

**THE COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD**

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October 16, 2015

BY ELECTRONIC FILING

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

Re: Tennessee Gas Pipeline Company, LLC, PF14-22-000

Dear Ms. Bose:

The Massachusetts Energy Facilities Siting Board (“Siting Board” or “EFSB”) appreciates the opportunity to comment on filings related to the Tennessee Gas Pipeline Company, LLC (“Tennessee,” “TGP,” or “Company”) Northeast Energy Direct Project (“NED” or “Project”) in the Federal Energy Regulatory Commission (“FERC” or “Commission”) proceeding PF14-22-000. These comments are intended to provide additional information to both FERC and Tennessee relative to the portion of the NED project that the Company is proposing to construct in Massachusetts. For each topic presented, the comments provide: (1) an introductory context; (2) a summary of the comments received by the Siting Board; and (3) recommendations of the Siting Board staff.

The Siting Board is an independent board of the Commonwealth of Massachusetts with a statutory mission to ensure a “reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.” G.L. c. 164, § 69H. The Siting Board is required by regulation at 980 C.M.R. § 7.07(9)(a) to conduct public information hearings and intervene at FERC when an interstate natural gas pipeline company applies to FERC to construct or modify pipeline facilities within Massachusetts. In addition, the Siting Board participates in the pre-filing phase of FERC proceedings in order to preserve the rights of interested residents of the Commonwealth, consistent with the Siting Board’s statutory and regulatory mandate.

Siting Board staff attended four public scoping meetings held by the Commission, in Pittsfield (July 28), Greenfield (July 29), Dracut (August 11), and Lunenburg (August 12). The Siting Board separately held public comment hearings in the same four communities during the

week of August 3, 2015. Siting Board staff also invited and received written comment from the public. Siting Board staff has monitored postings on the FERC website for NED and has participated in bi-weekly interagency telephone calls coordinated by FERC.

These comments reflect the Siting Board staff's understanding of the Project as it has developed during the Pre-Filing process, which commenced on September 15, 2014 and is now nearing its completion. The next step of the FERC review process would be the submission by Tennessee of a formal application to FERC for a Certificate of Public Convenience and Necessity. At the conclusion of the application review process, FERC will make its decision whether or not to approve the Project.

As referenced in Section I below, a recent Order issued by the Massachusetts Department of Public Utilities ("Department" or "DPU") has concluded that, in general, there is a need in Massachusetts for additional natural gas pipeline capacity to serve both gas and electric customers.¹ However, the Department also noted that all possible options should be considered in developing a solution to the natural gas capacity constraint issues facing Massachusetts. Recognizing that there are many issues and concerns about the Project yet to be addressed and resolved, such as its design, environmental impacts, choice of proposed route, and currently unsubscribed capacity, the Siting Board will remain actively engaged in this process to help ensure that these and other key issues are fully addressed. Accordingly, this letter neither endorses the Project, as currently proposed, nor rejects the possibility that it can ultimately be appropriately routed, designed, built, and operated in a manner that would warrant FERC approval – provided that all necessary environmental, economic, safety, and other regulatory requirements are satisfied.

Attached to these comments (in Appendix B) are additional comments of the Siting Board's sister agencies: The Massachusetts Department of Environmental Protection; the Massachusetts Department of Fish and Game; the Massachusetts Department of Agricultural Resources; and the Massachusetts Department of Conservation and Recreation. The staff of the Siting Board urges FERC and the Company to fully address these agencies' recommendations as well as those articulated in this letter.

I. INTRODUCTION

Tennessee proposes construction of the Project to expand its natural gas transmission pipeline network and facilities in Pennsylvania, New York, Connecticut, Massachusetts, and New Hampshire. FERC is reviewing the Project under its regulations in compliance with the Natural Gas Act ("NGA") and the National Environmental Policy Act ("NEPA").

The Commission issued a "Notice of Intent to Prepare an Environmental Impact Statement for the Planned Northeast Energy Direct Project, Request for Comments on

¹ See Order Determining Department Authority Under G.L. c. 164, § 94A, D.P.U. 15-37 (October 2, 2015).

Environmental Issues, and Notice of Public Scoping Meetings” (“Notice”) on June 30, 2015, in keeping with procedure at this stage of FERC project review. The Company, in accordance with FERC requirements, provided the Commission with a second draft of its Environmental Report (Resource Reports 1 through 13), on July 24, 2015.² Comments herein reflect the July 24, 2015 draft of the Company’s Environmental Report.

Tennessee has stated that it plans to submit an Environmental Notification Form (“ENF”) to the Massachusetts Environmental Policy Act Office (“MEPA”) regarding NED later this fall. MEPA staff will conduct scoping sessions after the ENF is filed to take comments on the ENF. MEPA expects that the Project will also require a mandatory Environmental Impact Report because of the size and scope of NED. As a result, MEPA expects that Tennessee will file both a Draft Environmental Impact Report and a Final Environmental Impact Report. The Draft and Final Environmental Impact Reports will be subject to a minimum 30-day comment period. The Secretary of the Massachusetts Executive Office of Energy and Environmental Affairs will issue Certificates following each submittal indicating whether the Draft and Final Environmental Impact Report adequately address MEPA requirements. The Certificates may also identify issues requiring further analysis. State agencies cannot issue any permits or licenses, and cannot grant any easements, until the MEPA process has been concluded.

Tennessee has also represented that it will seek permits from the MassDEP relating to water quality and air quality requirements. Other state agencies whose permits and approvals will be sought by Tennessee include: the Massachusetts Division of Fisheries and Wildlife, the Massachusetts Historical Commission, the Massachusetts Department of Transportation, and the state legislature for Article 97 land disposition, if an easement on state lands is sought (as proposed by Tennessee). In addition, Tennessee has committed to seek local approvals under the Massachusetts Wetlands Protection Act. This list is not exhaustive, and other permits, approvals, and authorizations from federal, state, and local authorities may also be necessary for construction and operation of NED.

A. Proposed Massachusetts Facilities

As of the Company’s July 24, 2015 filing, Tennessee proposes construction and operation of approximately 418 miles of natural gas transmission pipeline and associated facilities in Massachusetts, Pennsylvania, New York, New Hampshire, and Connecticut. The Company’s Project, as now proposed, would provide 1.3 billion cubic feet per day (“bcf/d”) of natural gas³

² Prior to submitting the second draft of its Environmental Report, the Company provided FERC with drafts of Resource Reports 1 and 10 for the Project on November 5, 2014, and a revised draft of Resource Report 1 on December 8, 2014. Tennessee filed the first draft of its Environmental Report (Resource Reports 1 through 13) with FERC on March 13, 2015.

³ On July 16, 2015, Tennessee scaled back the Project to a 30-inch diameter pipeline of 1.3 bcf/d from its original 36-inch diameter with a maximum capacity of up to 2.2 bcf/d. The

transmission capacity east of Wright, New York (the so-called “Market Path” portion of NED) to local distribution companies (“LDCs”), and potentially to gas-fired generators, electric distribution companies, industrial plants, natural gas producers, and other customers in New England.⁴ Tennessee has executed precedent agreements for long-term firm transportation capacity for a total of approximately 500,000 dekatherms per day (“Dth/d”) with Market Path shippers.

In Massachusetts, Tennessee would construct approximately 64 miles of mainline pipeline and 38 miles of lateral pipeline. The tables below provide a summary of pipeline and other NED facilities proposed for Massachusetts. As of August 31, 2015, Tennessee has performed biological surveys on 36 percent of the NED Project Market Path route, and performed cultural resource surveys on approximately 20 percent of the NED Market Path route (Tennessee Monthly Status Report, September 23, 2015). The Siting Board notes that Tennessee has not sought land survey permission from the Massachusetts Department of Public Utilities, which has the authority under G.L. c. 164, §§ 72A, 75D to grant or deny survey petition requests by natural gas pipeline companies.

Company’s press release noted, however, that “while TGP is now moving forward with a 30-inch pipeline design, circumstances could arise in the very near term as more capacity commitments are made that would necessitate a design modification to a 36-inch pipeline design, and that would require us to file an amended application with the FERC” (Kinder Morgan Press Release, July 16, 2015). Kinder Morgan, Inc. is the parent company of Tennessee Gas Pipeline Company.

⁴ In its September 15, 2014 Pre-Filing Request to FERC, Tennessee noted that NED may also access potential customers in Atlantic Canada through interconnections with the Maritimes & Northeast Pipeline and the Portland Natural Gas Transmission System at Dracut, Massachusetts. The filing noted that such customers might include LDCs, power generators, industrial customers, and liquefied natural gas (“LNG”) export projects.

Table 1: Proposed New Pipeline Facilities in Massachusetts

Facility Name	Diameter (inches)	Location	Length (miles)	Maximum Allowable Operating Pressure (pounds per square inch)	Maximum Operating Pressure (pounds per square inch)
Wright to Dracut Pipeline Segment	30	Hancock, Lanesborough, Cheshire, Dalton, Hinsdale, Peru, Windsor, Plainfield, Ashfield, Conway, Shelburne, Deerfield, Montague, Erving, Northfield, Warwick, & Dracut	63.75	1,460	1,460
Fitchburg Lateral	12	Townsend & Lunenburg	9.00	1,460	1,460
Lynnfield Lateral	24	Dracut, Andover, Tewksbury, Wilmington, North Reading, Reading, & Lynnfield	15.86	1,460	1,460
Haverhill Lateral	20	Dracut & Methuen	5.67	1,460	750
Concord Delivery Line	24	Dracut	0.51	1,460	750
Maritimes Delivery Line	30	Dracut	1.20	1,460	1,460
Peabody Lateral	24	Lynnfield, Middleton, Peabody, & Danvers	5.33	1,460	730

Compressor Stations

The Company proposes to construct three new compressor stations in Massachusetts, in Windsor, Northfield, and Dracut. The proposed compressor stations and sites are summarized below.

Table 2: Proposed New Compressor Station Facilities in Massachusetts

Town	Total Horsepower	Number of Compressor Units	Estimated Acreage of Compressor Station Site (acres)	Estimated Acreage of Property (acres)	Residents Within Half Mile of Property
Windsor	41,000	Two	10	89	6
Northfield	41,000	Two	10	242	10
Dracut	23,000	One	10	29	260

Meter Stations

The Company would construct nine new meter stations and modify eleven meter stations in Massachusetts, listed by town in Table 3 below.

Table 3: Additional Metering Facilities in Massachusetts

Facility Type	Location
New meter stations (nine in total)	Dracut (3), Lanesborough, Deerfield, Lynnfield, Lunenburg, Longmeadow, Everett
Modifications to existing meter stations (eleven in total)	North Adams, Methuen, Southbridge, Spencer, Leominster, Lunenburg, Lexington, Burlington, Arlington, Reading, Essex

B. Public Comments

At the four Siting Board public hearings held during the week of August 3, 2015, members of the public had an opportunity to comment on the Project. At these hearings, a total of approximately 550 people attended, with 129 individuals providing oral comments, including those of 51 elected and other public officials. The transcripts from these hearings are attached as Appendix A.

In addition, the Siting Board staff invited members of the public to submit written comments by August 13, 2015. The Siting Board received almost 250 written comments, which are attached as Appendix B.

The comments covered a wide range of issues involving environmental, safety, and socio-economic impacts of the Project, which the following sections of this letter summarize in detail. The vast majority of oral and written comments received by the Siting Board expressed concerns and/or opposition to the Project.⁵ Some commenters reported difficult encounters and communications with Company officials, representatives, and contractors, particularly with regard to survey requests on landowner property. Some municipal officials expressed frustration that Company officials apparently contacted landowners before town officials were notified, and thus, they were unable to respond knowledgeably to constituent inquiries (Carolyn Smart Comments, 8/6/2015).

A significant number of commenters questioned the need for NED. Many commenters maintained that the energy needs of the Commonwealth and the New England region could be met with non-fossil fuel energy resources, such as wind, solar, and energy efficiency, or by repairing existing gas pipeline systems – particularly at the distribution level – where a number of leaks have been identified and are in need of repair.⁶ A number of commenters cited the importance of reducing greenhouse gas emissions and meeting the requirements of the Massachusetts Global Warming Solutions Act. The Project’s reliance on gas supplied from the

⁵ As of August 5, 2015, approximately 55 Massachusetts municipalities voted on some form of resolution in opposition to the Project. Transcript of Siting Board Comment Hearing, at 102, Greenfield (August 5, 2015).

⁶ See, for example, the DPU’s recent Gas System Enhancement Plan Orders, D.P.U. 14-130 through D.P.U. 14-135.

Marcellus Shale formation, where hydraulic fracturing (or “fracking”) is increasingly used to produce natural gas, elicited concerns about the environmental impacts of such gas production. In addition, some commenters voiced concerns about the constituents in the “fracked” gas that could be released into the environment in Massachusetts given potential pipeline leaks, compressor station venting, or other potential releases.

Others questioned the need for ratepayer financial support for NED (estimated by Tennessee to cost \$3.3 billion for the Wright, New York to Dracut, Massachusetts “Market Path” segment). They maintained that existing LNG import terminals off the Massachusetts coast are underutilized and might be a more cost-effective solution for meeting peak winter gas needs when interstate gas pipelines lack sufficient capacity to heat homes and businesses and supply fuel to electric generators. Several commenters asserted that FERC is either required by NEPA or should otherwise conduct a comprehensive regional analysis of the various pending pipeline proposals to determine which of them (if any) are necessary and best suited to meet any identified regional need, at the lowest cost both to consumers and the environment.

Another concern expressed during hearings and in written comments relates to the markets NED would supply, and that a substantial amount of the intended pipeline capacity remains unsubscribed. Some commenters expressed concerns that the capacity might ultimately be used for export to Atlantic Canada, or for liquefaction and transshipment to global LNG markets, where prices may be at a premium. Some expressed a view that supplying gas for export is the fundamental objective of Tennessee, and that by serving such markets gas prices in New England could rise. A number of commenters took exception to the Company seeking eminent domain for siting NED facilities when a significant portion of the Project’s capacity could potentially be destined for use beyond New England. Some expressed their belief that NED is not needed in New England, but rather, reflects Tennessee’s pursuit of export-related markets.

While Project supporters were few in number at the Siting Board hearings and in written comments submitted, these individuals contended that NED would help residents and businesses by providing affordably priced energy (especially in relation to the price of heating oil); helping reduce the region’s high electric power prices; and also creating a number of skilled trade jobs during pipeline construction. Some also referred to the existing moratoria on new gas customer hookups in certain areas of the Berkshire Gas Company and the Columbia Gas Company service territories as an economic impediment that they maintained could only be alleviated by NED.

A number of studies conducted or sponsored by government agencies, non-governmental organizations, industry groups, and others were cited by the Company and commenters in asserting either support for need, or lack thereof, associated with the Project. Referenced studies finding need for NED (or some form of additional pipeline capacity in New England) include the following (starting with the most recent):

- *Report on Investigation into Potential Approaches to Mitigate Wholesale Electricity Prices*, September 15, 2015, prepared by Staff of the New Hampshire Public Utilities Commission for the New Hampshire Public Utilities Commission.
- *New England Energy Market Outlook, Demand for Natural Gas Capacity and Impact of the Northeast Energy Direct Project*, 2015, prepared by ICF International for Kinder Morgan, Inc.
- *Massachusetts Low Gas Demand Analysis: Final Report*, January 7, 2015, prepared by Synapse Energy Economics, Inc, for the Massachusetts Department of Energy Resources.
- *Natural Gas Infrastructure and Electric Generation: A Review of Issues Facing New England*, December 14, 2012, prepared by Black & Veatch, for The New England States Committee on Electricity.⁷

Studies cited questioning the need for NED include the following:

- *Analysis of Alternative Winter Reliability Solutions for New England Energy Markets*, August 2015, prepared by Energyzt for GDF SUEZ Energy North America.
- *Examiners' Report, Staff Recommendation in Docket No. 2014-00071*, October 1, 2014, prepared by Commission Staff for the Maine Public Utilities Commission.
- *Solving New England's Gas Deliverability Problem Using LNG Storage and Market Incentives*, 2015, prepared by SkippingStone, LLC for Conservation Law Foundation.

C. Recent Orders Issued by the Massachusetts Department of Public Utilities

1. Precedent Agreements

There have been Orders issued recently by the Massachusetts Department of Public Utilities ("Department") that are relevant to the issue of gas capacity in Massachusetts and the region. Three relate directly to precedent agreements between LDC's over whom the Department has jurisdiction and Tennessee. Another was an order relating to the need for gas capacity to address pipeline constraints that are affecting gas availability to electric generators in during the winter. Each is described briefly below:

The development of new interstate gas pipeline capacity to serve the firm gas supply requirements of Massachusetts customers typically occurs through the execution of gas transportation Precedent Agreements between local distribution companies ("LDCs") and

⁷ This is not a comprehensive list of studies that have been conducted on the subject. There are others not listed here.

interstate pipeline companies, such as Tennessee. Pursuant to G.L. c. 164, § 94A, gas or electric distribution companies seeking to enter into a contract for the purchase of gas or electricity covering a period in excess of one year must obtain the approval of the Department for such contracts. The Department has reviewed and approved several such Precedent Agreements recently in connection with the Algonquin Incremental Market Project, and is currently reviewing a Precedent Agreement associated with the Algonquin Atlantic Bridge Project.

The Department reviewed and recently issued orders approving three precedent agreements for NED capacity with Bay State Gas Company (114,300 Dth/day), Berkshire Gas Company (36,000 Dth/day), and Boston Gas Company (151,962 Dth/day). Bay State Gas Company, D.P.U. 15-39 (August 31, 2015); Berkshire Gas Company, D.P.U. 15-48 (August 31, 2015); Boston Gas Company, D.P.U. 15-34 (August 31, 2015). In Massachusetts, no LDC may enter into a gas capacity contract unless it receives approval by the Department. (G.L. c. 164, § 94A) The Department reviewed these agreements applying precedent and applicable standards. It is important to note that Department consideration of the filed agreements did not, as a matter of law, address the pipeline route, any environmental issues, or other impacts on property that might be caused by the proposed Project.

In each case, the Department found the acquisition of NED capacity to be consistent with the standards for approval. Specifically, each agreement was consistent with the LDC's portfolio objectives and the Massachusetts Global Warming Solutions Act, and that the NED capacity would be needed to meet growing customer demands given growing gas conversions from fuel oil – even with significant energy efficiency programs currently in place, or as enhanced. The Department found that the NED Project will enable The Berkshire Gas Company to end its moratorium on new customers in both its Eastern and Western Divisions. D.P.U. 15-48, at 50. Similarly, the Department found that Bay State Gas Company's precedent agreement is necessary for the Company to continue to serve existing customer load reliably and at least cost, and to serve future customer growth. D.P.U. 15-39, at 40.

The Department further found that the precedent agreements for NED “compare[s] favorably to the range of alternative options” such as LNG, and that demand response programs for natural gas do not currently exist in the Massachusetts market. The Department also found that the subject LDCs established a need for incremental pipeline capacity to ensure reliability and deliverability of natural gas to meet their existing and future customer requirements.⁸

⁸ It is our understanding that, pursuant to FERC's policy on determination of need, approved precedent agreements carry significant weight at FERC in establishing the need for pipeline capacity. [See *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227, at ¶ 19, (1999), *clarified*, 90 FERC ¶ 61,128, *further clarified*, 92 FERC ¶ 61,094 (2000)].

2. Investigation Regarding Gas Capacity for the Electric Sector

In D.P.U. 15-37 (October 2, 2015), the Department recently concluded an investigation on its own motion to examine how new natural gas delivery capacity may be added to the New England market, including possible capacity purchases by the electric distribution companies (“EDCs”). It is important to note that the investigation did not review any specific pipeline projects. Rather, the investigation addressed gas capacity needs for the electric generation sector generally, including the legal authority of EDC’s to contract for gas capacity. The Department concluded that sufficient information had been provided in the docket to arrive at a conclusion that increasing regional gas capacity will lead to lower wholesale gas and electricity prices. The Department did not make a finding that voiced a preference for any particular gas pipeline project over any other potential capacity constraint solution. However, the Department found that innovative solutions and a menu of options are required to alleviate capacity constraints and the associated downstream market price impacts experienced by Massachusetts ratepayers. The Department further concluded that, pursuant to G.L. c. 164, § 94A, it has the requisite authority to approve EDC contracts for the acquisition of new natural gas capacity and to allow recovery of such costs through electric distribution rates.

II. ARTICLE 97 PROTECTION

A. Introduction

Potential consequences of the Project include impacts to “Article 97 lands” as defined in Article 97 of the Articles of Amendment to the Constitution of the Commonwealth of Massachusetts.⁹ Massachusetts assigns the Article 97 designation to lands protected for their significant value for conservation purposes. As currently proposed, of the more than 110 public and private conservation and recreation parcels impacted by the proposed NED route, approximately 85 would be afforded Article 97 protection.¹⁰ In addition, many farms in Massachusetts are preserved through the Massachusetts Department of Agricultural Resources Agricultural Preservation Restrictions (“APRs”). APR land has a permanent deed restriction, which precludes any use of the property that will have a negative impact on its agricultural viability. Article 97 lands, APRs, and other such conservation-restricted properties are protected in perpetuity, for the benefit of the Commonwealth, its residents, and its ecosystem.

NED facilities that pass through Article 97 lands would trigger a process that requires that both houses of the Massachusetts Legislature approve by a two-thirds vote any change in use

⁹ Article 97 states that: “The people shall have the right to clean air and water, freedom from excessive and unnecessary noise, and the natural, scenic, historic, and esthetic qualities of their environment; and the protection of the people in their right to the conservation, development and utilization of the agricultural, mineral, forest, water, air and other natural resources is hereby declared to be a public purpose.”

¹⁰ See Mount Grace Land Conservation Trust Comment, 8/5/2015.

or disposition of lands held under the provision's constitutional strictures. State practice requires that an equal amount of protected conservation land must be secured to offset any land removed from Article 97 protection.

B. Public Comment

Speakers at EFSB and FERC scoping hearings raised a number of concerns around Article 97 lands. These comments focused on the disposition of Article 97 lands for private commercial uses (such as that proposed by Tennessee) given the outlay of public funds originally made for their purchase; the potential loss of conservation values associated with the disposition of Article 97 lands; and impacts on Massachusetts farming in general, and specific farm properties should NED cross Article 97-designated lands.

Commenters asserted that natural gas pipelines and their ancillary facilities impact all of the values articulated in Article 97 such as air and water quality, and natural, scenic, historic, and aesthetic qualities. Specifically, the commenters maintained that a pipeline built across public protected lands reduces public use and enjoyment of the agricultural, mineral, forest, water, air and other resources that are declared a public purpose consistent with the intent and values for which a parcel was protected. Land preservation organizations and conservation agencies also stated their belief that donor and public trust is the cornerstone of existing land protection efforts, and the foundation of every land conservation project. They asserted that disposition of such lands for construction of a gas pipeline would harm such donations and bequests in the future.

C. EFSB Recommendations

As some commenters noted, the proposed Project may contradict the terms of the conservation trust documents or other conservation requirements underlying affected Article 97 properties and this could diminish the public's confidence that such programs offer permanent, protection for conservation land. The disposition of Article 97 lands for pipeline easements, or other commercial or industrial uses, could certainly send a detrimental message to donors and benefactors of future conservation lands.

FERC should direct Tennessee to avoid Massachusetts Article 97 lands, to the extent possible. Where avoidance is not possible, Tennessee must adhere to Massachusetts law and seek legislation for the disposition of Article 97 lands through the Massachusetts Legislature, including the Commonwealth's no net loss policy. Such "converted land" must be replaced with land of equal monetary value and recreational or conservation utility. This will ensure that Massachusetts experiences no net loss of Article 97 lands today, and that future conservation efforts are not jeopardized.¹¹

¹¹ In this letter, the Siting Board staff is not addressing the scope of federal preemption authority to authorize the taking of land designated as Article 97 property should the Legislature not grant its approval.

III. PROPERTY VALUES

A. Introduction

The Project, as proposed, would require easements on public and private properties in Massachusetts involving some 659 acres, and approximately 101 linear miles. To the best of our knowledge, compensation for easements sought by the Company has yet to be negotiated with landowners or determined through eminent domain legal proceedings (if and when a certificate is issued by FERC). A basic principle underlying acquisition of easements, whether through voluntary negotiation or by eminent domain, is just compensation. Project proponents and affected landowners can sometimes be quite far apart in their relative assessments of the proper compensation for project easements. While Tennessee's stated goal is to arrive at mutually beneficial terms and conditions in obtaining easements with landowners, this is not always the outcome achieved. In cases where eminent domain is used, the law requires that the landowner be fully compensated for the rights obtained under the easement.

B. Public Comment

Commenters described a number of reasons for anticipating impaired value of their properties stemming from a potential pipeline: preclusion of intended development use of the property; loss of value in the eyes of future buyers due to aesthetics, undesirable land use characteristics, and safety-related issues; or other factors. Some commenters noted that homes often represent the largest single asset in the asset portfolio of the property owner. A number of property owners voiced concern that whether negotiating voluntary easements with Tennessee or having their property condemned through eminent domain proceedings following FERC certificate approval, they stand to receive inadequate levels of compensation for their property, and that the impairment of property value may not be fully recognized by the Company.

Some commenters noted that property values would be adversely affected by both pipelines and compressor stations. For example, Paul and Patricia Zapert, property owners in Dracut, MA, submitted comments to the Siting Board concerning the "co-location" of the proposed pipeline with existing electric transmission utilities (Zapert Comment, 8/12/2015). Tennessee proposes a 50-foot easement "alongside" the existing electric utility easement behind homes on Heather Road in Dracut. However, the existing band of trees that provides a natural barrier to the easement would be entirely removed for the new pipeline easement. As a result, direct abutters and neighbors will no longer have this natural tree screening the transmission line. As the Zaperts state in their comments, "[t]he landscape of the Heather Road properties will be permanently altered and this, along with the end result of living across the street from a massive gas pipeline, will negatively affect the property values of every home on the street."

The Northern Middlesex Council of Governments ("Council") also submitted comments to the Siting Board concerning property values (Council Comments, undated). According to the Council, numerous paired-sale studies have shown that there may be long-term loss of property value caused by the presence of natural gas pipelines (Council Comments at 3-4).

Inconvenience, restrictions on use, unsightly paths cut through wooded areas, and potential stigma are all likely to have a negative impact on property values, particularly in communities such as Dracut, where nine miles of new pipeline, three metering stations and a compressor station are proposed by Kinder Morgan. Hard data should be provided outlining the impacts that other projects of this magnitude have had on property values and marketability.

Edward C. Dow, of West Townsend, MA, raised the concern that he may experience a “loss of income from our hay crop for an unknown number of years.” (Edward C. Dow Comment, 8/7/15). Similarly, the Town of Dalton asked how the Project would affect people’s timber rights (*i.e.*, the timber income they would have derived but for the perpetual clearing required by the Project) (Town of Dalton Comment, 8/4/2015).

C. EFSB Recommendations

In the past, FERC has acknowledged the possibility that pipeline facilities could, in fact, adversely affect the property values of nearby residents, but it has not been able to quantify with any degree of certainty the impact on or decrease in property values that may be experienced. Millennium Pipeline Company L.L.C., 145 FERC 61,007, at ¶ 96 (2013). In other cases, FERC has found only that “a *significant loss* of property value due to construction of a pipeline *is not supported by the literature.*” Constitution Pipeline Company, LLC, 149 FERC ¶ 61,199 at ¶ 95 (emphasis added).

Many of the available studies on property value impacts of gas pipelines were funded directly by the pipeline industry. For example, the Interstate Natural Gas Association of America (“INGAA”) produced a study in 2001, titled “Natural Gas Pipeline Impact Study,” concluded that there is no significant impact on the sales price of properties located along natural gas pipelines” in the areas studied. Some experts have suggested that additional research is necessary to achieve any conclusions about the effects compared to earlier study results. See Diskin, B., Friedman, J., Peppas, S., January/February 2011, *The Effect on Natural Gas Pipelines on Residential Value*, Right of Way at 24-28.

By analogy to property value losses, in at least one FERC pipeline case, a pipeline company itself proposed to compensate landowners for reduced crop yields due to construction of the Rockies Express East pipeline facilities and use of the easement. Rockies Express Pipeline LLC, CP07-208-000, *Final EIS* at ES-5 (April 11, 2008). According to the FEIS, “[c]onstruction of the pipeline may affect the fertility of the agricultural fields for several years.” Id. Of course, reduced crop yields arising from pipeline construction are not limited to the Rockies Express case. And reductions to crop yields and timber growth, which have tangible financial consequences, are not dissimilar to the loss of homeowner property values.

Given the concerns related to general use, visual impacts, agricultural productivity and marketability, the Siting Board concurs that the time is ripe to conduct additional research into the relationship between property values and interstate pipeline facilities, including compressor stations. The Siting Board requests that FERC fund and conduct third-party studies so that homeowners may be compensated, as appropriate, for any demonstrated loss of value associated with the proposed NED Project.¹²

IV. FARMLAND

A. Introduction

The proposed NED route would run through significant farming regions of the Commonwealth. Various impacts to farms along and in the vicinity of NED facilities may result from construction of the Project. Relative to other regions of the country, farmland in Massachusetts is at a premium, farms tend to be smaller, and production costs higher. To promote viability in a challenging business climate, Massachusetts farmers therefore tend to specialize in high-value production and property uses (e.g., bed and breakfast tourism, “pick-your-own,” farmstand marketing, cultivation of organic or specialty produce, etc.) to achieve and maintain profitability. In fact, many farms along the NED route are considered in practice, and in some cases, certified as “organic.” Some commenters were wary that the construction and operation of NED could threaten their farms due to pollution of land, air and water, degradation of prime agricultural soils, or through disruptive effects on livestock, drainage, wetland and delicate farmland eco-systems.

B. Public Comment

Some who provided comments at the scoping hearing detailed anticipated changes to particular farms. On one farm that Tennessee has designated for a 12-inch lateral, the Company also anticipates use of a field for equipment storage (Edward C. Dow Comment, 8/7/15). In addition to any impacts of the lateral, the owner of the farm expressed concern about potential damage to his septic leach field, loss of his hay crop for an undetermined number of years, and reduction of tree cover, with localized erosion resulting. Among concerns expressed by certain organic farmers (David Fisher and Anna Maclay Comments, 8/13/15) along the NED route was that the agricultural operation they run (Natural Roots Farm, Conway, Massachusetts), located in a valley, would be subject to emissions from a nearby blowoff valve. In the commenters’ view, exposure to blowoff valve emissions might jeopardize their ability to certify, advertise, or otherwise promote their farm as organic.

¹² To the extent that Tennessee is able to reroute the pipeline under roads and streets rather than through other public or private lands, it is possible that property value reductions could be avoided or minimized.

C. EFSB Recommendations

The Siting Board notes that many of the farms along the NED route may be protected Article 97 lands where every effort should be made to avoid siting the Project. As noted by commenters, potential impacts to farms concern both the quality of resources required for their operation and their aesthetic and perceived market appeal. Their success depends on the ability of farm owners to establish their reputation and a loyal clientele. These are both hard-earned assets that could be threatened by pipeline development. The Siting Board asks that FERC direct Tennessee to submit a list of farms along the route of its proposed pipeline and facilities and the construction and operational impacts of the Project on such properties. The Siting Board suggests that FERC require that Tennessee honor any protections now associated with individual farms under Article 97 and other Massachusetts state protection provisions. The Siting Board further suggests that FERC encourage Tennessee to locate its pipeline and facilities to avoid working farms to the extent possible. Where complete avoidance of working farms is not possible, Tennessee should accommodate requests for route alterations by farmland owners that would minimize the impacts to the ongoing viability of Massachusetts's scenic and highly valued – but fragile – farms.

V. WETLANDS

A. Introduction

Wetlands protection practices in Massachusetts under the Massachusetts Water Protection Act (“WPA”) are, as a rule, more stringent than protections at the federal level under the Clean Water Act (“CWA”). Furthermore, municipalities and townships may adopt local protections that are above and beyond those required under the WPA. While Tennessee acknowledges such provisions, neither the Company nor FERC has yet guaranteed the protection of Massachusetts wetlands at the level of protection required under state and local regulations. Meeting these regulations would require the Company to operate within the bylaws and ordinances of Massachusetts communities, wherever appropriate, to file Notices of Intent with local conservation commissions and to implement any resulting conditions contained in an Order of Conditions.

B. Public Comment

Commenters at EFSB and FERC scoping hearings expressed particular concern regarding alteration of wetlands for NED construction in Massachusetts and the potential of these changes to have irreversible impacts. Many of these comments suggested taking strong measures necessary to safeguard long-term wetland ecosystem health. The described measures included establishing a pre-construction baseline for wetlands and planning for their post construction restoration. Commenters also called upon FERC to require, and Tennessee to effect, a five-year program of wetlands management after NED construction to ensure that full wetland resource restoration occurs.

C. EFSB Recommendations

The Siting Board asks that FERC act in accord with the high value that Massachusetts places on wetland resources. The Siting Board suggests that FERC might do this, first and foremost, by directing Tennessee to avoid disturbance to wetlands for NED construction or operation to the extent possible. Tennessee should mitigate unavoidable wetland impacts by restoring wetlands to their original condition. The Siting Board agrees with commenters who suggest that pre-construction study of wetlands along the NED route is advisable as an aid to wetland restoration. The Siting Board recommends that Tennessee underwrite research by a third-party consultant both for initial wetland studies and for continued study of affected wetlands for several years after NED completion to check for the success of resource restoration efforts. The Siting Board observes that on-going changes to the NED proposal present a challenge to participants in the FERC pre-filing process attempting to evaluate wetland impacts of the Project.

VI. WATER QUALITY, WATER SUPPLY, AND WELL WATER

A. Introduction

On the proposed route, the Project would cross 139 waterbodies in addition to groundwater protection zones and other water resources. The impacts of the Project on surface water quality, well water quality, and other water resources are issues of concern. Additional water quality issues relate to construction methods for the Project and the potential for disturbance of river sediments; river-bank work associated with horizontal directional drilling; removal of protective vegetation from river edges and habitat degradation for wild trout and other fisheries

B. Public Comment

General concerns around community water supplies and NED stem from the potential of a pipeline leak or break to contaminate aquifers and wells; the potential of a horizontal drilling borehole to trigger groundwater migration; and the potential of air pollutants released with venting at meter and compressor stations to contaminate surface waters. The possible infiltration of water resources and wells by NED-related contaminants is a particular issue in western Massachusetts where reliance on private wells and natural springs is common, increasing the number of points where drinking water contamination may occur.

Scoping hearing remarks addressed possible NED impacts to the sources or delivery system of public water supplies, particularly in Berkshire County. Flows within watershed networks exacerbated concerns around the persistence and physical extent of NED pipeline installation impacts on local water resources. Commenters provided specific information regarding watersheds, wells, and other water supply sources that serve close to half the Berkshire County area and the location of these resources vis-à-vis proposed NED facilities. In at least one case (Town of Dalton), the community provided a route alternative that would, among other advantages, avoid watersheds associated with local drinking water supplies. Stakeholder

remarks also addressed the reduction or elimination of impacts to water resources and water quality potentially gained by installing TGP's pipeline in roadways rather than across resource areas and residential properties. Additional commenters (e.g., Town of Montague) urged FERC to mandate the Company's adherence to relevant state regulation, especially MA Drinking Water Regulations, 310 CMR 22.00.

Other commenters expressed concern about the lack of baseline water resource information currently available. The Conservation Commission of the Town of Warwick, for example, explained that the town's hydrology is largely unknown. Because its residents rely entirely on private wells and natural springs for their water supply, Warwick requested third-party testing of all private wells and public drinking water supplies within five miles of the proposed pipeline corridor to establish a baseline for water quality prior to natural gas pipeline construction.

Illustrative of landowner concerns, H. John and Sebern Fisher, of Plainfield Massachusetts, suggested pre- and post-Project testing of well water; in addition, they questioned whether the Company can guarantee remediation of well water in the event that testing reveals construction-related contamination. The Fishers not only sought assurance of water resource protection in the near-term, but also wondered about water resource protections over the life of the NED Project. The Fishers also expressed concern about hydrostatic testing of the pipeline and the chemical composition and disposal of any additives that might be used in the hydrostatic testing process.

C. EFSB Recommendations

The Siting Board requests that FERC review, or require Tennessee to review, the modification to the NED pipeline route submitted by the Town of Dalton (Town of Dalton Comments, 8/7/15, at 4) and those modifications submitted by other commenters. FERC should also direct Tennessee to test and monitor public and private water supply wells potentially impacted by NED before and after pipeline construction sufficiently to assure pre-construction water quantity and quality is not adversely affected. The Siting Board further suggests that FERC direct Tennessee to submit measures the Company will take to prevent, reduce, and mitigate any impacts to public water supplies associated with Project construction. As part of such mitigation, Tennessee must communicate and coordinate with the public water supplier regarding protection of the public water supplier's infrastructure and all its resources. The public water supplier conducts required water quality testing and has emergency plans that could be modified, with assistance of the Company, to include contingencies related to the Project.

VII. COMPRESSOR STATIONS AND ABOVEGROUND FACILITIES

There would be three new compressor stations, nine new meter stations, eleven modified meter stations, and additional aboveground appurtenant facilities (e.g., mainline valves) constructed for the Project. The impacts of aboveground facilities are related to air quality,

noise, and site selection. Many commenters addressed concerns and provided recommendations related to those permanent impacts.

A. Air Impacts

1. Introduction

The analyses provided in Resource Report 9 do not contain information about the existing or operational climatological conditions and air emissions for the compressor station locations (Resource Report 9, at 9-1 and 9-25). The Siting Board will provide comments on the complete data analyses when available. Below, the Siting Board has identified specific recommendations related to the air analyses.

2. Public Comment

There were many comments regarding the impacts on ambient air quality, agriculture, and recreational land uses due to air emissions of normal operations, blowdowns, emergency shutdowns, and fugitive emissions. Many local residents expressed concerns about the lack of information about the scale, frequency, and duration of blowdowns. While most of the comments received were related to compressor stations, concerns with blowdowns and fugitive emissions were also identified for meter stations and mainline valve locations.

3. EFSB Recommendations

The Siting Board requests that the Company provide ambient air quality data from air monitoring stations closer to and more representative of each individual compressor station compared to the locations identified in Table 9.1.6. The towns of Windsor and Northfield are rural communities, and could be misrepresented by the suburban air monitoring station in Loudonville, NY. Similarly, Dracut is a suburban community, and could be misrepresented by the rural nature and geographic locations of air monitoring stations in Greenfield or at the Quabbin Reservoir. For example, the MassDEP monitoring station in Chelmsford, MA (ID 25-017-0009), appears to be closer to, and more representative of Dracut. The Siting Board requests that the Company consult with MassDEP to identify the most representative monitoring stations for each pollutant for all aboveground facility locations.

The Siting Board requests that the Company provide information related to the frequency and duration of blowdowns for compressor stations in its portfolio, specifically for both (1) gas-fired compressor stations around 40,000 hp; and (2) electric-powered compressor stations around 20,000 hp. For each of these examples, the Company should provide the number of unit and station blowdowns on a monthly and annual basis over a ten-year period, the duration of each blowdown, the quantity of natural gas released, and the quantity of criteria pollutants released (See Resource Report 9, at 9-2). For each facility used as an example, the Company should provide information about the location; the numbers of residents, businesses, and industrial facilities within a half-mile radius of each facility; the total horsepower; the total property

acreage; the acreage of the compressor station facilities; and an air quality analysis completed pre- and post-construction.

The Siting Board requests that the Company provide information about blowdowns at meter stations and mainline valves, including the typical number and duration of blowdowns, the quantity of natural gas released, and the quantity of criteria pollutants released for existing facilities in the Company's portfolio. The Siting Board also requests a full discussion on how post-construction air quality monitoring will be conducted for all aboveground facilities.

B. Noise Impacts

1. Introduction

Resource Report 9, at 9-33 states that the Commonwealth of Massachusetts noise regulations "may be more stringent than the FERC criterion." MassDEP standards vary from FERC criteria in several ways in that a new noise source: (a) must not increase ambient noise levels by 10 dBA at the facility property line; (b) must not create a "pure tone"¹³; and (c) are evaluated on a background A-weighted L₉₀ scale.

2. Public Comment

Concerns about the noise impacts from normal compressor station operations were expressed by many commenters. Additionally, many residents stated concerns about the noise from blowdowns and emergency shutdowns. Similar to the concerns about information available for air emissions, many commenters said that there was little information about the frequency, duration, and sound levels of any compressor station activity. Many commenters worried that noise impacts of the compressor stations would disrupt the quality of life in comparison to their existing quiet surroundings.

3. EFSB Recommendations

The Siting Board requests that the Company provide a detailed noise analysis for compressor stations and meter stations based on both MassDEP and FERC standards. Each analysis should incorporate the following factors:

- The noise analysis should include a table that consists of at least the following columns: receptor, measured ambient sound level, modeled facility-only noise level, combined ambient and facility noise level, and increase above ambient.
- Nighttime measurements should be taken between midnight and 4:00 a.m., which is likely to be the time period with the quietest ambient sound levels in the Project area.

¹³ MassDEP defines a pure tone condition where any one octave band sound pressure level exceeds the two adjacent frequency bands by three dBA or more.

- Background noise measurements were taken in late May and early June 2015 when leaf cover from wooded tree buffer would mitigate noise impacts and not account for noises that are buffered by tree cover in summer and fall months (Resource Report 9, at 9-45, 46 and 48). The noise analysis should therefore be adjusted for the mitigation of tree buffer or completed after November, to more accurately represent the maximum sound levels.
- The noise analysis should also discuss options for noise mitigation during normal operations and blowdowns. The noise analysis should include a description of mitigation practices at other similar facilities and the effectiveness of such practices.
- Attachment 9a identifies the distance and direction of “Noise Sensitive Areas” (“NSAs”) from compressor station locations, and states that the Company will provide NSAs for meter stations in the Company’s certificate application. The Siting Board asks that the maps show the location of noise-producing equipment, station property boundaries, and all residential properties within a half-mile radius.
- Additionally, the Company should provide a description of the anticipated frequency of blowdowns for the three compressor stations, including a description of Company, federal, and industry requirements or recommendations for the frequency of blowdowns, as well as ambient noise measurements, both pre- and post-construction.

C. Site Selection

1. Introduction

The three compressor stations proposed in Massachusetts would provide a total of 105,000 hp of compression. These facilities are being proposed in both suburban and rural areas, with multiple impacts, as outlined below. Many commenters have raised questions regarding the need for the compressor stations in each specific location, especially with respect to existing land use.

2. Public Comment

Many commenters, including Tim Crane and Douglas McNally of the Windsor Selectboard, voiced opposition to the siting of an industrial facility in the rural community of Windsor (Tim Crane Comments, 8/4/2015; Douglas McNally Comments, 8/4/2015). Commenters stated that the entire town of Windsor is zoned for residential and agricultural use, and the development of a heavy industrial facility would disrupt the bucolic and rural nature of Windsor. Commenters also cited the proximity of the compressor station to conservation and recreation land, such as the Tamarack Hollow Nature and Cultural Center and Notchview Reservation.

The Siting Board received many comments related to the proximity of the Northfield compressor station to the town center and watershed (Andrew Vernon, President of the Greater Northfield Watershed Association Comments, 8/3/2015). Commenters also stated that the compressor station will be located in close proximity to conservation and open space areas, such as the Northfield State Forest and New England National Scenic Trail.

Many commenters expressed concerns with the land use characteristics and residential density surrounding the Dracut compressor station location. Several individuals filed very detailed and specific comments with FERC outlining alternatives to the proposed location (e.g., Dana Atwood Comments to FERC, 8/26/2015). Resource Report 8, at 8-115 states that there are 260 landowners within a half-mile radius of the Dracut location. John Yurka of Dracut estimated that there are approximately 200 to 500 homes in the “blast zone”, likely totaling over 1,000 people (John Yurka Comments to FERC, 8/11/2015). Many commenters from Dracut noted that one fire station is located within this half-mile radius and the single Dracut Police Station is located very close to the edge of this radius.

3. EFSB Recommendations

The compressor station alternatives presented by Tennessee are limited to the specific municipalities included in the proposed design, and do not consider potential alternative locations in other towns. The Siting Board requests that the Company expand Resource Report 9 to include alternatives for each compressor station outside of Windsor, Northfield, and Dracut. Additionally, the alternatives analysis should include a description of how each town was selected over other towns as well as over other parcels within the preferred town, and the pipeline engineering specifications which make each location ideal.

The Siting Board requests that the Company provide a detailed analysis, based on engineering and safety requirements, to support the geographic site selection of the proposed compressor stations. Specifically, the analysis should include the following;

- Describe in general how the Company identifies the location of a compressor station. Include all factors such as pipeline diameter, maximum operating pressure, maximum allowable operating pressure, pipeline capacity, and pipeline length. Given this information, explain the basis for the specific geographic locations selected for the Project’s compressor stations.
- With regard to any pipeline diameter or capacity (bcf) changes in general, describe whether the number of compressor stations, amount of compression at each, and total Project compression changes given the change in pipeline size and/or capacity.
- Specifically describe if the reduction in proposed pipeline capacity from 2.2 bcf to 1.3 bcf, announced shortly before the July 24 issuance of the resource reports, changes the need for any of the compressor stations, the distance between compressor stations, and the total compression (208,600 hp) needed for the Project. If there is no change in the

compressor station status since July 24, please explain why given the change in pipeline capacity.

- Describe the land use requirements for the compressor stations, specifically the amount of land purchased versus the land use required for the physical compressor station structures.

The Siting Board requests that the Company identify compressor stations within their portfolio which are located on similar parcel characteristics as the proposed Dracut compressor station, including either (or both): (a) greater than 100 residences or businesses within a half-mile radius; and (b) total parcel size less than 30 acres. For each comparable compressor station, provide the total number of residences and businesses within a half-mile radius, property size, compressor station size, total horsepower, number of compressor units, type of unit (gas or electric turbine), average monthly and annual number of partial and full system blowdowns, and site safety standards developed for the specific location.

Resource Report 10, Table 10.5-7 contains a description of two alternatives to the Dracut compressor station, but without geographic information about the identified alternate locations. The Siting Board requests that the locations of the alternative sites be provided, specifically a map showing the location of the preferred and two alternative sites, and the Project pipeline facilities (mainline and laterals). The maps should identify locations of wetlands and wetland buffer zones, locations of transmission line within the ROW as well as ROW boundaries, and the location and number of residences within a half-mile radius.

With respect to Alternative 1 described in Table 10.5-7, the Siting Board requests that the Company expand further on the “Reason for Dismissal,” specifically in comparison to the property characteristics of the preferred property location.

- The Company states that Alternative 1 was not selected because “close proximity to existing residences and subdivisions ... over 30 homes are located less than 0.5 mile away” (Resource Report 10, at 10-82). In Resource Report 8, at 8-115, the number of homes within a half-mile radius of the proposed compressor station property is listed as 260. The Siting Board requests that the Company expand on this reason, specifically outlining the weight of this characteristic versus the other identified concerns (*i.e.*, parcel size, restrictions from the electric transmission company).
- The Company states that Alternative 1 was not selected because “the area north of the power ROW is too small to use.” Does this statement refer to the parcel size – 45 acres for Alternative 1 and 29 acres for the preferred site? The Siting Board requests that the Company expand on this reason, and provide a map of this location which clearly shows the distance from the ROW, land to be acquired within the ROW, and where the compressor station equipment could be placed within the parcel.

- The Company states that Alternative 1 was not selected because “the power line company will not allow any permanent, aboveground structures within their ROW.” Please explain why the structures could not be located outside of the ROW.
- The Company states that Alternative 1 was not selected because “there is an existing home/business within the property that would require purchase and removal.” The Siting Board requests that the Company specify if the structure is a home or a business. In considering this alternative, was the Company in contact with the owner to discuss property acquisition?

With respect with Alternative 2 described in Table 10.5-7, the Siting Board requests that the Company expand further on the “Reason for Dismissal” provided. The Company stated that Alternative 2 was not selected due to the identification of numerous wetlands. The Siting Board requests that the Company provide the number of residences within a half mile of this location. In addition, please discuss if the Company has considered an option of wetland replication if permanent impacts to wetlands would be unavoidable at this alternative location.

Additionally, the Siting Board requests that the Company update the following maps and aerial images related to compressor station locations in the Company’s certificate application and FERC’s draft EIS:

- The Siting Board requests that the Company provide a public version of the Preliminary Draft Compressor Station Drawings. These documents, contained in Volume IV of the Appendices filed on July 24, have been classified as Critical Energy Infrastructure Information (“CEII”), and are not available for public review. These drawings contain valuable information, such as the location of specific noise producing equipment and the layout of the compressor station on the total property to be acquired.
- The Siting Board requests that the aerial mapping included in the June 1 and June 5 supplemental filings to the docket be updated and included in the Company’s Application and FERC’s draft EIS. The aerial mapping contained compressor station locations, property acquisition status, and sensitive receptors within a half-mile radius. These images were not included in the July 24 resource reports.
- The Siting Board requests that Appendix E and F be updated to show, at a minimum, the entire proposed compressor station property boundary. Appendix E and F only contain a milepost marker to indicate the location of compressor stations, not the entire footprint of the property. If the scale of the appendix permits, the layout of equipment should also be included.

VIII. SAFETY

A. Introduction

Safety concerns stem from the proximity of the pipeline and compressor stations to homes, farms, businesses, government facilities, and other properties coupled with the potential for pipeline incidents involving a gas release, fire, explosion, or other safety emergencies. According to Tennessee, NED will be designed, installed, operated, and maintained in accordance with best industry practices and federal safety and operational regulations for interstate natural gas pipelines. The Company indicated that NED safety practices would be similar to those used on Tennessee's existing pipeline system.

B. Public Comment

A number of commenters voiced concern that the proposed pipeline will traverse many small communities that do not currently have the necessary equipment or training to address a significant emergency associated with either pipelines or compressor stations. Other commenters expressed concerns about the proximity of high-pressure natural gas pipelines to high-voltage electric transmission lines ("co-location"), as proposed by the Company for most of the Massachusetts pipeline route. These commenters noted that pipeline corrosion is accelerated by chemical reactions between the pipe and the surrounding soil, and also from externally generated electric current passing between soil and pipeline.

The Town of Conway, Massachusetts submitted comments to the Siting Board stating:

It is expected that the applicant, [Tennessee], *would be responsible for all costs* associated with training of emergency management personnel, purchase, storage, and maintenance of all necessary equipment and retain liability for any significant incident related to the proposed NED pipeline.

A full and detailed independent risk analysis for the placement of the proposed NED pipeline in or adjacent to an existing right-of-way for high [voltage] lines should be provided. Such risk analysis should include, but not be limited to, analysis of risk of equipment failure, longevity of sacrificial cathodes in cathode beds, and evidence based maintenance plans. (Town of Conway Comment at 7-8, 8/12/2015)

As shown in Table 4, below, some examples of similar requests were made by other Massachusetts cities and towns in their comments to the Siting Board.

Table 4: Comments on Fire Equipment

Commenter	Comment on Fire Equipment
Berkshire Regional Planning Commission (“BRPC”), August 13, 2015, at 2-3	“Require TGP to provide training to local volunteer fire departments for responses to fires created by construction activities. Assess materials and equipment available for their response to such incidents. Provide at no cost all necessary response training, materials, and equipment.”
Town of Dalton, MA, August 4, 2015, at 8.	“The cost of any emergency response related to the construction, maintenance, or failure of the pipeline cannot be borne by the Town.”
Dalton Fire District, August 11, 2015, at 2.	“The cost of any emergency response related to the construction, maintenance, or failure of the pipeline cannot be borne by the Dalton Fire District. How will TGP ensure that these costs are paid for?”
Town of Deerfield, Report to FERC, August 2015, at 1.	“However, extensive training, planning and other resources would be required in order to adequately plan for and protect against the extraordinary threat of a major incident related to the pipeline. These measures would result in costs of both time and money – and still may not adequately prepare for a possible incident”

C. EFSB Recommendations

The certificate application and the draft EIS should include a detailed description of all the federal, state, and local safety regulations and inspections that pertain to the Project, as well as any additional Company safety protocols. The Siting Board further requests that the Company provide a detailed history of its safety record, which would include failures, incidents, and accidents with respect to pipelines and compressor stations within the Company’s portfolio. The information should include the cause of the incident; the quantity of leaked gas and pollutants, and other environmental impacts; and any related injuries or fatalities. Additionally, the Siting Board requests that the Company provide information on incidents and accidents at any compressor station across the United States in the past ten years.

Historically, FERC has found that the U.S. Department of Transportation (“DOT”) is solely responsible for establishing criteria and requirements for the safety of natural gas pipeline facilities. Questar Pipeline Company, 95 FERC ¶ 61,404, at ¶ 6 (2001). FERC has also held in Section 7(c) proceedings, “once a pipeline certifies that it will comply with its [Natural Gas Pipeline Safety Act of 1968] obligations, [FERC] “is generally precluded from further consideration of pipeline safety issues.” Independence Pipeline Company, 91 FERC ¶ 61,102, at ¶ 40 (2000).

Existing DOT pipeline safety standards require different pipeline specifications be used based on population density in the vicinity of the pipeline, “and specifies more rigorous safety requirements for populated areas.” Independence Pipeline Company, 89 FERC ¶ 61,283 at ¶ 62 (1999).

Class locations representing more populated areas require *higher safety factors* in pipeline design, testing, and operation. . . . Class locations also specify the maximum distance to a sectionalizing block valve (e.g., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, maximum allowable operating pressure, inspection and testing of welds, and frequency of pipeline patrols and leak surveys *must also conform to higher standards in more populated areas*.

Id. at ¶ 62 (emphasis added).

However, there have been a number of pipeline applications submitted to FERC, which FERC has approved pursuant to Section 7(c), where the applicant has included additional safety measures that exceed DOT’s minimum standards. Constitution Pipeline Company, 149 FERC ¶ 61,199, at ¶ 97 (2014) (Constitution will put in place several measures that exceed DOT’s requirements, including installation of Class 2 design pipe in all Class 1 locations, installation of the pipeline deeper than required for Class 1 locations with a minimum depth of 36 inches in normal soils, inspection of 100 percent of mainline pipeline welds, hydrostatic testing of the entire pipeline at a higher level suitable for Class 3 locations, and spacing of mainline valves at closer intervals to meet Class 2 requirements in all areas); Rockies Express Pipeline LLC, 123 FERC ¶ 61,234, at ¶ 182 (2008) (following construction, Rockies Express will initiate a pipeline integrity management plan to ensure public safety during operation); Questar Pipeline Company, 95 FERC ¶ 61,40, at ¶ (2001) (Company proposed higher pipe-yield strength from X-65 to X-70 in anticipation of future community development in the area); Independence Pipeline Company, 89 FERC ¶ 61,283, at ¶ 66 (1999) (FERC orders Transco to implement additional measures it discussed in Company responses to FERC Staff information requests).

Recognizing that pipeline companies may voluntarily propose to construct pipeline that exceed DOT standards, the Commission has stated that “[w]e would not necessarily preclude the installation of facilities consistent with a higher DOT class standard that does not now apply.” Transwestern Pipeline Company LLC, 122 FERC ¶ 61,165, at fn. 90 (2008).

The Siting Board is troubled by any design and construction methods that fail to ensure that only the best and most protective safety standards are used throughout Massachusetts, regardless of whether construction occurs in a rural, suburban, or urban location. No community, no matter its size, should be required to host an interstate pipeline with safety standards that are less than best practices or that fail to provide the greatest assurance of safety.

Although safety is regulated by the DOT, Tennessee should adopt the highest levels of safety standards for the entire Massachusetts portion of the proposed pipeline. Accordingly, the Siting Board requests that Tennessee study those additional safety measures put forth by its sister pipeline companies in the above-referenced cases and voluntarily propose, as appropriate, to incorporate safety standards for NED that would exceed the “minimum” DOT standards required by 49 C.F.R. Part 192.

Historically, FERC has required developers of approved LNG terminals to file an Emergency Response Plan (“ERP”) that includes a “Cost-Sharing Plan” identifying the mechanisms for funding all project-specific security/emergency management costs that would be imposed on state and local agencies. See Dominion Cove Point LNG, LP, 148 FERC ¶ 61,244, at Appendix B, Environmental Condition No. 32 (2014). This FERC condition also states that “[i]n addition to the funding of direct transit-related security/emergency management costs, this comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base.” Id.

The proposed pipeline route goes through numerous small towns in Massachusetts that often lack the equipment and personnel to respond to large-scale potential emergencies. These communities may lack the financial resources to upgrade their existing police and firefighting equipment to accommodate the pipeline. Such towns should not be required to fund the cost of emergency management equipment, training and programs associated with an interstate natural gas pipeline. The Siting Board suggests that FERC require that Tennessee file an ERP that includes a “Cost-Sharing Plan” identifying the mechanisms for funding Project-specific security and emergency management costs that would otherwise be borne by state and local agencies.

IX. ALTERNATIVE ROUTES

A. Background

In its Draft Resource Reports 1 and 10, filed with FERC July 24, 2015, Tennessee provided an overview of major and minor route alternatives to the Massachusetts portions of its proposed Wright to Dracut mainline pipeline and its Lynnfield, Haverhill, and Fitchburg Laterals. Tennessee indicated that the factors it considered in its selection of the proposed route for the Project, rather than alternative routes and deviations, include: landowner concerns; minimization of the number of affected landowners; minimization of adverse environmental impacts; constructability; safety; and minimizing disruption during construction. Tennessee acknowledged that, due to the lack of available survey data, desktop data were used for the alternative route analyses, although some field reconnaissance data were also evaluated. As data sources for its alternative route analysis, the Company cited its use of aerial photography; topographic maps by the U.S. Geological Survey; and National Wetland Inventory maps.

The Company evaluated a number of major alternatives to the Proposed Project mainline route in Massachusetts (previously called the New Hampshire Powerline Alternative): the

original proposed route (also known as the Massachusetts Alternative); the Massachusetts Powerline Alternative; the Mass Turnpike Alternative; the Massachusetts Route 2 Alternative; the Article 97 Avoidance Route; and the Existing 200 Line Alternative. Based on its quantitative and qualitative analysis of the mainline options, Tennessee chose the Proposed Project as the preferred route for the Project, accepting some minor route deviations proposed by landowners and agencies.

Similarly, Tennessee evaluated a number of major and minor routing alternatives to the Project's lateral pipelines for the Lynnfield, Haverhill, and Fitchburg Laterals, as well as landowner- or agency-requested minor deviations of the Peabody Lateral and the Maritimes Delivery Line. Again, Tennessee chose the Proposed Route as its preferred option, making a small number of minor route deviations requested by landowners and agencies.

B. Public Comment

Attendees at EFSB and FERC scoping hearings asserted that there were information gaps hindering a comprehensive evaluation of the impacts of proposed Massachusetts NED pipeline, lateral facilities, compressor station locations and their alternatives. Commenters maintained that Tennessee inappropriately used a "bean counting" methodology to compare alternatives. These speakers also maintained that totaling the number, type, and linear distance or acreage of natural resource disturbances is not the same as a real analysis of the relative ecological values and impacts of Project alternatives. Stakeholders noted, in particular, their concerns stemming from continued uncertainties with respect to the physical location of the mainline pipeline and lateral alternatives.

In its comments, Massachusetts Audubon and The Trustees noted the availability of useful tools to guide an analysis of protected open space and to avoid, minimize, and better mitigate impacts. They cited BioMap2, produced by the Division of Fisheries & Wildlife Natural Heritage & Endangered Species Program, as a tool that "guides strategic biodiversity conservation in Massachusetts over the next decade by focusing land protection and stewardship on the areas that are most critical for ensuring the long-term persistence of rare and other native species and their habitats, exemplary natural communities, and a diversity of ecosystems." In addition, they cited the University of Massachusetts study of the Project and its potential impacts to habitat values using the Conservation Assessment and Prioritization System ("CAPS") analysis technique that assesses the ecological integrity of lands and waters and subsequently identifies and prioritizes land for habitat and biodiversity conservation. Massachusetts Audubon and The Trustees maintain that CAPS can be used to further assess the Project, impacts to natural resources, and any future route changes.

The Town of Deerfield attested to a long list of concerns with the Project, including the lack of information about horizontal drilling under railroads, Interstate 91, the Deerfield River, a contaminated aquifer in the East Deerfield rail yard, and the Connecticut River. According to Deerfield officials (EFSB Tr. C, pages 21-22), the information they received was both incomplete and perpetually changing. Residents and officials of Deerfield also faulted

Tennessee for a lack of information provided with respect to historic and archaeological resources impacted by the Project.

The comments of Carolyn Smart, a member of the Townsend Board of Selectmen, typified community concerns specific to lateral alternatives and information shortfalls. Selectwoman Smart reported that Townsend views the proposed Fitchburg lateral and its uncertain route as a potentially significant disturbance to local ecological, historical, and water resource areas, including a brook (Willard Brook), state park (Pearl Hill Brook State Park), and area of critical concern (Squannacook ACEC). Carol Regan, a Methuen resident, voiced concerns about environmental impacts and the lack of complete siting information with respect to the Haverhill lateral and the potential impacts to densely populated neighborhoods, wetlands, conservation land, and groundwater resources.

Many comments regarding the proposed Lynnfield and Haverhill Laterals noted that they would operate in areas already criss-crossed by existing pipelines. Some residents in these affected communities contended that the proposed NED laterals would contribute to an already unacceptable burden in the area, and would provide no additional benefit to local residents.

C. EFSB Recommendations

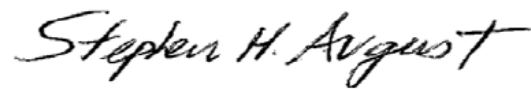
The Siting Board observes that, in Resource Report 10, the Company analyzed the Massachusetts pipeline and lateral route alternatives for NED by tabulating the number, type, and linear distance and area of natural resource disturbances for each considered alternative. No specific data were provided on the number of affected residents, noted as a “TBD” in the comparisons. The Company’s methodology appears to omit any explicit consideration of cultural resources such historical or archeological sites impacted.

As noted by Massachusetts Audubon and The Trustees, the comparative approach used by the Company fails to capture qualitative differences between resources disturbed and lacks any objective or defined method of weighing the inevitable tradeoffs between the quantity and quality of resources impacted, and other siting considerations considered by the Company. The Siting Board urges FERC to direct that the Company incorporate a complete set and well-defined set of qualitative as well as quantitative factors in its ongoing analysis and comparisons of Project alternatives.

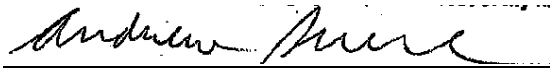
X. CLOSING COMMENTS

In summary, the Massachusetts Siting Board staff appreciates the opportunity to file comments on the scope of the Draft EIS and available resource reports, as well as filings relating to the Northeast Energy Direct Project, FERC proceeding number PF14-22-000.

Sincerely yours,



Stephen August
Presiding Officer



Andrew Greene
Director

Enclosures:

- Appendix A – Transcripts of EFSB Public Comment Hearings
- Appendix B – Written Comments Submitted to EFSB