BEFORE THE UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Constitution Pipeline LLC	**) Docket No. CP13-499**
Iroquois Gas Transmission LP	**) Docket No. CP13-502**

PETITION OF THE HENRY S. KERNAN TRUST FOR REHEARING, OR IN THE ALTERNATIVE, RECONSIDERATION OF ORDER ISSUING CERTIFICATE TO CONSTITUTION PIPELINE LLC

I. OVERVIEW AND CONCISE STATEMENT OF ERROR

Pursuant to Rule 713 of the Commission's Rules of Practice and Procedure, the Henry S. Kernan Trust, an intervenor in this proceeding,[1] hereby seeks rehearing, or in the alternative, reconsideration of the Federal Energy Regulatory Commission's (the Commission) December 2, 2014 decision issuing a certificate to Constitution Pipeline LLC (hereinafter, Constitution or CP) to construct and operate a 124-mile, 30-inch diameter pipeline and related facilities extend from Susquehanna County, Pennsylvania to a proposed interconnection point with Iroquois Gas Transmission LP (Iroquois) in Schoharie County, New York. As the pipeline passes through Delaware County, it will cross through approximately one mile of the 1000-acre tract of land known as the Charlotte Forest, which has been managed for public benefit by the Kernan family for sixty-five years, causing irreparable disruption to long stretches of

[1] In addition to the Henry S. Kernan Trust intervening in this proceeding, trustees Patricia Kernan, Bruce Kernan and Catherine Kernan filed separate motions to intervene in their individual capacity as landowners and each likewise joins in this petition in their individual capacity.

unfragmented, productive forest and pristine wetlands. (hereinafter, the impacted lands are referred to as the "Charlotte Forest." The impacts to the Charlotte Forest will have longer term consequences as well – as the Forest currently sequesters an impressive 100,000 tons of carbon annually. *See* Forest Management Plant (revised as of August 2014) attached at 3. Because the Commission did not consider either the cumulative impacts of the impending Tennessee Gas Pipeline or the effect of the limited notice requirements of the blanket certificate on the Charlotte Forest, failed to explain or support its rejection of the Trust's proposed alternatives to avoid the property, and prematurely awarded the certificate in advance of the New York Department of Environmental Conservation's grant of a water quality certificate, the Commission's order is arbitrary and capricious and unsupported by substantial evidence and should be overturned. In the alternative, should the Commission decline to vacate the certificate, the Trust asks the Commission to include certain as conditions of the certificate to ensure adequate mitigation of the pipeline impacts to the Charlotte Forest.

This rehearing request is timely filed within 30 days of the Commission's issuance of the certificate. [2]

II. STATEMENT OF ISSUES

[2] Because the thirtieth day following issuance of the certificate was January 1, 2015 and the Commission is closed, the deadline is moved to the next day that the Commission is open for business, in this case, January 2, 2015.

Issue No. 1: The Commission erred in failing to consider the cumulative impacts of the Tennessee Pipeline on the properties.

On February 21, 2012, while the Constitution pipeline was still in the pre-filing process, , the Kernan family received a notice from Tennessee Gas advising that of another pipeline that it was planning that might also cross the Kernan property. Although the Commission briefly referenced the possibility of cumulative impacts from the Tennessee Gas Pipeline it its order, the Commission failed to fully consider the cumulative effects of a second pipeline as required by *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1307 (D.C.Cir.2014). In particular, as relevant to the Charlotte Forest , the location of a second pipeline would essentially cancel out the benefits of the reduced pipeline right of way ordered by the Commission.

Issue No. 2: The Commission erred in failing to consider the adverse impacts associated with issuance of a blanket certificate as opposed to a tradition Section 7 certificate.

The Commission granted Constitution a blanket certificate for the putative purpose of performing future routine construction, repair and replacement activities through a streamlined process with limited advance notice or environmental review. *See* Commission Order at ¶11, *also Revisions to Auxiliary Installations, Replacement Facilities, and Siting and Maintenance Regulations*, 145 FERC ¶61,154 (2013)(describing purpose of blanket certificate). Among other things, a blanket certificate authorizes pipelines to add auxiliary facilities or replacements well outside the original right-of-

way. *Id*., *see also Columbia Gas Transmission v. 1.01 Acres*, 768 F.3d 300 (3rd Cir. 20140 (allowing condemnation of property a mile outside original footprint under blanket certificate). The issuance of the blanket certificate renders meaningless the Commission's requirement of a narrower right-of-way across the property since Constitution can simply use its blanket authority to place facilities outside the right-of-way. The Commission failed to consider the adverse impacts of a blanket certificate on the Charlotte Forest, or include additional conditions to protect the property from further encroachment.

Issue No. 3: The Commission unlawfully approved the certificate prior to issuance of a water quality certificate by the New York Department of Environmental Conservation (DEC) in violation of the Clean Water Act, 33 U.S.C. §401.

Section 401 of the Clean Water Act, 33 USC §1341 makes state certification of compliance with water quality standards a conditional precedent to issuance of any federal license. Therefore, the Commission's premature grant of a certificate for the Constitution Pipeline before the New York Department of Environmental Conservation's (New York DEC) issuance of a water quality certificate to Constitution violates the Clean Water Act. As such, the certificate must be vacated.

Issue No. 4: The Commission departed from its siting guidelines and NEPA requirements for consideration of project alternatives in declining to adopt the I-88 alternative.

Section 380.15(e)(1) of the Commission's regulations, 18 C.F.R. §385.15 states that the use, widening or extension of existing rights of ways must be considered in

locating proposed facilities. The Commission's failure to justify its rejection of Alternative M -- which would have co-located a larger portion of the pipeline with Interstate 88 -- reflects a departure from its own siting guidelines without reasoned explanation. Likewise, the Commission's analysis of the I-88 alternative falls short under NEPA.

Issue No. 5: In the event that the Commission denies rehearing of its order issuing the certificate, the Commission should reconsider a requirement to use HDD under the entire tract of Trust lands in light of the irreparable damage caused by the pipeline, and should include additional conditions to further ensure protection of the property.

The Commission's order requires Constitution to use trenchless drilling under a small portion of the property but failed to fully evaluate use of HDD under the entire tract. HDD would avoid a route variation but at the same time, would protect the property from the irreparable harm caused by the pipeline. In addition, the conditions included by the Commission in its order do not go far enough to guard against further damage to the property in the future.

III. FACTUAL BACKGROUND

A. Brief description of property

The Kernan Family Trust owns a 924-acre tract of land, Parcel NY-DE-226 known as (and hereinafter referred to as) the Charlotte Forest in the Town of Harpersfield, Delaware County, New York. Managed for public benefit by the Kernan family for more than sixty-five years, the Charlotte Forest has served as a model of exemplary

forest management by the New York Department of Environmental Conservation in six feature articles published in the NYSDEC's own "The Conservationist" magazine between 1956 and 2006. These same Trust lands now face permanent damage by the proposed Constitution pipeline, which will cut a swath through and irreparably disrupt an approximately one-mile stretch of unfragmented, productive forest and pristine wetlands.

Since August 2012, the Trust has worked tirelessly to bring to Constitution's attention the devastating impact that the proposed pipeline will have on the Trust lands and to persuade Constitution to consider an alternative route that would avoid the property. Unfortunately, these efforts were unsuccessful and thus, the issue was brought to the Commission. On December 5, 2013, the Trust submitted a comprehensive package prepared by the Trust's environmental consultants, which contained a detailed description of the pipeline's impacts to Trust lands (including an expert opinion by the Director of Ecology and Management of Invasive Plants Program at Cornell University on the permanent nature of the impacts due to the introduction of invasive species to the Trust properties), a corrections to Constitution's wetlands delineation and two well-developed viable alternative routes that would avoid Trust lands.

B. The EIS Process

On February 12, 2014, the Commission released the draft environmental impact statement (DEIS) for the project. The DEIS rejected the Trust's proposed minor route deviations in cursory and cryptic fashion. At the same time, recognizing the potential impacts to the Charlotte Forest, the Commission directed Constitution to resolve the Trust's concerns about impacts to the property and to submit additional information by the close of the comment period on mitigation if the property could not be avoided.

B. The Final EIS

On April 7, 2014, the Trust filed three sets of comments in response to the DEIS, criticizing the Commission's failure to fully and accurately consider the impacts of the project to the Charlotte Forest and available alternatives. In May 2014, the Commission issued a data request to Constitution asking for reassessment of eight minor route alignments suggested by the Kernans, and published notice seeking public comment on the alternative routes.[3]

Unfortunately, the Commission's notice was flawed. While the Commission sent out notice to property owners affected by the eight identified routes, Constitution instead chose to analyze a completely different set of routes affecting a nearly completely different set of property owners. This condition prevailed during the entire limited comment period that was specifically set for receiving comments on just these alternatives and was not corrected until June 14, 2014, the last day for comments

[3] FEIS at 1-9 (discussing issuance of supplemental notice).

when Constitution submitted a new analysis of the eight routes originally intended. Thus, the public never had an opportunity to comment on the actual project alternatives.

As a result of these problems, the FEIS now contains factual errors and misconceptions that went unchallenged, and the Commission was left to base its decisions on incomplete or incorrect information.[4] , The Final EIS, released on October 24, 2014, rejected the route variations. The Commission concluded that the route variations were not preferable to the proposed route *"based on the COE's findings and because the minor route variations all would be longer than the proposed segment and would in many cases also affect wetlands."*, *See* FEIS, Table 3.4.3-1, Land Parcel NY-DE-226.

The Commission evidently understood the potential effect of the pipeline on the property because it took some steps to minimize impacts to the Charlotte Forest. The Commission recommended that Constitution (1) implement trenchless direct pipe crossing from an upland area at MP 90.67, (2) reduce the temporary work easement on the property from 100 feet to 75 feet, and the permanent easement from

[4] As one example of the types of errors that persist, the FEIS Response CO5-10 states: *"The COE visited the subject property in July 2104 (sic) and ascertained that the proposed route followed an upland ridge and did not affect wetlands."* In truth, the COE and NYSDEC determined the opposite; that the proposed route passed through areas they confirmed contained two previously unmapped portions of the Mud Pond Wetland Complex and associated NYSDEC adjacent areas.

50 feet to 30 feet and (3) extend monitoring for invasive species for two years. *See* FEIS at 3-67, Table 3.4.3-1.

Unfortunately, the Commission's recommendations do not mitigate the considerable damage to the Trust lands. The pipeline will introduce invasive species which monitoring alone, particularly for only the three years required by the certificate, will neither control nor remedy, and will disrupt long stretches of pristine wetlands and contiguous forest. The harm is irreparable and the Commission's proposed remediation does little to address these impacts. Worse, by authorizing the pipeline across the Trust lands, the Commission will open the door to future and more expansive development.

Moreover, the Commission's order does not address the impact of another pipeline project – the Northeast Energy Direct pipeline that Tennessee Gas notified the Kernans about initially on February 21, 2012 *See* Attached. A more recent letter (also attached) dated December 11, 2014 confirms that the Northeast Energy Direct Pipeline will also cross the Trust lands. Yet the Commission's FEIS and certificate order are silent on the inevitable cumulative impacts of dual pipelines on the property. Likewise the Commission's issuance of a blanket certificate, which allows Constitution to upgrade the pipeline and add auxiliary facilities with limited public oversight or environmental review further exacerbates the potential for future harm, yet again, the Commission did not address this issue either.

Accordingly, the Trust seeks rehearing of the Commission's order. For the reasons set forth herein, the Trust ask the Commission to vacate the certificate or adopt one of the proposed route modifications. In the alternative, should the Commission affirm the certificate, it should reconsider use of HDD to avoid the Trust lands entirely, an include additional specific and robust conditions to provide additional mitigation to further minimize the irreparable damage caused by the Constitution pipeline and protect Trust lands from further damages and future encroachment.

IV. ARGUMENT

The Argument is structured as follows. The first sections, IV.A – IV.E preserves various legal arguments that would require reversal, or substantial modification of the Commission's certificate order. The last section, IV.F focuses on the inadequacies of the Commission's analysis of the impacts to the Kernan properties and proposed mitigation and proposes additional alternatives – such as use of HDD under the entire property, and mitigation conditions that would protect the Trust properties while keeping the bulk of the certificate order intact.

A. The Commission erred in failing to consider the cumulative impacts of the Tennessee Pipeline on the properties.

1. The Commission's cumulative impact analysis of the Northeast Energy Direct Project and Constitution Pipeline does not satisfy NEPA.

Approximately, six months before the Constitution pipeline was issued, the Kernan family received a notice from Tennessee Gas advising that a second pipeline, the Northeast Direct might potentially cross the Kernan property. Although the Commission briefly referenced the possibility of cumulative impacts from the Tennessee Gas Pipeline it its order, the Commission failed to fully consider the cumulative effects of a second pipeline as required by *Del. Riverkeeper Network v. FERC,* 753 F.3d 1304, 1307 (D.C.Cir.2014). *Delaware Riverkeeper* involved a challenge to a Commission order issuing a certificate for one segment of a project pipeline that was constructed in close temporal and geographic proximity to two other segments without considering the cumulative impacts of the three projects.[5]

The court agreed that the Commission's findings on cumulative impacts of the three project segments fell short. As the court explained, a meaningful assessment of cumulative impacts must identify:

> (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions — past, present, and proposed, and reasonably foreseeable — that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate." *Grand Canyon Trust v. FAA,* 290 F.3d 339, 345 (D.C. Cir. 2002).

The court concluded that the Commission's conclusory statement that the project " is not expected to contribute to cumulative impacts" failed to satisfy the

[5] The petitioners also argued that the Commission's review unlawfully segmented the projects in violation of NEPA.

court's test for review of cumulative impacts and showed that the Commission never really took these impacts seriously.

So too here. By the time the FEIS issued in October 2014, Tennessee Gas had already filed its application for the Northeast Energy Direct Pipeline Docket CP14-22, including a route showing the portions of the Northeast pipeline that would be co-located with, or run closely parallel to the Constitution Pipeline. Yet the Commission FEIS does not even contain a map identifying the potentially impacted areas as required by the D.C. Circuit's standard for cumulative impact assessment. And while the Commission generally discusses potential impacts on wildlife and the environment due to development of different projects (FEIS 4-250-4-252), it essentially dismisses these impacts. For example, the FEIS explains that most of the cumulative impacts are construction related and therefore, temporary. Thus, the FEIS suggests that if construction occurs at the same time, the cumulative impacts can be minimized. *See* FEIS -4-250. Yet, it hardly occurs to the Commission that the cumulative impacts of construction of two massive pipelines at the same time could result in far more extensive damage than if only one were constructed. Quite simply, the Commission's lax – and illogical analysis – lacks the rigor required by *Delaware Riverkeeper* and NEPA.

2. The Commission does not discuss the cumulative impacts to the Kernan property.

Back on February 11, 2012, the Trust received a letter from Tennessee Gas regarding the planned Northeast Energy Direct pipeline. More recently, on December 11, 2014, the Trust received a second letter from Tennessee Gas, which confirms that the Northeast Energy Direct pipeline will cross through the Charlotte Forest.

Yet even though it was known for some time that a second pipeline would cross through the Charlotte Forest, it is impossible to figure that out from the Commission's FEIS or certificate order because the second line is scarcely mentioned. Yet the planned second pipeline is key to the Commission's analysis, since it will cancel out any of the benefits (already scant to begin with) afforded by Constitution's reduced right of way across the Kernan property. In light of the planned Northeast Energy Direct Pipeline, the Commission must re-evaluate whether its reduced right of way requirement is adequate mitigation – or indeed, any mitigation at all – if the property will be harmed by other pipelines.

b. The Commission erred in failing to consider the adverse impacts associated with issuance of a blanket certificate as opposed to a traditional Section 7 certificate.

The Commission granted Constitution a blanket certificate to enable it to perform future routine construction, repair and replacement activities *See* Commission Order at P 11. However, the Commission failed to consider the adverse

impacts associated with issuance of a blanket certificate in contrast to a traditional certificate under Section 7 of the Natural Gas Act.

When the Commission issues a traditional Section 7 certificate, a pipeline may only construct, operate and maintain the facilities expressly authorized by that certificate. Therefore, if a pipeline later seeks to alter the pipeline route, or undertake substantial replacement or upgrades not authorized by its Section 7 certificate, it would be required to file an application to amend the existing certificate, or seek a second certificate for the additional activity. In either case, the proposed new activity would be subject to advance public notice and comment (which would give the landowner a chance to object) and environmental review.

By contrast, a "blanket certificate" grants a pipeline much broader powers. Under a blanket certificate, a pipeline can repair, replace or upgrade the originally approved facilities with little or no advance public notice and environmental review. *See* 18 C.F.R. §157.203 (describing requirements of blanket certificate).

Originally, the rationale for the Commission's creation of a blanket certificate process was to create a mechanism that would enable pipelines to promptly undertake necessary repairs within the existing project right-of-way without the time and expense of a full-blown certificate review process. . Unfortunately, both the Commission and courts allow pipelines to invoke blanket certificate procedures for upgrades and replacements as far as a mile outside of the originally-approved right-

of-way. *See Revisions to Auxiliary Installations, Replacement Facilities, and Siting and Maintenance Regulations*, 145 FERC ¶61,154 (2013)(expanding authority under blanket certificate to authorize replacements and auxiliary facilities outside original right-of--way); *see also Columbia Gas Transmission v. 1.01 Acres*, 768 F.3d 300 (3rd Cir. 20140 (allowing condemnation of property a mile outside original footprint under blanket certificate).

The Commission is not required to grant a blanket certificate – and should not have done so here, at least with respect to the facilities sited in the Charlotte Forest. Issuance of the blanket certificate renders meaningless the Commission's requirement of a narrower right-of-way across the property since Constitution can simply use its blanket authority to place facilities outside the right-of-way.

The Commission order never discussed or considered the adverse impacts of a blanket certificate on the Trust's property. The Commission's inclusion of special conditions to protect the Charlotte Forest on the one hand (*e.g.,* reducing the size of permanent right-of-way from 50 feet to 30 feet) while effectively taking away those conditions on the other through issuance of a blanket certificate is arbitrary and capricious and cannot be sustained.

C. The Commission unlawfully approved the certificate prior to issuance of a water quality certificate by the New York Department of Environmental Conservation (DEC) in violation of the Clean Water Act, 33 U.S.C. §401.

The Constitution Pipeline will cross numerous waterbodies and thus, must obtain a water quality certificate from the New York Department of Environmental Conservation (NYDEC) under Section 401 of the Clean Water Act, 33 USC §1341. Section 401 makes state certification of compliance with water quality standards a conditional precedent to issuance of any federal license. Specifically, Section 401 states in relevant part that:

> Any applicant for a Federal license or permit to conduct any activity, including but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters shall provide the licensing or permitting agency a certificate from the State in which the discharge originates....*No license or permit shall be granted until the certification required by this section has been granted or waived.*

As the D.C. Circuit confirmed in *City of Tacoma v. FERC*, 460 F.3d 53, 68 (D.C. Cir. 2006), "without a required [401 certification], FERC lacks authority to issue a license.

As of the date of this rehearing request, NYDEC has not issued a Section 401 permit for the project. In fact, the NYDEC did not even find Constitution's water quality application ready for review until sometime in December 2014. Because the NYDEC has not yet acted on Constitution's application for water quality certificate, the Commission lacked authority to issue a certificate to Constitution.

The fact that the certificate contains a condition prohibiting Constitution from commencing construction until it receives a 401 certificate does not cure the Commission's statutory violation. The Commission lacks authority under Section 7 to

modify the strict requirements of Section 401. That Congress intended the Commission to abide by the Clean Water Act is clear from Section 717b(d) of the Natural Gas Act, which expressly preserves states' permitting authority under the Clean Water Act, Clean Air Act and Coastal Zone Management Act

Although the Commission's order does not allow Constitution to commence construction until it obtains a water quality certificate, the conditioned certificate does not cure the Commission's error. The Clean Water Act requires receipt or waiver of a certificate before a project can go forward, period. The statute does not allow exceptions such as issuance of conditional certificate. Constitution can still move forward with eminent domain even while state permits are outstanding. *See Tennessee Gas Pipeline v. 104 Acres*, 749 F.Supp. 427 (D. RI 1990)(finding that outstanding state and water quality permits do not bar pipeline with valid certificate from proceeding with eminent domain). Constitution's ability to acquire property through eminent domain to construct a pipeline along a route that may eventually be rejected or substantially modified by the terms of the outstanding state permit is problematic, and at a minimum, the Commission should restrict Constitution's use of eminent domain until a Section 401 permit has been issued. [6]

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[6] The Commission has authority to condition a certificate to restrict a pipeline's exercise of eminent domain. *See, e.g., Mid-Atlantic Express v. Baltimore County*, Docket No. 09-2203 (4th Cir. 2010)(denying use of eminent domain to gain

D. The Commission departed from its siting guidelines and NEPA requirements for consideration of project alternatives in declining to adopt the I-88 alternative.

Section 380.15(e)(1) of the Commission's regulations, 18 C.F.R. §385.15 states that the use, widening or extension of existing rights of ways must be considered in locating proposed facilities. The Commission's failure to justify its rejection of Alternative M -- which would have co-located a larger portion of the pipeline with Interstate 88 -- reflects a departure from its own siting guidelines without reasoned explanation. Likewise, the Commission's analysis of the I-88 alternative falls short under NEPA.

1. The I-88 alternative is permissible under existing NYDOT regulations.

The Commission did not adequately support its rejection of the I-88 alternative. For example, the Commission claims that "Constitution would be required to show that no feasible alternative routes exist or cannot otherwise be successfully implemented to obtain approval of the alternative M route from the NYSDOT and the FHWA" (FEIS 3.4.1.2 Alternative M, page 3-33.) However, as confirmed by Donna K. Hintz, Associate Attorney, NYSDOT Division of Legal Affairs, the cited document is a 7.5 year old draft that has never been officially adopted. The correct governing statute is Part 131 of NYSDOT Rules & Regulations, NYCRR Title 17 -

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access for surveys where pipeline failed to satisfy express prerequisites included in the certificate for exercise of condemnation authority).

Accommodation of Utilities within State Highway Right-of-Way. This statute, which expressly includes authority over facilities for the transmission of "gas, oil, crude products" that are "are interstate or intrastate, or whether they are owned and operated by a government agency or by a person or other entity, corporation or other entity," does not make any reference to any standard that would require a demonstration that no other feasible routes exist.

The Commission further compounds this error by assuming, based on this misleading information, that the NYSDOT would not be receptive to the pipeline being collocated with I-88, and would therefore refuse the granting of an easement. The Commission then extends these assumptions to conclude that to grant an approving Certificate for Alternative M "would essentially be approving a non-buildable project, as federally managed lands cannot be acquired through the power of eminent domain."

As shown, the Commission's analysis is incorrect. Under the NYDOT's regulations, approval of Alternative M does not result in a non-buildable project – and therefore, the Commission's rejection of that alternative was arbitrary and capricious.

2. The I-88 alternative would have fewer impacts.

The Commission also found that Constitution's preferred route would have fewer impacts than Alternative M segment 5/6 – even though the evidence shows the contrary. Without any qualitative analysis, and without any explanation of the method of

analysis or basis for conclusions, the DEIS authors make a judgment that the proposed route is preferable to the alternative route: *"Alternative M segment 5/6 also crosses fewer forest interiors, Audubon-designated forest blocks of importance, property owners, and shallow bedrock areas. However, the proposed route segment 5/6 crosses fewer waterbodies, forested wetlands, and much fewer nearby residences and steep side slopes. Therefore, we do not consider adoption of alternative M segment 5/6 to be preferable to the proposed pipeline."*

As demonstrated in the annotated table below, from Constitution's own analysis, it is clear, rather, that Alternative M Segment 5/6 is superior to the proposed route. This table adds to Constitution's analysis the total impact on interior forest based on their own stated declaration that the pipeline easement would adversely impact interior forests by a distance of 300 feet on either side, converting interior forest into edge forest. In total, the preferred route would eliminate nearly 1000 more acres of interior forest habitat than would Alternative M Segment 5/6.

The adoption of this alternative would more closely satisfy FERC and FHWA guidelines that (a) encourage collocation with existing ROWs, (b) avoid the placement of new utility ROWs in greenfields, (c) reduce adverse impacts on agricultural lands, and (d) reduce overall environmental impacts in accordance with NEPA.

Comparison of Primary Route to Alternative Route M Segment 5/6

Factor	Primary Route	Alternative M Segment	Difference	Com
Length of Corresponding Segments (miles)	43.9	47.5	+3.6 miles	
Wetlands				Wetland impact based on tablet
Total Wetland Complexes Crossed (number)	8	6	-2	time of DEIS placed primary ro
Total Wetland Crossed (linear feet)	2,272	2,281	+9 feet	feet. Tabletop analysis suggests be essentially equal, with the ex being impacted under Alt. M. C
Total Wetland Impacts (acres)	3.9	3.9	0	Primary Route presents greater wetlands, while Alt. M. would already disturbed by I-88 and n
Waterbodies				
Waterbodies Crossed (number)	35	45	10	
Land Use				
Forested Land Crossed (miles)	29.2	29.7	+0.5 mile	While Alt. M slightly increases
Forested Land Impacts (acres)	389.5	395.9	+6.4	acres, the most important factor impacted vs. edge forest. As de upon interior forests are greatly
Forest Interior Crossed (miles)	15.5	3.9	-11.6 miles	
Direct Forested Interior Impacts (acres)	188.4	47.8	-140.6 acres	Impact calculation based only o
Direct + Indirect Forested Interior Impacts (acres)	1315.2	330.9	-984.3 acres	True impact calculation based o (300' each side) fragmenting in forest to edge forest
Audubon Forest Blocks of Importance (miles)	2.4	0.0	2.4	
Agricultural Land Crossed (miles)	10.4	6.5	-3.9 miles	
Agricultural Land Impacts (acres)	157.1	98.5	-58.6 acres	FHWA regs require that a perm impact of denying a utility ease *productive agricultural land…t disapproval."* Denying the pipe greatly increase this impact.
Property Owners				
Property Owners Affected (number of parcels crossed)[j]	253	140	-113	While Alt. M would bring the I residences, it would eliminate t
Residences Located within 250 feet (number)	18	56	38	(113)fewer property owners.
Other Environmental Features				
Shallow Depth to Bedrock Crossed (miles)	19.5	7.6	-11.9 miles	While Alt. M would increase sl
Steep Slopes Crossed (30 degrees or greater) (miles)	3.6	10.1	+6.5 miles	miles, slightly increasing engin would also *reduce* the crossing a much greater 11.9 miles (61%
Side Slope Construction (miles)	0.8	2.7	+1.9 miles	potential blasting and engineeri

E. The Commission should reconsider a requirement to use HDD under the entire tract of Trust lands in light of the irreparable damage caused by the pipeline, and should include additional conditions to further ensure protection of the property.

1. The Commission failed to fully appreciate the impact of the pipeline on the Charlotte Forest.

The Commission's certificate order suggests that the Commission at least partly understood the impacts of the pipeline on the Charlotte Forest – and attempted to mitigate those impacts by requiring Constitution to reduce the width of the right-of-way, to use HDD across part of the property and to monitor the property for invasive species for two years post-construction. While the Trust appreciates the Commission's efforts, it is also apparent that the Commission did not fully comprehend the pipeline's impacts on the Trust lands -- because if it had, the Commission would have realized that its proposed mitigation is simply inadequate.

First, the Commission failed to recognize that the wetlands on the Trust property are part of a larger undisturbed unfragmented interior forest, a type of habitat that supports a variety of fauna, mostly birds, that requires unbroken forest and distance from manmade influences. As development of any kind continues, this is a rapidly disappearing habitat. "Fragmenting influences" include linear development such as roads and utility rights-of-way. The effect of the ROW through the forest will be to convert the interior forest habitat to edge forest habitat, which is of significantly

diminished ecological value. This conversion extends a significant distance into the forest from the point of disturbance.

The FEIS itself acknowledges this impact to be about 300 feet from the edge of disturbance, so even a reduced 75-foot ROW will still have the impact of converting a corridor with a total width of about 675 feet to edge forest, both on and off the Kernan property. So while a corridor limited to 75 feet (as proposed by FERC) across a mile length of the Kernan land, not including additional areas for work spaces, would occupy about 9 acres on the Kernan property, the loss of interior forest would instead affect a potential total of about 82 acres. In contrast, the installation of a similar corridor through an edge habitat forest will impact only the 9 acres directly impacted. The impact of this corridor across the Kernan property therefore represents a nine-fold increase in impact from a similar corridor elsewhere.

Secondly, the Kernan property, or Charlotte Forest, has been found by several environmental scientists to contain no examples of invasive species, an extremely rare circumstance anywhere in New York State or even the Northeast in general. The introduction of a cleared ROW will have the impact of providing a virtual highway for the introduction of non-native, aggressive invasive species. Again, this impact would not be significant in areas that are generally already disturbed and currently contain invasive species.

Finally, that the Corps determined that there is no hydrological connection between the Mud Lake and Clapper Lake wetland complex is of little consequence.[7] The delineated wetlands on the Trust property are part of two larger wetland systems, the Clapper Lake wetland and Mud Pond wetland. Impacts to any part of the wetlands, or within their watershed, may have a potential adverse impact on the larger wetlands, which include a remarkably diverse and healthy wetland ecosystem that includes up to 6 species of orchid and multiple species of carnivorous plants. In an internal New York Natural Heritage Program (NYNHP) memo, Dr. Steven Young (Chief Botanist) noted that each of these wetlands are one of very few examples of their type (bog lake and inland poor fen, respectively) found in New York State, and the first of each of their types to be found in the four-county Catskill region.[8] In contrast, the pipeline crossing of a similar area of disturbed or lower quality wetlands elsewhere will present a far less potential impact.

2. Use of HDD as an alternative

The Commission order directs Constitution to use trenchless drilling under a small portion of the property but failed to fully evaluate use of HDD under the entire

[7] The Commission's Order cites the lack of hydrological connection between the Mud and Clapper Lake wetlands complexes as one of the reasons for rejecting a route alignment off the property. *See* FEIS Table 3.4.3-1.

[8] *See* Bagdon Environmental Report, submitted December 5, 2013 (discussing unique characteristics of Mud and Clapper Lake wetlands).

tract. HDD would avoid a route variation but at the same time, would protect the property from the irreparable harm caused by the pipeline.

HDD can be used for crossings up to 6500 linear feet, comfortably in excess of the one-mile length it would take to cross the entire Kernan property. Costs of HDD have also declined[9] and therefore, are not a barrier to its use. HDD would avoid re-routes across other properties so that Constitution could place the pipeline in its preferred location, while at the same time, the unfragmented forest remains such, no timber is lost, the wetlands remain unharmed, and the threat of invasive species is held at bay. The use of HDD therefore presents a solution that would fully achieve the stated goals of the applicant while keeping intact the 69-year mission of the Kernan Land Trust. For that reason, the Commission should evaluate a full HDD solution more closely, or at a minimum, condition the certificate on Constitution's further evaluation of a full HDD option.

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[9] *See* Directional Boring Central website (http://www.directionalboringcentral.com/library/dba/dbapamphlet.htm) "Directional boring has evolved steadily over the last 20 years and is now the preferred method on many installations due to its low cost and low impact on surroundings. It is generally less expensive than other methods such as microtunneling, jack & bore and open trenching in urban areas. In urban areas it can not only save a considerable amount on installation cost it can provide a tremendous amount of public goodwill."

2. The Commission order must include more robust conditions to protect the property.

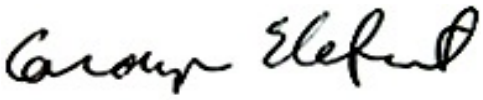
Should the Commission decline to change its order on rehearing, the Commission must still include additional conditions (beyond the reduced right of way and partial HDD) to protect the Kernan property from future encroachment and minimize to the extent possible any adverse impacts. Conditions should include the following:

- Constitution must adhere to the requirements of the Charlotte Forest Management Plan (August 14, 2014), attached as Exhibit A, in construction, operation and maintenance of the pipeline in the Charlotte Forest.
- Prior to commencement of construction, Constitution shall meet with the Kernan Trust family and/or their agents or representatives, to develop a construction schedule to further minimize impacts to the property [to develop guidelines for restoration of the property post-construction and a written agreement governing the scope of Constitution's rights of use within the right of way once the pipeline is completed.
- Constitution shall use HDD to cross the Charlotte Forest. Prior to commencement of construction, Constitution shall undertake the necessary geotechnical and boring studies to evaluate the feasibility of HDD to cross the Charlotte Forest. Constitution shall make the results of its evaluation available to the Kernan Family.
- Constitution shall fund an independent environmental monitor to be selected by the Kernan Family who shall oversee construction and restoration of the property.
- Constitution shall fund an invasive species expert, to be selected by the Kernan Family to monitor emergence of invasive species on the property for a period of the life of the easement.
- Constitution shall not be permitted to invoke blanket certificate procedures for any portion of the pipeline located on the Kernan Family property.

V. CONCLUSION

WHEREFORE, for the foregoing reason, the Kernans asks FERC to GRANT this rehearing request and DENY the certificate for the Constitution Pipeline Docket No. 13-499 or in the alternative, condition the certificate on the requirements discussed herein.

Respectfully submitted,



_____

Carolyn Elefant

LAW OFFICES OF CAROLYN ELEFANT
2200 Pennsylvania Avenue NW, Fourth Floor E.
Washington D.C. 20037
202-297-6100
carolyn@carolynelefant.com
FERC Counsel to Kernan Trust

Dated: January 2, 2015
Washington D.C.

Tennessee Gas Pipeline
an El Paso company

February 21, 2012

LL# TBD
Tax Map _4 Lot: 9

Kernan Land Trust, Henry S
204 County Hwy 40
South Worcester, NY 12197

Dear Kernan Land Trustee(s), :

Tennessee Gas Pipeline Company, L.L.C. ("Tennessee"), a subsidiary of El Paso Corporation, has sought to meet the increasing and changing need for clean, reliable, and cost effective natural gas supply for the northeastern United States for more than fifty years. As the demand for more environmentally sustainable power generation has increased, so has the demand for natural gas supply and the infrastructure to support it. As a country, we are fortunate to begin to be able to rely upon more domestic supplies of natural gas and less on foreign oil. As the mix of those supplies from different producing areas changes over time, the nation's distribution infrastructure must adjust to these changes.

In an effort to meet that demand, Tennessee is exploring the possibility of constructing a new natural gas pipeline which would tie into its current pipeline system in the vicinity of Wright, NY. This project is called the Northeast Exchange Project (NEX). Tennessee has reviewed potential routing and has identified a possible route which may impact your property. However, in order to determine the suitability for a new pipeline, certain work must be undertaken and Tennessee will be conducting civil, environmental, and archeological surveys along this proposed route. In addition, at certain areas, geotechnical investigations may be necessary.

Tennessee has retained the services of a number of its Alliance Contractors to perform this work. Staff from The NLS Group has already commenced conducting door to door requests for permission to survey properties. They are currently in the area to meet with landowners and discuss the project and any concerns they may have. The survey work is proposed to commence in March, 2012. Some of this work may carry over into the following year, as the permitting progresses. As we have been unable to contact you in person, attached to this letter is a survey permission form, which if acceptable, I ask that you take the time to fill out and return in the self addressed, stamped envelope. This will allow the surveys to take place on your property and identify any areas of concern, such as wetlands, cultural concerns, septic systems, wells, etc. Also included is a letter which fully describes each type of survey to be conducted.

Tennessee Gas Pipeline
1001 Louisiana Street Houston, Texas 77002
PO Box 2511 Houston, Texas 77252.2511
713-420-2600

Tennessee Gas Pipeline
an El Paso company

Once Tennessee has completed this survey work, it will be making application to the Federal Energy Regulatory Commission (FERC), who will conduct a thorough and intense review of the proposal to ensure that impacts to the environment and landowners are reviewed and considered. Both Tennessee and FERC will hold a series of public meetings and hearings on this project prior to approval. Additionally, prior to construction, Tennessee will need to negotiate for easement rights across each property crossed by the Project. Allowing the surveys to be conducted is a first step in this process; however it does not bind you in any way or indicate your approval to allow a pipeline on your property.

Thank you in advance for your time and cooperation on this matter and again, should you have any questions feel free to call 1-855-209-4034.

Sincerely,

Chris Wilber, PLS
Tennessee Gas Pipeline-Land Department

cc: file
Enc.

Tennessee Gas Pipeline
1001 Louisiana Street Houston, Texas 77002
PO Box 2511 Houston, Texas 77252.2511
713-420-2600

Survey and Environmental Fieldwork for

Tennessee Gas Pipeline
an El Paso company

An Information Guide for Private Property Owners

Introduction

Tennessee Gas Pipeline Company, a subsidiary of El Paso Corporation, and/or potential affiliated companies ("Tennessee) is investigating the possibility of constructing and operating a natural gas pipeline in your area. Tennessee must submit engineering plans and detailed environmental data to local, state and federal agencies to allow for a thorough analysis of potential project impacts. Therefore, as part of the planning process, Tennessee will be conducting field surveys and evaluations of the proposed construction location. This information answers many of the survey-related questions commonly asked by landowners.

Generally, up to five types of surveys may be required on an individual's property: (1) civil surveys which identify the boundaries of the corridor for all other surveys, obtain an accurate description of existing features, and locate the future pipeline, (2) geotechnical surveys (3) archaeological surveys, (4) wetland and stream surveys, and (5) surveys for rare, threatened, or endangered species. Highly trained engineers, scientists and technicians operating under the guidance of project managers perform these surveys.

Why does Tennessee need to survey?

Having accurate, current information along the proposed pipeline route is necessary for the regulatory permitting processes and to identify appropriate construction techniques. Some of this information is found in maps, aerial photos, and public records. However, some data must be obtained on site.

What happens during civil surveys?

A Tennessee representative (right-of-way agent) will contact you prior to a survey crew entering your property. The survey crew will place stakes at approximately 200-foot intervals along the proposed pipeline centerline and at certain other locations to mark features such as angle points or property lines. Surveyors' stakes are left in place for about 3 to 6 months to serve as a guide to other specialists (*e.g.,* engineers, appraisers, environmental scientists) who may need to conduct investigations of the right-of-way. Occasionally, incidental damages can result, which are typically very minor but understandably important to Tennessee and landowners. Tennessee will fairly compensate landowners for documented damages if they occur.

What is a geotechnical survey?

In order to design the pipeline, it is important to gather information about the types of soil and underground rock in areas where the pipeline would cross features such as large rivers or roads. At these sites, a truck mounted drilling rig will drill a 3- to 6-inch-wide hole and obtain soil and rock samples. Two to four small trucks with trailers will support this work. Tennessee will need landowner directions and permission to move these vehicles to and from the site. After the samples are collected, the borehole is completely filled and the work site restored. Each boring typically takes 1 to 3 days depending on the types of soils and the depth of the boring.

What do you look for during environmental fieldwork?

This varies depending on the types of property crossed and applicable regulatory requirements. Frequently, we need to conduct archaeological surveys and wetland delineations. Other studies, such as surveys of vegetation and wildlife, soil testing, or stream crossing surveys, may also be necessary.

How will this survey work affect me?

Generally, environmental field studies cause little or no disruption to landowners. Field crews may walk along the proposed right-of-way crossing your property. In some cases they may need to dig small holes or leave small stakes (called lath) behind. Disturbance is minimal and short term. We will notify you prior to this type of field survey.

What does an archaeological survey entail?

Archaeological surveys document the presence of historic and prehistoric artifacts and structures within the proposed pipeline right-of-way. Professional archaeologists walk along the proposed right-of-way and look for artifacts. Shovel tests are conducted if visibility is obscured by vegetation or if there is a likelihood of buried artifacts. Soils from shovel tests are screened and any artifacts collected. Holes are then filled and sod is replaced.

What if you find an archaeological site on my property?

In most cases, the archaeological sites found on the proposed right-of-way have been disturbed by previous activity. Sometimes a site is found that can yield important information about the past. In this case, Tennessee's archaeologists may need to return to conduct further work. Our right-of-way agent will contact you if this is necessary.

Artifacts found on your property belong to you. However, because some may have educational value, Tennessee endorses the donation of rare and culturally significant artifacts to a state repository. Tennessee will contact you concerning any artifacts found on your property upon completion of the archaeological studies, and you can decide at that time whether you wish to keep or donate the artifacts.

Am I liable for injuries to field crews on my property?

No. Contractors carry worker's compensation insurance. Safety is a top priority for all personnel working on Tennessee projects.

What is a wetland delineation?

Delineation, or mapping of wetlands found on the proposed right-of-way, is conducted to describe environmental resources and determine if special construction methods will be necessary. Typically, teams of 2 to 3 people will walk the proposed route to perform a visual check and limited soil probes. Teams will sometimes leave pin flags or lath behind, marking areas that may require further surveying. This information is then used to develop construction plans.

What happens if you find a wetland on my property?

If a wetland is identified, it would require Tennessee to use special construction methods on that section of the proposed right-of-way. Identification of wetlands does not affect or alter your existing use of the land and future uses will remain your prerogative, subject to existing regulations.

What other kinds of work may be done?

Tennessee may need to identify existing vegetation, assess wildlife habitats, evaluate soil conditions, investigate stream crossings, or conduct other field work depending on site-specific needs. Information collected during this work is used to develop sound, appropriate construction methods. Regardless of the type of fieldwork, you will receive advance notice. Tennessee's survey methods will be low-impact and cause minimal disruption.

Why conduct an endangered species survey?

If it appears that protected species (or habitat for that species) may be present, environmental agencies may ask Tennessee to field-verify these conditions. If endangered species are identified on your property, Tennessee will work with the applicable agency to determine the best means to address this issue.

What if this work results in damage to my property?

Tennessee's environmental surveyors have extensive experience in completing work on private property and are careful not to disturb livestock or to damage properties. A Tennessee right-of-way agent will contact you to discuss any site-specific issues regarding your particular property. Surveyors carry liability insurance, and Tennessee will fairly compensate you for documented damages, if any.

When will these surveys be conducted?

Fieldwork is part of an extensive pre-construction planning effort, and is usually conducted during the spring-fall seasons, or as conditions permit during the winter months.

For more information, please contact:
Tennessee Gas Pipeline Company
54 Wilson Street
Hopkinton, MA 01748
Telephone: 1-508-271-8929
Email:
Christen.Wilber@ElPaso.com

NEX Project

LL No. _____

SURVEY PERMISSION

I/We (Grantor) hereby grant permission to Tennessee Gas Pipeline its successors and assign, affiliates, agents, employees and contractors to enter upon my/our land for the purpose of performing civil surveys and environmental studies that include, but are not limited to the characterization of land as to property ownership, topographic features, cultural resources, wetland delineation and archeology.

Tennessee Gas Pipeline its agents and assigns agree to conduct themselves in a workmanlike manner and agrees to pay for any and all damages to property, crops and fences that are caused by said activities.

Grantor: HENRY S KERNAN LAND TRUST

PLEASE SIGN X _____

Date Signed: 4 _____

Address: 204 COUNTY HWY 40, SO WORCESTER, NY 12197

Telephone #: ? _____

Tennant: ? _____

City/Town: Harpersfield

County: Delaware

State: NY

Property Location: South Worcester

Map/Parcel: 4-1-9

692 AC

Existing Structures:

___ Water Well

___ Septic System

___ Property Corners Location

Notes/Comments:

Tennessee Gas Pipeline
Company, L.L.C.
a Kinder Morgan company

December 11, 2014

Henry S. Kernan Land Trust
317 County Highway 40
So. Worcester, NY 12197

RE: Tennessee Gas Pipeline Company, L.L.C.
Northeast Energy Direct Project, Docket No.PF14-22-000
New York TW 409, 411
Delaware County, Harpersfield

Dear Sir or Madam:

As you may be aware, Tennessee Gas Pipeline Company, L.L.C. ("Tennessee") is planning to expand its existing pipeline system to serve the growing demand for interstate natural gas transmission service in the northeastern United States. The Northeast Energy Direct Project ("Project") is being developed to serve specifically the New England region. The New England region, as a whole, stands to benefit from the NED Project as it will enable New England to sustain its reliance on natural gas-fired generation and to lower energy costs by providing scalable transportation capacity attached to lower cost, near-by domestic natural gas. Access to significant, reliable and abundant quantities of lower priced natural gas will benefit New England consumers and will encourage capital investment in commercial and industrial ventures adding to the region's economy. The Project will provide regional confidence in competitively priced natural gas supplies for decades to come providing stability in a critical fuel source. As part of Tennessee's fully integrated natural gas pipeline transportation system, the Project also will provide additional access to diverse supplies of natural gas to expansion customers in the New England region.

The Project is a federal undertaking that is regulated by the Federal Energy Regulatory Commission ("FERC") under Section 7(c) of the Natural Gas Act. On September 15, 2014, Tennessee requested authorization to use the FERC's Pre-Filing Process ("Process") for the Project. The FERC approved Tennessee's request on October 2, 2014 in FERC Docket No. PF14-22-000. The Process is a mechanism that allows the involvement of all relevant agencies and interested stakeholders at an earlier stage of the Project development than the FERC's traditional certificate process for review and approval of pipeline projects. By using the FERC's Process, Tennessee and the FERC have the opportunity to identify and resolve issues by consulting with stakeholders, including affected landowners, and participating agencies through meetings, telephone calls, and/or written correspondence prior to Tennessee filing a formal certificate application for approval to construct the Project with the FERC.

On November 5, 2014, Tennessee filed with the FERC draft Resource Report 1 (General Project Description) and Resource Report 10 (Alternatives) and an updated stakeholder list for the Project. The draft of Resource Report 1 reflected the information available as of the date of that filing regarding the proposed Project facilities and anticipated land requirements,

construction procedures, and permitting/clearance requirements for the Project. The draft of Resource Report 10 included the alternatives (system and routing) that Tennessee identified and a discussion of the evaluation of those identified alternatives as of the date of that filing. In the November 5, 2014 draft Resource Report 10, Tennessee presented evaluations of several major route alternatives for portions of the Project. Among the route alternatives for the Wright, New York to Dracut, Massachusetts Pipeline Segment (referred to as the Market Path Component of the Project) discussed in the draft Resource Report 10 were the New York Powerline Alternative and the New Hampshire Powerline Alternative (see Sections 10.3.1.2 and 10.3.1.8 of draft Resource Report 10). These identified alternatives involved co-locating the pipeline along an existing electric transmission line corridor in eastern New York, western Massachusetts, and southern New Hampshire.

In its ongoing effort to critically evaluate feasible alternatives for the Project, Tennessee has now determined that it will adopt both the New York Powerline Alternative and the New Hampshire Powerline Alternative as its proposed route. Therefore Tennessee will modify the originally proposed route for the Wright, New York to Dracut, Massachusetts Pipeline Segment of the Project. The Market Path component of the Project that is being revised originally consisted of approximately 177 miles of new and co-located mainline pipeline and eight new pipeline laterals totaling approximately 73 miles. With the adoption of the New York Powerline Alternative and the New Hampshire Powerline Alternative, the proposed revised route will now include approximately 188 miles of new and co-located mainline pipeline facilities as follows: (a) approximately 53 miles of pipeline generally co-located with Tennessee's existing 200 Line and an existing power utility corridor in eastern New York near the proposed Market Path Mid Station No. 1; (b) approximately 64 miles of pipeline generally co-located with an existing power utility corridor in western Massachusetts; and (c) approximately 71 miles of pipeline generally co-located with an existing power utility corridor in southern New Hampshire, extending east to the proposed Dracut, Massachusetts Market Path Tail Station.

One of primary reasons that led to Tennessee's decision to adopt the New York Powerline Alternative and New Hampshire Powerline Alternative for the Project is that they will enable a very substantial portion of the proposed new pipeline construction to be adjacent to, and parallel with, existing utility corridors in the states of New York, Massachusetts and New Hampshire. By increasing the percentage of co-location for the proposed pipeline segment, the revised route will reduce the construction of new pipeline facilities in undeveloped portions of the Market Path region, thus reducing environmental impacts and avoiding habitat fragmentation. In addition, the proposed route change will enable Tennessee to avoid (in certain cases) and to minimize (in other cases) the crossing of Article 97 properties and Areas of Critical Environmental Concern in Massachusetts.

Tennessee submitted supplemental information to the FERC on December 8, 2014 to reflect the revisions to the proposed route for the Project. That filing included a full description of the revised route and the proposed facilities for the Project. Also included is an updated stakeholder list for affected landowners, regulatory agencies, and governmental officials in the Project area. You are receiving this notification letter as you have been identified as a landowner affected by the proposed Project, including the revised pipeline route.

Tennessee plans to host open houses in the Project area during the period January 2015 through March 2015 to provide additional information and answer questions concerning the Project. Tennessee will provide information regarding the open house schedule to you when the dates and locations for those open houses have been established. Tennessee also plans in January 2015 to start meeting with affected landowners on a one-on-one basis to discuss survey needs and additional details regarding the Project.

Tennessee strives to be a good neighbor and appreciates your ongoing interest in this Project. A toll-free telephone number, (844) 277-1047, for Project / landowner inquiries is available, along with a dedicated email address, ncdinfo@kindermorgan.com. Incoming telephone calls and emails will be directed to the appropriate Project discipline to be returned as soon as possible.

Very truly yours,

James D. Hartman
Agent-Right of Way SR II
Tennessee Gas Pipeline Company, LLC

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Very truly yours,

James D. Hartman
Agent-Right of Way SR II
Tennessee Gas Pipeline Company, L.L.C

Forest Management Plan
Henry S. Kernan Land Trust

South Worcester

New York

Prepared October 2013
Revised August 2014

TABLE OF CONTENTS

I. Introduction

A. Background

In 2007 Henry S. Kernan established the Henry S. Kernan Land Trust to perpetuate the sound forest management of the Charlotte Forest. He designated his five children as the trustees of the Trust.

The Charlotte Forest management goal of the Charlotte Forest is to maintain an undivided, financially self-sufficient block of continuous forest where biodiversity and ecosystem functions are protected and enhanced by forest management for protection and production.

The Charlotte Forest is located in the Susquehanna Valley Region of New York State to the northwest of the Catskill Mountains, in the Towns of Worcester and Maryland in Otsego County and the Town of Harpersfield in Delaware County. South Worcester is the closest hamlet. The Village of Worcester is nine miles to the north and the Village of Davenport six miles to the southwest. Oneonta, 18 miles to the southwest is the nearest city.

Table 1 indicates the tax parcels of the Charlotte Forest with their number of acres and location in counties, towns and school districts according to the tax rolls.

Table 1 Tax Parcels of the Charlotte Forest

Tax Map Number	Area (acres)	County	Town	School District
264.00-2-6.00	135.52	Otsego	Worcester	Charlotte Valley
264.00-2-14.00	60.75	Otsego	Worcester	Charlotte Valley
263.00-1-13.00	48.48	Otsego	Schenevus	Schenevus
4-1-9	679.10	Delaware	Harpersfield	Charlotte Valley
TOTAL	923.85			

Table 1 indicates that according to the tax maps the total area of the Charlotte Forest is 923.4 acres. There are 679.10 taxable acres is in Delaware County, in the Town of Harpersfield, and 244.75 taxable acres is in Otsego County, 196.27 acres in the Town of Worcester and 48.48 acres in the Town of Schenevus.

B. Values of the Charlotte Forest

The Charlotte Forest is one of the largest remaining blocks of contiguous forest left in northern Delaware County. It thus forms a natural barrier against the spread of aggressive exotic species across the landscape.

Experts have estimated that the Charlotte Forest provides habitats for at least 10,000 species of insects, 50 species of mammals, 152 species of birds, 1,675 species of plants, including as many as 16 species of orchids, 4,000 species of fungi, 25 species of reptiles and amphibians, eight species of fish, 100 species of bryophytes and more than a thousand species of micro-organisms and algae and that it sequesters approximately 100,000 tons of atmospheric carbon annually. The forest vegetation and soils regulate the quantity and quality of water that flows from the forest into the Charlotte River and thence to the Susquehanna River.

Within the Charlotte Forest are relicts of New York State history, including a cemetery with graves of some of the earliest settlers and several veterans of the Civil War, and the cellar holes, barn sites, hand-dug wells and stones walls of five abandoned farms. The trustees, their families, friends and relatives and members of the general public with permission make frequent use of the forest for recreation. During the hunting season, about 35 hunters hunt for deer within the forest.

Since 1947, The Charlotte Forest has produced approximately 1.5 million board feet of commercial timber, plus large quantities of poles, pulpwood and firewood. These products have been sold to local enterprises that use

wood, thereby creating employment and added economic value. The forest continues to grow high-quality timber and poles.

II. Forest Management

A. Compartments, Management Units, Special Management Sites

The Charlotte Forest has been divided into three compartments: South Hill, Charlotte Valley and Quaker Hill. Within these compartments there are production and protection management units. Production units are being managed to produce high-quality, commercial saw timber while also enhancing their biodiversity and ecosystem functions. Protection stands are being managed to protect and enhance biodiversity and ecological functions. Within the three compartments there are 19 special management sites, which are small areas, such as camping and picnic places, of special importance.

B. Forest Types and Size Classes

The forest units have been designated based on the following forest types and diameter classes:

Forest Types
Northern Hardwoods (NH): maples, oaks, white ash and black cherry
Hemlock (Hem); hemlock
Northern Hardwoods/Conifer (NHP): northern hardwoods with red spruce, white pine
Conifer Plantation (CP): red pine, white spruce and red spruce
Wetland (W): bogs, swamps, ponds and lakes

Diameter Classes
Seedlings (S): trees less than 5 inches d.b.h.
Pole (PT): trees 5.5 to 11.5 d.b.h.
Sawtimber: (ST) trees more than 11.6 d.b.h..

C. Description of Management Compartments

1. South Hill Compartment

The **South Hill Compartment** is located on South Hill in the Towns of Worcester and Maryland in Otsego County. Table 2 indicates the number, classification, type, area, diameter class, and silvicultural status of the stands in the South Hill Compartment.

Table 2 South Hill Compartment Stands

No	Area	Classification	Type	Diameter Class	Silviculture Practices
1	1.8	Protection	Conifer	NA	No
2	9.9	Production	Deciduous	Medium	Yes
3	15.0	Production	Mixed	Large	Yes
4	1.4	Protection	Mixed	Large	Yes
5	30.7	Production	Deciduous	Large	Yes
6	21.6	Production	Mixed	Medium	Yes
7	12.2	Production	Deciduous	Medium	Yes
8	3.9	Protection	Deciduous	NA	Yes
9	41.3	Production	Mixed	Large	Yes
10	20.8	Production	Mixed	Large	Yes
11	4.9	Production	Conifer	Large	Yes
12	7.9	Protection	Conifer	NA	Yes
13	9.7	Protection	Deciduous	NA	No

TOTAL	181.1				

Table 3 indicates the letter, name, and special management sites in the South Hill Compartment.

Table 3 South Hill Compartment Special Sites

Letter	Name
A	Log cabin
B	White pine grove
C	Pruned white pine
D	Waterfall
E	Apple orchard
F	Picnic site

There are 181.5 acres in the South Hill Compartment. It has 6 Special Management Sites, 5 Reserve Management Units, and 9 Productive Management Units.

2. Charlotte Valley Compartment

The **Charlotte Valley Compartment** is in the valley bottom from the Charlotte River to County Route 40.

Table 4 Charlotte Valley Compartment Stands

No	Area	Classification	Type	Diameter	Silviculture
14	5.2	Protection	Field	NA	NA
15	2.7	Protection	Lawn	NA	NA
16	4.0	Production	Conifer	Pole	Yes
17	5.8	Protection	Mixed	Pole	Yes
18	6.8	Production	Conifer	Pole	Yes
19	35.8	Protection	Field	NA	NA
TOTAL	60.3				

Table 5 Charlotte Valley Compartment Special Sites

Letter	Name
T	Swimming Hole
U	Picnic Site
V	Picnic Seat
W	Skeet Field Path

3. Quaker Hill Compartment

The **Quaker Hill Compartment** lies on Quaker Hill in Delaware County in the Town of Harpersfield, Delaware County. Table 6 indicates the numbers, areas, classification, type, diameter class and silviculture treatment of its forest stands. Unit 56 is Clapper Lake and the swamp, bog and forest that surrounds it.

Table 6 Summary of Quaker Hill Compartment Stands

No	Area	Classification	Type	Diameter Class	Silviculture
20	11.5	Protection	Deciduous	NA	No
21	21.1	Production	Mixed	Pole	Yes
22	21.1	Protection	Conifer	NA	No
23	60.2	Protection	Mixed	NA	No
24	69.5	Production	Deciduous	Large	Yes
25	23.7	Protection	Mixed	NA	No
26	22.9	Production	Deciduous	Large	Yes

27	19.8	Production	Deciduous	Large	Yes
28	30.0	Production	Deciduous	Large	Yes
29	8.0	Protection	Mixed	NA	No
30	16.6	Production	Deciduous	Pole	Yes
31	20.7	Production	Deciduous	Pole	Yes
32	8.6	Production	Deciduous	Pole	Yes
33	16.4	Protection	Deciduous	NA	No
34	6.6	Production	Mixed	Seedling	Yes
35	10.2	Protection	Mixed	NA	No
36	4.9	Protection	Mixed	NA	No
37	21.2	Protection	Conifer	NA	No
38	10.7	Protection	Mixed	NA	Yes
39	11.2	Protection	Conifer	NA	Yes
40	44.4	Production	Mixed	Large	Yes
41	37.2	Production	Deciduous	Seedling	No
42	13.0	Protection	Mixed	NA	No
43	22.8	Protection	Mixed	NA	No
44	6.5	Production	Mixed	Pole	No
45	6.2	Production	Conifer	Large	Yes
46	9.2	Production	Conifer	Large	Yes
47	13.9	Production	Mixed	Pole	Yes
48	18.0	Protection	Mixed	NA	Yes
49	10.0	Production	Mixed	Large	Yes
50	2.0	Production	Conifer	Seedling	No
51	14.7	Production	Deciduous	Large	Yes
52	3.7	Production	Conifer	Large	Yes
53	19.6	Protection	Mixed	NA	Yes
54	29.2	Production	Deciduous	Large	No
55	14.0	Protection	Deciduous	NA	No
56	44.0	Protection	Swamp/Lake		No
	723.3				

Table 7 indicates the special sites in the Quaker Hill Compartment.

Table 7 Quaker Hill Compartment Special Sites

Letter	Description
G	Leek picnic site
H	Lean-to
I	Outlet of lake
J	Path to lake
K	Blueberry patch
L	Stone cellar
M	Stone cellar & well
N	Spring
O	USGS topographical marker
P	Mother memorial
Q	Stone cellar & well
R	Spring
S	Bee tree

D. Management Practices

1. Non-Commercial Silviculture

Silvicultural treatments are made in the productive management units in order to (1) increase the commercial value of the stand by concentrating wood growth on the straightest trees of the commercially more valuable species; (2) diversify tree species and ages in order to increase the resistance of the stand to insects and diseases; (3) achieve adequate regeneration of commercially valuable tree species especially by reducing damage from deer browsing; and, in conjunction with commercial logging operations, (4) achieve an uneven age distribution..

Non-commercial silvicultural treatments include pruning, thinning, releasing and planting. Pruning is done mostly on conifer species in order to produce wood free from knots. Thinning is required to achieve rapid growth of wood on the better-formed trees. Releasing is required mostly in stands where no silvicultural treatments have been previously applied in order to eliminate crooked or diseased trees and encourage the regeneration and growth of more commercially valuable trees. Planting is done in open fields where little natural regeneration of trees has occurred.

Currently, most of the stands in the Charlotte Forest are even-aged, either because they regenerated in old fields or because they have been managed using the shelter-wood harvesting system. A severe attack of forest tent caterpillar in 2008 and 2009 on Quaker Hill suggested that it would be prudent to maintain more diversity in ages, diameters and species in the forest. Currently, therefore, one aim of silvicultural practices is now to create such diversity and convert most of the productive management units to uneven aged stands. The objective of silvicultural operations is to eventually convert even aged hardwood stands and pine and spruce plantations into uneven aged stands with the size and basal area distribution indicated in Table 2.

Table 8 No & BA of Uneven-Aged Hardwood Stands

Dbh	No/Acre	BA/acre
1-5	223	11
6-11	57	21
12-17	26	29
18-24	14	32
25+	0	0
All	320	92

(Based on Arbogast 1957)

2. Commercial Timber Harvesting

Commercial timber harvesting occurs in only those stands that have been designated for production rather than protection. Harvesting occurs when a forest management unit has accumulated sufficient volume of wood per acre on trees above 18 inches d.b.h. to make a sale of timber feasible. Sales are generally made of standing timber. Timber is measured and marked and then put up for sealed-envelop bidding. The sale contract specifies the conditions for construction, use and closing of roads and skidding trails, treatment of logging slash and cleaning and operation of equipment. A performance bond is required.

3. Prevention and Control of Invasive Plant Species

Means to control the introduction and spread of invasive species include: (1) restricting the entrance of vehicles into the forest to those owned by the trustees; (2) requiring thorough cleaning of logging equipment before it is permitted into the forest; (3) to the extent feasible removal by hand or killing by herbicides of invasive plant species; and (4) monitoring of vegetation to permit rapid identification of new invasive species and the prompt application of effective measures to eliminate them.

4. Control of Deer Populations

To reduce damage to regeneration of commercially valuable tree species hunting is encouraged by: (1) giving out more than 60 hunting permissions per year for all types of deer hunting (i.e. bow, black powder, shotgun/rifle); (2) non-commercial silvicultural operations such as releasing and thinning that will stimulate more plentiful regeneration; (4) commercial logging that will create opening where abundant regeneration can become established; and (5) retention of slash produced by non-commercial and commercial operations to a height that will serve to protect tree regeneration.

Deer browsing on regeneration is of most concern in those productive units where the immediate silvicultural objective is to obtain and protect abundant regeneration of commercially valuable species. Such units have been recently logged, severely affected by defoliation or treated silviculturally by a non-commercial release cut. Currently, there are eight such units. Units are 5, 24, 26, and 41 have been recently logged after heavy defoliation. Unit 2 was heavily defoliated but not logged. Sections of Units 9, 40 and 47 have been treated silviculturally with a non-commercial release cut.

In August 2014 these eight units were surveyed to ascertain the condition of their regeneration. Observations were made of (1) abundance of regeneration of commercially valuable species (i.e. maples, oaks); (2) abundance of ferns; (3) deer browses. Regeneration of commercially valuable tree species was observed to be sparse or non-existent in Units 2, 5, 9, 24, 26 and 41. In the sections of Units 40 and 47 which have been treated with a non-commercial release cut regeneration of commercially valuable species was more abundant although also not entirely adequate.

5. Maintenance of Infrastructure

Forest roads and a log landing are the principal infrastructure of the Charlotte Forest. There are approximately 36,200 feet of forest roads. Their location is indicated by yellow lines on the forest map. The roads cause no breaks in the forest canopy and do not affect water bodies. Maintenance of the forest roads requires periodic removal of fallen trees, clearing of over-hanging branches, and occasional cleaning of culverts, water-bars and drainage ditches.

The forest's principal log landing is located at the intersection of South Worcester Hill Road and Titus Hill Road on Quaker Hill, the only site with a sufficiently large flat area adjacent to a public road to permit the accumulation of logs and their subsequent preparation for loading on trucks, making it a particularly important site for the management of the Charlotte Forest.

6. Maintenance of Boundary Lines

Every two or three years the boundary lines are cleared, re-marked with paint.

7. Maintenance of Equipment

The principal equipment required to manage the Charlotte Forest is a four wheel drive truck, two chainsaws, a motorized backpack sprayer, a power tree pruner, a firewood splitter, axes and bow-saws, and measuring equipment, such as a Biltmore stick, a diameter tape, and a compass.

III. Operating Plan 2015 – 2019

A. Non-Commercial Silvicultural Treatments Production Stands 2015-2019

Table 9 Compartment A: Non-Commercial Silvicultural Operations

Year	Unit No	Area	Operation
2015	2	9.9	Thin & Release
2016	3	15.0	Thin & Release
2017	6	21.6	Thin & Release
2018	7	12.2	Thin & Release

2019	10	20.8	Thin & Release
	TOTAL	79.5	

No non-commercial treatments are planned in Compartment B between 2015 and 2019.

Table 10 Compartment B: Non-Commercial Silvicultural Operations

Year	No	Area	Non-Commercial Silviculture
2015	21	21.1	Thin & Release
2015	40	44.4	Thin
2016	24	69.5	Cut hornbeam & striped maple. Girdle culls
2017	26	22.9	Cut hornbeam & striped maple. Girdle culls
2017	28	30.0	Cut hornbeam & striped maple. Girdle culls
2018	33	16.4	Thin
2018	30	16.6	Thin
2019	41	37.2	Cut hornbeam & striped maple. Girdle culls
2019	44	6.5	Release
		293.8	

B. Timber Harvests

Table indicates the stands that will be harvested during the period 2015 to 2019 with their estimated volumes assuming a minimum harvest of 2,000 board feet per acre.

Table 11 Timber Harvests by Stand 2015-2019

Year	Stand No	Area	TOTAL VOL. ('000 bd. ft.) *
2015	46	9.2	18.4
	28	30.0	60.0
	49	10.0	20.0
2016	9	41.3	82.6
	11	4.9	9.8
2017	-		0
2018	-		0
2019	-		0
TOTAL	-	95.4	190.8

*Assuming at least 2,000 bd. ft./acre of commercial timber

IV. Financial Plan 2015-2020

A. Expenses

Table 12 Silvicultural Expenses 2015-19

Year	No	Area	Cost
2015	2, 21, 40	75.5	$7,550.00
2016	3, 24	84.5	$8,450.00
2017	6, 26, 28,	96.1	$9,610.00
2018	7, 33, 30	45,2	$4,700.00

2019	10, 41, 44	64,5	$6,900.00
		372.1	$37,210.00

Table 13 Equipment & Materials Expenses 2015-19

Equipment	Yearly Cost	TOTAL
Pick-up truck	0	0
Chainsaws (2)	200	1,000
Backpack-sprayer	50	250
Power splitter	0	0
Power pruner	50	250
Axes	10	50
Bow saws	40	200
Measuring tools	0	0
Marking paint	100	500
Posted signs	50	250
	500	2,500

Table 14 Estimated Tax Expenses 2015-19

Year	School Taxes	Town/County Taxes	TOTAL
2015			20,000
2016			20,000
2017			20,000
2018			20,000
2019			20,000
TOTAL			100,000

Table 15 Estimated Administrative Expenses 2015-2019

Year	Accounting	Lawyer	Labor	Insurance	TOTAL
2015	200	2,000	500	500	3,200
2016	250	2,000	500	500	3,200
2017	300	2,000	500	500	3,200
2018	350	2,000	500	500	3,200
2019	400	2,000	500	500	3,200
TOTAL	$1,500.00	10,000	2500	2500	16,000

Table 16 Summary Expenses 2015-2019

Year	Silviculture	Equip./Materials	Taxes	Administration	TOTAL
2015	$7,550.00	500	20,000	10,500	$38,550.00
2016	$8,450.00	500	21,000	2,550	$32,500.00
2017	$9,610.00	500	22,000	2,600	$34,710.00
2018	$4,700.00	500	23,000	2650	$30,850.00
2019	$6,900.00	500	24,000	2,700	$34,100.00
TOTAL	$37,210.00	2500	110,000	21,000	$170,710.00

B. Income

Table 14 indicates estimates of the values of the timber in the South Hill Compartment at different prices per thousand board feet.

Table 17 Estimated Value of Timber Sales 2015-2019

Year	Stand No	TOTAL VOL. ('000 bd. ft.)	Est. $/'000 bd. ft.	TOTAL VALUE
2015	46	18.4	300	5,430
	28	60.0	600	36,000
	49	20.0	200	4,000
2016	9	82.6	500	41,300
	11	9.8	300	2,940
2017	-	0		0
2018	-	0		0
2019	-	0		0
TOTAL	-	190.8		89,670

Table 18 Income & Expenses

INCOME (A)	155,710
Investments	53,440
Rental House	12,600
Timber Sales	89,670
EXPENSES (B)	155,710
Silviculture	37,210
Equipment & Materials	2,500
Taxes	100,000
Administration	16,000
Difference (A-B)	0