

Amended Staff Report of Investigation

(This Amended Staff Report of Investigation is intended to replace and supersede the Staff Report of Investigation filed on May 31, 2017 in this case.)

Duke Energy Ohio
C314V Central Corridor Pipeline Extension Project

Case No. 16-0253-GA-BTX

March 5, 2019



**Power Siting
Board**

Mike DeWine, Governor | **M. Beth Trombold**, Interim Chair

**In the Matter of the Application of Duke Energy Ohio,)
Inc. for a Certificate of Environmental Compatibility)
and Public Need for the C314V Central Corridor)
Pipeline Extension Project.)** **Case No. 16-0253-GA-BTX**

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Submitted to the
OHIO POWER SITING BOARD

BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

**In the Matter of the Application of Duke Energy Ohio,)
Inc. for a Certificate of Environmental Compatibility) Case No. 16-0253-GA-BTX
and Public Need for the C314V Central Corridor)
Pipeline Extension Project.)**

Chairman, Public Utilities Commission	Director, Department of Natural Resources
Director, Department of Agriculture	Public Member
Director, Development Services Agency	Ohio House of Representatives
Director, Environmental Protection Agency	Ohio Senate
Director, Department of Health	

To the Honorable Power Siting Board:

In accordance with the Ohio Revised Code (R.C.) 4906.07(C) and rules of the Ohio Power Siting Board (Board), the staff of the Public Utilities Commission of Ohio (Staff) has completed its investigation in the above matter and submits its findings and recommendations in this Staff Report for consideration by the Board.

The findings and recommendations contained in this report are the result of Staff coordination with the following agencies that are members of the Board: Ohio Environmental Protection Agency, the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Natural Resources, and the Ohio Department of Agriculture. In addition, Staff coordinated with the Ohio Department of Transportation, the Ohio Historic Preservation Office, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the Federal Aviation Administration.

In accordance with R.C. 4906.07(C) and 4906.12, copies of this Staff Report have been filed with the Docketing Division of the Public Utilities Commission of Ohio and served upon the Applicant or its authorized representative, the parties of record, and pursuant to Ohio Administrative Code 4906-3-06, the main public libraries of the political subdivisions in the project area.

The Staff Report presents the results of Staff's investigation conducted in accordance with R.C. Chapter 4906 and the rules of the Board, and does not purport to reflect the views of the Board nor should any party to the instant proceeding consider the Board in any manner constrained by the findings and recommendations set forth herein.

Respectfully submitted,

Tammy Turkenton
Director, Rates and Analysis
Public Utilities Commission of Ohio

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I. POWERS AND DUTIES

OHIO POWER SITING BOARD

The authority of the Ohio Power Siting Board (Board) is prescribed by Ohio Revised Code (R.C.) Chapter 4906. R.C. 4906.03 authorizes the Board to issue certificates of environmental compatibility and public need for the construction, operation, and maintenance of major utility facilities defined in R.C. 4906.01. Included within this definition of major utility facilities are: electric generating plants and associated facilities designed for, or capable of, operation at 50 megawatts (MW) or more; electric transmission lines and associated facilities of a design capacity of 125 kilovolts (kV) or more; and gas pipelines greater than 500 feet in length and more than nine inches in outside diameter, and associated facilities, designed for transporting gas at a maximum allowable operating pressure in excess of 125 pounds per square inch. In addition, pursuant to R.C. 4906.20, the Board authority applies to economically significant wind farms, defined in R.C. 4906.13(A) as wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of 5 MW or greater but less than 50 MW.

Membership of the Board is specified in R.C. 4906.02(A). The voting members include: the Chairman of the Public Utilities Commission of Ohio (PUCO or Commission) who serves as Chairman of the Board; the directors of the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Department of Health, the Ohio Development Services Agency (ODSA), the Ohio Department of Agriculture, and the Ohio Department of Natural Resources (ODNR); and a member of the public, specified as an engineer, appointed by the Governor from a list of three nominees provided by the Ohio Consumers' Counsel. Ex-officio Board members include two members (with alternates) from each house of the Ohio General Assembly.

NATURE OF INVESTIGATION

The Board has promulgated rules and regulations, found in Ohio Administrative Code (Ohio Adm.Code) 4906:1-01 et seq., which establish application procedures for major utility facilities and economically significant wind farms.

Application Procedures

Any person that wishes to construct a major utility facility or economically significant wind farm in this state must first submit to the Board an application for a certificate of environmental compatibility and public need.¹ The application must include a description of the facility and its location, a summary of environmental studies, a statement explaining the need for the facility and how it fits into the Applicant's energy forecasts (for transmission projects), and any other information the applicant or Board may consider relevant.²

Within 60 days of receiving an application, the Chairman must determine whether the application is sufficiently complete to begin an investigation.³ If an application is considered complete, the

1. R.C. 4906.04 and 4906.20.

2. R.C. 4906.06(A) and 4906.20(B)(1).

3. Ohio Adm.Code 4906-3-06(A).

Board or an administrative law judge will cause a public hearing to be held 60 to 90 days after the official filing date of the completed application.⁴ At the public hearing, any person may provide written or oral testimony and may be examined by the parties.⁵

Staff Investigation and Report

The Chairman will also cause each application to be investigated and a report published by the Board's Staff not less than 15 days prior to the public hearing.⁶ The report sets forth the nature of the investigation and contains the findings and conditions recommended by Staff.⁷ The Board's Staff, which consists of career professionals drawn from the staff of the PUCO and other member agencies of the Board, coordinates its investigation among the agencies represented on the Board and with other interested agencies such as the Ohio Department of Transportation (ODOT), the Ohio History Connection, and the U.S. Fish and Wildlife Service (USFWS).

The technical investigations and evaluations are conducted pursuant to Ohio Adm.Code 4906-1-01 et seq. The recommended findings resulting from Staff's investigation are described in the Staff Report pursuant to R.C. 4906.07(C). The report does not represent the views or opinions of the Board and is only one piece of evidence that the Board may consider when making its decision. Once published, the report becomes a part of the record, is served upon all parties to the proceeding and is made available to any person upon request.⁸ A record of the public hearings and all evidence, including the Staff Report, may be examined by the public at anytime.⁹

Board Decision

The Board may approve, modify and approve, or deny an application for a certificate of environmental compatibility and public need.¹⁰ If the Board approves, or modifies and approves an application, it will issue a certificate subject to conditions. The certificate is also conditioned upon the facility being in compliance with applicable standards and rules adopted under the Ohio Revised Code.¹¹

Upon rendering its decision, the Board must issue an opinion stating its reasons for approving, modifying and approving, or denying an application for a certificate of environmental compatibility and public need.¹² A copy of the Board's decision and its opinion is memorialized upon the record and must be served upon all parties to the proceeding.¹³ Any party to the proceeding that believes its issues were not adequately addressed by the Board may submit within 30 days an application for rehearing.¹⁴ An entry on rehearing will be issued by the Board within 30 days and may be appealed within 60 days to the Supreme Court of Ohio.¹⁵

4. R.C. 4906.07(A) and Ohio Adm.Code 4906-3-08.

5. R.C. 4906.08(C).

6. R.C. 4906.07.

7. Ohio Adm.Code 4906-3-06(C).

8. R.C. 4906.07(C) and 4906.10.

9. R.C. 4906.09 and 4906.12.

10. R.C. 4906.10(A)

11. R.C. 4906.10.

12. R.C. 4906.11.

13. R.C. 4906.10(C).

14. R.C. 4903.10 and 4906.12.

15. R.C. 4903.11, 4903.12, and 4906.12.

CRITERIA

Staff developed the recommendations and conditions in this *Staff Report of Investigation* pursuant to the criteria set forth in R.C. 4906.10(A), which reads, in part:

The board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the board, unless it finds and determines all of the following:

- (1) The basis of the need for the facility if the facility is an electric transmission line or gas pipeline;
- (2) The nature of the probable environmental impact;
- (3) That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations;
- (4) In the case of an electric transmission line or generating facility, that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability;
- (5) That the facility will comply with Chapters 3704, 3734, and 6111 of the Revised Code and all rules and standards adopted under those chapters and under sections 1501.33, 1501.34, and 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under section 4561.32 of the Revised Code, the board shall consult with the office of aviation of the division of multi-modal planning and programs of the department of transportation under section 4561.341 of the Revised Code;
- (6) That the facility will serve the public interest, convenience, and necessity;
- (7) In addition to the provisions contained in divisions (A)(1) to (6) of this section and rules adopted under those divisions, what its impact will be on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929 of the Revised Code that is located within the site and alternative site of the proposed major utility facility. Rules adopted to evaluate impact under division (A)(7) of this section shall not require the compilation, creation, submission, or production of any information, document, or other data pertaining to land not located within the site and alternative site; and
- (8) That the facility incorporates maximum feasible water conservation practices as determined by the board, considering available technology and the nature and economics of the various alternatives.

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II. APPLICATION

APPLICANT

The Applicant, Duke Energy Ohio, Inc. (Duke Energy) is a natural gas company as defined in R.C. 4905.03 and a public utility as defined in R.C. 4905.02. The Applicant is primarily engaged in the transmission and distribution of electricity, and the transportation and sale of natural gas in portions of Ohio. The Applicant and its subsidiary, Duke Energy Kentucky, Inc., provide transmission and distribution services for natural gas to approximately 525,000 customers. Duke Energy Ohio is a subsidiary of Duke Energy Corporation. Duke Energy Corporation is based in Charlotte, North Carolina.

HISTORY OF THE APPLICATION

On March 22 and 23, 2016, the Applicant held public informational meetings regarding the proposed pipeline in Cincinnati, Ohio.

On June 15, 2016, the Applicant held a third public informational meeting regarding the proposed pipeline in Blue Ash, Ohio.

On September 13, 2016, the Applicant filed the C314V Central Corridor Pipeline Extension Project application (the Central Corridor Pipeline). The Applicant also filed a motion for waiver of certain provisions of Ohio Adm.Code 4906-3-03(B).

On September 28, 2016, Neighbors Opposed to Pipeline Extension, LLC (NOPE) filed a Petition for Leave to Intervene and the City of Madeira filed a Notice of Intervention. Both parties filed memoranda contra the Applicant's motion for waiver.

On October 6, 2016, the Executive Director, Ohio Power Siting Board (OPSB) filed a letter notifying the Applicant that it must conduct a fourth public informational meeting. On the same day, the Administrative Law Judge filed an entry denying the Applicant's motion for waiver.

On January 20, 2017, the Applicant filed an amended application for the Central Corridor Pipeline.

On January 26, 2017, the Applicant held a fourth public informational meeting regarding the proposed pipeline in Blue Ash, Ohio.

On February 13 and 24, 2017, the Applicant filed supplemental and corrected information for the amended application.

On March 3, 2017, the Applicant filed supplemental information for the amended application. On the same day, the Director of Rates and Analysis, PUCO, issued a letter of compliance regarding the application to the Applicant.

On March 24, 2017, the Pleasant Ridge Community Council filed a Petition for Leave to Intervene.

On March 31, 2017, the City of Cincinnati, the Village of Evendale, the City of Blue Ash, and Sycamore Township each filed a Notice of Intervention.

On April 3, 2017, Amberley Village and Hamilton County each filed a Notice of Intervention.

On April 5, 2017, the Village of Golf Manor filed a Notice of Intervention.

On April 10, 2017, the City of Reading filed a Notice of Intervention.

On April 11, 2017, the City of Deer Park filed a Notice of Intervention.

On April 12, 2017, Columbia Township filed a Notice of Intervention and The Jewish Hospital filed a Petition for Leave to Intervene.

On April 13, 2017, Interstate Gas Supply, Inc. filed a Petition for Leave to Intervene.

On April 21, 2017, BRE DDR Crocodile Sycamore Plaza, LLC filed a Petition for Leave to Intervene.

On May 1, 2017, 10149, LLC filed a Petition for Leave to Intervene.

On May 4, 2017, Kenwood Mall, LLC filed a Petition for Leave to Intervene.

On May 11, 2017, the Applicant filed supplemental information for the amended application.

On May 23, 2017, RLB, Inc. filed a Petition for Leave to Intervene.

On May 30, 2017, Coprop, Inc. filed a Petition for Leave to Intervene.

On May 31, 2017, Staff filed the Report of Investigation

On June 13, 2017, a Joint Motion for Continuance of the Adjudicatory Hearing and request for Expedited Ruling was filed on behalf of the City of Cincinnati, Amberley Village, the City of Blue Ash, The Board of County Commissioners of Hamilton County, the City of Deer park, the City of Madeira, the City of Reading, Columbia Township, Sycamore township, the Village of Evendale, and the Village of Golf Manor.

On June 14, 2017, a Motion for Continuance of the Adjudicatory Hearing and request for Expedited Ruling and Memorandum in Support filed on behalf of NOPE.

On June 15, 2017, the Administrative Law Judge granted petitions to intervene in Paragraph 5 of the entry.

On June 15, 2017, a Local Public Hearing was held in Blue Ash, Ohio.

On June 20, 2017, a Motion for Continuance of the Adjudicatory Hearing and request for Expedited Ruling and Memorandum in Support was filed on behalf of Kenwood Mall, LLC.

On June 20, 2017, a Motion for Continuance of the Adjudicatory Hearing and request for Expedited Ruling and Memorandum in Support was filed on behalf of BRE DDR Crocodile Sycamore Plaza, LLC.

On June 21, 2017, the Administrative Law Judge rescheduled the Adjudicatory Hearing to September 11, 2017.

On August 23, 2017, a Motion of Suspension of procedural schedule and memorandum in support was filed by the Applicant.

On August 24, 2017, the Administrative Law Judge issued an entry granting the Applicant's motion to suspend the procedural schedule until otherwise ordered by the Board.

On April 13, 2018, a Motion was filed by the Applicant for Reestablishment of procedural Schedule and Request for Expedited Treatment and Memorandum in Support.

On April 13, 2018, the Applicant filed a six-part Supplement to the application.

On June 29, 2018, a Staff review and recommendation was filed.

On July 26, 2018, the Applicant filed two reports.

On December 18, 2018, the Administrative Law Judge filed an entry finding that Duke's supplemental information should be considered an amendment of a pending accepted, complete application. The entry also set the procedural schedule for consideration of the application.

The December 18, 2018 entry scheduled a second local public hearing for March 21, 2019, from 3-8 p.m. at the University of Cincinnati-Blue Ash, Muntz Hall, Room 119, 9555 Plainfield Rd., Blue Ash, Ohio 45236. The December 2018, 2018 entry also scheduled the adjudicatory hearing for April 9, 2019, at 10 a.m., PUCO, Hearing Room 11-A, 180 E. Broad St., Columbus, Ohio 43215.

This summary of the history of the application does not include every filing in Case No. 16-0253-GA-BTX. The docketing record for this case, which lists all documents filed to date, can be found online at <http://dis.puc.state.oh.us>.

PROJECT DESCRIPTION

The Applicant proposes to construct, own, operate, and maintain the Central Corridor Pipeline in Hamilton County, Ohio. The project is a component of the Applicant's plan to retire propane-air plants, better balance supply within its pipeline system, and replace aging infrastructure.

The 20-inch diameter pipeline would extend approximately 13 to 14 miles from the southern terminus of the existing 24-inch diameter Line C314 pipeline at the WW Feed Station to a point along the existing 20-inch diameter Line V pipeline in the Fairfax or Norwood area. The proposed pipeline is designed for a Maximum Allowable Operating Pressure (MAOP) of 500 pounds per square inch gauge (psig) and would have an operating pressure of approximately 400 psig. The project would include the construction of two valve stations, the expansion of the WW Feed Station (to be renamed the Highpoint Park Station), and either the construction of a new regulation station in Fairfax or the expansion of the Norwood Station.

The Applicant states all valve locations were selected based on ease of access for response times in the event of an emergency and so that a valve is located within 2.5 miles of any point on the pipeline to comply with federal requirements. Along the Preferred Route, the valve stations would be located behind a business 400 feet northeast of Malsbary Road, and behind a business at 7265 Kenwood Rd. along the north edge of the parking lot. Along the Alternate Route, the valve stations would be located 800 feet west of EMCOR Facilities Services located at 9655 Reading Rd., and approximately 175 feet east of the intersection of Glendale-Milford Road and Plainfield Road near the west side of Summit Park.

The Applicant utilized field survey data and public input to identify route alternatives and further narrow those alternatives to the Preferred and Alternate routes proposed in the application.

Preferred Route

The Preferred Route is approximately 14 miles long. The route begins at the proposed Highpoint Park Station and extends west to Conrey Road. The route turns south on Conrey Road and then heads southeast after crossing Kemper Road. The route passes under I-275, just east of Deerfield Road and then heads southwest parallel to I-71 until reaching Pfeiffer Road. The route continues west on Pfeiffer Road and, after crossing Kenwood Road, turns south and runs roughly parallel to Kenwood Road and Blue Ash Road. Upon reaching Galbraith Road, the route turns east, and then south along Kenwood Road. After passing under I-71, the route continues along the eastern and southern edges of the Kenwood Country Club before following Red Bank Road south until terminating at the proposed Fairfax Station at the tie-in to Line V in the area.

Revised Alternate Route

The Alternate Route is approximately 13 miles long. The route exits the proposed Highpoint Park Station and extends in a common direction with the Preferred Route, heading west to Conrey Road then south until it crosses Kemper Road. Here, the route diverges from the Preferred Route, heading southwest under I-275 and then west to Reed Hartman Highway. The route next leads south along Reed Hartman Highway until it reaches Glendale-Milford Road. The route then heads west on Glendale-Milford Road to a point near the Norfolk-Southern railroad in Evendale. Here, the route turns in a general southerly direction roughly parallel to the railroad and Reading Road. After crossing under Ronald Reagan Highway the line continues to run parallel to the railroad again until it terminates at the Norwood Station at the tie-in to Line V in the area.

On April 13, 2018, the Applicant filed supplemental information regarding revisions it chose to make to its original Alternate Route. These revisions include, but are not limited to, seven significant adjustments to its original Alternate Route:

- (1) Relocating the route into the public road right-of-way along Glendale Milford Road.
- (2) Relocating the route as it turns south from Glendale Milford Road into road right-of-way.
- (3) Relocating the route around Formica, Inc.
- (4) Relocating the route to the west side of the AluChem facility.
- (5) Relocating the route to the west side of a planned future development site in the city of Reading.
- (6) Relocating the route around the Patheon facility.
- (7) Relocating the route to the west side of the property at the southern end of the proposed project.

The map in this report shows the Applicant's Preferred and revised Alternate routes.

Project Specifications

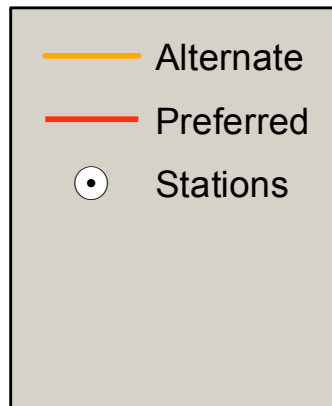
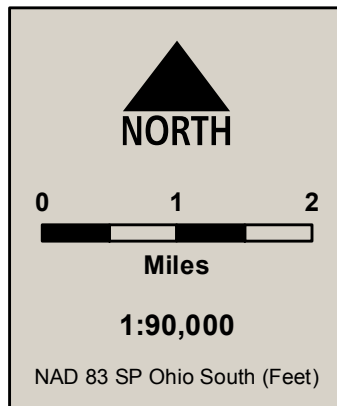
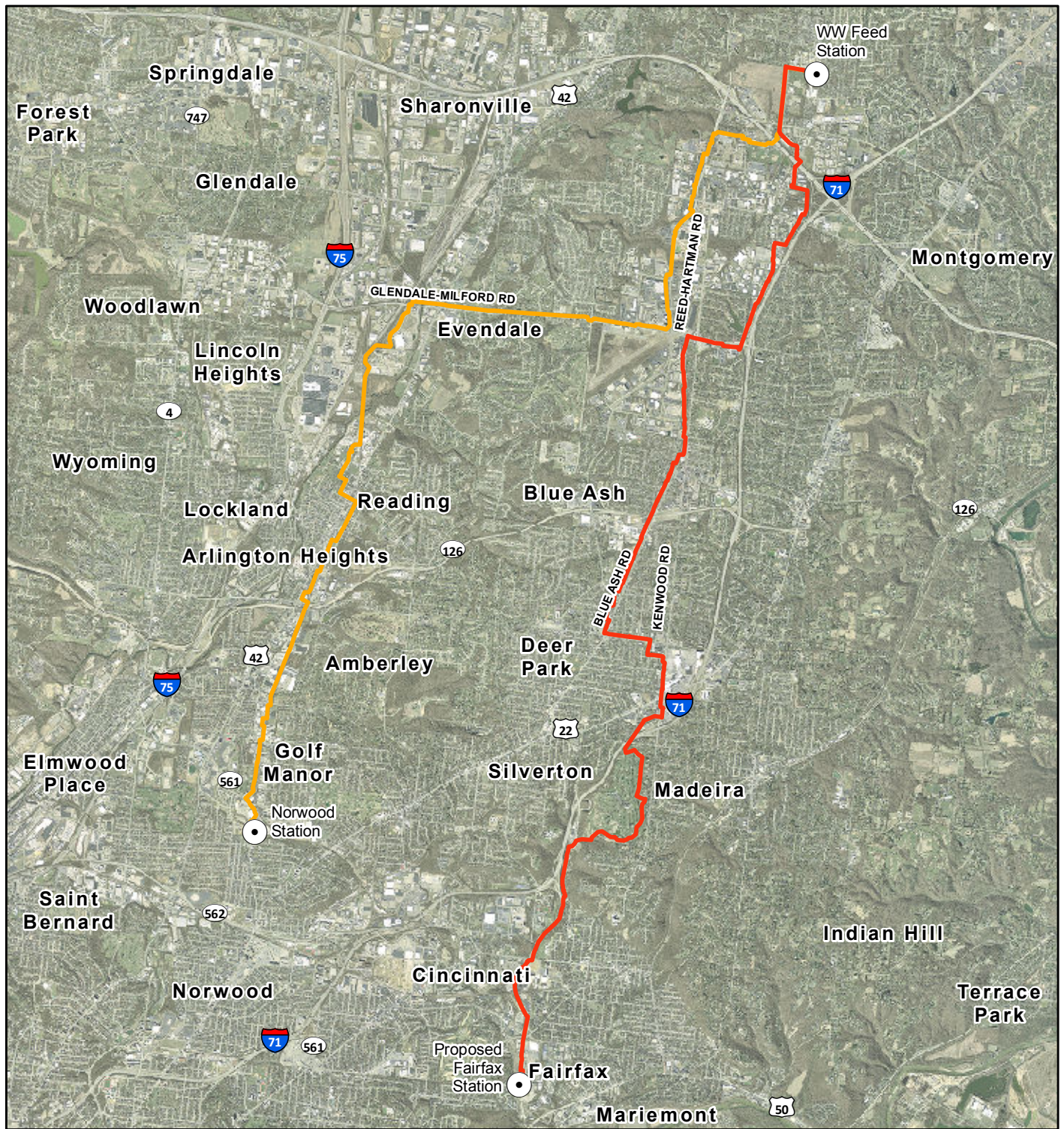
Schedule

The Applicant proposes to begin construction in Spring/Summer 2019, complete construction in Summer/Fall 2020, and complete restoration in Fall/Winter 2020.¹⁶

Pipe Materials and Specifications

The Central Corridor Pipeline is proposed to operate at a maximum operating pressure of 400 psig. However, the pipeline would be designed for a MAOP of 500 psig. The proposed pipeline would have an outside diameter of 20 inches. The pipeline material would consist of electric resistance welded carbon steel pipe with an external coating of fusion-bonded epoxy, and the pipe would have a minimal wall thickness of 0.438 inch. Construction of the pipeline would generally require the excavation of a 5-foot wide by 6-foot deep trench, within a 30-foot wide permanent right-of-way.

16. Duke Energy Ohio, Central Corridor Gas Pipeline Extension Project, Project Timeline, Anticipated Future Milestones, accessed August 2, 2018, <https://www.duke-energy.com/home/natural-gas/central-corridor-pipeline-ext/construction-schedule>.



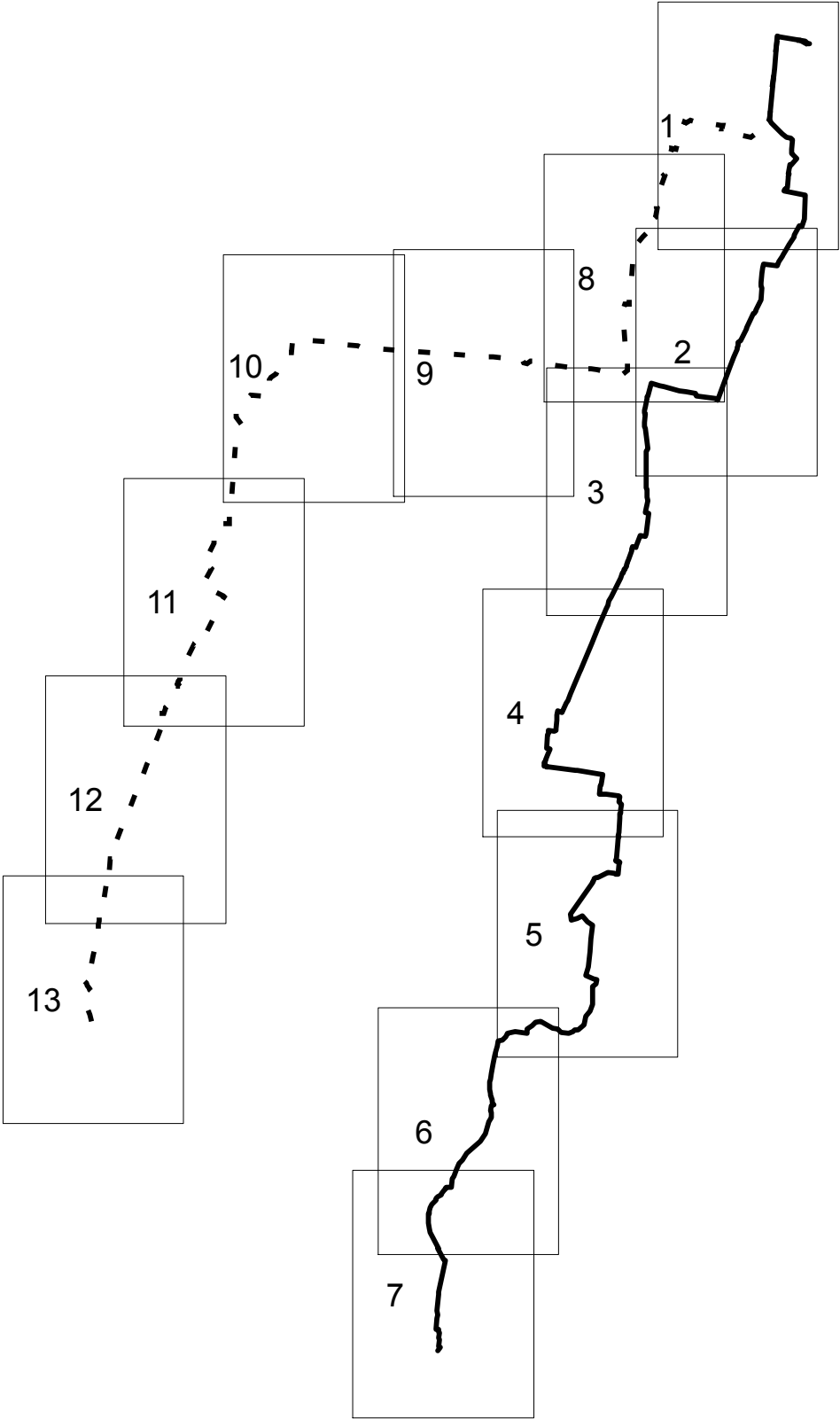
Overview Map

16-0253-GA-BTX

**Duke Energy C314V
Central Corridor Pipeline
Extension Project**

Maps are presented solely for the purpose of providing a visual representation of the project in the staff report, and are not intended to modify the project as presented by the Applicant in its certified application and supplemental materials.

Map Index



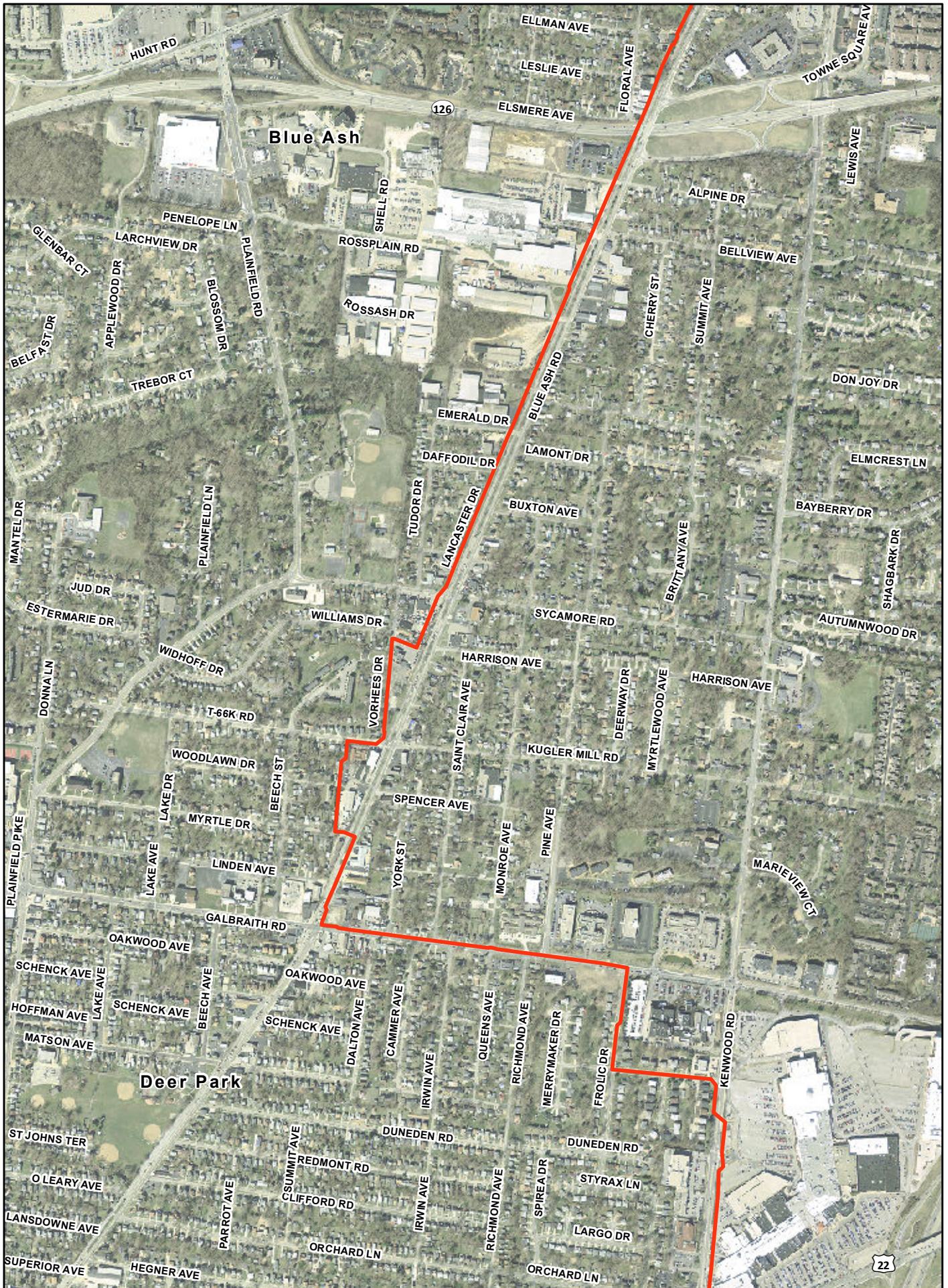


1 inch = 1,000 feet





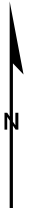
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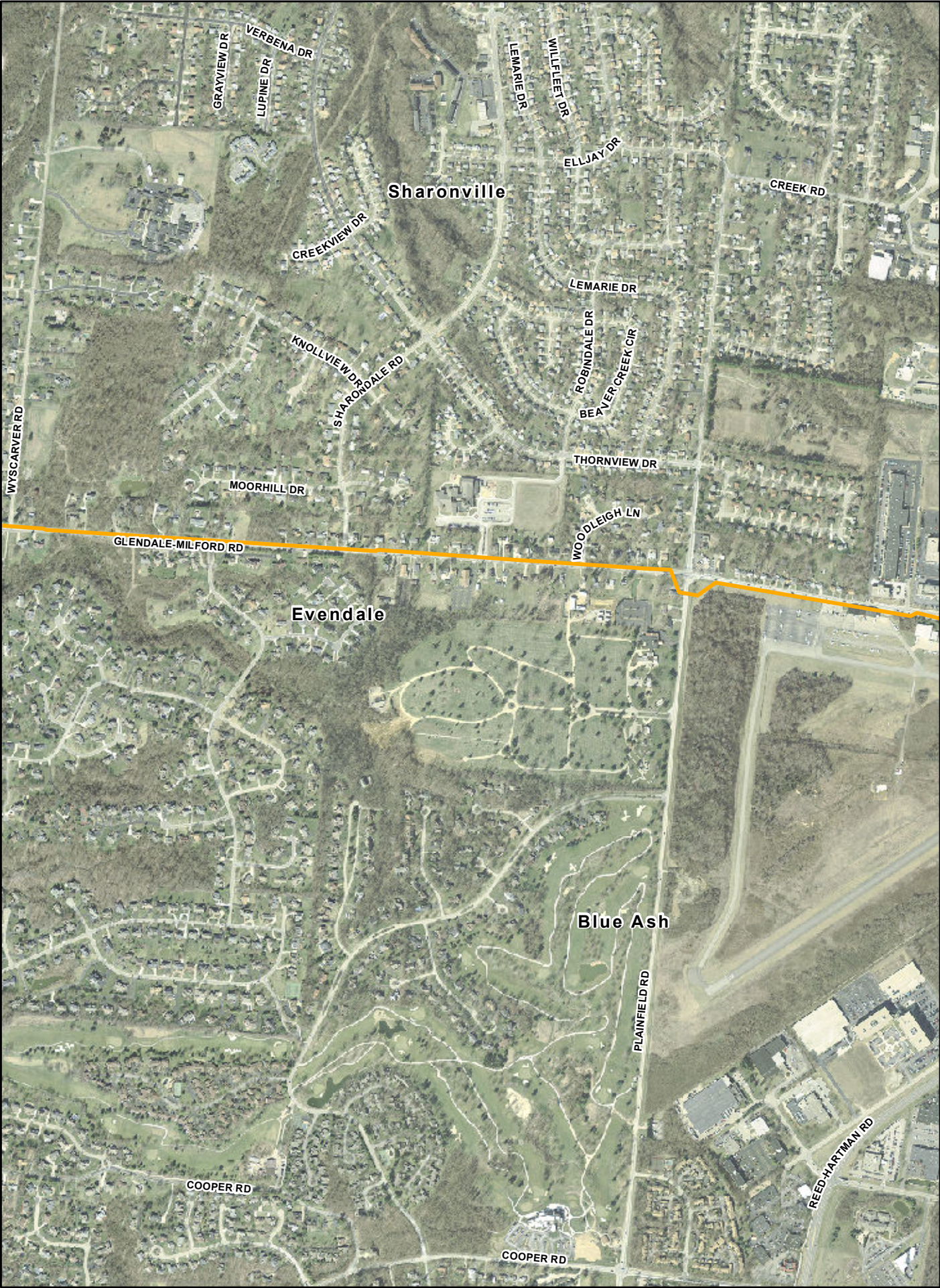
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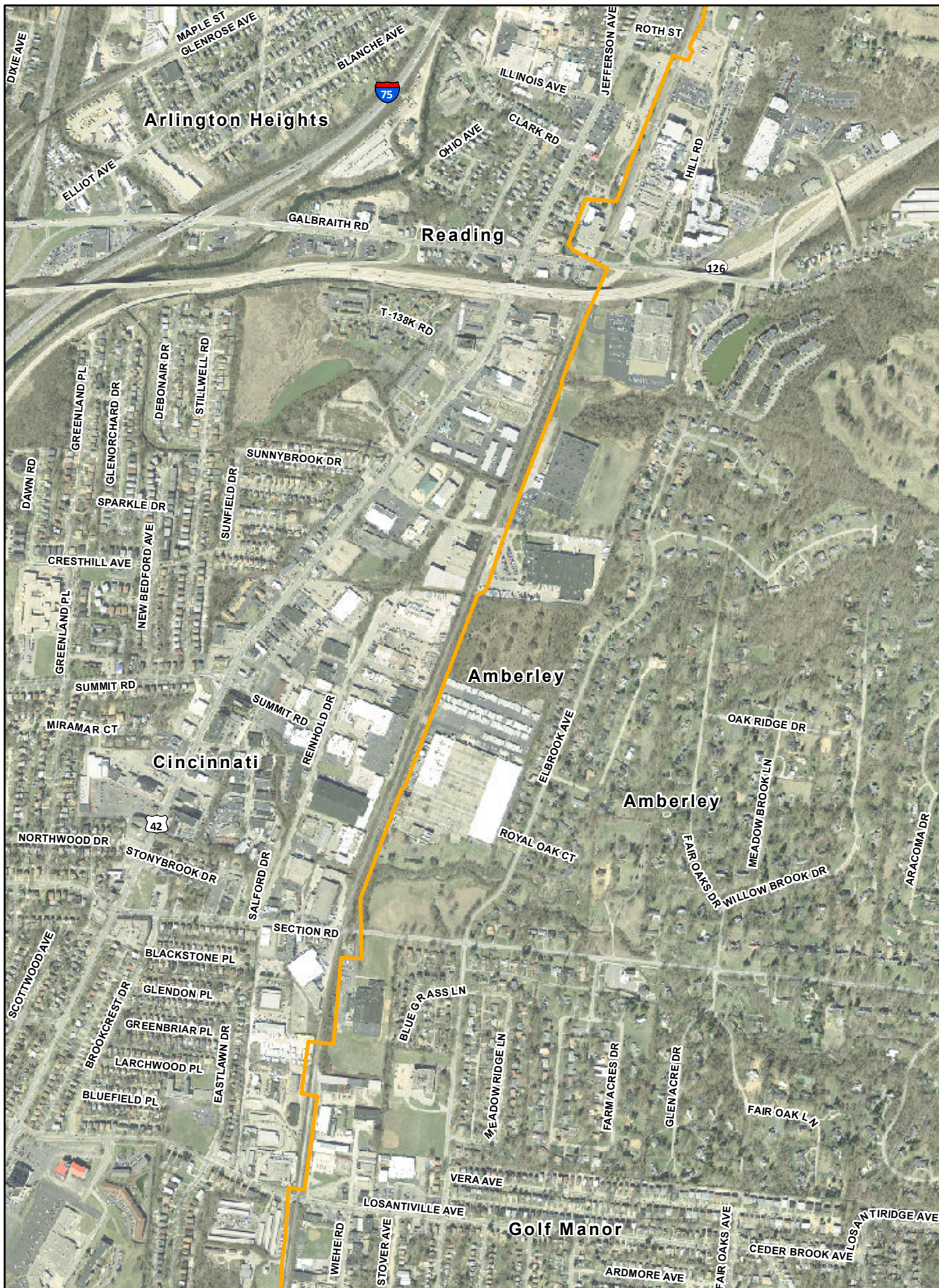








1 inch = 1,000 feet





1 inch = 1,000 feet

III. CONSIDERATIONS AND RECOMMENDED FINDINGS

In the Matter of the Application of Duke Energy Ohio, Inc. for a Certificate of Environmental Compatibility and Public Need for the C314V Central Corridor Pipeline Extension Project, Staff submits the following considerations and recommended findings pursuant to R.C. 4906.07(C) and 4906.10(A).

Considerations for R.C. 4906.10(A)(1)

BASIS OF NEED

The Applicant submitted an application to the Board for a Certificate of Environmental Compatibility and Public Need to install up to 14 miles of new 20-inch diameter natural gas pipeline from the southern terminus of its Line C314 (known as the WW Feed Station) to a location along its Line V in the Fairfax and Norwood area.

Purpose of Proposed Facility

The Applicant proposes to construct the pipeline project as part of its plan to retire propane-air peaking plants, better balance system supply from north to south, and support the inspection, replacement, and upgrading of aging infrastructure. The Applicant confirmed to Staff the purpose of the proposed facility continues to be relevant in 2019.

System Conditions, Local Requirements, and Other Pertinent Factors

The Applicant and its subsidiary, Duke Energy Kentucky, Inc., supply up to 43,000 thousand cubic feet per hour (MCFH) of natural gas to approximately 538,000 residential, commercial, and industrial customers in the southwestern Ohio and northern Kentucky area. Since the issuance of Staff's prior report, Staff interviewed engineering, technical, and project management representatives from Duke Energy. The Applicant representatives confirmed that the information provided previously about the system conditions, local requirements, and other pertinent system performance factors remains accurate. Staff notes that the customer count has increased since the original pipeline application. Additionally, the Applicant indicated that during the January 2019 polar vortex (and at times in 2014) that the demand on its system was at or near the system maximum of 43,000 MCFH.

Natural gas supply for the system is received from 22 stations that connect to interstate pipelines. All of the stations are in the northern section of the Applicant's service territory except for the Foster Station, which is in Kentucky. The Foster Station is a critical station that typically serves up to 55 percent of the Ohio customer load and up to 60 percent of the peak design day load in Ohio. A loss of supply from the Foster Station on a high demand day would result in widespread service outages. With the installation of the proposed pipeline facilities, the Applicant's modeling shows that the Foster Station would serve 45 percent of the Ohio customer load. Staff notes that this would be significant reduction in the reliance on the Foster Station.

Due to pressure limitations around the WW Feed Station lines, Line C314 (a pipeline constructed in 2003) has limited capability of supplying gas to the system from the north to Line A and Line

WW¹⁷. The proposed pipeline project would bring increased pressure and volumes of natural gas into the system from the north and eliminate some of those constraints.

The current gas supply system also includes propane-air¹⁸ peaking plants that are used to meet demand during peak periods and emergencies. The propane-air plants in Erlanger, Kentucky and Cincinnati, Ohio, and the associated storage facilities, were placed in service in the early 1960s to provide an additional peaking supply and now serve up to 10 percent of the current peak day design load. Staff agrees that these propane-air plants and propane storage facilities are now reaching the end of their useful lives. If propane-air peaking plants would become unavailable, the loss of supply from these plants on a high demand day could result in widespread service outages. Staff recommends that the Applicant keep the PUCO apprised of the status of its plans for retirement of the propane-air plants in the next long-term forecast.

These system conditions, including the potential loss of supply, were observed in a prior PUCO case. Specifically, in Case No. 15-218-GA-GCR, the Commission ordered a management/performance audit be performed on the Applicant's gas procurement practices and policies for the audit period of September 2012 through August 2015.¹⁹ In the management and performance audit report, the auditor observed that the Applicant's Dicks Creek Plant propane facility is no longer operational and that the potential exists for the Applicant's Eastern Avenue and Erlanger Plant propane facilities to also become unavailable.²⁰ The auditor recommended that the Applicant assess the potential for this to occur and evaluate and determine its optimal interstate pipeline capacity portfolio if this were to occur. The Applicant agreed to conduct this evaluation, through a stipulation, which was adopted by the Commission in its final order in the case.²¹

The Applicant noted that some of its existing customers' operations are intolerant to the propane-air mixture and must curtail their gas use when the propane-air peaking facilities are in operation. The retirement of the propane-air peaking plants should eliminate the need for these types of associated curtailments.

The Applicant has several older natural gas pipelines that were not designed to meet the current pipeline integrity testing requirements. Furthermore, the Applicant needs to inspect, test and upgrade portions of its backbone system that brings gas from both the north and the south into the central Hamilton County area. The major elements of this backbone include Line A, Line V, and various Line AM pipelines.²² Portions of Line A and Line V were constructed in the 1940s, 1950s, or 1960s and need to be upgraded. According to the Applicant, Line A has reached maximum capacity and, without upgrades, is not capable of supplying additional natural gas to the area. Construction of the proposed Central Corridor Pipeline would allow the Applicant to replace this aging infrastructure while maintaining service. The Applicant stated that since the original pipeline

17. *In the Matter of the Application of Duke Energy Ohio, Inc. for a Certificate of Environmental Compatibility and Public Need for the C314V Central Corridor Pipeline Extension Project*, Case No. 16-0253-GA-BTX, Application at Figure 3-1 (Sept. 13, 2016 as amended and supplemented) (*Application*).

18. Propane and air are mixed to deliver the same energy content as natural gas.

19. *In re Purchased Gas Adjustment Clause of Duke Energy Ohio, Inc.*, Case No. 15-218-GA-GCR, *et al.*, Entry (Feb. 25, 2015).

20. *In re Purchased Gas Adjustment Clause of Duke Energy Ohio, Inc.*, Case No. 15-218-GA-GCR, *et al.*, Management and Performance Audit Report at 10 (Dec. 9, 2015).

21. *In re Purchased Gas Adjustment Clause of Duke Energy Ohio, Inc.*, Case No. 15-218-GA-GCR, *et al.*, Stipulation and Recommendation at 6 (Jan. 29, 2016); *see also* Opinion and Order at 17 (Sept. 7, 2016).

22. *Application* at Figures 3-1 and 3-2.

application was filed that it has replaced and repaired small sections of these older natural gas pipelines.

Load Flow Studies and Contingency Analysis

The Applicant uses Gas Synergi Version 4.7 hydraulic modeling software program to analyze and model its natural gas pipeline system. The Applicant uses this software program for gas system design, daily operations analysis, new customer assessments, identification of system bottlenecks, and performing emergency/outage assessments. This modeling software is commonly used in the oil and natural gas industry. The software models the behavior of operating gas systems and allows the testing of experimental changes to the system without the expense, time, or cost of actually testing a new pipe segment in the ground. The Applicant stated that its hydraulic software model of its system is routinely benchmarked/compared to actual operation data after each winter season.

The Applicant used the software to assist with the development of a *Gas System Master Plan*. This plan identified future infrastructure needs in order to maintain the ability to provide customers with supply reliability, as well as to provide sufficient flexibility of the natural gas system to be able to recover from a wide range of service interruption events.

The Applicant found that when the propane-air peaking plants are in use, natural gas supplies containing the propane-air mixture can travel extensively throughout the Applicant's gas supply system.²³ Retirement of the propane-air peaking plants is becoming necessary, based on their age. However, retirement of the propane-air peaking plants without a replacement supply source would cause the system to have inadequate supply to serve customers and affect service to up to approximately 50,000 customers on peak winter days. Staff notes that the propane-air peaking plants have been used 9 to 13 days every year since 2015. According to the Applicant, increasing flow from the northern gate stations to replace propane-air augmentation is not currently possible due to system capacity restrictions.

The Applicant performed a simulation which it entitled "C314V Flow Maximized Scenario." Under this future-operating scenario, the Applicant anticipated an increased system load, retirement of the propane-air peaking facilities, additional flow from the Fernald South Gate Station, and maximized flow in the proposed Central Corridor Pipeline. This simulation showed that with the proposed Central Corridor Pipeline in place, the Applicant could be able to retire the propane-air peaking plants, increase gas supply from the northern stations, and service anticipated future gas demand/growth.

Relevant Base Case System

The Applicant provided the relevant base case system and data. Staff's review included meeting with the Applicant, and asking questions about the assumptions of the base case including the 43,000 MCFH throughput, operation of the propane-air peaking facilities, and curtailment of interruptible customers. It appears to Staff that the Applicant properly evaluated the anticipated system conditions under peak load, and Staff concurs with the Applicant's conclusion that a system upgrade is appropriate.

23. Ibid., Figure 3-3.

Regional Expansion Plans

Staff has found that the proposed project fits into regional expansion plans. The Applicant has also identified several areas of its service territory where it anticipates growth. The customer count has increased since the original pipeline application was filed. The proposed project could accommodate anticipated system growth of up to 45,500 MCFH and allow future replacement/upgrade of aging infrastructure that has been pressure limited.

Long-Term Gas Forecast Reference

Within the application, the Applicant stated the proposed Central Corridor Pipeline is one of several capital improvement projects recommended for inclusion in its long-range plan and has been part of the Applicant's long-term forecast since 2007.²⁴ Staff acknowledges that a central corridor project intended to address system issues has been contemplated by the Applicant for years.

Alternative Options for the Proposed Project

The Applicant considered and evaluated several options before submitting the application.

No Action Option

The Applicant considered making no improvements and simply continuing maintenance of the existing infrastructure.

The maintenance costs for its aging propane-air peaking plants and associated equipment would likely increase. This option would not address the increased risk of failure of the propane-air peaking plants due to age, would not address propane intolerant industries, and would not reduce reliance on the Foster Station for system flexibility.

Replacement in Place Option

The Applicant considered replacement of key area pipelines, notably Line A. The Applicant found that there is limited backup gas capacity of the pipeline system, making it impossible to take Line A out of service without disruption to customers during the peak winter season. This option would not offset the use of the propane-air peaking plants.

System Modeling Study Options

The *Gas System Master Plan* outlined seven alternative system improvements that would allow the retirement of the propane-air peaking plants, reduce the reliance on the Foster Station, and allow replacement of aging infrastructure.

The Applicant considered three western options, one eastern option beyond the I-275 outerbelt, and three central options within the I-275 outerbelt in the *Gas System Master Plan*.

The Applicant found that the western options did not allow for retirement of the propane-air peaking plants or improve reliability in the central core area. Additionally, these western options did not allow pipeline inspection and replacement work to be conducted as needed in the central core area.

24. Ibid., p. 3-11.

The Applicant found that the eastern option would bring a significant supply of natural gas from northern suppliers and would allow the retirement of the propane-air plants. However, this option would involve a large diameter high-pressure pipeline, up to three times longer than any of the other options. With this option, a large diameter, high-pressure pipeline into the central core of the city would still be needed to support the aging central core natural gas infrastructure.

The Applicant found that two of the central options were suboptimal. The Applicant concluded that an extension of Line C314 further south through the central corridor from the existing WW Feed Station to the existing Line V was the best option to minimize overall project impacts and meet current and future customer needs.

Conclusion

Staff believes that the Applicant has appropriately evaluated the condition and needs of its gas supply system and has demonstrated the basis of need for the proposed facility. Nothing in this report should be construed as Staff's pre-approval of cost recovery in future rate proceedings.

Recommended Findings

Staff recommends that the Board find that the basis of need for the project has been demonstrated and therefore complies with the requirements specified in R.C. 4906.10(A)(1), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(2)

NATURE OF PROBABLE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(2), the Board must determine the nature of the probable environmental impact of the proposed facility.

Socioeconomic Impacts

Demographics

Select population and income figures for Hamilton County and the area near the project are shown in the table below.

SELECT DEMOGRAPHIC CHARACTERISTICS OF COUNTY AND PROJECT AREA			
Geographic Area	2010 Population²⁵	2015 Population Estimate²⁶	2015 Median Household Income²⁷
Hamilton County	802,374	807,598	\$50,668
Census Tracts crossed by Preferred and Alternate routes	88,261	Not available	\$60,891
Census Tracts within 1,000 feet of Preferred and Alternate routes	125,347	Not available	\$56,001
Census Tracts within 1,000 feet of all candidate routes ²⁸	166,001	Not available	\$60,862

The U.S. Census Bureau estimates that the population of Hamilton County increased by 5,224 people from 2010-2015. The ODSA projects that the population of the county will decline through the year 2030, then increase in the decade from 2030 to 2040.²⁹ The median household income for the area near the project is about \$10,000 higher than that of Hamilton County. Median household income is nearly identical for census tracts crossed by the Preferred and Alternate routes and those within 1,000 feet of all routes considered by the Applicant.

Land Use

The Preferred Route is 13.9 miles long, and its construction right-of-way would cross 723 properties. The Alternate Route is 12.9 miles long, and its construction right-of-way would cross 471 properties. The Applicant proposes to use a construction workspace of up to 80 feet wide, and maintain a permanent right-of-way of 30 feet in width along the pipeline route. All permanent

25. U.S. Census Bureau, "Estimates of the Components of Resident Population Change: April 1, 2010 to July 1, 2015," *American FactFinder*, accessed February 24, 2017, <https://factfinder.census.gov>.

26. Ibid.

27. U.S. Census Bureau, "American Community Survey, 2015," *American FactFinder*, accessed February 24, 2017, <https://factfinder.census.gov>.

28. Includes all routes presented in the Applicant's Route Selection Study, and the additional eastern route outside of the study area. Census tracts do not provide a precise representation of the project area. However, a census tract is the smallest geographic unit for which income data are available.

29. Ohio Development Services Agency, Office of Research, "Ohio County Profiles: Hamilton County," *County Profiles – 2016 Annual Edition*, accessed February 24, 2017, https://development.ohio.gov/reports/reports_countytrends_map.htm.

facilities would be underground, except for two regulator stations, two valve stations, and pipeline markers.

A summary of land use area covered by both the construction and permanent rights-of-way is included as Table 7-4 in the application, corrected by the Applicant's modified pages from the April 2018 supplement. This information is copied in the table below, sorted by permanent right-of-way percentage for the Preferred Route. Ecological features such as ponds, streams, and wetlands that were included in the Applicant's table are omitted here because they are discussed in a later section of this report and represent less than one percent of the area crossed by the routes.

LAND USE CROSSED BY ROUTE RIGHTS-OF-WAY								
Land Use	Preferred Route				Alternate Route			
	CWA³⁰ (Acres)	CWA (Percent)	ROW³¹ (Acres)	ROW (Percent)	CWA (Acres)	CWA (Percent)	ROW (Acres)	ROW (Percent)
Industrial/Commercial	46.3	34.3	18.9	37.4	47.4	37.9	18.9	40.2
Road right-of-way	36.5	27	13.9	27.5	41.6	33.3	17.3	36.8
Parks and Recreation	18.2	13.5	7.3	14.5	7.9	6.3	3.2	6.8
Woodlots	21.1	15.6	7.1	14.1	17.1	13.7	5.6	11.9
Residential	8.4	6.2	1.9	3.8	5.9	4.7	0.7	1.5
Educational	2.1	1.6	0.7	1.4	1.5	1.2	0.5	1.1
Undefined	0.3	0.2	0.2	0.4	1.6	1.3	0.2	0.4
Institutional	0.5	0.4	0.1	0.2	0.4	0.3	0.0	0.0

The primary land uses for land crossed by the right-of-way include industrial/commercial, road right-of-way, parks and recreation, and woodlots, with these four categories making up over 90 percent of the land uses crossed. The modified Alternate Route right-of-way now covers slightly less acreage of residential land than the Preferred Route, at 0.7 acres compared to 1.9 acres, respectively. Due to the similarity of land uses crossed by each route, potential land use impacts are similar for both routes.

The project would cause direct and indirect impacts to land use. Direct impacts would be mostly temporary and would include site clearing, grading, construction activity, and restoration. Construction would be limited to daytime hours on weekdays, with some exceptions. The Applicant proposes to use trenchless construction methods at many road crossings and access points in order to avoid disruptions to traffic and access to schools, fire stations, businesses, railroads, and overhead structures. Construction activities near places of worship and schools would not occur during or within an hour of weekend worship services or school arrival and dismissal times. The Applicant estimates total construction duration to be 12 to 16 months, with no more than one month at any specific area. Therefore, the Applicant expects that temporary construction impacts to any individual landowner or property would last no more than one month.

30. CWA is the 80-foot wide construction work area.

31. ROW is the 30-foot wide permanent right-of-way.

Within the construction right-of-way, the Applicant would remove all vegetation, and would separate and store topsoil as requested by landowners. The Applicant may need to remove some vegetation on properties crossed by the easement but outside of the construction right-of-way, such as dead, decaying, or overgrown trees, if it impedes construction or maintenance of the pipeline. The construction trench would be five feet wide by six feet deep. Depth of pipeline cover would be four feet minimum. The Applicant would construct temporary access routes with landowner approval, as determined after final project design is complete.

The Applicant has committed to restoring cleared land to original conditions, with the exception of existing vegetation or structures that are incompatible with pipeline maintenance. The Applicant would repair fences and would seed and/or mulch land as previously existed. The Applicant would record preconstruction photo and video of the construction area for comparison. The Applicant would not permit trees or shrubs to be planted directly over the pipeline, but would permit some small shrubs and ornamental trees within the easement, provided that they do not interfere with pipeline inspection or maintenance.

Direct, permanent impacts would include loss of incompatible vegetation and landscaping within and near the right-of-way, and installation of aboveground facilities including two regulator stations, two valve stations, and pipeline markers.

The regulator station at the north end of the project, the WW Feed Station, currently occupies 1.3 acres of fenced area on industrial property leased by the Applicant. The Applicant proposes to expand the WW Feed Station by approximately 0.4 acre within a new easement. The expanded station would be referred to as the Highpoint Park Station. The proposed Fairfax Station at the south end of the Preferred Route would occupy 0.6 acre of fenced area on a 4-acre commercial property. At the end of the Alternate Route, the Norwood Station would be expanded by about 0.5 acre within an existing easement. Structures at the regulator stations would be no taller than 15 feet.

Around the regulator and valve stations, the Applicant proposes to use 6-foot tall chain link fencing that may include green screening, and would include vegetative screening, as allowed and/or required by local zoning and easement agreements. Each regulator and valve station would have lighting for security. Staff recommends a condition that would require the Applicant to include green screening and vegetation around regulator and valve stations. Staff also recommends a condition that would require security lighting to be directed downward so that it does not present a nuisance to neighboring properties.

The Applicant would install pipeline markers in accordance with 49 C.F.R. 192.707 and would inspect the markers annually to ensure they are maintained in good condition. Staff recommends a condition that would require the Applicant to work with landowners of properties on which pipeline markers would be located to design and locate pipeline markers that are compatible with the surrounding landscape, to the extent practicable while meeting all federal requirements.

Indirect impacts to land use involve limits on future use of the right-of-way, including limitations on planting of incompatible vegetation and erecting structures. Indirect land use impacts vary greatly for each property, and depend on a number of factors including zoning, current use and

structures on the property, and development potential.³² As such, land use impacts “must be determined in light of the facts and characteristics of each parcel of property.”³³ Within parks, the easement could continue to be used for playing fields or other activities that do not require the addition of vegetation or structures within the right-of-way.

Indirect impacts to land use could also include increased demand for housing and services caused by construction activities, job growth, or population change.³⁴ The Applicant does not expect construction and operation of the pipeline to increase demand for services in an amount that would cause changes to land use patterns near the project.

Residential Structures

The Preferred Route has 115 residences within 100 feet and 3,153 residences within 1,000 feet, compared to 182 residences within 100 feet and 2,186 residences within 1,000 feet for the Alternate Route. Construction of the project is not expected to require removal of any residences or cause any permanent impacts to residential or other structures.

Land Use Plans and Regional Development

Both routes pass through Sycamore and Columbia townships. The Preferred Route passes through Blue Ash, Cincinnati, Deer Park, Fairfax, Madeira, Montgomery, Sharonville, and Silverton. The Alternate Route passes through Amberley Village, Blue Ash, Cincinnati, Evendale, Golf Manor, Reading, and Sharonville, and is within 1,000 feet of Norwood. The Applicant contacted officials from these communities and other public entities about the project.

Regional development is dependent upon the current and future energy supply available to the area.³⁵ The Applicant projects that the current natural gas system in the region may not be able to meet increased demand unless infrastructure improvements are made, resulting in potential curtailments in natural gas service without construction of the project. Because the project would increase natural gas supply, it would also contribute to the development potential of the region.

A land use planning conflict could occur if there were any known developments or plans along the pipeline route that would be incompatible with the pipeline. The Applicant reviewed land use planning documents for the townships and municipalities along the project and did not discover any conflicts. Staff recommends that the Applicant continue to coordinate with local planning authorities during the construction and operation of the pipeline in order to minimize and mitigate any future development conflicts, following guidelines outlined by the Pipelines and Informed Planning Alliance (PIPA).³⁶ To further this cause, Staff recommends that the Board require the Applicant to initiate a consultation process with all development, planning, or land use authorities

32. Pipeline Safety Trust, “Landowner’s Guide to Pipelines, 2016,” accessed April 19, 2017, http://pstrust.org/wp-content/uploads/2016/12/pst_LandOwnersGuide_2016-web.pdf.

33. Richard H. Glazer, “Frequently Asked Questions,” *Landowners Guide to Pipelines*, 2014: p. 3, accessed February 7, 2017, <http://pstrust.org/about-pipelines/landowners-guide-to-pipelines/>.

34. U.S EPA, “EIA Technical Review Guidelines: Energy Generation and Transmission,” July 2011: p. 67, accessed on February 2, 2017, <https://www.epa.gov/international-cooperation/eia-technical-review-guidelines-energy-sector>.

35. “APA Policy Guide on Energy,” American Planning Association, October 1, 2012, accessed February 1, 2017, <https://www.planning.org/policy/guides/adopted/energy.htm>.

36. Pipelines and Informed Planning Alliance, “Partnering to Further Enhance Pipeline Safety in Communities Through Risk-Informed Land Use Planning: Final Report of Recommended Practices,” November 2010, accessed February 7, 2017, https://primis.phmsa.dot.gov/comm/pipa/pipa_audience_local_government.htm.

whose jurisdictions are crossed by the pipeline. The process should include procedures for sharing information about the pipeline and consulting on proposed developments within an agreed-upon consultation zone, in order to ensure that future developments are compatible with the pipeline.

Parks and Recreation

Approximately 14 percent of the Preferred Route right-of-way (in acres) would utilize land presently designated for parks and recreation use, while the Alternate Route would utilize approximately 7 percent of the same land use category. The Applicant states that upon completion of construction, the right-of way for this project in non-paved areas would be restored and reseeded.

Staff notes that the majority of right-of-way along the Preferred Route located in parks and recreation areas is located within the boundaries of the Kenwood Country Club. There would be some temporary disturbance for the set up of direction drilling, at the Robert L. Schuler Sports Complex along the Preferred Route. Both routes would be located adjacent to soccer fields and parking at the Francis RecreAcres Park complex at the northern in-common portion of the project.

The Alternate Route is located within or adjacent to the Blue Ash Sports Center, Crosley Field, Summit Park, the Village of Evendale Municipal Complex (Recreation Center and Cultural Arts Center, Sports Fields, Pool and Park), the Reading High School athletic fields, Reading Community Pool, Sports Fields, and Park, the P&G Cincinnati MLB Urban Youth Academy (baseball), and the Cincinnati Gardens (inactive). The predominant impact to these parks and recreation locations would be during construction and would be temporary in nature, as the Alternate Route is located adjacent to or along the edge of these park and recreation areas.

Staff recommends that the Applicant coordinate construction of the pipeline in parks and recreation areas during off-season, or off-peak, times, to minimize impacts to recreational activities. Permanent impacts should be minimal as the pipeline would be located underground and the surface impact areas would be reseeded or repaved.

Cultural, Archaeological, and Architectural Resources

The Applicant conducted cultural resources literature reviews of the proposed gas transmission line project. The literature reviews were first conducted for the area within 1 mile of the project route centerlines. The Applicant's cultural resources consultant indicates that no known Ohio Archaeological Inventory (OAI) sites were identified within 1,000 feet of the Preferred Route, and that 230 Ohio Historic Inventory (OHI) resources and three cemeteries were previously identified within 1,000 feet. No National Register of Historic Places (NRHP) boundaries were previously identified within 1,000 feet of the Preferred Route. Thirty-one OHI structures are located within 100 feet of the Preferred Route.

Of the previously identified cultural resources, five OAI sites were identified within 1,000 feet of the Alternate Route, and 116 OHI structures were identified within 1,000 feet of the Alternate Route. Three cemeteries and no NRHP structures were identified within 1,000 feet of the Alternate Route. None of these resources is located within the project footprint/centerline. However, four resources are located within 100 feet of the Alternate Route. One historic district is located within 1,000 feet of the Alternate Route, but it is not located within the project centerline.

No scenic rivers or scenic routes/byways were identified by the Applicant to be located within 1,000 feet of either route.

The Applicant is preparing survey parameters for Phase I cultural resources field work studies as needed for this project. The Applicant states that upon completion, the results of field studies would be submitted to Staff and the Ohio Historic Preservation Office (OHPO). Staff recommends continued coordination between affected parties prior to construction to ensure minimal effects from this project on cultural resources.

Staff notes that several structures or sites that were identified during the initial literature review appear to have been altered or are no longer present. When preparing a Phase I cultural resources survey, the Applicant should consider updating applicable files and database(s) at the OHPO for accuracy and future reference in the project corridor.

Aesthetics

Permanent visual impacts would result from the introduction of new man-made elements to the landscape, particularly at the location of the valve stations and regulating stations. Aesthetic impacts would vary with the viewer and setting, depending on the degree of contrast between the proposed transmission gas pipeline and associated facilities and the existing landscape/surrounding physical environment.

The proposed pipeline would be buried, thus visibility would be limited to the cleared right-of-way and pipeline markers. These factors would not likely impact cultural resources. The Applicant states that once construction is completed, the pipeline trench would be backfilled and seeded, or covered with concrete/asphalt, as appropriate for the area. Staff recommends that in situations where concrete driveways or parking areas are crossed by the pipeline route, that full panels be replaced to alleviate cracking and mismatched concrete along the right-of-way.

Along the Preferred Route, the Applicant is proposing the Highpoint Park Regulation Station adjacent to the Applicant's existing WW Feed Station at the northern terminus, with two valve stations a maximum of five miles apart, and the new Fairfax Regulation Station at the southern terminus. The Alternate Route would also consist of the Highpoint Park Regulation Station adjacent to the Applicant's existing WW Feed Station at the northern terminus, with two valve stations a maximum of five miles apart, and is planned to terminate at a station directly adjacent to the existing Norwood Regulation Station.

The tallest aboveground facilities in the new regulation stations would be approximately 15 feet in height (control building), and the stations would utilize security fencing.

Economics

The supplemental information that the Applicant filed in this case on April 13, 2018, provided updated project cost and tax impact estimates. The Applicant's updated total estimated intangible and capital cost for the Preferred Route was \$128.2 million and for the Alternate Route was \$111.7 million.³⁷ The following table provides a breakdown of these cost estimates.

37. *Application* at 6-10, Supplemental Information at 13.

INTANGIBLE AND CAPITAL COSTS		
	Preferred Route	Alternate Route
Land and Land Rights	\$26,800,000	\$19,600,000
Structures and Improvements	\$5,200,000	\$900,000
Pipe Equipment	\$87,200,000	\$82,400,000
Measuring and Regulating Equipment	\$8,700,000	\$8,700,000
Right-of-way Clearing, Roads, Trails, or other Access	\$300,000	\$100,000
Total	\$128,200,000	\$111,700,000

The Applicant would remit property taxes annually on the installed utility facilities. The Applicant estimates the total projected first year property tax revenue at \$3.3 million for the Preferred Route and \$2.9 million for the Alternate Route. Each jurisdiction located along the pipeline would benefit by receiving a portion of this tax revenue. Additionally, the proposed facility would have a positive impact on regional development through increased reliability and availability of natural gas to residential, commercial, and industrial customers.

Liability Insurance

The Applicant is self-insured and maintains additional liability insurance for any damages that may occur as a result of its negligence during the construction or operation of the proposed pipeline.

Conclusion

The project would cause both direct and indirect impacts to land use. Direct impacts would occur primarily during the one-month construction period at each location, except for impacts from the permanent aboveground structures. The Applicant has proposed construction management and restoration activities that would mitigate temporary, direct impacts. Permanent, direct impacts to land use include loss of incompatible vegetation, and installation of the aboveground components of the project, which are a very small portion of the facility. Staff has recommended conditions to minimize the impact of the aboveground components of the project. Permanent, indirect impacts of the project to land use involve restrictions on future use of the pipeline right-of-way. The Applicant would mitigate these impacts with landowner compensation through the easement acquisition process.

The Applicant does not expect to remove any permanent structures for construction or operation of the project. The project would support regional development by increasing the supply of natural gas. The Applicant should mitigate future impacts to specific development projects through a consultation process between the Applicant and local development authorities, as proposed by Staff in the Recommended Conditions of Certificate.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Socioeconomic Conditions** heading of the Recommended Conditions of Certificate section.

Ecological Impacts

Geology, Slopes, and Foundation Soil Suitability

The Applicant has noted the various soil types that would be crossed by either the Preferred or Alternate route. Each soil type and its related association has a distinctive pattern of soils, relief, and drainage unique to its natural landscape. Of particular note are the detailed mapped soil units within each soil association, general size within the project area, and position on the landform of the mapped unit.³⁸

The detailed information for the mapped soil units provide information helpful in designing the layout of the project. Key indicators include location as upland or side slope, suitability for building, prone to landslides, erosion, shrink-swell potential, frost action, low strength, for a particular mapped soil unit.³⁹

The Applicant would conduct a geotechnical investigation prior to construction to obtain further site-specific detailed information and engineering properties of the soils for construction design purposes. The Applicant states that blasting activities are not expected during construction of the proposed project. Although the Applicant has identified areas along the Preferred and Alternate routes that cross along slopes greater than 12 percent, the majority of slopes along both routes are relatively shallow and do not pose site conditions that would prevent construction of the pipeline. The subsurface drilling investigation would ensure that the route selected would be sited along locations either suitable based on soil and rock properties or incorporate best management practices during construction for the structural integrity of pipeline.

Surface Waters

Because the Applicant made revisions to the routes that it previously presented, potential surface water impacts have changed somewhat from those presented in the prior Staff Report. As currently proposed, the Preferred Route centerline crosses 24 streams, while the construction work area contains 37 streams. The Preferred Route construction work area contains 4,544 linear feet of streams. The Alternate Route centerline crosses six streams, while the construction work area contains 14 streams. The Alternate Route construction work area contains 733 linear feet of streams.

Pipeline installation through streams would be accomplished by either open cut, traditional boring, or horizontal directional drilling (HDD). Traditional boring and HDD are preferred crossing methods as impacts would be avoided in most cases. However, the HDD process has a risk of an inadvertent return of drilling lubricant, or frac-out. An inadvertent return occurs when the drilling lubricant, typically a non-toxic, fine clay bentonite slurry, is forced through cracks in bedrock and surface soils. Staff recommends that, prior to construction, the Applicant provide a frac-out contingency plan detailing monitoring, environmental specialist presence, containment measures, cleanup, and restoration in the event of an inadvertent return.

38. *Application* at 8-47 (2).

39. *Ibid.*, p. 8-47 (2)(a)(b).

Open cut installation is particularly impactful through perennial streams because perennial streams provide habitat to more wildlife species. Further, water flow is mostly constant within perennial streams and installation generally cannot be done when the stream is dry or has extremely low flow, unlike intermittent and ephemeral streams. Open cut through perennial streams generally involves a dam and a pump to maintain flow. The Applicant proposes to open cut eight perennial streams along the Preferred Route and two perennial streams along the Alternate Route.

Vehicle access across streams would be necessary during construction. The Applicant has proposed temporary stream ford, temporary culvert stream crossing, and temporary access bridge crossing methods. A stream ford occurs when construction vehicles drive through streams without protection to the streambed. Staff recommends that no stream fords be permissible and that timber matting, or other methods that avoid or minimize streambed disturbance be employed.

The Preferred Route centerline would cross three wetlands, while the construction work area crosses 13 wetlands. The Preferred Route construction work area contains 1.6 acres of wetland. The Alternate Route centerline crosses 10 wetlands, while the construction work areas crosses 18 wetlands. The Alternate Route construction work area contains 0.9 acres of wetland. Due to property access issues, the Applicant did not assess three wetlands along the Alternate Route during field surveys. The Applicant has stated that it is unlikely the centerline would cross these features. All delineated wetlands are category 1 and category 2 wetlands.

The Applicant stated that timber mats would be utilized as necessary for vehicle and equipment crossings through any wetland. Most wetland impacts would be covered under Nationwide Permit 12. However, the Applicant is in the process of coordinating with the Ohio EPA about the potential need for a 401 certification for impacts within Wetlands P-W001 and O-W011 as impacts may exceed 0.5 acre in each wetland. Wetland P-W001 is located within the proposed pressure reducer station at the northern end of the common section of both routes. Wetland O-W011 is along the Preferred Route. It is anticipated that impacts within the pressure reduction station would be permanent, while impacts to wetland O-W011 would be temporary. No isolated wetland permitting would be required for the project.

No open water ponds would be crossed by the centerline of either route, and no impacts to ponds are anticipated. No lakes or reservoirs were documented along the construction corridor of the routes.

The Applicant would obtain coverage under the Ohio EPA General National Pollutant Discharge Elimination System (NPDES) permit. Sedimentation in the local watercourse may occur as a result of construction activities, but would be minimized through best management practices (BMP) such as silt fences. BMP would be outlined in the Applicant's Stormwater Pollution Prevention Plan, which is required as part of the NPDES permit. Portions of each route would cross within 100-year floodplain areas. Staff recommends the Applicant coordinate with the local floodplain administrator to obtain any applicable floodplain development permits. In order to further ensure impacts to surface water resources would be minimized, Staff recommends that the Applicant be required to provide a final construction access plan for Staff review prior to the preconstruction conference. The plan would consider the location of streams, wetlands, wooded areas, and sensitive areas, as identified by the ODNR or the USFWS.

Threatened and Endangered Species

The Applicant requested information from the ODNR and the USFWS regarding state and federal listed threatened and endangered plant and animal species. Staff gathered additional information through field assessments and review of published ecological information. The following table shows the results of the information requests, field assessments, and document review.

REPTILES AND AMPHIBIANS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Kirtland's snake	<i>Clonophis kirtlandii</i>	N/A	Threatened	Due to the project location, the type of habitat present at the project site and within the vicinity of the project area, this project is not likely to impact this species.
cave salamander	<i>Eurycea lucifuga</i>	N/A	Endangered	Due to the project location, and the type of habitat along the project route, and within the vicinity of the project route, this project is not likely to impact this species.
MAMMALS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered	Historical range includes the project area.
northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	N/A	Historical range includes the project area.
BIRDS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
American bittern	<i>Botaurus lentiginosus</i>	N/A	Endangered	Historical range includes the project area. Suitable nesting habitat not found in project area.
lark sparrow	<i>Chondestes grammacus</i>	N/A	Endangered	Historical range includes the project area. Suitable nesting habitat not found in project area.

MUSSELS

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
sheepnose	<i>Plethobasus cyphus</i>	Endangered	Endangered	Historical range includes the project area.
fanshell	<i>Cyprogenia stegaria</i>	Endangered	Endangered	Historical range includes the project area.
pink mucket	<i>Lampsilis orbiculata</i>	Endangered	Endangered	Historical range includes the project area.
rayed bean	<i>Villosa fabalis</i>	Endangered	Endangered	Historical range includes the project area.
snuffbox	<i>Epioblasma triquetra</i>	Endangered	Endangered	Historical range includes the project area.
ebonyshell	<i>Fusconaia ebena</i>	N/A	Endangered	Historical range includes the project area.
long-solid	<i>Fusconaia maculata maculata</i>	N/A	Endangered	Historical range includes the project area.
butterfly	<i>Ellipsaria lineolata</i>	N/A	Endangered	Historical range includes the project area.
washboard	<i>Megaloniais nervosa</i>	N/A	Endangered	Historical range includes the project area.
elephant-ear	<i>Elliptio crassidens crassidens</i>	N/A	Endangered	Historical range includes the project area.
Ohio pigtoe	<i>Pleurobema cordatum</i>	N/A	Endangered	Historical range includes the project area.
monkeyface	<i>Quadrula metanevra</i>	N/A	Endangered	Historical range includes the project area.
wartyback	<i>Quadrula nodulata</i>	N/A	Endangered	Historical range includes the project area.
black sandshell	<i>Ligumia recta</i>	N/A	Threatened	Historical range includes the project area.
fawnsfoot	<i>Truncilla donaciformis</i>	N/A	Threatened	Historical range includes the project area.
threehorn wartyback	<i>Obliquaria reflexa</i>	N/A	Threatened	Historical range includes the project area.

FISH				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
northern madtom	<i>Noturus stigmosus</i>	N/A	Endangered	Historical range includes the project area. Potentially located in perennial streams within the project area.
mountain madtom	<i>Noturus eleutherus</i>	N/A	Threatened	Historical range includes the project area. Potentially located in perennial streams within the project area.
shortnose gar	<i>Lepisosteus platostomus</i>	N/A	Endangered	Historical range includes the project area. Potentially located in perennial streams within the project area.
shoal chub	<i>Macrhybopsis hyostoma</i>	N/A	Endangered	Historical range includes the project area. Potentially located in perennial streams within the project area.
shovelnose sturgeon	<i>Scaphirhynchus platyrhynchus</i>	N/A	Endangered	Historical range includes the project area. Potentially located in perennial streams within the project area.
lake sturgeon	<i>Acipenser fulvescens</i>	N/A	Endangered	Historical range includes the project area. Potentially located in perennial streams within the project area.
bigeye shiner	<i>Notropis boops</i>	N/A	Threatened	Historical range includes the project area. Potentially located in perennial streams within the project area.
river darter	<i>Percina shumardi</i>	N/A	Threatened	Historical range includes the project area. Potentially located in perennial streams within the project area.
channel darter	<i>Percina copelandi</i>	N/A	Threatened	Historical range includes the project area. Potentially located in perennial streams within the project area.
blue sucker	<i>Cycleptus elongatus</i>	N/A	Threatened	Historical range includes the project area. Potentially located in perennial streams within the project area.
paddlefish	<i>Polyodon spathula</i>	N/A	Threatened	Historical range includes the project area. Potentially located in perennial streams within the project area.

OTHER INVERTEBRATES				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Sloan's crayfish	<i>Orconectes sloanii</i>	N/A	Threatened	Historical range includes the project area. Potentially located in perennial streams within the project area.
Kramer's cave beetle	<i>Pseudanophthalmus krameri</i>	N/A	Endangered	This species is found only in caves. The Ohio Cave Protection Law, R.C. 1517.21, protects caves from impacts, in turn, protecting the habitat of this species. Therefore, this project is not likely to impact this species.
Ohio cave beetle	<i>Pseudanophthalmus ohioensis</i>	N/A	Endangered	This species is found only in caves. The Ohio Cave Protection Law, R.C. 1517.21, protects caves from impacts, in turn, protecting the habitat of this species. Therefore, this project is not likely to impact this species.

The Applicant did not identify any listed plant or animal species during field surveys. Further, the ODNR and the USFWS did not identify any concerns regarding impacts to listed plant species. In the event that the Applicant encounters listed plant or animal species during construction, Staff recommends that the Applicant contact Staff, the ODNR, and the USFWS, as applicable. Staff recommends that activities that could adversely impact the identified plants or animals be immediately halted until an appropriate course of action has been agreed upon by the Applicant, Staff, and the appropriate agencies. Staff also recommends that if the Applicant encounters any listed plant or animal species prior to construction, the Applicant include the location and how impacts would be avoided in the final access plan to be provided to Staff.

The project area is within the range of state and federal endangered Indiana bat (*Myotis sodalis*) and the federal threatened northern long-eared bat (*Myotis septentrionalis*). As a tree roosting species in the summer months, the habitat of these species may be impacted by the project. In order to avoid impacts to the Indiana bat and northern long-eared bat, Staff recommends the Applicant adhere to seasonal tree cutting dates of October 1 through March 31 for all trees 3 inches or greater in diameter, unless coordination efforts with the ODNR and the USFWS reflects a different course of action.

The ODNR stated that this project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2016), all Group 2, 3, and 4 streams require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. The ODNR recommends that if in-water work is planned in any stream that meets any of the above criteria that the Applicant provide information to indicate no mussel impacts would occur. If this is not possible, the ODNR recommends a professional malacologist conduct a mussel survey in the project area. If mussels

that cannot be avoided are found in the project area, as a last resort, the ODNR recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol.

The project is within the range of several state listed fish species, including the shortnose gar, shoal chub, shovelnose sturgeon, lake sturgeon, northern madtom, bigeye shiner, mountain madtom, river darter, the channel darter, blue sucker, and paddlefish. The ODNR Division of Wildlife (DOW) recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. The Applicant currently proposes to open cut several perennial streams along both routes. However, the Applicant states that it is currently evaluating the suitability of using HDD or bore methodologies on the perennial streams currently identified as being crossed by the open trench method. If in-water work in perennial streams cannot be avoided, Staff concurs with the DOW's recommendation that no in-water work occur in perennial streams from April 15 through June 30.

The project is within the range of the Sloan's crayfish. The DOW recommends that the in-stream portions of a project be conducted during base flow periods or periods slightly above normal flow to allow the Sloan's crayfish to relocate out of the area as in-water work begins. If below base flow periods have created isolated pools potentially confining the Sloan's crayfish, the DOW recommends that any pools proposed to be impacted be cleared of the Sloan's crayfish using a sweep seine technique. Any captured Sloan's crayfish should be relocated upstream and outside of the project area.

Vegetation

Because the applicant made revisions to the routes that it previously presented, potential vegetation impacts have changed somewhat from those presented in the prior Staff Report. The Preferred and Alternate routes cross through several vegetative communities. The following table reflects the major vegetative communities present in the construction corridor and associated acres of impact for each route.

VEGETATION		
Community Type	Preferred Route Impacts (Including Common Route) (Acres)	Alternate Route Impacts (Including Common Route) (Acres)
Woodlot	21.1	17.1
Landscaped Areas/ Commercial/ Industrial	46.8	47.8
Recreational Areas	18.2	7.9

Impacts on vegetation along both routes would be limited to the clearing within the 80-foot construction right-of-way and along access roads, and operational maintenance. Trees adjacent to the proposed right-of-way, which are significantly encroaching or prone to failure, may require clearing to allow for safe operation of the pipeline. Vegetative wastes generated during construction would be windrowed or chipped and disposed of appropriately depending on

landowner requests. The Applicant anticipates the use of herbicides to be minimal, if at all, and would be conducted according to manufacturer's specifications.

Pristine, Inc. Superfund Site

The proposed Alternate Route would cross properties adjacent to a property where historical industrial activities lead to soil and groundwater contamination. This property is currently managed under the US Environmental Protection Agency's (USEPA) Superfund Program, and is known as the Pristine, Inc. Superfund Site (Pristine).

The Pristine site is an approximately three acre area which was used for liquid waste treatment operations from 1974 to 1981. Operations at the site were shut down under terms of a Consent Agreement with USEPA due to complaints about spills and a large inventory of waste. Investigations of the Pristine site and surrounding area began in the early 1980's and included the collection of soil and groundwater samples. Contaminants including various semi-volatile organic compounds and volatile organic compounds (VOCs) were documented within the soil and groundwater at the Pristine site and at locations beyond the property boundary. Groundwater was determined to flow primarily toward the south of the site. Remediation at the site has included soil treatment to prevent contaminants from leaching from soil into the groundwater, and groundwater treatment. All remedial action construction activities at the site have been completed, including treatment of contaminated soil and sediment, construction of a low permeability cap, and construction and operation of a groundwater extraction and treatment system. Groundwater extraction/treatment and monitoring began in 1997 and is ongoing.

The Applicant has contacted the USEPA Remedial Project Manager and Community Involvement Coordinator, and Ohio EPA Southwest District Office Site Coordinator for the Pristine site to coordinate proposed construction activities. The Applicant performed an investigation of the site based on the location of the pipeline, depth of the proposed pipeline excavation, and/or depth of the pipeline in HDD locations. Contamination in groundwater is present in the lower aquifer at depths exceeding 60-feet below ground surface. The location of the proposed pipeline is east of the groundwater contamination and at shallower depth. Soil contamination was limited to the Pristine site and has been addressed through remediation. The Applicant has concluded that contamination from the Pristine facility is not impacting conditions along Duke Energy's proposed pipeline route.

A section of the proposed pipeline near the Pristine site, along West Street, is in close proximity to remedial components including site monitoring wells, extraction wells, and underground piping connected to the extraction wells. Operation and maintenance of the Pristine site is currently handled by Gutteridge, Haskin, and Davey (GHD) Services Inc. In order to avoid impacts to this infrastructure, Staff recommends that the Applicant locate and avoid impacts to the wells, piezometers, underground piping, and any other relevant remedial components in coordination with the GHD Pristine site engineer.

All Staff recommendations for the requirements discussed in this section of the *Staff Review of Investigation* are included under the **Ecological Conditions** heading of the Recommended Conditions of Certificate section.

Public Services and Facilities

Public Services and Traffic

The principal impact on public services would be temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary during pipeline installation. The Applicant will coordinate with the appropriate authority regarding any temporary or permanent road closures, lane closures, road access restrictions, and traffic control. The Applicant would use HDD to cross five of the major roadways and traditional boring on the rest of the major roadways and highways. Construction hours may be adjusted, with work taking place during off-peak time in order to minimize impacts on traffic. Traffic management during the pipe installation phase would be necessary in the immediate vicinity of the project area to ensure safe and efficient maintenance of existing traffic patterns. The Applicant has committed to coordinating with local officials to ensure that construction hours and travel routes are optimized to the extent possible.

Excavation equipment and materials would be stored off site at laydown areas to be determined. The Applicant plans the delivery of pipe and removal of materials to be done on a just-in-time basis that is used to increase efficiency and decrease waste by receiving and removing materials only as they are needed. This practice would thus reduce hazards to motorists and disruptions to traffic.

Roads and Bridges

The project area includes a number of major highways (I-275 and I-71), state routes (22, 42 and 24) and a railroad (Indiana & Ohio Railway (I&O)/Southwest Ohio Regional Transit Authority). The Applicant would coordinate and acquire the necessary permits from the impacted municipalities and follow those specific guidelines in conjunction with the traffic control plan. The Applicant would continue to coordinate project timelines with the appropriate authorities so that traffic impacts would be minimized.

Staff recommends a requirement for the Applicant to develop a Transportation Management Plan that would include a Road Use Agreement. Any damaged roads would be repaired promptly to their previous conditions by the Applicant under the guidance of the appropriate regulatory agency. The Applicant stated that there would be no impacts to any bridges in the area. Any temporary improvements would be removed unless the appropriate agency request that they remain in place.

Noise

Construction noise would include excavation, pipeline installation, backfilling, traditional boring and HDD, and the construction of valve stations and regulation stations. The total duration of construction of the pipeline is expected to be 12-16 months. Construction at any location along the project would typically occur for a duration of less than one month. Construction activities would be limited primarily to daytime hours. After-hours work may occur in non-residential areas and when HDD is used. The Applicant would notify property owners or tenants of the upcoming construction activities for the pipeline in the same manner as required for the public information program, as stated in Ohio Adm.Code 4906-3-03(B)(2), including the potential for the after-hours activities. Operation of the proposed natural gas pipeline would produce audible noise only at valve stations and regulation stations. This noise is expected to be less than ambient noise levels at all sensitive noise receptors. Temporary operational noise would include infrequent maintenance noise related to right-of-way clearing and integrity checks.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Public Services, Facilities, and Safety Conditions** heading of the Recommended Conditions of Certificate section.

Recommended Findings

Staff recommends that the Board find that the Applicant has determined the nature of the probable environmental impact for the proposed facility, and therefore complies with the requirements specified in R.C. 4906.10(A)(2), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(3)

MINIMUM ADVERSE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, along with other pertinent considerations.

Route Selection

After finding that Staff had recommended the Alternate Route in its prior report, the Applicant indicated that it had not evaluated that route with the level of detail necessary to pursue its potential construction. To further investigate the Alternate Route, the Applicant conducted additional environmental assessments, geological testing, surveying, and located utilities. The Applicant also engaged with the affected businesses and municipalities. Following stakeholder meetings and additional investigations, the Applicant modified the Alternate Route at locations where there was potential to reduce impacts to municipalities, businesses, and residents.

Staff reviewed whether the Applicant followed a reasonable process for determining the optimal location for the needed facility, within the operational constraints of the project. An evaluation of the basis of need for the facility is addressed in a preceding section of this *Staff Report of Investigation*. If the project has some flexibility in its design characteristics, and the final design would influence location, those design characteristics could be included as criteria in the route selection study.

For pipeline route selection, “it is almost impossible to develop a universal decision-making system with a standard set of decision parameters.”⁴⁰ Criteria are sensitive to different contexts, including project needs, physical characteristics of the project area, political climates, and regulatory regimes. Many criteria are subjective and dependent on the backgrounds and perspectives of various stakeholders. As such, there is “little opportunity . . . to explore/document best practices.”⁴¹ The process is “considered a highly knowledge-intensive domain . . . because it is multidisciplinary” and relies on tacit knowledge from various experts.⁴² Pipeline developers may establish routing criteria by consulting published research, industry standards, regulations, firsthand knowledge and experience, and input from stakeholders or a group of experts.⁴³

Despite the contextual nature of the route selection process, some common industry practices have developed. A typical route selection process has three steps:⁴⁴

- (1) Define a study area that encompasses the entire region where the pipeline may be located;
- (2) Consider all possible alignments within the study area; and

40. H.M. Osman and T.E. El-Diraby, “Knowledge-Enabled Decision Support System for Routing Urban Utilities,” *Journal of Construction Engineering and Management*, March 2011: p. 198.

41. Ibid.

42. Ibid., p. 200.

43. Andy Mitchell, *The Esri Guide to GIS Analysis, Volume 3: Modeling Suitability, Movement, and Interaction*, Esri Press, 2012: p. 7.

44. Jason Luettinger and Thayne Clark, “Geographic Information System-based Pipeline Route Selection Process,” *Journal of Water Resources Planning and Management*, May/June 2005: p. 194.

(3) Create a justifiable method for eliminating alternatives.

The Applicant completed these steps and explained the methods and inputs used for each step in its route selection study.

In defining the study area, developers often take into consideration hard constraints such as operational requirements and prominent physical features.⁴⁵ In its route selection study, the Applicant described the study area as being bound on the north and south by the project origin and terminus, and on the east and west by prominent physical features such as highways, highly-developed areas, and forested areas. After initial public comment, the Applicant further evaluated routes outside of its study area, to the east, and determined that routes in this area would cause more overall impact than the routes evaluated within the study area. The Applicant defined the study area using reasonable criteria to encompass all practical routes, considering the needs and context of this project.

The Applicant created a constraint map to assist in placing possible route alignments. The Applicant first evaluated use of existing utility and transportation corridors, as this is generally a preferred practice.⁴⁶ The Applicant found that some of the existing utility and transportation corridors within the study area, particularly the railroad, are constrained by surrounding development and do not have adequate right-of-way to maintain recommended separation distances from the existing infrastructure. The Applicant consulted with appropriate industry professionals and technical guidelines when making this determination.

With these limitations in mind, the Applicant placed initial routes by using its constraint map to avoid sensitive areas and take advantage of existing infrastructure corridors, when possible. The Applicant placed routes within industrial areas and outside of residential areas to the extent possible, though some residential areas were unavoidable. The Applicant also applied the following technical constraints:

- A minimum of 15 feet between the pipeline centerline and existing structures;
- Along interstates, placement at least 10 feet outside of ODOT right-of-way;
- Along other roads, placement outside of the road right-of-way;
- Road crossings should be as perpendicular as possible; and
- Slopes over 25 percent should be avoided, where possible.

These initial routing constraints represent reasonable limitations for pipeline routing, considering the needs of the project, the physical characteristics of the area, and the applicable technical guidelines and standards.

The Applicant adjusted the initial routes by conducting a windshield survey of the area and a constructability review of the routes, with an engineering consultant. As a result, the Applicant reduced the potential alignments from 100 route segments and over 75,000 possible route combinations to 28 route candidates within five general corridors. The Applicant evaluated and scored the route candidates based on its scoring criteria. The Applicant provided a thorough

45. Ibid., p. 194-195.

46. 18 C.F.R. 380.15

description of all scoring criteria and the methodology used to assign normalized scores to the observed values. The criteria covered a range of ecological, social, and technical considerations. After receiving public input at the third information meeting, the Applicant applied a weighting factor to the social/land use criteria, and found that it did not affect the results.

From the scoring and certain qualitative factors, including constructability and avoidance of routing through private backyards, the Applicant chose three routes to present at the initial public information meetings. Each route was within a different corridor, providing the public with three distinct options to evaluate. Based on feedback from the public, the Applicant made several modifications to the proposed routes, and rejected one of the routes. The Applicant presented the two remaining, modified routes in the application. The Applicant published additional public notifications and held two additional information meetings.

The Applicant conducted a typical route selection study, appropriately adapted to the context of the project. The Applicant developed and described reasonable route evaluation criteria that covered a range of impacts and incorporated public feedback. The route selection process led to the selection of Preferred and Alternate routes that provide two distinct alternatives for the Board's consideration, while minimizing potential impacts, based on the criteria used to evaluate the routes.

Minimizing Impacts

While both routes are viable, they each have unique issues, and no route is without impact. Staff has analyzed each route independently of one another and concluded that the Alternate Route presents fewer impacts to the project area than the Preferred Route.

The Alternate Route is approximately 1 mile shorter than the Preferred Route, crosses 252 fewer properties, and would cost approximately \$16.5 million less to construct.

The Alternate Route crosses 17 fewer streams and contains approximately four times less linear footage of stream within the construction work area than the Preferred Route. The Alternate Route would open-cut five fewer perennial streams than the Preferred Route, presenting fewer impacts due to sedimentation from soil and riparian vegetation disturbance and impacting less aquatic wildlife habitat. Although the Preferred Route would cross six fewer wetlands than the Alternate Route, it would impact 0.2 acre more total wetland.

Compared to the Preferred Route, the Alternate Route has the potential to impact 114 fewer OHI structures within 1000 feet of the proposed centerline.

The Preferred Route would require the construction of a new regulation station at the southern end of the proposed pipeline, while the Alternate Route would require only the expansion of the existing Norwood Station.

Finally, although the Preferred Route would impact 67 fewer residences within 100 feet of the centerline than the Alternate Route, the Alternate Route would impact 967 fewer residences within 1,000 feet of the centerline than the Preferred Route.

Conclusion

The project would result in both temporary and permanent impacts to the project area. The Alternate Route presents fewer potential economic, ecological, and cultural resource impacts. The Alternate Route is shorter in length, would cost significantly less to construct, and presents a lower

potential for disruption of residences during construction, as the Alternate Route crosses fewer properties and contains significantly fewer residences within 1,000 feet. Therefore, Staff concludes that the Alternate Route represents the minimum adverse environmental impact when compared to the Preferred Route. Thus, Staff recommends that the Alternate Route be accepted by the Board.

Recommended Findings

Staff recommends that the Board find that the Alternate Route represents the minimum adverse environmental impact, and therefore complies with the requirements specified in R.C. 4906.10(A)(3), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(4)

ELECTRIC GRID

Pursuant to R.C. 4906.10(A)(4), the Board must determine that proposed electric facilities are consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facilities will serve the interests of electric system economy and reliability.

The proposed project is not an electric transmission line, therefore this section does not apply.

Recommended Findings

Staff recommends that the Board find that the requirements specified in R.C. 4906.10(A)(4) are not applicable to the certification of the proposed project.

Considerations for R.C. 4906.10(A)(5)

AIR, WATER, SOLID WASTE, AND AVIATION

Pursuant to R.C. 4906.10(A)(5), the facility must comply with Ohio law regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

Air

The operation of the project facilities would not produce air pollution. Therefore, there are no applicable air quality limitations, National Ambient Air Quality Standards, or prevention of significant deterioration increments, and no need for a Permit-to-Install or a Permit-to-Install and Operate an air pollution source.

The Applicant has indicated that fugitive dust would be controlled, when necessary, through irrigation and/or mulching, or other BMP, as appropriate.

Construction and operation of the facilities, as described in the application and data request responses and in accordance with the conditions included in this *Staff Report of Investigation*, would be in compliance with air emission regulations in R.C. Chapter 3704, and the rules and laws adopted under this chapter.

Water

Neither construction nor operation of the proposed facilities would require the use of significant amounts of water, so requirements under R.C. 1501.33 and 1501.34 are not applicable to this project.

The Applicant plans to withdraw approximately 1.1 million gallons of water from local fire hydrants for hydrostatic testing. In the case where a fire hydrant is unavailable, the Applicant would withdraw water from a nearby waterbody. The Applicant plans to discharge the water after the hydrostatic testing is complete into the local sewer in accordance with authorizations from the Metropolitan Sewer District of Greater Cincinnati and in accordance with the Ohio EPA NPDES General Permit No. OHH000002 for discharges of hydrostatic test water.

Construction methods and their environmental impacts along with necessary environmental permits are further discussed in the Ecological Impacts section under the “Surface Waters” heading.

With these measures, construction and operation of this facility would comply with requirements of R.C. Chapter 6111, and the rules and laws adopted under that chapter.

Solid and Hazardous Waste

As construction work proceeds, the right-of-way would be kept clean of all rubbish and debris resulting from the work. Refuse would be properly disposed to an approved landfill or other appropriate location.

Where trees must be cleared from the right-of-way, the resulting brush would be windrowed or chipped. All excess vegetation would be properly disposed of depending on the property owner’s wishes.

The solid waste generated during the construction or operation of the pipeline would be secured and removed from the project area and disposed of at a licensed disposal facility. With these measures, the Applicant's solid waste disposal plans would comply with solid waste disposal requirements in R.C. Chapter 3734, and the rules and laws adopted under this chapter.

Aviation

The height of the tallest aboveground structure of the proposed gas pipeline and construction equipment would be approximately 15 feet or less. The above ground structures that would remain after completion of construction are the Highpoint Park regulation station, Fairfax regulation station (along the Preferred Route), an expanded Norwood regulation station and two fenced-in valve stations (along the Alternate Route), and identity markers for the pipeline.

According to the Federal Aviation Administration (FAA), the closest airports are the Cincinnati Municipal Airport Lunken (LUK), Butler County Regional-Hogan Field (HAO) Cincinnati/Northern Kentucky (CVG), Clermont County (I69), Middletown Regional/Hook Field (MWO), Red Steward Airfield (40I), Cincinnati West (I67), Dayton-Wright Brothers (MGY), and Warren County/John Lane Field (I68) which are between 2 and 20 miles from the proposed gas pipeline. The closest public use heliport is the Dayton Transportation Center (5D7) approximately 29 miles away.

In accordance with R.C 4561.32, Staff contacted the ODOT Office of Aviation during review of this application in order to coordinate review of potential impacts of the facility on local airports. As of the date of this filing, no such concerns have been identified.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Air, Water, Solid Waste, and Aviation Conditions** heading of the Recommended Conditions of Certificate section.

Recommended Findings

Staff recommends that the Board find that the proposed facility complies with the requirements specified in R.C. 4906.10(A)(5), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(6)

PUBLIC INTEREST, CONVENIENCE, AND NECESSITY

Pursuant to R.C. 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

Pipeline Safety

The proposed pipeline is designed for a MAOP of 500 psig and would have a normal operating pressure of approximately 400 psig. Its function is to transport gas south from an existing 24-inch transmission line operated by the Applicant (Line C314) to a high-pressure distribution system in the Norwood or Fairfax area (Line V).

Pipeline safety regulations are promulgated by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA) at 49 C.F.R. 192 et seq, and adopted by Ohio in Ohio Adm.Code 4901:1-16-03 (Pipeline Safety Regulations). The Pipeline Safety Regulations contain construction and operation standards for pipelines that differ depending on whether the pipeline is classified as gathering, transmission, or distribution lines. Staff reviewed the classification of this pipeline and its impact on pipeline safety.

The definition of a gathering line found in 49 C.F.R. 192.3 is “a pipeline that transports gas from a current production facility to a transmission line or main.” Since the Central Corridor Pipeline would not transport gas from a current production facility, it would not be classified as a gathering line.

The definition of a transmission line found in 49 C.F.R. 192.3 is “a pipeline, other than a gathering line, that: (1) Transports gas from a gathering line or storage facility to a distribution center, storage facility, or large volume customer that is not down-stream from a distribution center; (2) operates at a hoop stress of 20 percent or more of SMYS; or (3) transports gas within a storage field.”

First, the term “distribution center” in the definition of transmission line is not defined within the Pipeline Safety Regulations. However, PHMSA has defined the term “distribution center” through written interpretations as “the point where gas enters piping used primarily to deliver gas to customers who purchase it for consumption as opposed to customers who purchase it for resale.”⁴⁷ The Applicant is a local distribution company (LDC) that provides gas to customers who purchase it for consumption as opposed to customers who purchase it for resale. The Central Corridor Pipeline would be supplied from the Highpoint Park Station equipped with overpressure protection separating the line from the upstream 24-inch transmission line. The proposed pipeline is not transporting gas to a storage field or single large volume customer and is downstream of a distribution center, and therefore would not fit the first part of the transmission line definition.

Second, the term specified minimum yield strength (SMYS) refers to how much pressure a pipe can hold before it weakens and deforms permanently. SMYS is determined by an engineering formula that takes into account the piping diameter, wall thickness, and the tensile strength of the steel used in the pipe manufacturing process. If the pipeline would operate at a pressure that is 20 percent or more of the calculated SMYS the pipeline is classified as a transmission line. This is due to the behavior of steel in the event of a pipeline failure. At pressures greater than 20 percent

47. Pipeline and Hazardous Materials Safety Administration Interpretation PI-09-0019 (Mar. 22, 2010).

of SMYS, gas may exit the pipe with enough force to increase the size of the defect in the pipe, resulting in a pipeline rupture. At less than 20 percent of SMYS, defects remain stable, resulting in a gas leak. The proposed Central Corridor Pipeline would be constructed from API 5L X-60 grade pipe with a wall thickness of 0.438 inches. Pipe with this tensile strength and wall thickness, at the given MAOP, would operate at 19 percent of SMYS, and therefore would not fit the second part of the transmission line definition.

Third and finally, the pipeline is also not transporting gas within a storage field. Therefore, the Central Corridor Pipeline should not be classified as a transmission line.

The Pipeline Safety Regulations define distribution lines as “a pipeline other than a gathering or transmission line.”⁴⁸ Since the Central Corridor Pipeline is a pipeline but is not a gathering line or a transmission line, it should be classified as a high-pressure distribution line.

The Applicant stated that the construction, operation, and maintenance of the Central Corridor Pipeline would comply with or exceed the applicable specifications of the Pipeline Safety Regulations. Staff has reviewed the application and verified that the standards and procedures listed by the Applicant in this section meet or exceed the requirements in the Pipeline Safety Regulations for Distribution Lines. The pipeline would operate at a relatively high-pressure, close to the 20 percent SMYS threshold, and in order to account for any potential future increases in operating pressure, Staff recommends the Applicant construct the Central Corridor Pipeline in accordance with requirements for transmission lines to provide an extra margin of safety, above and beyond the construction activities already listed in the application for distribution lines. Staff also notes that the Applicant must incorporate the Central Corridor Pipeline in its Gas Distribution Integrity Management Plan, as described in 49 C.F.R. 192, Subpart P. This requirement was not listed in the application.

In addition, Staff recommends the Applicant inform the PUCO Gas Pipeline Safety Section at least two weeks prior to the start of construction so that welding qualifications, welding procedures, and nondestructive testing procedures may be reviewed in advance.

Based on the information provided in the application, the Applicant would be able to construct, operate, or maintain the line in accordance with the Pipeline Safety Regulations along either of the proposed routes.

Public Interaction and Participation

The Applicant hosted four public informational meetings for this project. The first two meetings were held in Cincinnati on March 22 and 23, 2016, near the north and south ends of the proposed route corridors, respectively. The third meeting was held in Blue Ash on June 15, 2016. The fourth meeting was held in Blue Ash on January 26, 2017 after the Executive Director of the OPSB notified the Applicant that it must hold another informational meeting due to the substantial changes made to the proposed project since the third meeting.

During each meeting, attendees were provided the opportunity to speak with representatives of the Applicant about the proposed project and to provide feedback. The Applicant incorporated two overview presentations into the format of the fourth meeting. Staff attended the meetings to learn about the project and to answer questions from the public regarding the OPSB application process.

48. 49 C.F.R. 192.3.

As discussed in the section of this report titled Route Selection, the Applicant made several modifications to the project based on the feedback received during the first three meetings.

Estimated attendance figures provided by the Applicant are outlined in the table below.⁴⁹

PUBLIC INFORMATIONAL MEETINGS	
Date	Estimated Attendance
March 22, 2016	50
March 23, 2016	70
June 15, 2016	550
January 26, 2017	460

In addition to the four public informational meetings described above, the Applicant has met with local officials, businesses, community groups, and the media in the communities affected by the proposed pipeline. The Applicant maintains a project website at the following link: <https://www.duke-energy.com/home/natural-gas/central-corridor-pipeline-ext>. Members of the public may contact the Applicant by email or by phone, and the Applicant logs all contacts in a customer comment database. The Applicant has committed to continue to communicate project updates with the public and to respond to questions and concerns. Staff recommends a condition that the Applicant be required develop a public information program that informs affected property owners, tenants, and local government officials of the nature of the project, specific contact information of personnel familiar with the project, the proposed timeframe for project construction, and a schedule for restoration activities. Staff further recommends a condition that the Applicant be required to develop a complaint resolution procedure to address potential public grievances resulting from project construction and operation.

Service of Application

The Applicant served copies of the complete application on officials representing Hamilton County; Columbia and Sycamore townships; the cities of Blue Ash, Cincinnati, Deer Park, Madeira, Norwood, Reading, and Sharonville; the villages of Amberley, Evendale, Fairfax, Golf Manor, and Silverton; and the Cincinnati neighborhoods of Madison and Roselawn. Copies of the complete application are available for public inspection at the Public Library of Cincinnati and Hamilton County, the offices of the PUCO, and online at <http://opsb.ohio.gov>, and are available upon request from the Applicant.

Public Comments Submitted to Board

As of February 26, 2019, 1,534 document records have been filed in the public comments of the case record for this proceeding.⁵⁰ Public comments are often filed in groups by the PUCO Docketing Division. Therefore, many of these document records include public comments from multiple individuals or organizations.

49. Application at 6-6.

50. In the Matter of the Application of Duke Energy Ohio, Inc. for a Certificate of Environmental Compatibility and Public Need for the C314V Central Corridor Pipeline Extension Project, Case No. 16-0253-GA-BTX, Public Comments, <http://dis.puc.state.oh.us>. (accessed February 26, 2019).

The public comments received by the OPSB are overwhelmingly opposed to the proposed pipeline, with commenters citing concerns with issues including but not limited to, pipeline safety, the need for the pipeline, potential impacts to property value, and route selection. Among the public comments are those from government officials from the affected areas expressing opposition to the project on behalf of their constituents.

Intervention

The administrative law judge has granted intervention to Coprop Inc.; RLB Inc.; Kenwood Mall, LLC; 10149 LLC BRE DDR Crocodile Sycamore Square LLC; Interstate Gas Supply, Inc.; The Jewish Hospital – Mercy Health; Columbia Township; City of Deer Park; City of Reading; Village of Golf Manor; Board of County Commissioners of Hamilton County; Amberley Village; Sycamore Township; City of Blue Ash; Village of Evendale; City of Cincinnati; Pleasant Ridge Community Council; City of Madeira; and NOPE - Neighbors Opposed to Pipeline Extension, LLC.

Hearings

The Board conducted a local public hearing in Blue Ash, Ohio on June 15, 2017. During the hearing, 68 witnesses offered sworn testimony regarding the proposed facility. A transcript of the proceedings is available in the case record at <http://dis.puc.state.oh.us>. A second local public hearing is scheduled for March 21, 2019 in Blue Ash, Ohio.

An adjudicatory hearing is scheduled for April 9, 2019 at 10 a.m. at the offices of the PUCO, 180 E. Broad St., Hearing Room 11-A, Columbus, Ohio 43215. A court reporter will transcribe both proceedings, and the OPSB will make the hearing transcript available in the case record.

Conclusion

The Applicant has submitted detailed information on relevant items of public interest, convenience, and necessity, including noise, aesthetics, environmental concerns, social and economic impacts, long-term natural gas supply, and health and safety considerations. The Staff has reviewed this information and believes that the information is sufficient to support the fulfillment of the statutory criteria, and the submitted information has been discussed throughout this *Staff Report of Investigation*.

Staff is aware of the high level of public interest in this project. The comments received from members of the public and local officials served to inform the Staff throughout the course of its investigation. Many of the potential impacts and concerns raised in these comments, including those regarding pipeline safety, basis of need, and route selection are addressed in various sections of this Staff Report, minimized by the Applicant, and further mitigated by the Recommended Conditions of Certificate.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the Recommended Conditions of Certificate section.

Considerations for R.C. 4906.10(A)(7)

AGRICULTURAL DISTRICTS

Pursuant to R.C. 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the Preferred and Alternate routes of the proposed utility facility. The agricultural district program was established under R.C. Chapter 929. Agricultural district land is exempt from sewer, water, and electrical service tax assessments. Agricultural land can be classified as an agricultural district through an application and approval process that is administered through local county auditors' offices. Eligible land must be devoted exclusively to agricultural production or be qualified for compensation under a land conservation program for the preceding three calendar years. Furthermore, eligible land must be at least 10 acres or produce a minimum average gross annual income of \$2,500.

The Preferred and Alternate routes do not cross any agricultural land or agricultural district parcels. Therefore, no agricultural district impacts are expected.

Recommended Findings

Staff recommends that the Board find that the requirements specified in R.C. 4906.10(A)(7) are not applicable to the certification of the proposed project.

Considerations for R.C. 4906.10(A)(8)

WATER CONSERVATION PRACTICE

Pursuant to R.C. 4906.10(A)(8), the proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives.

Because the facility would not require the use of water for operation, water conservation practice as specified under R.C. 4906.10(A)(8) is not applicable to the project.

Recommended Findings

Staff recommends that the Board find that the requirements specified in R.C. 4906.10(A)(8) are not applicable to the certification of the proposed project.

IV. RECOMMENDED CONDITIONS OF CERTIFICATE

Following a review of the application and the record compiled to date in this proceeding, Staff recommends that a number of conditions become part of any certificate issued for the proposed facility. These recommended conditions may be modified as a result of public or other input received subsequent to the issuance of this report. At this time, Staff recommends the following conditions:

GENERAL CONDITIONS

Staff recommends the following conditions to ensure conformance with the proposed plans and procedures as outlined in the case record to date, and to ensure compliance with all conditions listed in this Staff Report:

- (1) The facility shall be installed on the Applicant's Alternate Route, utilizing the equipment, construction practices, and mitigation measures as presented in the application filed on September 13, 2016 and further clarified by an amended application, supplemental information, and replies to data requests, as well as the recommendations in this *Staff Report of Investigation*.
- (2) The Applicant shall conduct a preconstruction conference prior to the start of any construction activities. Staff, the Applicant, and representatives of the prime contractor and/or subcontractors for the project shall attend the preconstruction conference. The conference shall include a presentation of the measures to be taken by the Applicant and contractors to ensure compliance with all conditions of the certificate, and discussion of the procedures for on-site investigations by Staff during construction. Prior to the conference, the Applicant shall provide a proposed conference agenda for Staff review to ensure compliance with this condition. The Applicant may conduct separate preconstruction conferences for each stage of construction.
- (3) At least 30 days before the preconstruction conference, the Applicant shall submit to Staff, for review to ensure compliance with this condition, one set of detailed engineering drawings of the final project design, including the facility, temporary and permanent access roads, construction staging areas, and any other associated facilities and access points, so that Staff can determine that the final project design is in compliance with the terms of the certificate. The final project layout shall be provided in hard copy and as geographically-referenced electronic data. The final design shall include all conditions of the certificate and references at the locations where the Applicant and/or its contractors must adhere to a specific condition in order to comply with the certificate.
- (4) At least 30 days prior to the preconstruction conference, the Applicant shall provide to Staff a public information program that informs affected property owners and tenants of the nature of the project, specific contact information of Applicant personnel who are familiar with the project, the proposed timeframe for project construction, and a schedule for restoration activities. The Applicant shall give notification to property owners and tenants at least 30 days prior to work on the affected property.
- (5) At least 30 days prior to the preconstruction conference, the Applicant shall provide to Staff a complaint resolution procedure to address potential public grievances resulting from project

construction and operation. The resolution procedure must provide that the Applicant will work to mitigate or resolve any issues with those who submit either a formal or informal complaint and that the Applicant will immediately forward all complaints to Staff.

- (6) The certificate shall become invalid if the Applicant has not commenced a continuous course of construction of the proposed facility within five years of the date of issuance of the certificate.
- (7) As the information becomes known, the Applicant shall provide to Staff the date on which construction will begin, the date on which construction was completed, and the date on which the facility begins commercial operation.
- (8) Prior to the commencement of construction activities in areas that require permits or authorizations by federal or state laws and regulations, the Applicant shall obtain and comply with such permits or authorizations. The Applicant shall provide copies of permits and authorizations, including all supporting documentation, to Staff within seven days of issuance or concurrently upon receipt by the Applicant, whichever comes earlier. The Applicant shall provide a schedule of construction activities and acquisition of corresponding permits for each activity at the preconstruction conference.
- (9) Within 60 days after the commencement of commercial operation, the Applicant shall submit to Staff a copy of the as-built specifications for the entire facility. If good cause prevents the Applicant from submitting a copy of the as-built specifications for the entire facility within 60 days after commencement of commercial operation, it may request informally an extension of time for the filing of such as-built specifications. The Applicant shall use reasonable efforts to provide as-built drawings in both hard copy and as geographically-referenced electronic data.
- (10) After the commencement of commercial operation, the Applicant shall submit to the PUCO in the next long-term gas forecast the status of its plans for the retirement of the propane-air plants.

SOCIOECONOMIC CONDITIONS

Staff recommends the following conditions to address the impacts discussed in the **Socioeconomic Impacts** section of the Nature of Probable Environmental Impact:

- (11) Prior to construction, the Applicant shall finalize a Phase I cultural resources survey program (which may include archaeological and architectural components) for the gas transmission line, laydown area(s) and any access roads acceptable to Staff and the Ohio Historic Preservation Office (OHPO). If the resulting survey work discloses a find of cultural significance, or a site that could be eligible for inclusion on the National Register of Historic Places, then the Applicant shall prepare a mitigation or avoidance plan. Any such mitigation or avoidance effort, if needed, shall be developed in coordination with the OHPO and submitted to Staff for review to ensure compliance with this condition.
- (12) In order to minimize construction impacts in active parks and recreational areas, the Applicant shall coordinate the timing of construction in such areas to be done during off-season or off-peak times and months as necessary to avoid prolonged field or park closures,

unless an agreement is reached between the affected parties that allows construction to occur while the outdoor space is active.

- (13) Damage to lawns, grass areas/parks and recreation, and parking areas as a result of this project will be restored to original conditions upon completion of construction, and subsequently monitored for settling, cracking and sinking during operation of the facility. Unless otherwise directed by the property owner, concrete panels (if applicable) shall be replaced in their entirety rather than cut and patched.
- (14) The Applicant shall initiate a consultation process with all development, planning, or land use authorities whose jurisdictions are crossed by the pipeline. The Applicant shall propose a process that includes procedures for sharing information about the pipeline and consulting on proposed developments within an agreed-upon consultation zone, in accordance with the recommended practices published by the Pipelines and Informed Planning Alliance.
- (15) The Applicant shall include green screening and vegetation around regulator and valve stations. The Applicant shall coordinate with local zoning officials to develop a screening plan to be submitted to Staff for review to ensure compliance with this recommendation.
- (16) The Applicant shall design all required security lighting to be directed downward so that it does not present a nuisance to neighboring properties.
- (17) The Applicant shall collaborate with landowners of properties on which pipeline markers would be located to design and locate pipeline markers in a manner that is compatible with the surrounding landscape, to the extent practicable while meeting all federal requirements. The Applicant shall inspect the markers annually and maintain them in good condition.

ECOLOGICAL CONDITIONS

Staff recommends the following conditions to address the impacts discussed in the **Ecological Impacts** section of the Nature of Probable Environmental Impact:

- (18) The Applicant shall adhere to seasonal cutting dates of October 1 through March 31 for removal of any trees greater than or equal to three inches in diameter, unless coordination efforts with the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) allow a different course of action.
- (19) The Applicant shall provide a construction access plan for review prior to the preconstruction conference. The plan would consider the location of streams, wetlands, wooded areas, and sensitive plant species, as identified by the ODNR Division of Wildlife, and explain how impacts to all sensitive resources will be avoided or minimized during construction, operation, and maintenance. The plan shall show surface water resource crossing methods. The plan would include the measures to be used for restoring the area around all temporary access points, and a description of any long-term stabilization required along permanent access routes.
- (20) The Applicant shall contact Staff, the ODNR, and the USFWS within 24 hours if state or federal threatened or endangered species are encountered during construction activities. Construction activities that could adversely impact the identified plants or animals shall be

immediately halted until an appropriate course of action has been agreed upon by the Applicant, Staff, and the appropriate agencies.

- (21) Prior to construction, the Applicant shall submit to Staff, for review and confirmation that it complies with this condition, a project construction plan that includes the specific locations of its laydown areas. If the specific locations chosen appear to have additional adverse impacts, the Applicant shall either propose different specific locations without such impacts, or refile its application.
- (22) Prior to construction, the Applicant shall provide a copy of any floodplain permit required for construction of this project, or a copy of correspondence with the floodplain administrator showing that no permit is required.
- (23) The Applicant shall not cross streams by fording for construction access and shall instead employ timber matting or other methods that avoid or minimize streambed disturbance.
- (24) Prior to construction, the Applicant shall provide a frac-out contingency plan detailing monitoring, environmental specialist presence, containment measures, cleanup, and restoration.
- (25) Prior to any in-water work, the Applicant shall provide information to Staff and the ODNR indicating that no mussel impacts would occur at stream crossings. If this is not possible, then the appropriate survey(s) shall be performed in coordination with the ODNR and Staff. If mussels found in the project area cannot be avoided, a professional malacologist shall collect and relocate the mussels to suitable and similar habitat. All surveys, assessments, and relocation plans shall be completed in accordance with the Ohio Mussel Survey Protocol and provided to Staff and the ODNR for review to ensure compliance with this recommendation.
- (26) The Applicant shall conduct no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat.
- (27) Construction of in-stream portions of a project shall be conducted during base flow periods or periods slightly above normal flow to allow the Sloan's crayfish to relocate out of the area as in-water work begins. If below base flow periods have created isolated pools potentially confining the Sloan's crayfish, any pools proposed to be impacted shall be cleared of the Sloan's crayfish by an ODNR approved biologist using a sweep seine technique. Any captured Sloan's crayfish shall be relocated upstream and outside of the project area.
- (28) The Applicant shall have a qualified environmental specialist on site during construction activities that may affect sensitive areas, as mutually agreed upon between the Applicant and Staff, and as shown on the Applicant's final approved construction plan. Sensitive areas include but are not limited to areas of vegetation clearing, designated wetlands and streams, and locations of threatened or endangered species or their identified habitat. The environmental specialist shall be familiar with water quality protection issues and potential threatened or endangered species of plants and animals that may be encountered during project construction.
- (29) The Applicant shall avoid damage to or interference with remedial components associated with the Pristine, Inc. Superfund Site. The Applicant shall locate and avoid impact to the

wells, piezometers, underground piping, and any other relevant remedial components in coordination with the GHD Pristine, Inc. site engineer.

PUBLIC SERVICES, FACILITIES, AND SAFETY CONDITIONS

Staff recommends the following conditions to address the requirements discussed in the **Public Services, Facilities, and Safety** section of the Nature of Probable Environmental Impact:

- (30) General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving and hoe ram operations, rock drilling, and blasting operations, if required, shall be limited to the hours between 10:00 a.m. to 5:00 p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. Applicant will notify property owners or affected tenants within the meaning of Ohio Adm.Code 4906-5-08(C)(3), of upcoming construction activities including potential for nighttime construction activities.
- (31) Prior to commencement of construction activities that require transportation permits, the Applicant shall obtain all such permits. The Applicant shall coordinate with the appropriate authority(s) regarding any temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility.
- (32) The Applicant shall repair damage to government-maintained (public) roads and bridges caused by construction or maintenance activity. Any damaged public roads and bridges shall be repaired promptly to their previous conditions by the Applicant under the guidance of the appropriate regulatory agency. Any temporary improvements shall be removed unless the County Engineer(s) request that they remain. The Applicant shall provide financial assurance to the counties that it will restore the public roads it uses to their conditions prior to construction or maintenance. The Applicant shall develop a Transportation Management Plan and enter into a Road Use Agreement with the County Engineer(s) prior to construction and subject to Staff review and confirmation that it complies with this condition. The Road Use Agreement shall contain provisions for the following:
 - (a) A preconstruction survey of the conditions of the roads.
 - (b) A post-construction survey of the condition of the roads.
 - (c) An objective standard of repair that obligates the Applicant to restore the roads to the same or better condition as they were prior to construction.
 - (d) A timetable for posting of the construction road and bridge bond prior to the use or transport of heavy equipment on public roads or bridges.
- (33) The Applicant shall construct the Central Corridor Pipeline in accordance with requirements for Transmission lines to provide an extra margin of safety, above and beyond the construction activities already listed in the application. These requirements include:

- (a) Design and construct the pipeline to allow for the passage of instrumented internal inspection devices as specified in 49 C.F.R. 192.150. The application mentions the installation of a launcher and recovery system for internal inspection devices in the application but does not explicitly state the pipeline will be constructed in accordance with 49 C.F.R. 192.150.
 - (b) Install the line with sectionalized block valves spaced so that each point on the pipeline will be within 2.5 miles of a valve in Class 4 locations, or within 4 miles of a valve in Class 3 locations, in accordance with the requirements of 49 C.F.R. 192.179.
 - (c) Install the line with at least 12 inches of clearance from any other underground structure not associated with the pipeline in accordance with the requirements of 49 C.F.R. 192.325.
 - (d) Install underground warning tape above the pipeline to caution excavators of the buried pipeline below.
- (34) The Applicant shall notify the Public Utilities Commission of Ohio Gas Pipeline Safety Section at least two weeks prior to the start of the project so that welding qualifications, welding procedures, and nondestructive testing procedures may be reviewed in advance.

AIR, WATER, SOLID WASTE, AND AVIATION CONDITIONS

Staff recommends the following conditions to address the requirements discussed in the **Air, Water, Solid Waste, and Aviation** section of the Nature of Probable Environmental Impact:

- (35) The Applicant shall remove all temporary gravel and other construction staging area and access road materials after completion of construction activities, as weather permits, unless otherwise directed by the landowner. Impacted areas shall be restored to preconstruction conditions in compliance with the Ohio Environmental Protection Agency (Ohio EPA) General National Pollutant Discharge Elimination System (NPDES) permit(s) obtained for the project and the approved Stormwater Pollution Prevention Plan (SWPPP) created for this project.
- (36) All construction debris and all contaminated soil shall be promptly removed and properly disposed of in accordance with Ohio EPA regulations.
- (37) At least seven days before the preconstruction conference, the Applicant shall submit to Staff, for review, a copy of all NPDES permits including its approved SWPPP, approved Spill Prevention, Control, and Countermeasure procedures, and its erosion and sediment control plan. The Applicant must address any soil issues through proper design and adherence to Ohio EPA best management practices related to erosion and sedimentation control.
- (38) The Applicant shall comply with fugitive dust rules by the use of water spray or other appropriate dust suppressant measures whenever necessary.



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Summary: Staff Report of Investigation electronically filed by Adam Bargar on behalf of Staff of OPSB