



July 17, 2013

Via Electronic Filing

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Re: **Comments on Application of Constitution Pipeline Company, LLC for Certificate of Public Convenience and Necessity, Docket No. CP13-499-000**

Dear Secretary Bose:

On behalf of proposed intervenors, Catskill Mountainkeeper, Clean Air Council, Delaware-Otsego Audubon Society, Delaware Riverkeeper Network, Sierra Club, and Riverkeeper, Inc.,¹ we respectfully submit these comments on the application ("Application") of Constitution Pipeline Company, LLC ("Constitution" or "Applicant") for a certificate of public convenience and necessity ("Certificate") to construct and operate an interstate natural gas transmission pipeline through five counties in New York and Pennsylvania ("Project"). For the reasons explained below, we urge the Federal Energy Regulatory Commission ("FERC" or "Commission") to deny Constitution's Application. Specifically, the significant adverse impacts on the communities and environment through which the Project will cut cannot be mitigated fully and, thus, far outweigh the Applicant's assertions of need.

We are confident that a comprehensive review of all potential significant adverse environmental effects of the Project, conducted in accordance with the requirements of the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321–4370f, will demonstrate that the Project is not in the public interest and will not serve public convenience and necessity as required under the Natural Gas Act ("NGA"), 15 U.S.C. §§ 717–717z. Before any determination can be made, however, the Environmental Impact Statement ("EIS") that the Commission is

¹ Earthjustice submits these comments on behalf of its clients, Catskill Mountainkeeper, Clean Air Council, Delaware-Otsego Audubon Society, Delaware Riverkeeper Network, and Sierra Club; Riverkeeper, Inc. submits these comments on its own behalf.

preparing must carefully examine the Project’s environmental impacts, both separately and cumulatively with the impacts of past, present, and reasonably foreseeable future actions. Among the significant environmental risks that should be examined are: degradation of water resources; impairment of ecosystem services; diminished air quality; forest fragmentation; harm to wildlife and botanical species of concern; permanent landscape alteration; disruption of community character; and threats to community safety.

Such potential adverse effects cannot be adequately analyzed without complete data on all affected resources. Accordingly, we request that the Commission require the Applicant to conduct all necessary surveys and studies and submit all outstanding information, reports, and responses to data requests *before* the Commission prepares a draft EIS for the Project. In addition, NEPA requires a full analysis of reasonable alternatives to the proposed action and of measures for mitigating the action’s impacts. The Commission should not restrict its analysis of alternatives and mitigation measures to the limited discussion included in the Application.

The proposed intervenors oppose the Project as inconsistent with public convenience and necessity and urge the Commission to deny the Application or, at the very least, to undertake a rigorous review of the environmental impacts of the Project and to require the mitigation measures necessary to avoid or minimize those impacts to the greatest extent possible.

I. Background

In its Application, the Applicant requests authorization to construct and operate 122 miles of 30-inch-diameter natural gas pipeline, a compressor station, metering stations, access roads, and other related appurtenances and infrastructure through Broome, Chenango, Delaware, and Schoharie Counties in New York and Susquehanna County in Pennsylvania.² If approved, the Project will affect nearly 1,000 private landowners—many of whom chose to call this area home because of its rural character and unique landscape—and will cut through two state forests and an Audubon Society-designated Important Bird Area. Project construction will disturb a total of 1,838 acres of land and will leave 761 acres—a fifty-foot wide strip along the length of the pipeline right-of-way—permanently cleared to allow for the maintenance and operation of the Applicant’s facilities.³ A mere thirteen percent of the proposed 122-mile route will use or parallel existing rights-of-way,⁴ resulting in the clear-cutting of hundreds of thousands of trees. This permanent conversion of forest to open land will fragment important habitat, will result in increased stormwater runoff, and will compromise the area’s resilience to flooding in the face of increased precipitation and more frequent and intense storm events. The pipeline will cross multiple public drinking water supply sources, 6 watersheds, at least 286 wetlands, and 263 waterbodies, including designated high quality streams, trout streams, and at least 80 protected streams.⁵ In addition, Project access roads will cross another 28 wetlands and 18 waterbodies, among them protected streams.

² Constitution Pipeline Co., Resource Report No. 1: General Project Description, 1-1 (June 2013), FERC Docket No. CP13-499-000 (hereinafter “Resource Report 1”).

³ Resource Report 1 at 1-11.

⁴ *Id.* at 1-4.

⁵ Constitution Pipeline Co., Resource Report No. 2: Water Use and Quality, (June 2013), FERC Docket No. CP13-499-000 (hereinafter “Resource Report 2”).

Along with 122 miles of pipeline and additional miles of access roads that will cut across forests and water resources, the Project will be served by two compressor stations: Iroquois Gas Transmission's 14,200-horsepower Wright Compressor Station, located in Wright, NY, as modified by the proposed 21,800-horsepower Wright Interconnect Project⁶ and Williams' 17,970-horsepower Central Compressor Station, located in Brooklyn Township, PA.⁷ These sources, together with construction equipment and other operational facilities, will emit harmful air pollution, including volatile organic compounds ("VOCs"), nitrogen oxides ("NOx"), and other hazardous air pollutants.⁸ The Project also likely will result in the direct emission of climate-change-causing greenhouse gases ("GHGs"): carbon dioxide ("CO₂") and nitrous oxide ("N₂O") from compressor engines, line heaters, and generators; fugitive methane emissions from compressors and the pipeline;⁹ and black carbon emissions from diesel vehicles and equipment.

In addition to the direct impacts to natural resources located in the immediate vicinity of the Project, the availability of the infrastructure necessary to bring gas to market through a region underlain by the Marcellus Shale formation is likely to induce the development of additional gas wells, including those developed utilizing the extraction technique of high volume hydraulic fracturing. Such development brings with it water, air, and land pollution and could transform dozens of quiet, rural communities—presently consisting primarily of forest and farm lands—into industrial zones, plagued by constant truck traffic, the disappearance of scenic vistas, and noise and light pollution, among other impacts.

II. FERC Must Take a Hard Look at All of the Project's Environmental Impacts.

NEPA is our "basic national charter for protection of the environment." 40 C.F.R. § 1500.1(a). As such, it makes environmental protection a part of the mandate of every federal agency. *See* 42 U.S.C. § 4332(1). NEPA requires that federal agencies take environmental considerations into account in their decisionmaking "to the fullest extent possible." 42 U.S.C. § 4332. To this end, federal agencies must consider environmental harms and the means of preventing them in an EIS before approving any "major federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). When preparing an EIS, an agency must take a detailed, "hard look" at the environmental impact of and alternatives to the proposed action. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). This required analysis serves to ensure that "the agency will not act on incomplete information, only to regret

⁶ *Id.* at 1-6.

⁷ Resource Report 1 at 1-64 (June 2013), FERC Docket No. CP13-499-000.

⁸ *See* Al Armendariz & Env'tl. Def. Fund, Emissions from Natural Gas Production in the Barnett Shale Area and Opportunities for Cost-Effective Improvements 24 (2009), *available at* http://www.edf.org/documents/9235_Barnett_Shale_Report.pdf (hereinafter "Armendariz"); *see also* U.S. EPA, *Outdoor Air – Industry, Business, and Home: Oil and Natural Gas Production – Additional Information*, http://www.epa.gov/oaqps001/community/details/oil-gas_addl_info.html (last visited July 11, 2013).

⁹ "The U.S. natural gas transmission network contains more than 279,000 pipeline miles. Along this network, compressor stations are one of the largest sources of fugitive emissions, producing an estimated 50.7 billion cubic feet (Bcf) of methane emissions annually from leaking compressors and other equipment components such as valves, flanges, connections, and open-ended lines." U.S. EPA, *Lessons Learned from Natural Gas STAR Partners 1*, *available at* http://www.epa.gov/gasstar/documents/1l_dimcompstat.pdf.

its decision after it is too late to correct.” *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1979).

In its EIS for the Project, the Commission must fully assess and disclose the full range of environmental consequences of its approval of the Project, including “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, [and] cultural” impacts, “whether direct, indirect, or cumulative.” 40 C.F.R. §§ 1502.16(a), (b); 1508.8. Indirect effects are those impacts that are caused by the action, but occur “later in time or farther removed in distance, but are still reasonably foreseeable,” and may include “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.” 40 C.F.R. § 1508.8. Cumulative impacts are “impact[s] on the environment which result[] from the incremental impact of the action *when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.*” 40 C.F.R. § 1508.7 (emphasis added). As the regulations make clear, “[c]umulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” *Id.*

FERC’s environmental analysis must examine all direct and indirect impacts of the Project, individually, as well as when considered in addition to the impacts of existing and reasonably foreseeable Marcellus Shale gas development, which includes but is not limited to the hundreds of miles of gathering and transportation pipelines that have been and will need to be constructed to move the gas from the thousands of wells that have been and will be drilled to interstate markets. As discussed in greater detail below, the EIS should evaluate both construction and operational impacts on the natural resources located in the vicinity of the Project area and on the ecosystem services they provide as well as on other potentially affected local and regional resources. In addition, FERC must take a much more thorough look at the alternatives to and mitigation measures for the Project. The analysis of alternatives must include careful consideration of the ‘no action’ alternative and alternative siting. 40 C.F.R. § 1508.25(b).

A. Cumulative Impacts

The Commission must look beyond the summary evaluation of cumulative impacts presented in the Application and undertake a comprehensive analysis of the incremental impacts of the Project when considered in addition to other past, present, and reasonably foreseeable future actions. The Applicant’s cumulative impacts section identifies the gas wells that already have been drilled in Susquehanna county—552 wells between 2009 and 2012—but states that “Constitution assumed for the purposes of this discussion that drilling would continue through construction of the Project; however, the exact extent and location of such drilling is unknown.”¹⁰ The “exact extent and location” of well development is not necessary to evaluate the cumulative impacts of the Project and such development. The typical environmental effects of well development are understood and should be included in the EIS. Moreover, the Application fails to make any attempt to evaluate the extent to which the construction of the

¹⁰ Resource Report 1 at 1-86.

Project will induce additional development of gas wells or will influence the location of gas well development; the EIS must do so.

With respect to well development in New York, the Application includes a single paragraph that rejects the need to consider the effects of any future development.¹¹ However, the fact that the review by the New York State Department of Environmental Conservation (“NYSDEC”) of the environmental impacts of extracting gas from the Marcellus Shale via high-volume hydraulic fracturing is ongoing does not render future well development so uncertain as to remove any obligation to consider its impacts. On the contrary, the NYSDEC’s review process has generated information regarding future Marcellus Shale development that can be used to project development patterns. NYSDEC’s revised draft supplemental generic EIS for its gas development regulatory program contemplates green completions of new well development. If required, gathering lines would need to be constructed first so that subsequently drilled wells can connect immediately to a pipeline system instead of resorting to venting or flaring.¹² Thus, drillers would have an incentive to construct wells as close to existing pipelines as possible. Even without a green completion requirement, significant cost savings are associated with siting well pads as close as possible to transmission pipeline receipt points. In addition, NYSDEC has projected the number of wells that are likely to be drilled in three of the counties crossed by the Project,¹³ thereby facilitating an examination of the environmental impacts that will result from gas development that is induced in those areas. The EIS therefore should examine a range of reasonable development scenarios, as NYSDEC did, instead of ignoring the issue.

While the Application does identify a number of projects and actions the effects of which warrant inclusion in a discussion of cumulative impacts, it fails to provide any evaluation of those effects, let alone an analysis of the cumulative impact of the Project’s effects when considered together with those effects. Instead, the Application relies on the assumption that regulatory oversight of the other actions will obviate any impacts.¹⁴ In addition, the Applicant improperly concludes that there will be no traffic, surface water, or vegetation impacts from other projects because their construction schedules are unlikely to overlap with Project construction.¹⁵ This discussion ignores the fact that the Project will continue to cause adverse

¹¹ *Id.*

¹² NYSDEC, Revised Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program: Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Reservoirs 7-112–7-113 (Sept. 2011), *available at* http://www.dec.ny.gov/docs/materials_minerals_pdf/rdsgeisch70911.pdf.

¹³ Ecology and Env’t, Inc., Economic Assessment Report for the Supplemental Generic Environmental Impact Statement on New York State’s Oil, Gas, and Solution Mining Regulatory Program (Aug. 2011), *available at* http://www.dec.ny.gov/docs/materials_minerals_pdf/rdsgeisecon0811.pdf.

¹⁴ Resource Report 1 at 1-98 (“Given the regulatory oversight for large-scale projects regarding impacts on these wetlands and Waterbodies . . . Constitution does not believe that cumulative impacts will result from construction of these projects.”); 1-102 (“Given the regulatory oversight for the major (and potentially minor) projects detailed in Table 1.9-1, regarding impacts on fisheries . . . Constitution does not believe that cumulative impacts will result from construction of these projects, whether construction occurs concurrently or the projects are separated by a short period of time.”); 1-95 (“Constitution expects that other major projects in these basins also will implement the necessary BMPs, such that projects obtain approval and remain in compliance during construction with the applicable regulatory conditions as determined by applicable regulatory agencies.”).

¹⁵ *Id.* at 1-89, 1-96, 1-100.

environmental effects after construction activities have been completed. Finally, the Application includes no analysis of the cumulative impacts on air quality, including emissions from the two compressor stations to which the pipeline connects. The Commission cannot satisfy its obligations under NEPA, unless the EIS contains a robust discussion of all cumulative impacts.

B. Impacts on Water Resources

Drinking Water Resources

The Project poses substantial risks to ground and surface drinking water resources in Pennsylvania and New York. The Applicant has identified a Sole Source Aquifer (“SSA”), 19 principal aquifers, several municipal water supply sources, and private wells within the Project area. However, the Applicant has failed to show that these resources will be protected throughout Project construction and right-of-way maintenance or that long-term adverse impacts will be avoided. In order for FERC to make a decision regarding the expected environmental impacts of the Project, the Applicant must be required to prepare and submit: (1) details regarding all applicable watershed and well-protection rules and regulations in the Project area and plans for compliance; (2) a comprehensive evaluation of each principal aquifer the Applicant proposes to cross; and (3) a complete list of all potentially impacted private wells. In addition, the Applicant should be required to provide comprehensive, third-party pre- and post-construction testing for all potentially affected drinking water supplies.

Project construction and right-of-way maintenance activities present unacceptable risks to both ground and surface drinking water supplies. If construction intercepts the water table, direct contamination of local aquifers could occur and dewatering activities could cause local drawdowns of water table elevation. Even if construction activities do not directly intercept the water table, chemicals from construction fluids, herbicides, and spills may enter the water table through porous soils overlying local aquifers. Runoff, which is likely to be substantially increased by construction activities, by the soil compaction that will result, and by the permanent conversion of forest lands to a manicured right-of-way, also decreases groundwater recharge capabilities by causing water to quickly run off rather than infiltrating the ground and alters watershed drainage patterns.¹⁶ As a result, drinking water aquifers may no longer recharge, or may only partially recharge. Stormwater runoff also increases the risk of transporting chemicals into surface drinking water supplies. Of particular concern is the use of herbicides to maintain permanent rights-of-way, which the Applicant notes it will use in a “limited and controlled”¹⁷ manner. The use of *any* herbicides to maintain rights-of-way risks contaminating adjacent drinking water supplies, as runoff from the cleared right-of-way transports chemicals into receiving waters. Herbicides, including the often used glyphosate and its associated surfactants, are known to have ecological impacts, including to amphibians that are of concern.

¹⁶ Richard R. Horner & Jocelyn Gretz, Natural Resources Defense Council, Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices Applied to Meet Various Potential Stormwater Runoff Regulatory Standards (2011), *available at* http://water.epa.gov/infrastructure/greeninfrastructure/upload/gi_NRDC-EPA-standard-assessment-report-2.pdf.

¹⁷ Resource Report 2 at 2-13.

Specifically, ground and surface drinking water resources in both Pennsylvania and New York are at risk from Project construction and maintenance. These include an untold number of residents in both states who depend on private wells in the Project area for drinking water.¹⁸ The Applicant also plans to cross 19 principal aquifers in New York.¹⁹ Principal aquifers, while not currently “intensively” used by major municipal systems as water supply sources, may nonetheless be important water supply sources for smaller municipalities and/or private wells.²⁰ Further, the Applicant proposes to cross three public water supply watershed areas:²¹ the Pine Hill Reservoirs in Delaware County, NY; the Cobleskill Reservoir in Schoharie County, NY; and the Barton Hill Natural Resource Overlay Protection zone, which contains the public water supply for the Village of Schoharie in Schoharie County, NY.²² The Applicant also identifies a recharge area and springs used as the municipal public water supply for the Village of Afton, NY²³ and unspecified springs in Delaware County, NY²⁴ that may be affected by the Project.

Another major source of drinking water that may be adversely impacted by Project construction and maintenance is the Clinton Street Ballpark Sole Source Aquifer (“Clinton SSA”) in Broome County, NY. The Clinton SSA provides the sole or principal source of drinking water for approximately 111,000 people.²⁵ According to the U.S. Environmental Protection Agency (“U.S. EPA”), the Clinton SSA is “susceptible to contamination through several mechanisms,” including surface contaminants and any contaminants entering the Susquehanna River.²⁶ The highly permeable soils overlying the Clinton SSA could be infiltrated by any construction fluids, spills, or chemicals, such as herbicides, resulting from Project construction and/or right-of-way maintenance. This prospect is raises serious concerns, as the Applicant plans two crossings of the Clinton Park SSA, totaling nearly 4 miles in length.²⁷ The U.S. EPA cautions that substantial contamination of the Clinton SSA would result in “grave consequences” and a “significant hazard to public health.”²⁸

The Applicant’s claims that the Project is “not expected to adversely impact groundwater quality and/or supply”²⁹ or “adversely affect[] any public watershed or potable surface water supply”³⁰ are not supported by the information provided. In fact, there are a number of

¹⁸ Resource Report 2 at 2-1 and 2-4.

¹⁹ *Id.*, Table 2.1-1, at 2-2.

²⁰ NYSDEC, Primary & Principal Aquifers, <http://www.dec.ny.gov/lands/36119.html> (last visited July 11, 2013).

²¹ Resource Report 2, Table 2.2-7, at 2-46–2-47.

²² *Id.*; *see also id.* at 2-11.

²³ *Id.*

²⁴ *Id.* at 2-11–2-12.

²⁵ U.S. EPA, Clinton Street Ballpark Aquifer System, <http://www.epa.gov/region2/water/aquifer/clinton/clinton.htm#I18> (last visited July 11, 2013).

²⁶ *Id.*

²⁷ Resource Report 2, Table 2.1-2, at 2.5.

²⁸ U.S. EPA, Clinton Street Ballpark Aquifer System, <http://www.epa.gov/region2/water/aquifer/clinton/clinton.htm#I18> (last visited July 11, 2013).

²⁹ Resource Report 2 at 2-13.

³⁰ *Id.* at 2-47.

significant gaps in the information provided in the Application, which make it impossible for FERC or the public to understand and evaluate the Project's expected adverse impacts to drinking water supplies. The Applicant must provide the following information before the Commission makes any decisions regarding the Project:

- 1) *Details regarding all applicable watershed rules and regulations in the Project area and how the Applicant proposes to comply with them and protect drinking water supplies.* The Applicant notes that it has reviewed New York State regulations governing public water supplies, located at 10 NYCRR Chapter III, as well as the New York State Wellhead Protection Program, but provides no information regarding which provisions apply and how it plans to comply.³¹ The Applicant also notes the existence of local watershed protection rules and regulations and claims that it will “work with individual municipalities to ensure protection of municipal groundwater supplies.”³² Failing to detail plans for ensuring protection of municipal groundwater supplies is entirely inadequate and deprives FERC and the public the opportunity to fully understand and evaluate potential Project impacts to public water supplies. The Applicant must be required to set forth all applicable state and local provisions, its plans for compliance, and its site-specific plans for ensuring the protection of each drinking water supply source potentially affected.
- 2) *A comprehensive evaluation of each principal aquifer the Applicant proposes to cross.* Simply listing specifications, as in Table 2.1-1,³³ is not sufficient to determine the potential impacts to drinking water resources. The Applicant also must provide information regarding the populations that rely on the aquifers for water supply, alternate sources of water supply, if any, should the aquifers become contaminated, and potential for cross-contamination.
- 3) *A complete list of all private wells potentially impacted by the Project.* The Applicant merely notes that residents in Pennsylvania and New York rely on private wells in the Project area for water supplies,³⁴ but does not provide any detail. Further, the Applicant notes that it is “currently in the process of identifying and compiling information on the location of private drinking water wells and springs.”³⁵ This is unacceptable. The Applicant must be required to identify, map, and evaluate *all* drinking water resources potentially affected by the Project before any decisions are made by the Commission.

Finally, the Applicant should be required to provide comprehensive, third-party pre- and post-construction testing and ongoing monitoring for *all* potentially impacted drinking water supplies. The Applicant notes only that it plans to offer pre- and post-construction testing to owners of water wells within 150 feet of construction workspace and/or blasting activities.³⁶

³¹ Resource Report 2 at 2-4.

³² *Id.*

³³ Resource Report 2 at 2-2.

³⁴ *Id.* at 2-1 and 2-4.

³⁵ *Id.* at 2-11.

³⁶ *Id.* at 2-14–2-15.

Given the significant drinking water resources potentially affected by the Project, and the thousands of people who depend on them, the Applicant should be required to provide comprehensive testing and ongoing monitoring at each potentially impacted source.

Proposed Waterbody Crossings

The Applicant's review of water resources fails to adequately analyze the adverse environmental impacts likely to occur from proposed waterbody crossings. Per FERC regulations, the Applicant is required to "provide a description of site-specific construction techniques that would be used at each major waterbody crossing." 18 C.F.R. § 380.12(d)(2). While the Applicant has supplied simple engineering plans for major waterbody crossings,³⁷ these plans fail to provide site-specific evaluation of the expected adverse environmental impacts on each major waterbody as a result of the proposed crossing methods. The Applicant must also provide a complete evaluation of each proposed minor and intermediate waterbody crossing, including an analysis of the likely, site-specific, environmental impacts from each proposed crossing. The U.S. Army Corps of Engineers ("USACE") noted that the "environmental documentation should include an evaluation/justification for the stream crossing method chosen."³⁸

The Application proposes the use of open trenching methods, which require digging a hole into the streambed³⁹ and present the risk of severe degradation of water quality and damage to aquatic ecosystems, as does the proposed use of in-water blasting to supplement other crossing techniques. In particular, the Applicant's proposed use of wet open cut methods to cross Schoharie Creek, a major waterbody, threatens severe environmental damage to the Creek and downstream waterbodies and ecosystems. The likely environmental impacts of each proposed waterbody crossing must be comprehensively evaluated. The alternative utilization of trenchless crossing methods should be thoroughly investigated for each proposed waterbody crossing. Finally, prior to construction, surface water testing should be conducted to obtain baseline data for monitoring environmental impacts.

Over 200 waterbody crossings are planned for the Project, including more than 80 at known protected streams, utilizing primarily open trench (also known as open cut) crossing methods.⁴⁰ Streams and other waterbodies that the Applicant proposes to cross for Project

³⁷ See Constitution Pipeline Co., Environmental Report, Vol. II, App. M, Site Specific Major Waterbody Crossing Plan, FERC Docket No. PF12-9-000.

³⁸ See USACE, Comments on Draft Environmental Resource Reports dated February 2013 (Mar. 29, 2013), FERC Docket No. PF12-9-000 ("In order to evaluate avoidance and minimization of adverse environmental impacts to streams and adjacent areas, the environmental documentation should include an evaluation/justification for the stream crossing method chosen [. . .] for each stream. In addition we recommend the environmental documentation include a more detailed evaluation of crossing methods for . . . waterbodies.").

³⁹ See THE INGAA FOUNDATION, INC., BUILDING INTERSTATE NATURAL GAS TRANSMISSION PIPELINES: A PRIMER 33, 51 (2013), available at <http://www.ingaa.org/File.aspx?id=19618>.

⁴⁰ The Applicant notes proposed crossings of NYSDEC protected waterbodies. Resource Report 2, Table 2.2-4, at 2-24 to 2-37. FERC must require the Applicant to resolve the discrepancies between Table 2.2-4 in Resource Report 2 and Table 6.0-1 in Constitution Pipeline Co., Environmental Report, Vol. II, Appendix J, Environmental Construction Plan: Construction Activities in New York, Table 6.0-1 at 129-47 (hereinafter "NY Env'tl. Construction Plan").

construction contain diverse aquatic habitats and serve as biologically productive resources for flora and fauna. Both the water column and the streambed are susceptible to adverse environmental impacts.

Among the numerous waterbody crossings proposed for the Project, we are very concerned about the potential impacts to Schoharie Creek. The Creek is the largest tributary of the Mohawk River in the Mohawk River basin watershed, and is one of two major streams in the Schoharie Creek subwatershed. The Mohawk River is one of the major tributaries of the Hudson River, and part of the larger Hudson River basin. The portion of Schoharie Creek that would be impacted by the Project is classified by NYSDEC as Class C. The best usage of Class C waters is fishing, and Class C waters must be suitable for fish, shellfish and wildlife propagation and survival, as well as primary and secondary contact recreation. The lower portion of Schoharie Creek, below the Gilboa Dam, has been deemed suitable as a warm water fishery for smallmouth bass and walleye.

Open trench crossing methods literally require digging a giant hole in the streambed,⁴¹ risking severe erosion, destruction of aquatic habitats, and contamination from construction fluids and debris. While diverting the waterbody around the hole may minimize turbidity in the water column, it does not mitigate the extensive damage done to the streambed itself. NYSDEC has expressed concern about the Applicant's proposed use of open trench crossing methods, stating that it "does not support the use of open-trenching, regardless of method, as an installation technique for pipelines; wet-trenching in particular is strongly opposed."⁴²

The Application states that the proposed route would require crossing the Schoharie Creek and proposes that the "wet open cut method" of crossing be utilized.⁴³ In fact, the wet open cut method causes severe environmental damage, and should not be used for any waterbody crossings proposed for the Project. Both NYSDEC and the U.S. Fish and Wildlife Service ("U.S. FWS") oppose the use of wet open cut, both in general and for this project specifically.⁴⁴ The wet open cut method essentially entails using a backhoe or other heavy equipment to dig a trench across the bed of the waterbody without altering the natural flow of water. The trench is dug and the pipeline emplaced while the stream is still flowing. As a result, the process of digging the trench and displacing sediment causes significant increases in turbidity, which negatively affects fish spawning, migration, and feeding and impairs the natural function of the waterbody during construction. The presence of heavy equipment in the stream also can directly

⁴¹ See THE INGAA FOUNDATION, INC., BUILDING INTERSTATE NATURAL GAS TRANSMISSION PIPELINES: A PRIMER 33, 51 (2013), available at <http://www.ingaa.org/File.aspx?id=19618>.

⁴² NYSDEC, Comments on Envtl. Construction Plan (May 28, 2013), FERC Docket No. PF12-9-000.

⁴³ Resource Report 2 at 2-60.

⁴⁴ See NYSDEC, Comments on the Scope of Environmental Impact Statement for the Constitution Pipeline Project (Nov. 7, 2012), FERC Docket No. PF12-9-000; NYSDEC, Comments on Environmental Construction Plan (May 28, 2013), FERC Docket No. PF12-9-000 ("NYSDEC's preferred methodology for all stream crossings is Horizontal Directional Drill (HDD)."); Letter from David A. Stilwell, Field Supervisor, U.S. Dep't of the Interior, Fish and Wildlife Service, to Kevin Bowman, Envtl. Prot. Specialist, FERC (Oct. 5, 2012), FERC Docket No. PF12-9-000 ("[W]e recommend the use of horizontal directional drilling (HDD) to cross under aquatic habitat where feasible.").

affect fish and other aquatic biota that are in the vicinity of the trenching activity, killing or injuring individual fish and damaging or destroying aquatic habitat.

Schoharie Creek is the only major waterbody crossing where this method is proposed for use, and the Applicant has failed to provide any rationale for proposing this method, beyond the conclusory statement that it is the “most efficient and economical.”⁴⁵ The section of Schoharie Creek that the Applicant proposes to cross already suffers from excess turbidity due to sediment loading from agricultural runoff, and fluctuating flow due to the upstream dam. Activities such as wet open cut trenching would only increase turbidity and sediment loading in the Creek, and should not be permitted. Proposed intervenors oppose the Applicant’s proposed use of the wet open cut method for crossing Schoharie Creek, and urge FERC to require the use of trenchless waterbody crossing methods for all waterbodies affected by the Project.

Rather than simply proposing “efficient and economical”⁴⁶ open cut crossing methods, the Applicant should be required to fully evaluate the use of trenchless crossing methods—for Schoharie Creek, as noted above, as well as for each proposed waterbody crossing. Both NYSDEC and U.S. FWS recommend the use of trenchless crossing methods for waterbody crossings.⁴⁷ Trenchless crossing techniques do not disturb the streambed or impact water flow, nor do they directly increase turbidity, thus minimizing adverse environmental impacts compared to open trench methods. The Application notes that the Schoharie Creek crossing is undergoing further evaluation for “trenchless excavation,” but fails to explain why a trenchless crossing was not initially proposed for this waterbody. Nor does it describe what further analyses will be conducted in order to make a final determination as to what method would be used. The Applicant must be required to provide detailed information regarding its proposed use of the wet open cut method for Schoharie Creek, including an assessment of the site specific impacts on the Creek and the reasons why the use of horizontal directional drilling (“HDD”) or other trenchless crossing techniques were not proposed for this crossing.

The Applicant also fails to assess the risk that severe and frequent flooding would pose to the construction and operation of the pipeline section that crosses Schoharie Creek. The Application Alternatives Report notes that “[t]he frequent flooding of the Schoharie Creek corridor creates a significant safety concern for both pipeline construction and long term operation of the pipeline.”⁴⁸ FERC should require the Applicant to conduct a thorough assessment of the risk that flooding poses to the construction and operation of the pipeline across Schoharie Creek and across any other waterbody where flooding and sedimentary scouring are known to occur. The risk assessment should take into account the likelihood of more frequent

⁴⁵ *Id.* at 2-55.

⁴⁶ Resource Report 2 at 2-55.

⁴⁷ See NYSDEC, Comments on the Scope of Environmental Impact Statement for the Constitution Pipeline Project (Nov. 7, 2012), FERC Docket No. PF12-9-000; NYSDEC, Comments on Environmental Construction Plan (May 28, 2013), FERC Docket No. PF12-9-000 (“NYSDEC’s preferred methodology for all stream crossings is Horizontal Directional Drill (HDD).”); Letter from David A. Stilwell, Field Supervisor, U.S. Dep’t of the Interior, Fish and Wildlife Service, to Kevin Bowman, Env’tl. Prot. Specialist, FERC (Oct. 5, 2012), FERC Docket No. PF12-9-000 (“[W]e recommend the use of horizontal directional drilling (HDD) to cross under aquatic habitat where feasible.”).

⁴⁸ Constitution Pipeline Co., Resource Report No. 10: Alternatives (June 2013), FERC Docket No. CP13-499-000.

and more severe storms as a result of climate change and should include adaptation measures that will mitigate environmental impacts.

Further, the Applicant has failed to provide FERC with “data sufficient to determine the expected impacts of the project,”⁴⁹ by not specifically identifying the method to be used at each minor or intermediate waterbody crossing, but instead impermissibly grouping together the distinct methods of flume, dam and pump, cofferdam, and dry open cut under the umbrella term “dry crossing method.”⁵⁰ Each of these methods comes with its own set of environmental impacts that must be assessed for each specific waterbody crossing segment. For example, the dam and pump method requires the waterbody to go through pumps, which can lead to significant fish kills, while the flume method involves the funneling of water into a pipe using sand bags and dams, not requiring the waterbody to enter any sort of machinery, and thereby permitting fish to remain intact while work is ongoing.⁵¹ In addition, erosion control measures must minimize adverse water quality impacts in both designated work areas and downstream water resources.

While the Applicant notes that it is currently investigating specific waterbody crossings to “determine the feasibility of using trenchless construction methods,” that is not a substitute for providing FERC the information it needs to understand and evaluate the Project’s environmental impacts. The Applicant must provide FERC with all information regarding the feasibility of using alternative trenchless crossing techniques for each specific crossing before the Commission makes any decisions regarding the Project.

Proposed intervenors also strongly oppose the Applicant’s proposed use of in-water blasting to facilitate pipeline waterbody crossings. In-water blasting risks seriously damaging streambeds, aquatic ecosystems, and water quality, and its use in this context should be prohibited. While the Applicant claims that “blasting may be required,” but “is not anticipated,”⁵² its plan to make any final determination on the need for blasting “at the time of construction”⁵³ is wholly unsatisfactory, as this effectively removes the site-specific blasting plans and their potential impacts from public review and comment. Moreover, it circumvents the purpose of environmental review, which is to help FERC determine the Project’s likely environmental impacts. In-water blasting is an extreme excavation technique that maximizes, rather than minimizes, adverse environmental impacts, but the extent of those impacts cannot be evaluated by the Commission if no site-specific information is provided for review. If the Applicant cannot rule out the use of in-water blasting then for the purposes of this review, every waterbody crossing must assume the use and environmental effects of the techniques application.

Finally, proposed intervenors support U.S. FWS’s recommendation that surface water quality testing be conducted prior to any waterbody crossing to obtain a baseline for more

⁴⁹ 18 C.F.R. § 380.12(d).

⁵⁰ See NY Evtl. Construction Plan at 147.

⁵¹ See FERC, Wetland and Waterbody Construction and Mitigation Procedures, at 8–9 (May 2013).

⁵² NY Evtl. Construction Plan at 152.

⁵³ *Id.*

accurately determining adverse environmental impacts after construction.⁵⁴ Data should be collected on water quality parameters, including temperature, pH, conductivity, dissolved oxygen, and nutrient levels (phosphorus, nitrogen).⁵⁵ In addition, a pre-construction index of biological integrity should be developed for potentially impacted waterbodies in order to assess the health and biodiversity of their aquatic ecosystems. Such testing will significantly aid in determining the gravity of adverse environmental impacts from waterbody crossings.

Wetland and Buffer Impacts

As proposed, the Project would substantially affect wetland resources, potentially permanently altering and/or destroying wetland functions and aquatic habitat. The Applicant proposes to use trench crossing methods and blasting to complete pipeline construction, and proposes significant additional wetland disturbance along and adjacent to the pipeline right-of-way. However, the Applicant fails to include critical information necessary for FERC to understand and evaluate the potential adverse environmental impacts to wetlands and water resources. Before the Commission makes a decision regarding the Project, the Applicant must be required to prepare and submit: (1) a complete delineation of all potentially affected wetlands; (2) detailed studies regarding the functions and biota supported by each potentially affected wetland; (3) an evaluation of trenchless crossing methods for each proposed wetland crossing; (4) a discussion of permanent modifications to wetland habitat types, such as conversion of forested to emergent wetlands or open water systems, and the ecological impacts resulting; and (5) a comprehensive wetland mitigation plan. The Applicant must also clearly identify and evaluate impacts to 100-foot wetland buffer areas.

As an essential component of ecological systems, wetlands perform a number of important functions. Wetlands serve as water storage resources, absorbing and retaining flood and storm waters to reduce erosion and prevent downstream flooding. This storage capacity also allows for the recharge of surface waters, ground waters, and aquifers that may feed local drinking water supplies. Wetlands perform crucial filtration functions, trapping pollutants and nutrients such as nitrogen and phosphorus and assimilating them in wetland vegetation. In addition, wetlands are biologically productive resources with abundant vegetation and shallow waters that provide diverse habitats for fish and wildlife species to flourish.⁵⁶

According to information provided by the Applicant, the Project will impact more than 90 acres of wetlands along and adjacent to the pipeline right-of-way and above-ground facilities during construction and more than 15 wetland acres during operation.⁵⁷ All wetlands crossings are proposed using the Conventional Wetland Construction method,⁵⁸ which will involve the segregation of a maximum of 12 inches of topsoil and the digging of a trench while the pipeline

⁵⁴ See Letter from David A. Stilwell, Field Supervisor, U.S. Dep't of the Interior, Fish and Wildlife Service, to Kevin Bowman, Env'tl. Prot. Specialist, FERC (Oct. 5, 2012), FERC Docket No. PF12-9-000.

⁵⁵ *Id.*

⁵⁶ U.S. EPA, Functions and Values of Wetlands, <http://water.epa.gov/type/wetlands/outreach/upload/functions-values.pdf> (last visited July 11, 2013).

⁵⁷ Resource Report 2, Tables 2.3-1, 2.3-2, 2.3-3, and 2.3-4, at 2-69–2-74 and 2-80–2-91.

⁵⁸ *Id.*

is assembled in a nearby staging area.⁵⁹ The Applicant does note other construction methods that may be used, including the Push-Pull Technique for “[c]onstruction in saturated/inundated wetland areas;” however all crossings are listed as utilizing the Conventional Wetland Construction method.⁶⁰

Proposed intervenors are deeply concerned with the proposed use of trench crossing methods in sensitive wetland areas, particularly given the enormous amount of wetland acreage that will be disrupted by Project construction. While the Applicant claims that it will minimize wetland impacts by “restoring wetlands to their original configurations and contours,”⁶¹ this statement is not supported by information provided and is in fact contradicted by the Applicant’s admission that Palustrine Forested wetlands and Palustrine Scrub-Shrub wetlands will likely convert to Palustrine Emergent wetlands within the permanent right-of-way.⁶² Given that the Applicant proposes to construct 50-foot permanent rights-of-way within wetlands,⁶³ rather than the 30-foot permanent rights-of-way recommended by USACE,⁶⁴ this represents a substantial conversion area.

Instead of defaulting to trench crossing methods, the Applicant should be required to fully evaluate trenchless crossing methods for each wetland crossing proposed. NYSDEC agrees, and has recommended that HDD, a trenchless crossing technique, be utilized for wetland crossings.⁶⁵ The Applicant notes that it is “currently investigating specific stream and wetland crossings to determine the feasibility of using trenchless construction methods” and plans to submit this information when a final determination is made.⁶⁶ This is unacceptable. The Applicant must be required to undertake and submit a comprehensive evaluation of trenchless crossing methods for *each proposed wetland crossing* as part of the environmental review process, to allow the Commission and the public the opportunity to understand and evaluate the environmental impacts likely to result from wetland crossings and disturbance. This evaluation, which has been recommended by NYSDEC and USACE,⁶⁷ should include information regarding alternate routes that might avoid the specific wetland crossing, the feasibility of using trenchless methods, and the environmental impacts likely to result from the use of trench versus trenchless crossing methods for each specific crossing proposed. In fact, FERC’s own regulations and

⁵⁹ Resource Report 2 at 2-100.

⁶⁰ *Id.*

⁶¹ Resource Report 2 at 2-107.

⁶² *Id.* at 2-93.

⁶³ *Id.*

⁶⁴ USACE, Comments on Draft Environmental Resource Reports dated February 2013, at 3 (Mar. 29, 2013), FERC Docket No. PF12-9-000.

⁶⁵ NYSDEC, Comments on the Scope of Environmental Impact Statement for the Constitution Pipeline Project 3 (Nov. 7, 2012), FERC Docket No. PF12-9-000.

⁶⁶ Resource Report 2 at 2-55–2-56.

⁶⁷ NYSDEC, Comments on the Scope of Environmental Impact Statement for the Constitution Pipeline Project 3 (Nov. 7, 2012), FERC Docket No. PF12-9-000; USACE, Comments on Draft Environmental Resource Reports dated February 2013, at 2 (Mar. 29, 2013), FERC Docket No. PF12-9-000.

procedures direct project applicants to avoid construction in wetland areas, if possible,⁶⁸ and at the very least require that the Applicant evaluate measures to avoid wetland disturbance.

In addition to a comprehensive evaluation of trenchless crossing methods for all proposed wetland crossings, the Applicant must prepare and submit the following information to FERC before any decision is made regarding the environmental impacts of the Project. This information is essential to understanding and evaluating the likely Project impacts to wetlands and associated water resources.

- 1) *A complete delineation of wetlands within the Project area.* While the Applicant notes that a number of wetlands along the proposed pipeline route have been delineated, it also reports that “[f]ield surveys will continue throughout the 2013 field season,” and that for properties where the Applicant has not been able to negotiate survey access “completion of field surveys may extend past the issuance of a Certificate of Public Convenience and Necessity should the project be approved.”⁶⁹ FERC cannot conduct a meaningful review of the Project’s impacts until *all* potentially affected wetlands are delineated. This position is supported by USACE, which has requested that the Commission “defer a decision on the project until all parcels are delineated,”⁷⁰ and by FERC’s own Wetland and Waterbody Procedures, which require the delineation of “all wetlands that would be affected.”⁷¹ As discussed below, the landowner opposition to property surveys suggests that many landowners may face condemnation—a severe impact that weighs against a finding that the Project serves the public interest.
- 2) *Studies evaluating in detail the hydrology, vegetation, and soils present, and fish and wildlife supported, by each wetland that may be disturbed by the Project.* This information is essential to understanding the characteristics and ecological value of each wetland, the functions and aquatic life that will be imperiled by disturbance, and the environmental and water quality impacts that will result. Both USACE and U.S. FWS have requested such information.⁷²
- 3) *An analysis of the ecological changes associated with a change in vegetation type resulting from pipeline installation.* Forested wetlands, emergent wetlands, and open waters provide distinctly different ecological habitats and functions. The conversion of wetlands from one habitat type to another needs to be assessed and the ecological impacts to species and habitats needs to be evaluated.

⁶⁸ 18 C.F.R. § 380.15(d)(2); FERC, Wetland and Waterbody Construction and Mitigation Procedures 13 (May 2013).

⁶⁹ Resource Report 2 at 2-65.

⁷⁰ USACE, Comments on Draft Environmental Resource Reports dated February 2013, at 1 (Mar. 29, 2013), FERC Docket No. PF12-9-000.

⁷¹ FERC, Wetland and Waterbody Construction and Mitigation Procedures 13 (May 2013).

⁷² USACE, Comments Regarding the Preparation of an Environmental Impact Statement for the Proposed Constitution Pipeline Project, at 2 (Oct. 9, 2012), FERC Docket No. PF12-9-000; Letter from David A. Stilwell, Field Supervisor, U.S. Dep’t of the Interior, Fish and Wildlife Service, to Kevin Bowman, Env’tl. Prot. Specialist, FERC (Oct. 5, 2012), FERC Docket No. PF12-9-000.

- 4) *A comprehensive wetland mitigation plan.* The Applicant notes that it is developing and plans to submit a wetland mitigation plan,⁷³ but detailed information has not been provided. The need for preparation and submission of a wetland mitigation plan is supported by FERC regulations, which require a discussion of proposed mitigation measures,⁷⁴ and the Commission’s Wetland and Waterbody Procedures, which call for the development of a “project-specific wetland restoration plan.”⁷⁵ Detailed information regarding wetland mitigation has also been requested by NYSDEC⁷⁶ and USACE, which requested that a mitigation plan be prepared in accordance with the requirements of 33 C.F.R. § 332.⁷⁷

All information regarding wetland impacts and mitigation must also address wetland buffer areas. Wetland buffers are important transitional areas that intercept stormwater from upland habitat before it reaches wetlands or other aquatic habitat. Other water quality benefits of buffer zones include reducing thermal impacts (shade), nutrient uptake, providing filtration, reducing erosion, and restoring and maintaining the chemical, physical, and biological integrity of water resources.⁷⁸ Impacts to wetland buffer areas are not discussed in the Applicant’s Environmental Report, and it is not clear whether the wetland disturbance areas and proposed crossings identified by the Applicant include buffers or only refer to direct wetland impacts. Any proposed disturbance within 100-foot wetland buffer areas must be clearly delineated and evaluated.

Finally, proposed intervenors strongly oppose any use of blasting in wetland and/or associated buffers. The Applicant notes that blasting may be required in wetlands occurring over shallow depth to bedrock, and it lists 67 wetlands located in such areas.⁷⁹ The Applicant proposes to determine blasting locations “in the field during the construction process.”⁸⁰ This is unacceptable. Blasting within wetlands and/or buffers risks destroying aquatic habitat and wetland functions, as well as potentially degrading water quality and water resources along the proposed pipeline route. The potentially severe, site-specific environmental impacts caused by blasting represent precisely the kind of information that the Applicant must provide to FERC in order to allow the Commission to determine the Project’s environmental impacts in deciding whether to issue a Certificate of Public Convenience and Necessity.

⁷³ Resource Report 2 at 2-95 and 2-107.

⁷⁴ 18 C.F.R. § 380.12(d)(8).

⁷⁵ FERC, Wetland and Waterbody Construction and Mitigation Procedures 17 (May 2013).

⁷⁶ NYSDEC, Comments on the Scope of Environmental Impact Statement for the Constitution Pipeline Project 3 (Nov. 7, 2012), FERC Docket No. PF12-9-000.

⁷⁷ USACE, Comments on Draft Environmental Resource Reports dated February 2013, at 3 (Mar. 29, 2013), FERC Docket No. PF12-9-000.

⁷⁸ EPA, Aquatic Buffer Model Ordinance, <http://water.epa.gov/polwaste/nps/mol1.cfm> (last visited July 11, 2013).

⁷⁹ Resource Report 2 at 2-101; Table 2.3-7, at 2-102–2-104.

⁸⁰ *Id.* at 2-101.

Hydrostatic Testing

The Applicant's assessment of water use and quality fails to evaluate the adverse environmental impacts associated with hydrostatic testing, or the use of water to pressure test a pipeline before operation, which FERC must analyze prior to certifying the Project. The Applicant proposes to conduct hydrostatic testing on the pipeline prior to placement in service.⁸¹ The Project proposes to withdraw over 22 million gallons of water from Pennsylvania and New York for use as hydrostatic testing water, but fails to specify withdrawal locations. Detailed analysis regarding the potential impacts on water quality from water withdrawals and wastewater discharges⁸² must be prepared and submitted. Minus this additional information, FERC will be unable to conduct a comprehensive review of the Project's anticipated adverse environmental impacts to water resources. Finally, harmful additives used in the testing process must be prohibited.

Per FERC regulations, the Applicant is required in its Resource Report No. 2 to:

Describe specific locations, the quantity required, and the method and rate of withdrawal and discharge of hydrostatic test water. Describe suspended or dissolved material likely to be present in the water as a result of contact with the pipeline, particularly if an existing pipeline is being retested. Describe chemical or physical treatment of the pipeline or hydrostatic test water. Discuss waste products generated and disposal methods.

18 C.F.R. § 380.12(d)(6). The Application lists Starrucca Creek, Pennsylvania; Oquaga Creek, New York; Bennettsville Creek, New York; Ouleout Creek, New York; and Schoharie Creek, New York as "potential sources of hydrostatic test water."⁸³ However, this fails to satisfy FERC regulations, which require the identification of "specific locations." The mere identification of waterbodies generally is insufficient for the comprehensive evaluation of environmental impacts. Thus, specific withdrawal and discharge locations must be identified prior to FERC making any final decision on the Project. In addition, FERC must conduct a full evaluation of environmental impacts based on information with respect to each specific withdrawal and discharge location.

The Applicant is planning to withdraw over 5 million gallons in Pennsylvania and over 16 million gallons in New York for hydrostatic testing from the potential water sources proposed.⁸⁴ In New York State, water withdrawal permitting is required pursuant to Environmental Conservation Law § 15-1501, and it is regulated under 6 NYCRR Part 601 by NYSDEC. However, the Applicant may attempt to escape water withdrawal permitting in New

⁸¹ Resource Report 2 at 2-48. Hydrostatic testing is used to verify the structural integrity of constructed pipeline segments by capping pipeline segments with test manifolds and then filling the capped segments with water. The water is then pressurized to at or above the maximum allowable operating pressure of the pipeline and held for a number of hours. Significant loss of pressure indicates leakage and that the pipeline needs to be repaired and retested prior to being put into service. *See* NY Envtl. Construction Plan at 123.

⁸² The Applicant notes that "[u]pon completion of the hydrostatic tests, the wastewater will be discharged to an upland area." Resource Report 2 at 2-49.

⁸³ *Id.* at 2-48.

⁸⁴ *Id.* at 2-49 to 2-50.

York pursuant to 6 NYCRR § 601.9—permit exemptions. Under this regulation, temporary water withdrawals for hydrostatic testing are exempt from permitting “where the volume withdrawn is less than an average of 100,000 gallons per day in any consecutive thirty-day consecutive period (3 million gallons during a 30 day period).”⁸⁵

NYSDEC, in its scoping comments for the Project, recommended that the Applicant “ensure that water withdrawals less than 100,000 [gallons per day] do not compromise the required bypass flow (the minimum stream flow at any particular stream point necessary to protect fisheries resources).”⁸⁶ The Applicant has failed to comply with NYSDEC’s recommendation, and has failed to propose such procedures to maintain stream flow. Excessive water withdrawals could prove fatal to ecological functions and wildlife. For example, the combination of reduced stream flow and lack of shading can elevate water temperature beyond the limit that native species can tolerate.⁸⁷ Thus, all withdrawals must be designed to preserve stream flow rates required for ecological productivity and to ensure availability of volumes for downstream withdrawals. In order to fully assess whether water withdrawals for the Project will be conducted pursuant to state requirements, the Applicant must provide daily timetables including respective volumes for its proposed withdrawals.

Potential impacts to water quality may also result from the handling of hydrostatic testing wastewater discharges. While the Applicant plans to mitigate the volume of hydrostatic test water required by transferring the used test water from one test segment to the next, this plan comes with additional environmental concerns. By recycling the hydrostatic test water among various test sections, it is unclear whether the discharged water would be returned to the same waterbody or would be discharged to a different waterbody. The Project merely proposes to return hydrostatic test water to “the same watershed(s) from which they were collected, *where possible*.”⁸⁸ The discharge of hydrostatic testing wastewater to a different waterbody could lead to adverse environmental impacts that must be evaluated.

Finally, the use of additives during the hydrostatic testing processes must be prohibited. Although the Applicant “does not anticipate the use of any additives within the hydrostatic test water at this time,”⁸⁹ this statement is not reassuring. The Applicant also claims it will not use “anti-freeze or additives to reduce test water’s freezing point” during hydrostatic testing in winter,⁹⁰ but this use must be affirmatively prohibited in order to effectively protect water quality. FERC may find instructive Michigan’s and Texas’ general permits authorizing discharges of hydrostatic test water, both of which prohibit the discharge of additives, including

⁸⁵ 6 NYCRR § 601.9(o).

⁸⁶ NYSDEC, Comments on the Scope of Environmental Impact Statement for the Constitution Pipeline Project (Nov. 7, 2012), FERC Docket No. PF12-9-000.

⁸⁷ U.S. EPA, Stressor Identification Guidance Document 2-5 (Dec. 2000) *available at* <http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/biocriteria/upload/stressorid.pdf>.

⁸⁸ Constitution Pipeline Co., Environmental Report, Vol. II, Appendix J, New York Invasive Species Management Plan, at 3-3 (June 2013), FERC Docket No. CP13-499-000 (emphasis added).

⁸⁹ Resource Report 2 at 2-49.

⁹⁰ Constitution Pipeline Co., Environmental Report, Vol. II, App. J, Winter Construction Plan, at 7 (June 2013), FERC Docket No. CP13-499-000.

corrosion inhibitors, antifreeze compounds, and biocides.⁹¹ The discharge of hydrostatic wastewater laced with chemical additives has a significant potential to result in adverse environmental impacts to upland areas, waterbodies, and their associated ecosystems, and it therefore must be prohibited.

Stormwater Discharges

The Applicant's evaluation of surface water resources omits a significant potential source of water contamination from Project construction activities, as it fails to evaluate stormwater discharges. The potential impacts from stormwater discharges from the construction of both the pipeline and above-ground facilities may cause substantial water quality degradation, particularly given the extensive clearing and steep slope construction planned for the Project. A separate section analyzing potential stormwater impacts, along with the submission of a complete Stormwater Pollution Prevention Plan ("SWPPP") must be included in the EIS. Without this information, FERC will be unable to understand and evaluate all of the Project's expected adverse environmental impacts to water resources.

Stormwater runoff from construction activities has the potential to significantly damage surface water resources. When construction activities remove vegetation and expose soils, forest canopies no longer intercept stormwater and root systems no longer hold soils in place. Stormwater runoff from construction sites may carry pollutants—such as debris, oil and other contaminants from equipment, and any herbicides used for vegetation clearing or right-of-way maintenance—from the Project site to downstream wetlands, streams, and other waterbodies.⁹² Construction site runoff can also erode exposed soils and transport sediment to receiving waters.⁹³ Pipeline construction results in significant soil compaction along the length of the right-of-way, which increases the volume of runoff impacted surface and groundwater systems. Long-term changes in hydrology and surface drainage patterns may also result from construction activities, particularly in areas such as steep slopes, where changes in ground cover and topography can increase stormwater runoff, reduce the ability of natural systems to filter pollutants, and permanently alter drainage patterns.⁹⁴ These impacts are exacerbated by poor but common pipeline construction practices, in which the entire trench is left open or long stretches

⁹¹ See Michigan Dep't of Natural Res. & Env't, Water Bureau, Groundwater Discharge Gen. Permit No. 2215-10-8, at 3, *available at* http://www.michigan.gov/documents/deq/wb-gw-Rule2215-10-Hydrostatic_317311_7.pdf ("The discharge shall only consist of hydrostatic pressure test water, *with no additives*, on new pipelines and new tanks.") (emphasis added); Texas Comm'n on Env'tl. Quality, TPDES General Permit No. TXG670000 Relating to Discharges of Hydrostatic Test Water, at 6, *available at* <http://www.tceq.texas.gov/assets/public/permitting/wastewater/general/txg670000.pdf> ("This general permit regulates the discharge of water resulting from a hydrostatic test of a vessel into or adjacent to water in the state from: [. . .] Existing vessels that contain . . . raw or portable water, where the water used for hydrostatic tests *does not contain corrosion inhibitors, antifreeze compounds, biocides, or other chemical additives* (except chlorine or tracer dyes).") (emphasis added).

⁹² U.S. EPA, Stormwater Discharges from Construction Activities, <http://cfpub.epa.gov/npdes/stormwater/const.cfm> (last visited July 11, 2013).

⁹³ U.S. EPA, Construction Site Management Measure III. Construction Activities, <http://water.epa.gov/polwaste/nps/czara/ch4-3a.cfm> (last visited July 11, 2013).

⁹⁴ NYSDEC, New York Standards and Specifications for Erosion and Sediment Controls, 1.3 (Aug. 2005), *available at* www.dec.ny.gov/docs/water_pdf/bluebook.pdf.

are excavated at the same time, instead phasing excavation and closing each segment before a new one is opened.

The Applicant recognizes that stormwater impacts from construction activities need to be controlled, referencing “stormwater management measures”⁹⁵ and “stormwater management facilities.”⁹⁶ However, the Applicant fails to provide details or analyze the potential negative impacts to water quality that may result from stormwater discharges. Given the 122-mile length of the Project, the forest and vegetation clearing that will be required for right-of-way construction and maintenance, and the extensive steep slope crossings planned—more than 16 miles over slopes from 15% to 30% grade and more than 3 miles over slopes greater than 30% grade⁹⁷—the Project has the potential to cause significant stormwater discharges, substantially altering surface drainage patterns and increasing pollutant runoff. These potential impacts, including the identification of water resources likely to be affected and proposed mitigation measures, must be fully evaluated.

As part of a comprehensive evaluation of the expected impacts from Project stormwater discharges, the Applicant must prepare and submit a complete SWPPP. Contrary to the Applicant’s assertion,⁹⁸ an Environmental Construction Plan is not a substitute for preparation of a SWPPP, which focuses specifically on detailed stormwater evaluation and control measures. As noted by NYSDEC, a SWPPP “must be included as an appendix to the draft EIS, describing the proposed erosion and sediment control practices and, where required, post-construction stormwater management practices, that will be used and constructed to reduce the pollutants in stormwater discharges.”⁹⁹ The Applicant should also describe how the pipeline construction schedule will be phased to coordinate with control measures contained in the SWPPP,¹⁰⁰ and should consider alternative construction practices that can be used to avoid or reverse soil compaction and thereby prevent runoff volume.

C. Air Quality Impacts

The Application concludes that no long-term air quality impacts will result from the Project “because emissions are associated with the construction phase of the Project only” and “only minor air emissions will be associated with the operation of the Project.”¹⁰¹ However, the Applicant reaches this conclusion by discounting two significant sources of air emissions: the

⁹⁵ Constitution Pipeline Co., Environmental Report, Resource Report No. 7: Soils, at 7-104 (June 2013), FERC Docket No. CP13-499-000.

⁹⁶ NY Env'tl. Construction Plan at 12.

⁹⁷ Resource Report 1, Tables 1.3-2a and 1.3-2b, at 1-24–1-37.

⁹⁸ NY Env'tl. Construction Plan at 46.

⁹⁹ NYSDEC, Comments on the Scope of Environmental Impact Statement for the Constitution Pipeline Project 2 (Nov. 7, 2012), FERC Docket No. PF12-9-000; *see also* NYSDEC, Preliminary Comments 1–2 (Mar. 29, 2013), FERC Docket No. PF12-9-000.

¹⁰⁰ NYSDEC, Comments on the Scope of Environmental Impact Statement for the Constitution Pipeline Project 2–3 (Nov. 7, 2012), FERC Docket No. PF12-9-000.

¹⁰¹ Constitution Pipeline Co., Environmental Report, Resource Report No. 9: Air and Noise Quality at 9-3 (June 2013), FERC Docket No. CP13-499-000.

compressor stations at each end of the pipeline.¹⁰² FERC recently issued a Notice of Intent to Prepare an EIS for the compressor station at the eastern terminus of the pipeline—the Wright Interconnect Project (“WIP”).¹⁰³ The EIS must analyze fully the air quality impacts associated with the WIP, the components of which include two 10,900-horsepower compressors, natural gas coolers, gas filters, and an emergency generator, as well as the cumulative impact of those effects when considered with the effects of the existing Iroquois Wright Compressor Station. In addition, the EIS must analyze the effects of the Williams Central Compressor Station, located at the Pennsylvania end of the pipeline. Irrespective of whether that facility is considered by FERC to be within its jurisdiction, the air emissions that it will generate in service of the Project will affect the same communities that will bear the other impacts of the Project.

In addition to the direct effect of the Project on air quality, the EIS also must examine the incremental impact of the Project on air quality, when added to the air quality impacts of existing and reasonably foreseeable Marcellus Shale development in the region, including well development and the construction and operation of other pipelines and compressor stations.

Criteria and Toxic Air Pollutants

Natural gas and oil production and transmission emit substantial amounts of air pollutants, including VOCs, NO_x, sulfur dioxide (“SO₂”), hydrogen sulfide (“H₂S”), particulate matter (“PM₁₀” and “PM_{2.5}”), and hazardous air pollutants, including: benzene, a known carcinogen; toluene, n-hexane, and xylenes, which can lead to nervous system effects; and ethylbenzene, which can cause blood disorders.¹⁰⁴ Recent tests suggest that compressor stations also may emit harmful levels of formaldehyde, another known carcinogen.¹⁰⁵ VOCs and NO_x contribute to local and regional ozone pollution, which has serious impacts on respiratory and cardiovascular health as well as on vegetation and forest ecosystems.¹⁰⁶ Particulate matter, whether directly emitted from exhaust and fugitive dust during construction or from operation of diesel-fired engines or indirectly created from interactions of NO_x emissions in the atmosphere, also affects respiratory and cardiovascular health.¹⁰⁷

There is strong evidence that emissions from natural gas production are higher than has been commonly understood. In particular, a recent study by a consortium of researchers led by the NOAA Earth System Research Laboratory observed pollution concentrations near gas fields and recorded levels substantially greater than EPA estimates have predicted. The NOAA study

¹⁰² *Id.* at 9-7 (“[N]o compressors, dehydrators, line heaters, or other emissions-generating combustion equipment is proposed as part of the Project.”).

¹⁰³ FERC, Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Wright Interconnect Project and Request for Comments on Environmental Issues (July 10, 2013), FERC Docket No. CP13-502-000.

¹⁰⁴ *See* Armendariz, *supra* note 8, at 24.

¹⁰⁵ *See* Aman Batheja, *Carcinogen from gas compressor stations being monitored*, Star-Telegram, Oct. 4, 2010, at <http://www.star-telegram.com/2010/10/03/2516374/formaldehyde-from-gas-compressor.html>.

¹⁰⁶ *See* National Ambient Air Quality Standards for Ozone, 75 Fed. Reg. 2,938, 2,938, 3,000 (Jan. 19, 2010); *see also* Judy Fahys, *Ozone Raises Its Ugly Head in Utah*, Salt Lake Tribune, Oct. 21, 2010, at <http://www.sltrib.com/sltrib/home/50516943-76/ozone-county-basin-epa.html.csp>.

¹⁰⁷ U.S. EPA, *Particulate Matter: Health and Environment*, <http://www.epa.gov/pm/health.html> (last visited Oct. 25, 2010).

monitored air quality around oil and gas fields.¹⁰⁸ The researchers observed high levels of methane, propane, benzene, and other VOCs in the air around the fields. According to the study authors, their “analysis suggests that the emissions of the species we measured”—that is, the cancer-causing, smog-forming, and climate-disrupting pollutants released from these operations—“are most likely underestimated in current inventories,” perhaps by as much as a factor of two.¹⁰⁹

These emissions have dire practical consequences. A second research team, led by the Colorado School of Public Health, measured benzene and other pollutants released from unconventional well completions.¹¹⁰ Elevated levels of these pollutants correspond to increased cancer risks for people living within half of a mile of a well¹¹¹—a very large population which will increase as drilling expands.

An examination of 2009 emissions data shows that in north-central Texas, VOCs and NOx emissions from compressor engines in the Barnett Shale area amounted to four times the emissions from all airports in the Dallas-Fort Worth area,¹¹² which includes the Dallas-Fort Worth International Airport, one of the busiest airports in the world. 2009 NOx and VOC emissions from Barnett Shale oil and gas development generally were comparable to emissions from all the cars and trucks in the nine-county Dallas-Fort Worth metropolitan area.¹¹³ These figures suggest that any legally sufficient EIS for infrastructure development in the Marcellus Shale region must consider the cumulative impacts of all oil and gas development in the area in order to truly comprehend the Project’s effect on the quality of the human environment.

Greenhouse Gases

In addition to the Project’s toxic air pollution, the EIS also should examine the Project’s direct and indirect GHG emissions, as well as the cumulative impact of those emissions and the GHG emissions of other pipeline projects and gas development activities in the region. GHG pollution is a potent local, regional, and national threat to public health and welfare, as the U.S. EPA has acknowledged.¹¹⁴ GHG emissions will increase global warming, harming both the local and global environments. The impacts of global warming include “increased air and ocean temperatures, changes in precipitation patterns, melting and thawing of global glaciers and ice, increasingly severe weather events, such as hurricanes of greater intensity, and sea level rise.”¹¹⁵

¹⁰⁸ G. Petron et al., *Hydrocarbon Emissions Characterization in the Colorado Front Range: A Pilot Study*, 117 J. of Geophysical Research 4304 (2012).

¹⁰⁹ *Id.* at 4304.

¹¹⁰ L. McKenzie et al., *Human Health Risk Assessment of Air Emissions from Development of Unconventional Natural Gas Resources*, Science of the Total Environment (In Press, Mar. 22, 2012).

¹¹¹ *Id.* at 2.

¹¹² See Armendariz, *supra* note 8, at 25.

¹¹³ *Id.*

¹¹⁴ U.S. EPA, Overview of Greenhouse Gases, <http://www.epa.gov/climatechange/ghgemissions/gases.html> (last visited July 16, 2013).

¹¹⁵ Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 76 Fed. Reg. at 52,738, 52,791-22 (citing U.S. EPA, 2011 U.S. Greenhouse Gas Inventory Report Executive Summary (2011)).

A warming climate also will lead to loss of coastal land in densely populated areas, shrinking snowpack in Western states, increased wildfires, and reduced crop yields.¹¹⁶ More frequent heat waves as a result of global warming already have affected public health, leading to premature deaths, and threats to public health are expected only to increase as global warming intensifies. For example, a warming climate will lead to increased incidence of respiratory and infectious disease, greater air and water pollution, increased malnutrition, and greater casualties from fire, storms, and floods.¹¹⁷ Vulnerable populations—such as children, the elderly, and those with existing health problems—are the most at risk from these threats.

Direct GHG emissions may include, but are not limited to, CO₂ and N₂O from compressor engines, line heaters, and generators; fugitive methane emissions from compressors and pipelines;¹¹⁸ and black carbon¹¹⁹ emissions from diesel vehicles and equipment. A recent study estimates that between 3.6 and 7.9% of the total methane produced by a given well drilled into a shale formation for hydraulic fracturing over the course of its lifetime will escape into the atmosphere.¹²⁰ Notably, methane is estimated to have between a 33- and a 105-times-higher global warming potential than CO₂ over a hundred or twenty year period, respectively.¹²¹ U.S. EPA estimates that N₂O is 310 times more warming than CO₂,¹²² while black carbon is estimated to be 2,200 times more warming than CO₂ over the same period.¹²³ The Barnett Shale study reported that total 2009 GHG emissions for development of that formation were equivalent to the annual emissions from two 750-megawatt coal-fired power plants.¹²⁴ The equivalent figures for the Marcellus Shale, which represents 55 percent of technically recoverable natural gas in the United States compared to Barnett Shale's six percent, will dwarf these emissions.¹²⁵

¹¹⁶ *Id.* at 66,532–33.

¹¹⁷ U.S. EPA, Climate Change, Health and Environmental Effects, <http://epa.gov/climatechange/effects/health.html>.

¹¹⁸ “The U.S. natural gas transmission network contains more than 279,000 pipeline miles. Along this network, compressor stations are one of the largest sources of fugitive emissions, producing an estimated 50.7 billion cubic feet (Bcf) of methane emissions annually from leaking compressors and other equipment components such as valves, flanges, connections, and open-ended lines.” U.S. EPA, Lessons Learned from Natural Gas STAR Partners 1, available at http://www.epa.gov/gasstar/documents/ll_dimcompstat.pdf.

¹¹⁹ Black carbon, also known as soot, is a component of particulate matter that is formed by the incomplete combustion of fossil fuels, biofuels, and biomass. Black carbon can absorb a million times more energy than CO₂, making it the second-leading cause of global warming after CO₂. See U.S. EPA, Black Carbon, <http://epa.gov/blackcarbon/basic.html> (last visited July 16, 2013).

¹²⁰ Robert W. Howarth, Renee Santoro, Anthony Ingraffea, *Methane and the Greenhouse-Gas Footprint of Natural Gas from Shale Formations*, Climatic Change, 5 (2011), available at <http://www.sustainablefuture.cornell.edu/news/attachments/Howarth-EtAl-2011.pdf>.

¹²¹ *Id.* at 7.

¹²² U.S. EPA, Overview of Greenhouse Gases: Nitrous Oxide Emissions, <http://epa.gov/climatechange/ghgemissions/gases/n2o.html> (last visited July, 11, 2013).

¹²³ See L. Bruce Hill, Clean Air Task Force, The Carbon Dioxide-Equivalent Benefits of Reducing Black Carbon Emissions from U.S. Class 8 Trucks Using Diesel Particulate Filters: A Preliminary Analysis 3 (2009), available at <http://www.catf.us/resources/publications/files/CATF-BC-DPF-Climate.pdf>.

¹²⁴ *Id.*

¹²⁵ U.S. EIA, *Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays*, 4 (2011), available at <ftp://ftp.eia.doe.gov/natgas/usshaleplays.pdf>.

Indirect emissions, “which are caused by the [proposed] action and are later in time or farther removed in distance, but are still reasonably foreseeable,” 40 C.F.R. § 1508.8(b), are among the effects that agencies are required to consider under NEPA. *See id.* § 1508.25(c). The Council on Environmental Quality (“CEQ”) Draft Guidance notes that “for Federal actions that require an EA or EIS *the direct and indirect GHG emissions from the action should be considered in scoping,*” and these GHG impacts should be considered in the context of the “aggregate effects of past, present, and reasonably foreseeable future actions.”¹²⁶ One indirect effect of the Project’s transportation of natural gas from the Marcellus Shale is that this gas will be combusted for use, releasing additional GHGs that cause climate change. This effect is not only reasonably foreseeable, it is certain. Where CEQ has called for NEPA analyses of GHG sources to “take account of all phases and elements of the proposed action over its expected life,”¹²⁷ such certain downstream effects of a gas pipeline should be assessed. Moreover, cumulative impact analysis requires that these GHG emissions be considered in the context of GHGs emitted from gas wells and other infrastructure that already exists and will foreseeably be operating in the Marcellus Shale region crossed by the Project.

D. Forest Fragmentation

Watersheds and Other Ecosystem Services

One serious effect of pipeline and compressor facility construction in the development of the Marcellus Shale is the destruction and fragmentation of forests that protect watersheds, which in turn provide clean drinking water to the people of Pennsylvania and New York. As the U.S. Department of Agriculture (“USDA”) has noted, “forests are the crucial first barrier for source water protection” and “are critically important to the supply of clean drinking water in the Northeast.”¹²⁸ By holding and filtering water, while regulating its downstream flow and absorbing rain, which replenishes groundwater and prevents flooding, forests provide irreplaceable services. In fact, two-thirds of the clean water supply in this country is stream water from precipitation that is filtered through forests, and the value of national forest water to humans has been estimated to exceed \$27 billion per year.¹²⁹ The USDA consequently views the protection and management of forests in source watersheds as “essential parts of future strategies for providing clean, safe drinking water that citizens can afford.”¹³⁰

¹²⁶ CEQ, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions 5, 9-10 (Feb. 18, 2010) (emphasis added), *available at* http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf (notice of availability published at 75 Fed. Reg. 8,046 (Feb. 23, 2010)).

¹²⁷ *Id.* at 5.

¹²⁸ *See* Martina C. Barnes et al., USDA, Forests, Water and People: Drinking water supply and forest lands in the Northeast and Midwest United States vi, 2 (2009) (hereinafter “USDA Northeast Report”), *available at* http://na.fs.fed.us/pubs/misc/watersupply/forests_water_people_watersupply.pdf.

¹²⁹ *See* Robert A. Smail & David J. Lewis, USDA, Forest Land Conversion, Ecosystem Services, and Economic Issues for Policy: A Review 11–12 (2009), *available at* <http://www.fs.fed.us/openspace/fote/pnw-gtr797.pdf>.

¹³⁰ *See* USDA Northeast Report at 2.

In Pennsylvania and New York, in particular, it is critical that development proceed with a careful eye to the impacts on forests and watersheds.¹³¹ The Upper Susquehanna watershed, which serves each of the counties affected by the Project, provides surface drinking water to 77,412 consumers in New York and Pennsylvania.¹³² An EIS that examines only the direct impacts of the Project on these watersheds and on drinking water resources, and not the incremental impact of the Project, added to other past, present, and reasonably foreseeable future actions in developing the Marcellus Shale, would fail to properly determine the actual impact of the Project on “the quality of the human environment,” 42 U.S.C. § 4332(2)(C), and would fail to comply with NEPA, 40 C.F.R. §§ 1508.7-8.

In addition, the reduction of foliage associated with clearing trees and other vegetation near stream banks increases stream temperatures and reduces suitability for fish incubation, rearing, foraging, and escape habitat. The loss of vegetation also makes the stream more susceptible to erosion events, as the natural barrier along the stream bank has been removed. Deposited sediment from construction activities can fill in the interstitial spaces of the streambed, changing its porosity and composition, and thereby increasing embeddedness and reducing riffle area and quality.¹³³ Furthermore, deposited sediment has the potential to fill in pool areas and reduce stream depth downstream of the construction area.¹³⁴

The pipeline and its permanent 50-foot-wide right-of-way will cross floodplains and flood hazard zones. While the Application identifies practices to be employed to protect against the impacts of rain events to areas located within floodplains, it fails to analyze the severe risk presented by clear-cutting of existing forests crucial to adequate flood control. The extreme weather events of the last few years, and the extreme events predicted as a result of climate change, amplify the need for a full analysis of such impacts in the EIS. In addition, all plans for stream crossings and construction on steep slopes should be carefully examined to ensure that they adequately address the high likelihood of future storms.

Bat Habitat

Beyond degrading the quality of watersheds, forest fragmentation also affects wildlife. The Applicant acknowledges that permanent impacts to wildlife are “those associated with the conversion of forest habitats to open or scrub-shrub areas because of construction and maintenance of the permanent [right-of-way].”¹³⁵ These long-term adverse impacts are significant because the Project is within the geographic range of at least one species listed as

¹³¹ See USDA, *Forests, Water and People: Drinking water supply and forest lands in Pennsylvania 2* (2009), available at http://www.na.fs.fed.us/watershed/factsheets/fwap/FWAP_state_sheet_PA.pdf; http://www.na.fs.fed.us/watershed/factsheets/fwap/FWAP_state_sheet_NY.pdf.

¹³² *Id.* at 3.

¹³³ Canadian Association of Petroleum Producers, Canadian Energy Pipeline Association, and Canadian Gas Association, *Pipeline Associated Water Crossings*, Prepared by TERA Environmental Consultants and Salmo Consulting, Inc. 235–51 (2005).

¹³⁴ James Norman, et al., *Utility Stream Crossing Policy*, ETOWAH Aquatic Habitat Conservation Plan 10 (July 13, 2008).

¹³⁵ Constitution Pipeline Co., Environmental Report, Resource Report No. 3: Fish, Wildlife, and Vegetation, at 3-51 (June 2013), FERC Docket No. CP13-499-000 (hereinafter “Resource Report 3”).

“endangered” pursuant to the federal Endangered Species Act (“ESA”), 16 U.S.C. §§ 1531-99¹³⁶—the Indiana bat. The Application details the mist net surveys that were conducted to assess the Project area for the presence of Indiana bats. However, those surveys were conducted in accordance with outdated protocols that the U.S. FWS has since revised in order to improve the process by which surveyors determine whether bats are present.¹³⁷ Accordingly, the Project area should be re-surveyed using the updated protocol to ensure that any bats that may be harmed by Project construction are accounted for and adequately protected.

The failure to adequately survey is particularly troubling, given the difficulty with which Indiana bats are detected in a specific area. It is well-documented that the inherently small population size of an endangered species generally results in small survey sample sizes and low detection probabilities. This is especially true for the Indiana bat, a small nocturnal species, the habitat of which varies seasonally and by sex, which has proved difficult to capture. U.S. FWS acknowledges the difficulty of detecting Indiana bats: “Although capture of bats confirms their presence, failure to catch bats does not absolutely confirm their absence.”¹³⁸ Indeed, species may be present but undetected. *See, e.g., Heartwood, Inc. v. U.S. Forest Serv.*, 380 F.3d 428, 435 (8th Cir. 2004) (Indiana bat maternity colony was found in area where four years of mist-netting had captured no Indiana bats, thus demonstrating “how difficult it is to find Indiana bats even with nearby surveys and mist-netting”). Thus, an assessment of the effects on Indiana bats that may result from the Project must include comprehensive surveys that utilize the most up-to-date methodologies throughout the entire Project area.

In addition to the endangered Indiana bat, the habitat of other bat species that live in the region may be harmed by Project construction. The bat species that inhabit northeastern Pennsylvania and southern New York consume relatively large volumes of insects across extensive foraging home ranges and, thus, play a major role in suppressing nocturnal insect populations.¹³⁹ It is estimated that bats save U.S. farmers between \$3.7 and \$53 billion each year in pesticide use.¹⁴⁰

In recent years, populations of North American bats, particularly in the northeast, have suffered steep declines. Millions of bat fatalities have been attributed to White-nose Syndrome (“WNS”). Recent studies have estimated an 88% decrease in the total number of hibernating bats, with 98%, 91% and 72% declines in hibernating northern long-eared, little brown bats, and

¹³⁶ The ESA requires that FERC ensure that the Project “is not likely to jeopardize the continued existence of any endangered species . . . or result in the destruction or adverse modification of [critical] habitat of such species.” 16 U.S.C. § 1536(a)(2).

¹³⁷ U.S. FWS, 2013 Revised Range-Wide Indiana Bat Summer Survey Guidelines (May 2013), *available at* <http://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/FinalRevised2013IndianaBatSummerSurveyGuidelines5May2013.pdf>.

¹³⁸ U.S. FWS, Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision 252 (Apr. 2007), *available at* <http://www.fws.gov/northeast/nyfo/es/IndianaBatapr07.pdf>.

¹³⁹ Bat Conservation Int’l, Impacts of Shale Gas Development on Bat Populations in the Northeastern United States 6 (June 2012), *available at* http://www.delawareriverkeeper.org/resources/Reports/Impacts_of_Shale_Gas_Development_on_Bats.pdf.

¹⁴⁰ *Id.*

Indiana bats, respectively,¹⁴¹ and have concluded that these perilous population declines are exacerbated by the additive nature of both WNS and numerous human-induced environmental stressors, possibly including shale gas development.¹⁴² Given the fact that the Applicant’s preliminary mist net surveys resulted in the capture of northern long-eared and silver-haired bats big brown bats, further analysis of bat populations and habitat in the vicinity of the Project should be undertaken and the mitigation measures necessary to avoid adverse impacts to individual species and potential habitat should be adopted.

Migratory and Resident Bird Habitat

While the Application acknowledges that “[t]he most significant potential indirect impact associated with construction and operation of the Project is the fragmentation of contiguous forest blocks that may provide suitable breeding habitat for interior nesting species,”¹⁴³ it dismisses such impacts and concludes that “Constitution does not anticipate adverse impacts to migratory bird populations as a result of Project construction and operation.”¹⁴⁴ Such conclusion is unsupported by the facts presented in the Application itself.

The landscape through which the Project will cut contains large blocks of relatively unbroken forest, including designated Important Bird Areas (“IBAs”) which provide essential habitat for migratory and other bird species. The Application documents over 300 interior forested tracts that will be bisected permanently by the pipeline corridor. These sections range from a few feet to nearly a mile, with the length of many segments extending from 0.1 to 0.5 miles. However, the calculations of impacted areas of forest presented in the Application can be misleading. Although the total square footage of these areas may appear small, their deep linear intrusion into previously undisturbed forest magnifies the negative effects of the corridor on birds. Clearings as narrow as 26 feet are sufficient to allow access to bird predators and nest parasites.

Construction of the pipeline will be the largest single act of forest fragmentation in the region. A review of the maps of the proposed pipeline route indicates that it follows ridge tops in many areas, and crosses steep slopes in others. These areas are largely undisturbed woodland due to elevation and inaccessibility. Most flatter and lower land in the region has been deforested for agriculture and other development. The importance of the remaining intact forests to birds cannot be overstated.

The forested areas that will be affected by Project construction and maintenance of the permanent 50-foot right-of-way represent much of the breeding habitat for many species of neotropical migrant birds, as well as resident woodland birds, in the region—most of which are in decline and a number of which are considered at risk. The U.S. Geologic Survey’s Breeding

¹⁴¹ *Id.* at 7.

¹⁴² *Id.*

¹⁴³ Resource Report 3 at 3-93.

¹⁴⁴ *Id.* at 3-52.

Bird Survey¹⁴⁵—the longest and most consistent study of breeding bird populations—documents significant downward trends in interior forest birds over the past 45 years. In New York State, these include average annual declines of 1.6% for Eastern Wood-Pewee; 3.3% for Wood Thrush; 1.9% for Veery; 1.2 % for Black-throated Blue Warbler; and 1.3% for Scarlet Tanager. Numerous other species show similar declines.

Each of these species inhabits the woodlands to be impacted by the Project and each requires large unbroken forest tracts for successful breeding. Nest sites near forest edges, such as those created by utility rights-of-way, have a high rate of predation from animals using the edges, and from Brown-headed Cowbirds, a nest parasite that deposits eggs in the host birds' nest.¹⁴⁶ A 1988 study of forest fragmentation resembling that proposed by the Applicant suggests that an “influx of predators from nearby habitats may be responsible for much of the nest predation in forest fragments.”¹⁴⁷ The 50-foot permanent right-of-way width proposed for the pipeline is more than enough to allow access to bird nest parasites and predators.¹⁴⁸ The construction right-of-way in uplands will clear an additional 60 feet of land, creating a temporary, but long-lasting, clearing of 110 feet.

Given the well-documented links between forest fragmentation, such as that created by utility corridors, impacts to forest bird breeding success, and resulting population declines, the Applicant's conclusion that the Project will have no adverse impacts on bird populations must be rejected, and the Commission should reach its own determination about the effects of the Project on migratory and forest-dwelling bird populations.

While the Applicant acknowledges that “[w]hen contiguous forested areas become fragmented, the areas that once functioned as interior habitat are converted to forest edges,” which “provide access to avian and mammalian predators that eat bird eggs or young and expose nests to brood parasites,”¹⁴⁹ it downplays the impacts of such conversion on bird populations pointing instead to supposed benefits to certain species.¹⁵⁰ Edge effects are detrimental to the success of interior forest species even at some distance from the land disturbance, creating disproportionate impacts when new infrastructure is sited to transect rather than skirt intact forest

¹⁴⁵ Sauer, J. R., et al., *The North American Breeding Bird Survey, Results and Analysis 1966–2011* (2012), USGS Patuxent Wildlife Research Center, Laurel, MD, available at <http://www.mbr-pwrc.usgs.gov/bbs/>.

¹⁴⁶ Rosenberg, K.V., et al., *A land manager's guide to improving habitat for scarlet tanagers and other forest-interior birds* (1999), The Cornell Lab of Ornithology, available at <http://birds.cornell.edu/conservation/tanager/tanager.pdf> (“As mature forests become fragmented, less habitat is available for breeding birds, and a variety of factors, such as increased brood parasitism and nest predation, result in lower reproductive success in the habitat that remain.”).

¹⁴⁷ Small, M.F. and M.L. Hunter, *Forest fragmentation and avian nest predation in forested landscapes* (1988), *Oecologia* 76:62–64, available at <http://www.deepdyve.com/lp/springer-journals/forest-fragmentation-and-avian-nest-predation-in-forested-landscapes-iYrcknojPs/1>.

¹⁴⁸ Rich, A. C., et al., *Defining Forest Fragmentation by Corridor Width: The Influence of Narrow Forest-Dividing Corridors on Forest-Nesting Birds in Southern New Jersey* (1994), *Conservation Biology*, 8: 1109–1121, available at <http://onlinelibrary.wiley.com/doi/10.1046/j.1523-1739.1994.08041109.x/abstract> (finding a “surprisingly high abundances of cowbirds associated with narrow forest-dividing corridors, especially those with mowed grass. Corridor widths as narrow as 8 meters (26 ft.) produce forest fragmentation effects in part by attracting cowbirds and nest predators to corridors and adjacent forest interiors.”).

¹⁴⁹ Resource Report 3 at 3-53.

¹⁵⁰ *Id.* at 3-33–3-34.

blocks. Recent research into impacts from gas industry activity in Pennsylvania documented that negative effects on forest canopy nesting species extend further in to the surrounding forest than did visible changes in the vegetative structure, indicating that edge effects to avian communities may be more extensive than evident edge effects in the vegetative communities.¹⁵¹ This empirical evidence of a broader impact footprint on migratory birds than forest structure certainly indicates that computations of impact must extend well beyond the cleared right-of-way area. Thus, the Commission's EIS should include an examination of indirect impacts to bird populations due to edge effects, which should be expected to be significant for forestdwelling bird species.

In addition, the list of bird species of conservation concern included in the Application does not reflect the current status of birds considered in need of management action or planning. Partners in Flight, a cooperative effort of federal, state and local government agencies, foundations, and individuals interested in the conservation of birds not covered by existing conservation initiatives, has conducted a comprehensive analysis of the regional and continental status of bird species and established a ranking of priority species.¹⁵² The database identifies a number of species of concern not considered in the Application, including: Broad-winged Hawk; Downy Woodpecker; Pileated Woodpecker; Eastern Wood-Pewee; Acadian Flycatcher; Red-eyed Vireo; Cedar Waxwing; Scarlet Tanager; Summer Tanager; Yellow-throated Vireo; White-breasted Nuthatch; Louisiana Waterthrush; Black-and-White Warbler; and Hooded Warbler. These species and the risk to their habitat from Project construction should be included in FERC's analysis of Project impacts. In light of the incomplete assessment of the threats to migratory, forest-dwelling, and other bird species posed by the Project, the Commission should reject the Applicant's unsupported conclusions regarding such threats and should conduct a meaningful analysis of the magnitude and impacts of the Project's forest fragmentation on the full range of impacted species.

E. Threats to Community Safety

The Application indicates that the proposed pipeline route would run through U.S. Department of Transportation ("U.S. DOT")-designated Class 1, 2, and 3 areas. These classifications determine pipeline design standards with increasingly more stringent requirements as population density increases (Class 1 represents lowest density; Class 4 represents highest density). Despite the classification of most of the proposed pipeline route as Class 1 or Class 2 areas, the individuals living along the right-of-way deserve an assurance of safety from the real risks of pipeline rupture.

As identified by U.S. DOT's Pipeline and Hazardous Materials Safety Administration ("PHMSA"), there are serious concerns related to new pipeline construction and pipeline

¹⁵¹ Emily Thomas, "Effects of Oil and Gas Development on Songbird Abundance in the Eastern United States," presentation to the Cornell ForestConnect symposia (April 20, 2011), *available at* <http://breeze.cce.cornell.edu/p81735043/>.

¹⁵² Partners in Flight Science Committee, Species Assessment Database (2012), *available at* <http://rmbo.org/pifassessment> (last visited July 11, 2013).

safety.¹⁵³ Many of these concerns have been exacerbated by the flurry of activity connected to the rush to build gas pipelines resulting from a “boom time” mentality. This rush to build can increase pipeline risks of rupture due to the failure to follow important safety management process approaches, such as quality administration and quality control, especially during the very important pipeline construction lifecycle stage.

While the Application states that all pipe installed will be capable of withstanding the maximum allowable operating pressure required for a Class 3 area,¹⁵⁴ the Applicant has not committed to meeting other Class 3 safety requirements, such as distance between valves, inspection and testing of welds, and frequency of pipeline patrols and leak surveys. In order to minimize the risk of pipeline rupture, the Applicant should be required to meet Class 3 safety requirements along the entire length of the proposed pipeline route. The Commission’s EIS should include a full examination of the safety risks that will be borne by communities along the proposed pipeline route.

III. FERC Must Take a Hard Look at a Reasonable Range of Alternatives.

In preparing an EIS, agencies must “[r]igorously explore and objectively evaluate all reasonable alternatives” to a proposed action. 40 C.F.R. § 1502.14(a). Consideration of alternatives is “the heart of the environmental impact statement,” because it compels agencies to “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” *Id.* Fundamentally, an agency must “to the *fullest* extent possible . . . consider alternatives to its action which would reduce environmental damage.” *Calvert Cliffs’ Coordinating Comm., Inc. v. U.S. Atomic Energy Comm’n*, 449 F.2d 1109, 1128 (D.C. Cir. 1971) (emphasis in original). FERC’s environmental analysis of the Project therefore must contain a discussion of the “no-action” alternative and the environmental impacts of other reasonable alternatives to the Project, including alternatives that would avoid or mitigate the environmental impacts of the Project.

While the Application includes a brief section titled “No-action Alternative”, the discussion included therein is self-serving and conclusory. In order to fulfill its obligations under NEPA, the Commission must conduct an independent evaluation of the “no-action” alternative and not reject this option simply because it will not satisfy the Applicant’s bottom line. Likewise, the Applicant’s discussion of system alternatives—alternatives that would make use of other existing, modified, or proposed natural gas pipeline systems—and of co-locating the Project within, abutting, or parallel to an existing right-of-way lacks the rigor necessary to satisfy NEPA’s hard look standard. The alternatives analysis in the Commission’s EIS must identify any alternative that would not involve the greenfield development of a new gas infrastructure corridor through areas untouched by gas development or pipeline construction.

¹⁵³ PHMSA, Workshop on New Pipeline Construction, Docket ID No. PHMSA-2009-0060, *available at* www.regulations.gov.

¹⁵⁴ Constitution Pipeline Co., Resource Report No. 11: Reliability and Safety, at 11-4 (June 2013), FERC Docket No. CP13-499-000.

The Application presents various “Route Alternatives” and incorporates a number of these as part of its Primary Route. One of the alternatives that was developed but not incorporated is Alternative Route K—a route that is slightly shorter than the proposed Primary Route, but which would run through the New York City Watershed for almost 33 miles. The inclusion of this route has been criticized by commenters, including the New York City Department of Environmental Protection.¹⁵⁵ The construction of any portion of the Project through this vital resource, which serves as the primary drinking water source for almost half the population of New York State, is unacceptable. Accordingly, “Alternative Route K” should not be included as a potential route alternative in FERC’s consideration of a reasonable range of alternatives.

IV. The Project Will Not Serve the Public Interest or Public Convenience and Necessity.

Section 7 of the NGA, 15 U.S.C. §717f, and FERC’s Statement of Policy for Certification of New Interstate Natural Gas Pipeline Facilities, 88 FERC ¶ 61,227 (1999), clarified, 90 FERC ¶ 61,128 (2000), further clarified, 92 FERC ¶ 61,094 (2000) (“Certificate Policy Statement”), require the Commission to determine whether the Project facilities are “in the public interest” and whether the proposed pipeline is “required by the public convenience and necessity.” Specifically, the Certificate Policy requires the Commission to balance the alleged need for a project against the adverse impacts on affected landowners and the surrounding communities. 88 FERC ¶ 61,747. Stated simply, the Commission cannot approve a project unless it concludes that the project’s benefits outweigh its adverse impacts.

The Application fails to demonstrate that impacts on landowners have been mitigated or are outweighed by any alleged public benefits of the Project. In fact, the Application makes no attempt to even describe impacts that will be felt by landowners and the surrounding communities. Instead, it simply states that “every pipeline construction project will cause some short-term impacts to landowners. However, the proposed facilities were designed to minimize impacts on the community and the environment.”¹⁵⁶ The Application goes on to describe the Applicant’s public outreach efforts and its attempts to facilitate stakeholder communication, but includes no information on potential impacts to landowners and communities or how such impacts will be minimized. The Applicant all but ignores the fact that the Project has been met with staunch landowner and community opposition. While the Application acknowledges the Applicant’s inability to gain access to all parcels of land that require surveying in order to assess the Project’s environmental effects, it includes no assessment of the negative impact to landowners whose property would need to be condemned before surveys occur. Clearly, such negative impacts weigh against a finding that the Project serves the public interest.

Absent any examination of adverse impacts to landowners and surrounding communities, neither the Applicant nor the Commission is in a position to draw a conclusion as to whether the Project’s potential public benefits outweigh its potential adverse effects. While the Applicant would ignore consideration of any environmental impacts until after a determination on public

¹⁵⁵ NYCDEP, Letter to FERC re Request for Participation as a Cooperating Agency (Nov. 9, 2012), FERC Docket No. PF12-9-000.

¹⁵⁶ Constitution Pipeline Co., Application for Certificate of Public Convenience and Necessity 14 (June 13, 2013), FERC Docket No. CP13-499-000.

convenience and necessity is reached, the impacts to the water, air, and land in the five counties through which the Project would cut are real and will cause economic harms to the residents of those counties that must be included in the balancing of harms and benefits.

IV. CONCLUSION

For the reasons set forth above, we ask FERC to deny the Application. At the very least, we urge the Commission to conduct a comprehensive and thorough analysis of the Project and its environmental impact in compliance with NEPA. We appreciate the opportunity to submit these comments and look forward to further participation in this proceeding.

Respectfully submitted,



Bridget Lee
Earthjustice

*On behalf of Catskill Mountainkeeper,
Clean Air Council, Delaware-Otsego
Audubon Society, Delaware Riverkeeper
Network, and Sierra Club*



Misti Duvall
Riverkeeper, Inc.

On behalf of Riverkeeper, Inc.