the reciprocating compressors would likely reduce local air emissions. However, Columbia Gas states that its air permit would not have to be modified to accommodate the proposed Amendment and the application did not quantify potential emission reductions. Furthermore, Columbia Gas does not propose any modification at the Crawford Compressor Station in this Amendment that would affect air emissions. Accordingly, the Amendment would not involve new emissions and would result in no additional air quality impacts. Therefore, additional mitigation measures are not warranted.

2. Noise Impacts

In its comment letter, the USEPA requested that the EA disclose past noise levels identified in the LXP FEIS, disclose the existing and potential future noise levels associated with the Ceredo and Crawford Compressor Stations, as well as identify the components and modifications at the Ceredo and Crawford Compressor Stations. The noise impacts analysis for the LXP was completed in the LXP FEIS, was discussed in the Amendment application, and FERC staff incorporates by reference the LXP FEIS and clarifies that analysis herein.[4] This below analysis evaluates Columbia Gas's Amendment and clarifies our analysis of the noise requirements at the Ceredo and Crawford Compressor Stations.

Ceredo Compressor Station

The LXP Order authorized Columbia Gas to install three 11,000-hp, electric-driven compressor units (Units 10, 11, and 12) and to abandon one 10,500-hp natural gas-fired compressor unit at the Ceredo Compressor Station (Unit 8). The Ceredo Compressor Station was originally constructed in the mid-1950s; the existing Units 1-7 are slow-speed reciprocating units located in one compressor building. Following the LXP Order, the Mountaineer XPress Project (MXP) *Order Issuing Certificates and Approving Abandonment* (MXP Order), in Docket No. CP16-357-000, authorized Columbia Gas to install a new 30,000-hp natural gas turbine-driven compressor unit (Unit 14) and replace existing natural gas-fired Unit 9 with a new 13,000-hp electric motor driven compressor (Unit 13). Thus, the currently operating compressor units at the Ceredo Compressor Station are some combination of the legacy Units 1-7, Units 10-12, Unit 13, and Unit 14.

The LXP FEIS detailed the estimated noise impacts at the nearest noise-sensitive areas (NSAs) to the Ceredo Compressor Station; however, an incorrectly placed footnote in Table 4.11.2-3 (LXP FEIS section 4.11.2.3, page 4-183) changed the meaning of one of the columns. Footnote "c" clarifies that the measurement includes the existing compressor station noise level. The footnote was incorrectly placed within the "Estimate Sound Level of the Station" column, which represented the estimated sound levels attributable to only the three new compressor units installed under the LXP (Units 10-12). Table 1 below replicates LXP FEIS Table 4.11.2-3 with clarified column headings and the correct placement of footnote "c" on the "Estimated Total Sound Level (Station L_{dn} + Ambient L_{dn}) column.

[4] Noise analysis was in the LXP FEIS section 4.11.2.3, page 4-183, or view link at https://www.ferc.gov/industries/gas/enviro/eis/2016/09-01-16-eis/FEIS.pdf.

Table 1
Calculated Operational Noise Levels at the Ceredo Compressor Station

NSA	Distance and Direction of NSA to Compressor Station Site (feet)	Existing Station - Ambient Sound Level, pre-LXP and MXP L_{dn} (dBA)	Estimated Sound Level (L_{dn}) of LXP Units 10-12[a] (dBA)	Modified Station - Estimated Total Sound Level (Station L_{dn} + Ambient L_{dn}) [b] (dBA)	Potential Increase above Ambient (dB)
NSA #1 (Residence)	725 SE	75.3	50.4	73.5 [c]	-1.8
NSA #1A (Residence)	800 ESE	70.4	48.0	67.2 [c]	-3.2
NSA #2 (Residence)	1,275 S	65.1	41.5	62.9 [c]	-2.2
NSA #3 (Residence)	1,500 NNW	60.8	38.1	57.7 [c]	-3.1
NSA #4 (Residence)	1,359 NNE	60.9	39.5	57.9 [c]	-3.0

L_{dn}: day-night noise level; dBA: decibels on the A-weighted scale; dB: decibels

[a] Includes the effect of the anticipated noise control measures for the compressor units.

[b] Includes the noise generated by compressor station plus ambient sound levels measured at the NSA.

[c] Includes the existing compressor station noise level plus the noise level of the compressor station after the installation of the new compressor units and decommissioning of an existing compressor unit at nearby NSAs. Most of the estimated total sound level (Station + Ambient L_{dn}) at nearest NSAs to Ceredo Compressor Station are less than the ambient sound level because of the decommissioning of an existing compressor unit.

The LXP FEIS correctly concluded that the total noise levels attributable to the modified Ceredo Compressor Station would decrease, despite the high noise levels of the existing compressor units. The LXP FEIS also correctly recognized that the existing station noise levels were already above a day-night noise level (L_{dn}) of 55 decibels on the A-weighted scale (dBA) due to the legacy compressor units. FERC staff maintains that the overall noise from the entire, modified compressor station should not exceed the existing noise levels for compressor stations with legacy compressor units that precede the Commission's noise criteria of an L_{dn} of 55 dBA at the nearest NSAs.[5] Hence, staff's recommendation in the LXP FEIS for the Ceredo Compressor Station was to not exceed existing noise levels at any nearby NSAs that are currently at or above an L_{dn} of 55 dBA, or exceed 55 dBA L_{dn} at any nearby NSAs that are currently below 55 dBA L_{dn}.

The LXP Order responded to several comments on the LXP FEIS with regards to noise from the modified Ceredo Compressor Station and referred to the noise levels in table 4.11.2-3 in the LXP FEIS. Based on the noise level estimates in the LXP FEIS table and the inaccurate footnote, the Commission concluded that the estimated noise levels attributable to the entire modified station could meet our noise criteria of an L_{dn} of 55 dBA

[5] Evidence of the Commission's noise criteria in FERC documents date back to mid-1980s. The Ceredo Compressor Station was originally constructed in the mid-1950's, and the Crawford Compressor Station was originally constructed prior to 1920 and has existing compressor units installed in the 1950s and 1960s.

at the nearest NSAs; therefore, the LXP Order contained a version of environmental condition 31 requiring that the modified Ceredo Compressor Station (including the existing legacy compressor units) meet an L_{dn} of 55 dBA at the nearest NSAs. Columbia Gas accepted the LXP Order and did not file for rehearing of the LXP Order on environmental condition 31.

The USEPA recommended that we identify all noise mitigation measures Columbia Gas undertook at the Ceredo Compressor Station since the LXP FEIS and the Commission's Orders. Following issuance of the LXP and MXP Order, Columbia Gas took further steps to mitigate station noise, including: adding low noise gas aftercoolers; abandoning noisy legacy Frame 3 units (Units 8-9); and installing noise mitigation measures consisting of a 12- to 15-foot-high earthen berm, screen tree plantings, and acoustical insulation to exterior piping. Table 2 below shows the noise reduction achieved to date at the station.

As can be seen in table 2, the noise reduction has been substantial. Nevertheless, the noise levels attributable to the entire modified Ceredo Compressor Station, per the LXP and MXP, is still above our noise criteria of an L_{dn} of 55 dBA at the nearest NSAs as shown in the column "Estimated Noise Level of LXP+MXP (Units 10-14) + Existing Units 1-5," and is not compliant with environmental condition 31 of the LXP Order.

Table 2
Noise Level Reductions Achieved to date at the Ceredo Compressor Station [a]

			Existing Station	Modified Station			
NSA [b]	**Distance and Direction of NSA to Center of Units 10-14 (feet)**	**Distance and Direction of NSA to Center of Units 1-7 (feet)**	**Calculated Noise Level pre-LXP and MXP at full load Ldn (dBA)**	**Calculated Noise Level of LXP+MXP (Units 10-14) at full load [c] Ldn (dBA)**	**Calculated Noise Level of Existing Units 1-7 at full load Ldn (dBA)**	**Calculated Noise Level of LXP+MXP (Units 10-14) + Existing Units 1-5 [d] Ldn (dBA)**	**Calculated Noise Decrease (dB)**
NSA 1	725 SE	550 SE	75.3	46.5	62.0	60.9	-14.4
NSA1A	800 ESE	850 E	70.4	45.0	58.5	57.3	-13.1
NSA2	1,275 S	850 S	65.1	41.3	53.9	53.0	-12.1
NSA3	1,500 NNW	1, 850 NNW	60.8	42.5	51.4	50.6	-10.2

[a] Calculated noise levels based on Columbia Gas' noise survey report filed on April 22, 2019 following implementation of additional noise control measures and in-service of LXP and MXP.

[b] Previous NSA #4 (house) no longer functions as a residence. It is now utilized as a storage property for a church.

[c] LXP + MXP Facilities = Units 10-14 and new station gas cooler.

[d] According to Columbia Gas, any 2 of 7 existing Units 1-7 cannot operate during operation of Unit 14.

Columbia Gas filed an interim noise survey on April 22, 2019 in compliance with the LXP Order environmental condition 31 and MXP Order environmental condition 33. The April 2019 noise survey was conducted following implementation of the additional noise control measures and in-service of LXP and MXP. Based on Columbia Gas's interim noise survey report, the existing legacy reciprocating units (i.e., 1-7) are the most dominant noise source at the Ceredo Compressor Station. A full load noise survey was not feasible as the station could not be operated at full load. On December 31, 2019, Commission staff granted Columbia Gas an extension of time for submitting the Ceredo Compressor Station full-load noise surveys until December 31, 2020.

In its Amendment, Columbia Gas proposes to further reduce full-load noise levels at the Ceredo Compressor Station by limiting the number of legacy reciprocating compressor units that Columbia Gas uses at any given time. Columbia Gas reports that the legacy compressor units are needed to support system operations. The standard mode of operation of the Ceredo Compressor Station utilizes the newer electric-driven compressor Units 10-14 such that Columbia Gas uses five of the seven legacy reciprocating units only at full-load operations. Columbia Gas has now proposed to utilize only four of the seven legacy reciprocating units at a given time, without any reduction in system capability due to the proposed hp uprate of the new electric compressor units (from 11,000 hp to 13,000 hp on each of three units). This proposed change would ensure that Columbia Gas uses no more than four of the seven legacy reciprocating units at any given time.

Based on this new operation restriction, the proposed full-load operations at the Ceredo Compressor Station is estimated to further reduce noise levels by about 1 decibel at the nearest NSAs under the requested Amendment, as shown in table 3 below. With the proposed operation restriction, the noise levels from the Ceredo Compressor Station range would range from an L_{dn} of 51 to 61 dBA at the nearest NSAs. Columbia Gas states that it has exhausted all reasonable options to meet an L_{dn} of 55 dBA at the nearest NSAs with this proposed change.

FERC staff maintains that legacy compressor units that precede the Commission's noise criteria of an L_{dn} of 55 dBA at the nearest NSAs should be held to a standard that restricts overall noise from the entire modified station from exceeding the existing station noise levels. Imposing the Commission's noise criteria of an L_{dn} of 55 dBA at the nearest NSAs on the Ceredo Compressor Station would hold Columbia Gas to a different standard than other regulated entities. Further, Columbia Gas states that requiring the Commission's noise criteria at the Ceredo Compressor Station would require substantial compressor unit retirements and replacement of legacy facilities that are necessary to support Columbia Gas's current system operations. Therefore, staff recommends that the Commission revise condition 31 of the LXP Order to be consistent with the LXP FEIS analysis and recommendation for the Ceredo Compressor Station. However, the revised condition should take into account that the current noise levels have been reduced and would be further reduced by Columbia Gas's proposed operation restriction in the Amendment. The revised condition should also have modified filing timeframes given that

the LXP compressors have been in service for over a year, Columbia Gas has already filed an interim noise survey, and FERC granted an extension to December 31, 2020 to file full power load surveys.

Table 3
Proposed Amended "Full Load" Noise Levels at the Ceredo Compressor Station

NSA [a]	Distance and Direction of NSA to Center of Units 10-14 (feet)	Distance and Direction of NSA to Center of Units 1-7 (feet)	Calculated Ambient Sound Level, pre-LXP and MXP Ldn (dBA)	Estimated Noise Level of LXP+MXP [b] (Units 10-14) + Existing Units 1-4 Ldn (dBA)	Estimated Noise Decrease (dB)
NSA #1	725 SE	550 SE	75.3	60.1	-15.2
NSA #1A	800 ESE	850 E	70.4	56.4	-14.0
NSA #2	1,275 S	850 S	65.1	52.2	-12.9
NSA #3	1,500 NNW	1, 850 NNW	60.8	49.7	-11.1

[a] Previous NSA #4 (house) no longer functions as a residence. It is now utilized as a storage property for a church.
[b] LXP + MXP Facilities = Units 10-14 and new station gas cooler.

Therefore, **we recommend that:**

- **Columbia Gas should conduct a noise survey at the Ceredo Compressor Station to verify that the noise from all the equipment operated at full capacity under the amended operation restriction does not exceed the predicted noise levels in table 3 of the EA that are above an L_{dn} of 55 dBA at the nearby NSAs. The results of this noise survey should be filed with the Secretary of the Commission (Secretary) no later than December 31, 2020. If any of the noise levels are exceeded, Columbia Gas should file a report on what changes are needed and should install additional noise controls to reduce the operating noise level at the NSAs to or below the predicted level within 1 year of the noise survey. Columbia Gas should confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

Crawford Compressor Station

Columbia Gas did not install new compression facilities at the Crawford Compressor Station as part of the LXP or MXP. The facilities approved under the LXP Order at the Crawford Compressor Station were to modify piping, valves and regulators and construct new regulator buildings within and outside of the existing Crawford Compressor Station.

The LXP FEIS (again, LXP FEIS table 4.11.2-3, section 4.11.2.3, page 4-182) analyzed any noise impacts from the new regulator facilities at the Crawford Compressor Station, as replicated in table 4 below, and with corrected footnotes and revised column heading similar to table 1 for the Ceredo Compressor Station. The LXP FEIS version of table 4 detailed that the new facilities would not result in an increase to the total station noise levels at the nearest NSAs.

Table 4
Calculated Operational Noise Levels at the Crawford Compressor Station

NSA	Distance and Direction of NSA to Compressor Station Site (feet)	Existing Station - Ambient Sound Level, pre-LXP Ldn (dBA)	Estimated Sound Level (Ldn) of LXP Regulator (dBA)	Modified Station - Estimated Total Sound Level (Station Ldn + Ambient Ldn)[a] (dBA)	Potential Increase above Ambient (dB)
NSA #1 (Residence)	250 NE	61.5	43.0	61.5	0.0
NSA #2 (Residence)	500 SW	51.8	32.4	51.8	0.0
NSA #3 (Residence)	1,600 S	59.2	25.8	59.2	0.0
NSA #4 (Residence)	1,600 E	58.1	25.9	58.1	0.0
NSA #5 (Residence)	700 NW	51.8	34.2	51.8	0.0

L_{dn}: day-night noise level; dBA: decibels on the A-weighted scale; dB: decibels

[a] Includes the noise generated by existing compressor station plus the regulator and ambient sound levels measured at the NSA.

The LXP FEIS recognized that the pre-existing noise levels at three identified NSAs were already above an L_{dn} of 55 dBA due to the legacy compressor units. The existing compressor units were installed in the 1950s and 1960s, preceding the Commission's noise criteria of an L_{dn} of 55 dBA at the nearest NSAs.

Similar to the Ceredo Compressor Station, the table in the LXP FEIS was inaccurate in presenting the "Estimate Sound Level of the Station;" rather the sound levels in that column of the table actually represented the estimated sound levels attributable to the new regulator facilities installed under the LXP. Likewise, the Commission concluded that the new noise levels attributable to the entire modified Crawford Compressor Station could meet our noise criteria of an L_{dn} of 55 dBA at the nearest NSAs based on the inaccurate labeling in table 4.11.2-3 of the LXP FEIS. Therefore, the LXP Order contained the environmental condition 31 that required that the modified Crawford Compressor Station (including the existing legacy compressor units) meet an L_{dn} of 55 dBA at the nearest NSAs.

On September 14, 2018, Columbia Gas filed an interim noise survey for the Crawford Compressor Station in accordance with environmental condition 31 of the LXP Order. The interim noise survey was conducted at less than full-load conditions due to pipeline and market constraints. Although all of the modifications approved under the LXP Order were operating during the noise survey, the noise survey cannot be considered adequate in quantifying the post-LXP ambient station sound levels at the surrounding NSAs. Columbia Gas explains that the Crawford Compressor Station operates in various configurations depending on system operating conditions, and all compressor units do not operate at the same time. Further, the noise survey was conducted while Columbia Gas was installing modifications under its blanket certificate authority. These modifications include installing a new 1,480 hp reciprocating compressor unit (Unit 15) inside a new compressor building; designating two existing 250 hp reciprocating units for "stand-by" use only (Units 2 and 3); as well as a new dehydration system, new gas cooler, new separators and scrubbers, new control room building, and new station piping (Crawford Counterstorage Project, Docket No. CP17-487).

The USEPA recommended that we identify all modifications and noise mitigation measures Columbia Gas undertook at Crawford Compressor Station since the LXP FEIS / Commission's Orders. The modifications described above for the Crawford Counterstorage Project are anticipated to reduce noise levels at three NSAs by 0.1 dB as a result of not operating Units 2-3, and the new Unit 15 would increase noise levels at two NSAs (by 0.8 db and 0.2 db) that would remain below 55dBA L_{dn}. Columbia Gas has not filed a post-construction noise survey for the Crawford Counterstorage Project, given that FERC staff granted Columbia Gas's November 6, 2019 request for an extension until December 31, 2020.

Consistent with our conclusion for the Ceredo Compressor Station, we conclude that imposing the Commission's noise criteria of an L_{dn} of 55 dBA at the nearest NSAs on the Crawford Compressor Station would hold Columbia Gas to a different standard than other regulated entities. The LXP modifications to the Crawford Compressor Station did not consist of installing any new compressors, and the analysis in the LXP FEIS detailed that there would be no predicted increase in noise levels attributable to the Crawford Compressor Station at the nearest NSA. Staff recommends that the Commission revise condition 31 of the LXP Order to be consistent with the LXP FEIS recommendation for the Crawford Compressor Station, with modification to reflect that no new compressors were installed under LXP, Columbia Gas has already filed an interim noise survey, and adjustment of the timing requirements to be consistent with the noise survey filing extension that was previously approved. We note that new compression installed under the Crawford Counterstorage Project would be accounted for in the recommended full capacity noise survey. Therefore, **we recommend that:**

- **Columbia Gas should file a noise survey of the Crawford Compressor Station with the Secretary no later than December 31, 2020. If the noise from all the equipment operated at full capacity exceeds pre-LXP noise levels at any nearby NSAs that were at or above an L_{dn} of 55 dBA, or exceeds 55 dBA L_{dn} at any nearby NSAs that were below 55 dBA L_{dn}, Columbia Gas should file a report on what changes are needed and should install the additional noise controls to meet the level within 1 year of the noise survey. Columbia Gas should confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

We also note a discrepancy between the reported pre-LXP noise levels in the noise surveys filed for the Crawford Counterstorage Project versus the pre-LXP noise levels for the same NSAs in the LXP application. This discrepancy should be resolved to ensure Columbia Gas and the Commission have a consistent and accurate baseline from which to measure compliance. Therefore, **we recommend that**:

- **Within 30 days of the acceptance of the authorization, Columbia Gas should file with the Secretary, for review and written approval by the Director of the Office of Energy Projects (OEP), an analysis that resolves the discrepancy between the estimated L_{dn} of the pre-LXP Crawford Compressor Station as reported in Columbia Gas's application for the Crawford Counterstorage Project versus the LXP application.**

Based on the noise mitigation measures Columbia Gas undertook since the LXP FEIS and compliance with our recommendations, we conclude that the Amendment's impacts on noise would not be significant.

3. Socioeconomics

The USEPA recommended that FERC consider application of the Environmental Justice Screening and Mapping Tool (EJSCREEN), developed by USEPA to help users identify areas with environmental justice populations and provide critical demographic data. This analysis is based on data drawn from a query of EJSCREEN for local populations, present during 2014 to 2017, at each of the compressor stations (U.S. Census Bureau, 2014-17). The populations of study included residents and places of community surrounding a group of NSAs located within 0.5 mile of the compressor stations.

The population studied with respect to the Ceredo Compressor Station is estimated to be 210 people living in 82 housing units (66 owner-occupied), of which 46 persons are aged 0-17, 127 persons are aged 18-64, and 37 persons are 65 years or older. Forty-five percent of the population is not in the labor force, and 49 percent of the labor workforce over age 16 is employed. The population studied with respect to the Crawford Compressor Station is estimated to be 402 people living in 173 housing units (113 owner-occupied), of which 101 persons are aged 0-17, 252 persons are aged 18-64, and 49 persons are 65 years

or older. Thirty-nine percent of the population is not in the labor force, and 55 percent of the labor workforce over age 16 is employed.

These demographic measures are roughly the same percentage-wise for the two compressor station populations. Each compressor station population contains 1) a fairly large segment of middle-aged family households participating in employment, 2) a segment of older aged persons or families not participating in employment, and 3) an absence of a minority population (i.e., both stations exhibit 97-98 percent white population). The percentage of owner-occupied units is higher for the Ceredo Compressor Station population.

Given there would be no construction associated with the Amendment, we conclude there would be no construction-related impacts on socioeconomic characteristics in the area of the compressor stations. In addition, no operational impacts are expected to occur to socioeconomic characteristics such as housing availability or affordability, employment, recreation, educational services, tax revenues, industrial safety, emergency services, transportation and traffic, or minority or low-income populations. Subsequent to the LXP and MXP Orders, Columbia Gas has 1) reduced noise levels at the nearest NSA attributable to the Ceredo Compressor Station by at least 10 decibels, and 2) increased reliance of Ceredo Compressor Station operations on newer electric-driven compressor units while reducing the use of legacy compressor units at both Ceredo and Crawford Compressor Stations, with the expected result of reduced noise levels at the nearest NSAs. Considering the lack of construction and the reliance on compressor station systems currently in operations, noise resulting from the Amendment would not be a contributing factor in environmental conditions that could negatively affect socioeconomic characteristics.

The USEPA commented on the NOI that the Commission's EA analysis should be aware of nearby older-aged populations in its communications strategy. We acknowledge that older-aged populations live near the compressor stations. Concerning communications, the Commission and Columbia Gas made multiple notifications to all landowners within 0.5 mile of the Ceredo and Crawford Compressor Stations about the then-proposed LXP, MXP, and the Commission's subsequent EIS development. Regarding Columbia Gas's Amendment, as noted in section A.2 of this EA, the Commission notified these same residents with a separate *Notice of Application*, NOI, *Notice of Schedule*, and a *Notice of Availability* of the Amendment EA providing instructions for accessing the document on the Commission's website. We believe instructions in these notices are clear and sufficient.

4. Cumulative Impacts

In accordance with NEPA, we identified other actions located in the vicinity of the Amendment facilities and evaluated the potential for a cumulative impact on the environment. As defined by the Council on Environmental Quality (CEQ), a cumulative effect is the impact on the environment that results from the incremental impact of the

action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time. In general, small-scale projects with minimal impacts of short duration do not significantly contribute to cumulative impacts.

This cumulative effects analysis generally follows a method set forth in relevant CEQ and USEPA guidance and focuses on potential impacts from the Amendment on resource areas or issues where the incremental contribution would be potentially significant when added to the potential impacts of other actions. To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affect a resource potentially affected by the Amendment;
- cause this impact within all, or part of, the Amendment's impact area; and
- cause this impact within all, or part of, the time span for the potential impact from the Amendment.

Resources Affected by the Amendment

Our cumulative impacts analysis considers actions that impact environmental resources affected by the proposed action (i.e., Amendment), within all or part of the Amendment area affected by the proposed action, and within all or part of the time span of the impacts. Given the small scale of Columbia Gas's proposal, the Amendment would not impact geologic resources and hazards, soils, land use, groundwater, surface water, wetlands, vegetation, wildlife, cultural resources, socioeconomics, and air quality. Therefore, we conclude that the impacts from the Amendment, when considered cumulatively with past, present, and reasonably foreseeable projects, would not contribute to significant cumulative impacts on these resources, and these resources will not be discussed further in this section. As described in the environmental analysis section of this is EA, operating the Ceredo and Crawford Compressor Stations according to the proposed Amendment which alters operating conditions and noise limits could result in some permanent impacts on the noise quality at some nearby NSAs and therefore would be discussed in this section.

Geographic Scope

We use a geographic scope to determine which of the other actions could affect noise quality affected by the proposed Amendment within all or part of the Amendment area. Actions located outside the geographic scope are generally not evaluated because their potential to contribute to a cumulative impact diminishes with increasing distance from the Amendment. The geographic scope is a series of resource-specific proximity criteria which we use in this cumulative impacts analysis to describe the geographical limits within which the Amendment could contribute to cumulative impacts on noise

quality. For the most part, the geographic scope is limited to the area directly affected by the Amendment and, depending on the resources, in the adjacent areas.

Based on the project impacts identified and described in this EA and consistent with CEQ and USEPA guidance (CEQ, 1997; USEPA, 1999), we have determined that the only resource-specific geographic scope appropriate for assessing the potential cumulative impacts on noise quality is an area within 0.5 mile of the Ceredo and Crawford Compressor Stations.

Projects Outside the Geographic Scope

Other close by projects built in the 2017-2019 timeframe in proximity to the Ceredo Compressor Station occurring outside the geographic scope include an airport access road project (1 mile), a natural gas pipeline replacement project (1.3 miles), a county landslide mitigation project (1.5 miles), a natural gas pipeline right-of-way rehabilitation project (2.5 miles), a state highway project (3 miles), a municipal waterline extension project (5 miles), and two natural gas compressor stations (8 miles). Other close by projects built in the 2017-2020 timeframe in proximity to the Crawford Compressor Station occurring outside the geographic scope include a powerline replacement (0.8 mile), a natural gas pipeline recoating project (1.3 miles), and a highway project (14 miles). Because of its limited scope, the Amendment would not have a meaningful contribution to cumulative impacts at a larger geographic scale. Therefore, effects of these more distant projects were not assessed because their impacts would not be additive with those of the Amendment.

Projects Within the Geographic Scope

An evaluation was performed to identify past, present, and reasonably foreseeable future projects within the resource-specific geographic scopes for potential cumulative impacts in conjunction with the Amendment. The SM-80 MAOP Restoration Project, B-System Project, Crawford Counterstorage Project and MXP were identified as being within the noise quality resource specific geographic scope:

- SM-80 MAOP Restoration Project, Docket No. CP15-549, by Columbia Gas, four miles of 30-inch-diameter pipeline loop terminating 400 feet south of the Ceredo Compressor Station, from March 2017 to August 2017;
- B-System Project, Docket No. CP16-498, by Columbia Gas, a pipeline replacement project connecting to facilities within the Crawford Compressor Station, from February 2018 to October 2018;
- Crawford Counterstorage Project, Docket No. CP17-487, by Columbia Gas, a 1,480 hp reciprocating compressor unit with building, and placing on "standby" two existing reciprocating compressor units rated at 250 hp, and other related equipment, from March 2018 to September 2018; and

- MXP, Docket No. CP16-357, by Columbia Gas, a natural gas-fired compressor unit (30,000 hp) and an electric motor-driven compressor unit (13,000 hp) and other related equipment within the Ceredo Compressor Station, from August 2018 to June 2019.

Noise Impacts

As previously discussed, continued operations under the proposed modified operations and noise limits would result in continued noise impacts on nearby NSAs. The four projects listed above could potentially result in operational noise that, in addition to the proposed Amendment, may contribute cumulatively to noise impacts on NSAs in the vicinity of the Ceredo and Crawford Compressor Stations.

The first two projects listed within the geographic scope no longer pose a noise contribution that could contribute to compressor station operations. The last two projects listed above directly contributed to a decrease in total compressor station noise. Subsequent to the LXP Order, Columbia Gas has installed several noise mitigation measures at the Ceredo Compressor Station and has reduced noise levels at the nearest NSA attributable to the station by at least 10 decibels. Columbia Gas has since installed newer compressor units and reduced operation of two of its legacy units at the Crawford Compressor Station, with the expected result of reduced noise levels at several NSAs to the station, and minor noise increases at certain NSAs that would remain below 55dBA L_{dn}. Thus, we conclude that the Amendment would not contribute to any significant long-term cumulative noise impacts in combination with other projects.

D. ALTERNATIVES

In accordance with the NEPA and Commission policy, we identified and evaluated alternatives to the Amendment to determine whether they would be reasonable and environmentally preferable to the proposed action. Given the limited scope of the Amendment, our alternatives analysis is limited to the no-action alternative.

Our evaluation criteria for the no-action alternative included whether the alternative would:

- provide a significant environmental advantage over the Amendment;
- be technically and/or economically feasible and practical; and
- meet Columbia Gas's stated purpose.

The Amendment activities would be restricted to Columbia Gas's operational modifications at the Ceredo Compressor Station and its use of a modified environmental condition 31 for operational noise limits at the Ceredo and Crawford Compressor Station. No construction or abandonment activities are being proposed. The primary impact of the No-Action Alternative is that Columbia Gas would need to comply with environmental condition 31 of the LXP Order. While this would provide some environmental benefit to nearby NSAs, Columbia Gas states it would require substantial retirements and replacement of legacy facilities that are required to support Columbia Gas's current system operations.

The USEPA recommended that we assess and identify mitigation measures that would reduce noise levels to those agreed to under condition 31. In order to meet environmental condition 31 at the Ceredo Compressor Station, Columbia Gas states that it would need to retire five of the legacy compressor units and associated auxiliary equipment and replace these units with two new turbine compressor units and associated auxiliary equipment. According to Columbia Gas, the four required legacy compressor units serve two different and distinct systems. Additionally, given physical space limitations related to installing the replacement compressor units, Columbia Gas would need to install the units at its Kenova Compressor Station (4 miles northwest of Ceredo Compressor Station) and install another pipeline between the two stations to effectively continue the same type of service. Columbia Gas reports these modifications would likely exceed 110 million dollars and would involve added noise during construction of these modifications. Columbia Gas also evaluated potential facility modifications on the compressor building and intake/exhaust systems in an effort to comply with environmental condition 31, concluding this effort would cost 45 million dollars.

In order to meet environmental condition 31 at the Crawford Compressor Station, Columbia Gas states that it would need to retire and replace the hp associated with twelve existing legacy compressor units and all of the associated auxiliary equipment including a substantial amount of station piping. In addition, the Crawford Compressor Station houses

gas storage cleaning, dehydration and other equipment that maintains and operates the underground storage fields that are connected to the Crawford Compressor Station – this equipment would potentially also have to be retired and replaced with an estimated cost of about 300 million dollars. Besides compressor unit replacement, Columbia Gas also evaluated other facility modifications such as modifying compressor building, intake/exhaust systems, and piping insulation in an effort to comply with environmental condition 31, concluding this effort would cost at least 100 million dollars. However, there is uncertainty that installing these additional measures may effectively reduce noise levels because of the site design and age of the facilities.

We conclude that no action alternative would not provide a significant environmental advantage over the Amendment. Furthermore, we agree that Columbia Gas has exhausted all technically and economically feasible and practical means to meet an L_{dn} of 55 dBA at the nearest NSAs at the stations. Therefore, we do not recommend the no action alternative and conclude that the proposed Amendment, as modified by our recommended mitigation measures, is the preferred alternative to meet the Amendment's objectives.

E. STAFF'S CONCLUSIONS AND RECOMMENDATIONS

Based on the above environmental analysis and information in Columbia Gas's application and supplements, we have determined that approval of this proposed Amendment would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that a finding of no significant impact be included in the Commission's order and the following mitigation measures be included as conditions to the authorization:

1. Columbia Gas shall follow the operations procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Columbia Gas must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
    b. justify each modification relative to site-specific conditions;
    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
    d. receive approval in writing from the Director of OEP **before using that modification**.

2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during operation of the Amendment. This authority shall allow:

    a. the modification of conditions of the Order;
    b. stop-work authority; and
    c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Amendment operations.

3. Columbia Gas shall conduct a noise survey at the Ceredo Compressor Station to verify that the noise from all the equipment operated at full capacity under the amended operation restriction does not exceed the predicted noise levels in table 3 of the EA that are above an L_{dn} of 55 dBA at the nearby NSAs. The results of this noise survey shall be filed with the Secretary **no later than December 31, 2020**. If any of the noise levels are exceeded, Columbia Gas shall file a report on what changes are needed and shall install additional noise controls to reduce the operating noise level at the NSAs to or below the predicted level **within 1 year** of the noise survey. Columbia Gas shall confirm compliance with the above

requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

4. Columbia Gas shall file a noise survey of the Crawford Compressor Station with the Secretary **no later than December 31, 2020**. If the noise from all the equipment operated at full capacity exceeds pre-LXP noise levels at any nearby NSAs that were at or above an L_{dn} of 55 dBA, or exceeds 55 dBA L_{dn} at any nearby NSAs that were below 55 dBA L_{dn}, Columbia Gas shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the noise survey. Columbia Gas shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

5. **Within 30 days of the acceptance of the authorization**, Columbia Gas shall file with the Secretary, for review and written approval by the Director of OEP, an analysis that resolves the discrepancy between the estimated L_{dn} of the pre-LXP Crawford Compressor Station as reported in Columbia Gas's application for the Crawford Counterstorage Project versus the LXP application.

F. REFERENCES

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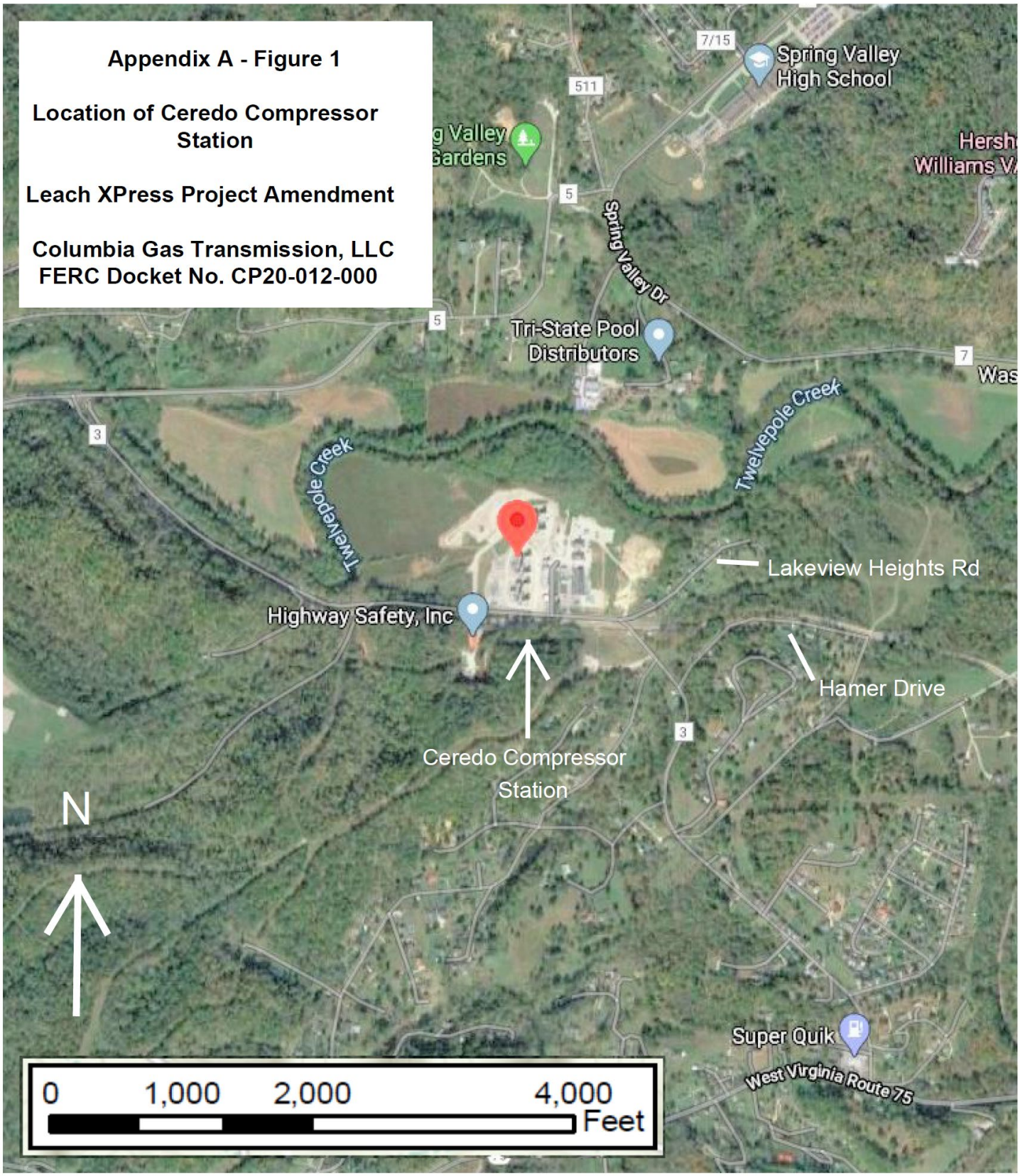
Appendix A


Appendix A - Figure 1
Location of Ceredo Compressor Station
Leach XPress Project Amendment
Columbia Gas Transmission, LLC
FERC Docket No. CP20-012-000
7/15
Spring Valley High School
511
Spring Valley Gardens
5
Spring Valley Dr
Tri-State Pool Distributors
7
3
Twelvepole Creek
Lakeview Heights Rd
Highway Safety, Inc
Hamer Drive
Ceredo Compressor Station
N
Super Quik
West Virginia Route 75
0
1,000
2,000
4,000
Feet


N
Crawford Compressor Station
Columbia Gas Transmission
Sugar Grove
Appendix A - Figure 2
Location of Crawford Compressor Station
Leach XPress Project Amendment
Columbia Gas Transmission, LLC
FERC Docket No. CP20-012-000
0
1,000
2,000
4,000
Feet