

<p>PETITION NO. 755A – Iroquois Gas Transmission System, L.P. application submitted to the Federal Energy Regulatory Commission to modify the existing interstate natural gas pipeline by the addition of a compressor station off of High Meadow Road in Brookfield, Connecticut</p>	<p>} } } }</p>	<p>Connecticut Siting Council</p>
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June 27, 2006

FINDINGS OF FACT

INTRODUCTION

1. On February 7, 2006, Iroquois Gas Transmission System, L.P. (Iroquois), pursuant to provisions of Connecticut General Statutes (CGS) §§4-176(a) and 16-50k(d) and §16-50j-38 *et. seq.* of the Regulations of Connecticut State Agencies, filed a Petition for declaratory ruling (Petition) with the Connecticut Siting Council (Council) that the Council does not have jurisdiction over proposed additions to Iroquois’ previously authorized natural gas compressor station off High Meadow Road in Brookfield, Connecticut. The modifications to the existing Iroquois pipeline were the subject of Council Petition 540 and Petition 555. (Council Admin. Notice 1)
2. At a public meeting held on February 22, 2006, the Council ruled that the Federal Energy Regulatory Commission (FERC) has exclusive jurisdiction over the proposed Brookfield compressor station under the Natural Gas Act, 15 U.S.C. § 717 *et. seq.* The Council further stated its intention to make recommendations to the FERC and Iroquois regarding siting, environmental mitigation measures and construction procedures. (Council Admin. Notice 1)
3. On December 21, 2001, Iroquois petitioned the Council for a declaratory ruling that the proposed modification to its existing interstate natural gas pipeline by the addition of a compressor station would not have a substantial adverse environmental effect, and that no Certificate of Environmental Compatibility and Public Need would be required (Petition 540). (Council Admin. Notice 6, FOF # 1)
4. On March 21, 2002, Iroquois filed a subsequent petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications of an existing Iroquois pipeline involving additions to a natural gas compressor station (Petition 555). (Council Admin. Notice 6, FOF # 1)
5. On September 25, 2002, the Council submitted Findings of Fact, an Opinion, and a Decision and Order to the FERC supporting a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for Petition 540 and Petition 555. (Council Admin. Notice 6)
6. On October 31, 2002, the FERC approved Iroquois’ application to construct a compressor station, subject to conditions. However, the two electric generation customers in New York that would have been serviced by the project subsequently deferred or cancelled their electric generation projects and as a result Iroquois delayed construction of the approved facilities. Since that time Consolidated Edison Company of New York, Inc. (Con Edison) has identified a need for similar facilities for new firm transportation service. Iroquois has developed a project to serve Con Ed’s need; it is called the MarketAccess Project. (Iroquois 1, vol. 1, p. 2, 7)

7. On March 29, 2006, Iroquois filed an application with the FERC for an amendment to the certificate of public convenience and necessity that was issued by the FERC on October 31, 2002. The FERC docket number associated with the proposed project is CP02-31. (Iroquois 1, vol. 1, p. 1; Transcript 1 (Tr. 1), May 9, 2006, p. 4, 5)
8. Iroquois proposed to reduce the size of the previously approved compressor facility from 10,000 (nominal) horsepower to 7,700 (nominal) horsepower to allow Iroquois to receive natural gas from the Algonquin system; and to install gas coolers at the site. (Iroquois 1, vol. 1, p. 3)
9. Pursuant to Sections 16-50j-21 and 16-50j-40 of the Regulations of Connecticut State Agencies, the Council, after giving due notice thereof, held a public hearing on May 9, 2006, beginning at 6:30 p.m. in the Brookfield High School Auditorium, 45 Longmeadow Hill Road, Brookfield, Connecticut. The evidentiary portion of the hearing was conducted on May 25, 2006 at the Central Connecticut State University, Institute of Technology and Business Development, Room 309 (Stanley Room), 185 Main Street, New Britain, Connecticut. The Council and its staff made an inspection of the proposed site and the Vale Road Alternative on May 9, 2006. (record, Tr. 1, May 9, 2006, p. 3; Transcript 2 (Tr. 2), May 25, 2006, p. 3)
10. Parties to this proceeding include the applicant and the Town of Brookfield. (Tr. 1, p. 8)

MUNICIPAL INVOLVEMENT

11. After notifying governmental entities for the area where the potential project would be located, Iroquois met with town officials and invited all local residents to an open house presentation. (Iroquois 1, vol. 1, p. 21)
12. Iroquois held an open house in the Town of Brookfield on January 19, 2006. Public comments received during the open house were provided to the FERC. Flyers regarding the open house were mailed to landowners in Brookfield and Newtown that are within 0.5 miles of the proposed site. Newspaper advertisements were published regarding the open house. Subsequently, Iroquois participated in a public meeting hosted by the Town of Brookfield on February 9, 2006. (Iroquois 1, vol. 2, p. 1-14)
13. The Town of Brookfield Board of Selectmen and the Board of Education have taken the position that the proposed compressor station should not be built in Brookfield at all. If the proposed site were recommended by the Council to the FERC, then the Town would discuss certain options with Iroquois, such as additional barriers that Iroquois could construct between the proposed project site and the surrounding residences and Whisconier Middle School. (Town 1, p. 2; Tr. 2, p. 100)
14. The Town of Brookfield does not want the proposed project in the Town. If made to choose between the proposed site and the Vale Road Alternative they would choose the Vale Road Alternative, because the proposed site is in proximity of the Whisconier Middle School. (Tr. 2, p. 104, 105)

PROJECT NEED

15. Iroquois has an agreement with Con Edison to deliver a maximum quantity of 100,000 dekatherms per day (Dth/d) of natural gas effective November 1, 2007. (Iroquois 1, vol. 1, p. 8)
16. It is necessary to raise Algonquin's normal operating pressure of 500 to 600 pounds per square inch (psi) to slightly higher than Iroquois' 900 to 1,200 psi in order to allow the transfer of natural gas from Algonquin to Iroquois. Iroquois anticipates operating the pipeline within Brookfield at a range of between 800 psi and 1,300 psi. (Iroquois 2, Q. 1)

PROPOSED PROJECT

17. The High Meadow Road site was selected for the proposed project because of the existing interconnection between Algonquin and Iroquois, and because it is the location on Iroquois' existing system where the two pipeline systems are in closest proximity, thus minimizing need for construction of new pipeline. Figure 1 shows the proposed site. (Iroquois 1, vol. 1, p. 10)
18. The proposed project would be constructed on two parcels owned by Iroquois that total 68.3 acres. One parcel is 65 acres and has been purchased by Iroquois recently. The other parcel is 3.3 acres, and is the location of the existing Brookfield Sales Meter Station. (Iroquois 1, vol. 1, p. 10; Iroquois 1, vol. 2, p. 1-3)
19. In 2001, Iroquois proposed a maximum ground disturbance of 8.7 acres and an operational land requirement of 7.0 acres. The current proposed project would require a maximum ground disturbance of approximately 7.3 acres and an operational land requirement of approximately 7.0 acres, 3.3 acres of which are located within the Brookfield Sales Meter Station fence line. (Iroquois 1, vol. 2, p. 1-6)
20. There are two existing warehouse/storage buildings on the proposed site. These buildings would be razed, including the concrete foundations, prior to the commencement of construction at the proposed site. (Iroquois 1, vol. 2, p. 1-8)
21. The proposed equipment storage areas would be used for company and contractor office trailers, parking, material stockpiling, pipe fabrication, temporary fuel storage tanks (with containment), storage of supplies, and other temporary construction activity. The existing impervious paved access and parking area to the south and east of the existing buildings would be used as a temporary laydown area during construction. This pavement would be removed prior to the completion of final grading and landscaping of the proposed site. (Iroquois 1, vol. 2, p. 1-5, 1-8)
22. The proposed facilities include an approximately 7,700 (nominal) horsepower turbo-compressor unit; control/utility buildings; a storage building; a local control building; a cooler motor control center (MCC) building; gas coolers, an emergency generator, a domestic gas building and associated paved parking and access areas. (Iroquois 1, vol. 1, p. 10; Iroquois 1, vol. 2, p. 1-3)

23. The proposed control building would consist of space for offices, control room for the compressor station, a utility area, storage for supplies and materials, and a garage. The proposed storage building would be approximately 40 feet by 40 feet, and would be constructed of a steel frame and metal or other sheet siding material. (Iroquois 1, vol. 2, p. 1-8)
24. The proposed compressor building would be approximately 50 feet by 74 feet and would contain the turbo-compressor equipment. The proposed compressor building would be constructed with a roof at a grade height of approximately 35 to 40 feet. The exhaust stack of the compressor building's turbine engine would be approximately 50 feet tall. (Iroquois 1, vol., 1, p. 10)
25. The gas cooler facilities would be a bank of large coolers with horizontal electric fans, approximately 20 to 25 feet tall. (Iroquois 1, vol., 1, p. 10)
26. The proposed buildings and gas cooler foundations would be constructed of poured reinforced concrete. If topsoil is present it would be stripped from the area of the building foundations and could be used on-site either for landscaping or for covering the septic system leach field. (Iroquois 1, vol. 2, p. 1-8)
27. The proposed gas coolers would consist of air-cooled heat exchangers located downstream of the existing compressor, in line with the station discharge piping. The exchangers would consist of four bays, each bay containing two fan units. The combined footprint would be approximately 50 feet by 60 feet. (Iroquois 1, vol. 2, p. 1-4)
28. Iroquois proposes to design the high pressure gas piping for a maximum allowable operating pressure (MAOP) of 1,480 psi. The station discharge pressure would be controlled so as to remain at or below the MAOP of 1,440 psi. (Iroquois 1, vol. 2, p. 1-8)
29. A new discharge line isolation valve would be installed which would require approximately 30 feet of existing discharge pipe to be replaced. The valve is necessary to direct the gas into the gas coolers. The coolers would each need a belowground suction and discharge header, up to 250 feet long. (Iroquois 1, vol. 2, p. 1-11)
30. Access to the site would be via an improved approximately 500-foot driveway extending from High Meadow Road. The proposed compressor station would be enclosed within a chain link fence. (Iroquois 1, vol. 2, p. 1-4, 1-7)
31. Following completion of clearing, Iroquois would comply with the FERC's regulations regarding erosion and sediment controls. (Iroquois 1, vol. 2, p. 1-7)
32. Iroquois would drill a water well to serve the potable water needs of the proposed control building. The well would provide approximately 200 to 300 gallons per day; however the volume of potable water used for on-site purposes is expected to be minimal. Installation of a domestic waste disposal system would be required at the proposed site. (Iroquois 1, vol. 2, p. 1-9, 2-4)
33. Iroquois proposes to restore High Meadow Road to pre-construction conditions following the completion of construction. (Iroquois 3, Responses to FERC dated May 8, 2006, Q. 1i)

34. Iroquois would agree to a condition requiring that it not subdivide the proposed property or develop the property for energy, industrial or commercial use without the Council's review and approval. (Iroquois 11, Q. 37)
35. Iroquois anticipates a construction period of April, 2007 to October, 2007. Construction would be performed on a five-day, eight hours per day work week. (Iroquois 1, vol. 2, p. 1-12; Iroquois 11, CSC Q. 13; Iroquois 13, CSC Q. 13)

LAND USE

36. Residential areas surround the proposed site in all directions. A railroad corridor borders the property to the southwest with residences beyond the corridor. Route 25 is located approximately 2,500 feet to the northeast and Interstate 84 (I-84) is located approximately 3,000 feet to the south. (Iroquois 1, vol. 2, p. 8-3)
37. In particular, the proposed project would be located in relatively close proximity to two residences. One is located at 67 High Meadow Road. This residence is across High Meadow Road from the existing meter station and is approximately 90 feet from the property line of the Iroquois property. A second residence is currently under construction to the east, adjacent to the existing home. This residence is located approximately 100 feet from the property line of Iroquois property. (Iroquois 1, vol. 2, p. 8-4)
38. Approximately 196 houses are located within 0.5 miles of the proposed compressor building. (Iroquois 1, vol. 2, p. 8-4)
39. There are three residences located within approximately 600 feet of the proposed site. (Iroquois 1, vol. 2, p. 10-8)
40. Approximately 166 houses existed within 0.5 miles of the proposed compressor building in 2002, during the Petition 540/555 process. Since 2002, 30 houses have been built. All but six of the newly built houses are within a subdivision called "Carriage Homes on the Pond", located to the southeast of the proposed project on Black Swan Court. The residential property in this subdivision closest to the proposed fence line is approximately 670 feet. (Iroquois 1, vol. 2, p. 8-4)
41. Whisconier Middle School, town open space, and a church are within one-half mile of the proposed compressor station yard. At its closest point, the proposed compressor building emission stack would be located approximately 2,040 feet from the Whisconier Middle School property line and approximately 2,325 feet from the closest corner of the school building. At its closest point the proposed station yard fence line would be approximately 1,800 feet from the school property line. (Iroquois 1, vol. 2, p. 8-5; Iroquois 3, Kiefner Report, p. 4)

ALTERNATIVES

42. The main factor in determining the location of the proposed compressor station is the proximity of Iroquois' and Algonquin's existing pipeline systems. The two pipeline systems parallel each other for approximately three miles. The proposed compressor station could be moved up to three miles downstream, based on the engineering characteristics of the pipeline in the area. Iroquois investigated the use of five alternative sites for the location of the proposed compressor station. Four of the alternative sites were downstream and one was upstream of the proposed site. Iroquois' investigation of the alternative sites consisted of a desktop analysis without any field work. (Iroquois 1, vol. 2, p. 10-5; Tr. 2, p. 194)
- a. Alternative Site 1 is located on an approximately 80-acre parcel in Newtown that is about 0.5 miles downstream of the proposed site. This alternative was rejected by Iroquois because there would be insufficient buildable land due to an expansive wetland system and the presence of residential properties adjacent to the pipeline right-of-way. (Iroquois 1, vol. 2, p. 10-7)
 - b. Alternative Site 2 is an approximately 120-acre parcel in Newtown about one mile downstream of the proposed site. This alternative was rejected by Iroquois because the eastern portion of the parcel has been converted into residential development and the remaining portion of the parcel is insufficient for the construction of the proposed compressor station. (Iroquois 1, vol. 2, p. 10-7)
 - c. Alternative Site 3 is located between Butterfield Road and Georges Hill Road in Newtown, approximately two miles downstream of the proposed site. This alternative was rejected by Iroquois because there is insufficient developable land for the proposed compressor station and because there would be potential impacts to environmental resources. (Iroquois 1, vol. 2, p. 10-7)
 - d. Alternative Site 4 is an approximately 55-acre parcel in Newtown that is located about three miles downstream of the proposed site. This alternative was rejected by Iroquois because it has insufficient developable land to construct the proposed compressor station and because construction would impact environmental resources. Also, extensive blasting might be needed at this alternative, which could impact nearby residences. (Iroquois 1, vol. 2, p. 10-7)

Vale Road Alternative

43. The Vale Road Alternative site (Alternative Site 5) is an approximately 45-acre parcel in Brookfield that is about one mile upstream of the proposed site. The site is in an industrial zone, and was used as a sand and gravel operation from 1950 to the early 1980s. There are 11 residents within approximately 600 feet of the Vale Road Alternative. Figure 1 shows the proposed site and the Vale Road Alternative site. (Iroquois 1, vol. 2, p. 10-8; Iroquois 2, Q. 2)
44. All of the equipment proposed at the proposed High Meadow Road site would also be required at Vale Road Alternative site with the addition of a pipeline lateral that would extend 1.25 miles to connect the Algonquin pipeline to the compressor station and to Algonquin's metering and regulation facilities, which are currently proposed at the existing High Meadow Road site. (Iroquois 2, Q. 2)

45. Iroquois would use the existing pipeline right-of-way to construct the 1.25-mile, 24-inch pipeline from the Vale Road property to the High Meadow Road property. An additional 25 feet of temporary workspace would be required for construction, resulting in approximately 3.8 acres of new land disturbance. (Iroquois 2, Q. 2, 2c(i))
46. The additional pipeline has the potential to impact approximately 4.5 acres of wetlands, and cross two perennial streams. Potential temporary impacts from stream crossings of a new pipeline include increased turbidity and silt loads from mechanical disturbances; change in the physical configuration of bottom surfaces; and removal of associated riparian vegetation. (Iroquois 1, vol. 2, p. 10-8; Iroquois 2, Q. 2c(ii))
47. Several of the wetlands along the pipeline from the Vale Road Property to the High Meadow Road property were identified as palustrine forested systems. Construction along this area would likely result in the conversion of portions of the forested wetlands into scrub-shrub or emergent systems, which would alter their function as wetland resources. (Iroquois 2, Q. 2c(ii))
48. Iroquois has not undertaken a Phase 1 environmental assessment at the Vale Road Alternative site and is thus not aware of the environmental condition of the Vale Road site. (Tr. 2, p. 193)
49. Approximately 166 residences and 48 businesses are located within a ½ mile radius of the proposed compressor station location on the Vale Road Alternative site. (Iroquois 2, Q. 2a)
50. Approximately three homes and five businesses are located within 1,000 feet of the proposed compressor exhaust at the Vale Road Alternative site. (Iroquois 2, Q. 2v)
51. Iroquois would employ appropriate architectural and landscaping measures at the Vale Road Alternative site including barn-like features on the buildings. Iroquois would consult the Town of Brookfield with regard to the color scheme and lighting configurations. (Iroquois 3, Responses to FERC dated May 12, 2006, Q. 3)

ENVIRONMENTAL ISSUES

Visibility

52. Iroquois proposes to leave approximately 57 acres of the entire parcel undeveloped. The existing trees along the High Meadow Road property boundary would be maintained. The proposed compressor station site, which is 30 feet below the elevation of High Meadow Road, would be partially screened by the wooded buffer that would remain along the property boundary. (Iroquois 1, vol. 2, p. 8-9)
53. The proposed compressor station would be visible from the residence at 67 High Meadow Road and the adjacent residence that is under construction. The residences located to the south of the railroad in the Dairy Farm and Carriage Homes subdivisions would have limited visibility of the proposed compressor station. Mature oak trees along the western boundary of the property would aid in the screening of views from that direction. (Iroquois 1, vol. 2, p. 8-9)
54. The exterior lighting at the proposed compressor station would be as non-intrusive as practicable. (Iroquois 1, vol. 2, p. 8-9)

55. Iroquois proposes a landscaping plan that would incorporate a design to improve the aesthetic appearance of the proposed station. Appropriate architectural and landscaping would be used to mitigate the visual impact of the proposed compressor station, including barn-like features on the proposed buildings and a color scheme to be decided under consultation with the Town of Brookfield. (Iroquois 1, vol. 2, p. 8-9; Iroquois 3, responses to FERC dated May 8, 2006, Q. 1a, Q. 2b)
56. The proposed compressor station, including the exhaust stack, is not expected to be visible from Whisconier Middle School because it would be at lower elevation than the school and the wooded area between the proposed site and the school would provide visual screening. (Iroquois 1, vol. 2, p. 8-9)
57. The Town of Brookfield recommended a prohibition against the removal of the trees along High Meadow Road; additional landscaping for aesthetic purposes around the proposed station; and visual buffers for residences along High Meadow Road, the Dairy Farms Estates, and Carriage Pond Homes. The Board also suggested the removal of the abandoned warehouse on the property. (Iroquois 1, vol. 2, p. 8-10)

Air Quality

58. Iroquois filed an air permit application with the Connecticut Department of Environmental Protection (CTDEP) on March 17, 2006. (Iroquois 1, vol. 1, p. 21)
59. The Town of Brookfield is in Fairfield County, Connecticut, which is part of the New York, New Jersey, Connecticut Interstate Air Quality Control Regions (AQCRs), which is designated AQCR No. 43. Fairfield County is designated as “attainment” for all criteria pollutants other than ozone and fine particulate matter (PM-2.5). The proposed project area is designated as a “severe” ozone non-attainment area and a “moderate” PM-2.5 non-attainment area. (Iroquois 1, vol. 2, p. 9-4)
60. Construction of the proposed compressor station would generate emissions from heavy-duty and standard construction vehicle exhaust. These emissions would comply with the Environmental Protection Agency mobile emission regulations. The limited duration of construction and the small number of vehicles would prevent significant localized air quality impacts. (Iroquois 1, vol. 2, p. 9-7)
61. Construction vehicles used on unpaved or disturbed access and construction areas may result in dust emissions. Dust suppression techniques, such as water or mulch applications, would be used as necessary. Iroquois would not use lime to deter dust because of the proximity of the wetlands to the proposed construction area. (Iroquois 1, vol. 2, p. 9-12; Iroquois 13, CSC Q. 13)
62. The potential emissions to the atmosphere that would result from the operation of the proposed compressor station include nitrogen oxides (NO_x), carbon monoxide (CO), particulates (PM), sulfur dioxide (SO₂) and volatile organic compounds (VOCs). (Iroquois 1, vol. 2, p. 9-7)

63. Best Available Control Technology (BACT) is required for NO_x and CO emissions because they are expected to be more than 15 tons per year (TPY). Iroquois proposes to use dry low NO_x combustion, a turbine emissions control technology. CO would be controlled with normal engine maintenance and tuning according to the manufacturer’s recommendations. Performance testing would ensure that permit emissions limits are met and that modeling parameters represent the actual installation and operations. (Iroquois 1, vol. 2, p. 9-12)
64. The following table details the potential emissions of the proposed turbine with proposed auxiliary fuel-burning equipment. The potential emissions from the proposed natural gas turbine are based on the incorporation of “dry low NO_x” combustion for continuous service at maximum load conditions and at the average ambient temperature of approximately 50 degrees Fahrenheit. Potential pollutant emissions are in tons per year:

<u>Pollutant</u>	<u>NO_x</u>	<u>CO</u>	<u>VOC</u>	<u>PM</u>	<u>SO₂</u>
Proposed Turbine	15.9	16.2	0.9	11.2	0.2
Auxiliary Power Unit	1.0	0.06	0.1	0.01	0.0004
Utility/Storage Area Space Heaters (4)	0.09	0.04	0.005	0.01	0.001
Office/Control Room Heat Furnace	0.08	0.03	0.005	0.01	0.001
Compressor Seal Gas Leakage	NA	NA	2.0	NA	NA
Domestic Water Heater	0.03	0.014	0.002	0.003	0.0002
Total	17.2	16.4	3.0	11.2	0.2
Major Source Thresholds	25	100	25	100	100

(Iroquois 1, vol. 2, p. 9-9, 9-11)

65. Venting at the proposed compressor station would be within a typical range of similar Iroquois facilities. At the existing Iroquois Dover Compressor Station there were eight scheduled and unscheduled blowdowns between January 2005 and early May 2006, which resulted in 0.35 tons of VOC. (Iroquois 8, Q. 8)
66. Based on wind conditions in the vicinity of the proposed compressor station in Brookfield during a typical year, the wind would blow from the compressor station toward Whisconier Middle School approximately 4.7 percent of the year. (Iroquois 10, Q. 33)

Water Quality

67. The proposed site is located within the “Primary Recharge zone of the Town of Brookfield Aquifer Protection District”, an area designated by the town. The Town of Brookfield has established zoning regulations for activities and proposed developments within this district. Iroquois contacted the town zoning enforcement officer and local sanitarian to determine if there are any construction-related procedures specific to working within this district. No construction measures were identified. (Iroquois 1, vol. 2, p. 2-2)
68. No Aquifer Protection Areas have been established within Brookfield by the CTDEP. (Iroquois 1, vol. 2, p. 2-2)

69. The groundwater in the area of the proposed site is classified as GA. The GA designation identifies private and potential public or private supplies of water suitable for drinking without treatment. Iroquois would remediate the proposed property to GA pollutant mobility standards and conduct ongoing remediation of groundwater contamination during construction and operation to reach levels required for GA areas. (Iroquois 1, vol. 2, p. 2-3; Iroquois 3, Responses to FERC dated May 8, 2006, Q. 1c)
70. The nearest well to the proposed site is on the Iroquois Brookfield Sales Meter Station property. This well would be replaced with a new well on-site. One off-site well is located approximately 100 feet to the east of the proposed site at the residence at 67 High Meadow Road. (Iroquois 1, vol. 2, p. 2-2)
71. Iroquois would not refuel equipment within 200 feet of private wells nor within 400 feet of public wells. (Iroquois 1, vol. 2, p. 2-4)
72. If bedrock were encountered at the proposed site during construction, the method of removal would depend on the characteristics of the rock. Iroquois proposes to use mechanical methods such as ripping or conventional excavation to remove the bedrock if possible. Blasting would be used if necessary and would be conducted in accordance with appropriate regulations to ensure safety and to prevent impacts to off-site wells. (Iroquois 1, vol. 2, p. 6-2)
73. Runoff at the proposed site generally drains southwest to a pond and a bordering vegetated wetland situated in the lower portion of the recently-purchased 65-acre parcel along a railroad bed. The bordering wetland contains an intermittent channel, approximately three to 12 feet wide with varying bank heights. In the Petition 540/555 project, Iroquois proposed to cross this channel to reach a temporary workspace for equipment storage. Iroquois no longer proposes to cross or impact any section of this channel. (Iroquois 1, vol. 2, p. 2-5)
74. Ten wetlands were identified on the recently purchased 65-acre parcel. No wetlands were identified within the 3.3-acre parcel that is the site of the existing Iroquois metering station. The proposed project site is located within 100 feet of two wetlands, referred to as Wetlands 1 and 2. (Iroquois 1, vol. 2, p. 2-7)
75. Personnel working at the proposed compressor station would receive environmental training including spill prevention, containment and control protocols. (Iroquois 8, Q. 3)
76. The proposed design of the compressor building and floor drain system would provide secondary containment into waste storage tanks. Barrels of turbine lubricating oil would be stored on site with secondary containment. (Iroquois 8, Q. 3)
77. Three underground storage tanks (USTs) and associated contaminated soil were removed by the previous owner. Also, additional monitoring wells were installed for water sampling. (Iroquois 1, vol. 2, p. 8-6, 8-7)
78. The CTDEP elected to retain supervision of the clean-up of the 65-acre property. The property has undergone soil remediation and groundwater monitoring is being implemented. All known debris has been removed from the property as of December 2005. The CTDEP has not yet made a determination regarding requirements for additional groundwater monitoring at the proposed site. (Iroquois 1, vol. 2, p. 2-3)

79. Iroquois proposes to use an environmental safe degreasing agent mixed with water to clean turbine blades during a water wash. This procedure would occur once per quarter. The solution would be collected and stored in a 55-gallon drum that would eventually be hauled off site to an environmental disposal company. (Iroquois 3, Responses to FERC dated May 8, 2006, Q. 1b)

Soil

80. Phase II and Phase III investigations were performed for the 65-acre parcel and six areas of solid waste disposal were identified. No groundwater contaminant plume was identified at the downgradient edge of the parcel. As of December 2005, all known debris was removed from the site. (Iroquois 1, vol. 2, p. 8-7, 8-8)
81. Remediation activities performed by the previous owner of the property included sampling for and removal of asbestos containing materials (ACMs) from the property. Iroquois is responsible for any further remediation of the property. (Iroquois 3, Responses to FERC dated May 8, 2006, Q. 1e)

Wildlife

82. There are no known federally listed endangered or threatened species at the proposed site. There are no known state listed Endangered, Threatened, or Special Concern Species at the proposed site. (Iroquois 1, vol. 2, p. 3-9)

Vegetation

83. Most of the proposed project area has been previously cleared for agriculture, cement mixing operations, and sand and gravel operations. The vegetation on the property is in various successional stages. Much of the previously disturbed land is occupied by invasive species. The steep hillsides outside of the proposed project development area are colonized by mature oak forests. (Iroquois 1, vol. 2, p. 3-4)
84. Successional old field and successional shrubland habitat comprise a total of approximately 1.2 acres of the proposed project area. Successional old field habitat is dominated by forbs and grasses in areas that have been cleared for farming and development. Successional shrubland habitat is dominated by shrubs and saplings. (Iroquois 1, vol. 2, p. 3-5)
85. Successional hardwood forest habitat comprises a total of approximately 2.8 acres of the proposed project area. (Iroquois 1, vol. 2, p. 3-5)
86. Iroquois proposes that approximately 0.3 acres of old field/shrubland habitat and approximately 2.8 acres of successional hardwood forest would be permanently developed or converted to lawn. (Iroquois 1, vol. 2, p. 3-6)

Cultural Resources

87. The proposed project would have no effect upon Connecticut's archaeological heritage. (Iroquois 1, vol. 2, p. 4-4, appendix D)

Noise

88. Several noise sensitive areas (NSA) were identified within 0.5 miles of the proposed site. The nearest noise sensitive receptor (NSR) is the residence at 67 High Meadow Road, which is located approximately 475 feet to the east of the proposed compressor building and approximately 250 feet to the north of the existing metering station. (Iroquois 1, vol. 2, p. 9-17)
89. The proposed compressor station equipment and gas coolers would be selected and designed to result in projected equivalent sound levels (L_{eq}) of 45 dB(A) and day-night sound levels (L_{dn}) of 52 dB(A), or lower, at the nearest NSR property line. The sound levels from the operation of the proposed compressor station would meet state and local noise requirements and be below the FERC requirement of 55 dB(A) L_{dn} . (Iroquois 1, vol. 2, p. 9-18)
90. Routine maintenance venting of the proposed equipment of less than five tons of natural gas would be performed during weekdays between 8:00 am and 5:00 pm and local emergency responders would be informed of the event. Maintenance or repair venting of five tons of natural gas or greater that is a non-emergency would require coordination with the CTDEP and local government agencies. (Iroquois 3, Responses to FERC dated May 8, 2006, Q. 1g)
91. In the event of an unplanned vent, Iroquois would notify emergency responders as early as practicable. (Iroquois 10, Q. 38)
92. Operation of the proposed compressor station would comply with State of Connecticut noise regulations, with the exception of the unsilenced blowdowns that would occur if the station were to have an emergency shutdown. An unsilenced blowdown would last two to three minutes, with maximum noise levels of 89 decibels lasting a few seconds. (Tr. 2, p. 169-174)
93. Silencers could be installed on the exhaust stack to minimize the noise from an unsilenced blowdown but they could lengthen the duration of time for the blowdown. Silencers are not currently in the design of the proposed compressor station, but Iroquois is willing to evaluate the possibility of this addition. (Tr. 2, p. 176, 177)
94. If the proposed compressor station were constructed, and if noise levels at the site were measured to be over State of Connecticut noise regulations, Iroquois would take mitigative measures to correct the problem. Following construction of the proposed project, Iroquois' noise consultant would perform post-installation measurements in 1/3 Octave Bands and evaluate the presence of discrete tones. If discrete tones exist, noise control measures may be evaluated for the equipment. (Iroquois 4, Q. 23; Tr. 2, p. 172)

SAFETY CONSIDERATIONS

95. The proposed compressor station would be designed, constructed, operated and maintained in accordance with safety standards mandated by the United States Department of Transportation (USDOT), Title 49 of the Code of Federal Regulations (CFR), Part 192; Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. (Iroquois 1, vol. 2, p. 11-1)
96. Standard Iroquois safety operations at existing compressor stations include the calibration, maintenance and inspection of equipment; monitoring for pressure, temperature and vibration data; and traditional landscape maintenance. (Iroquois 1, vol. 2, p. 1-13)

97. The proposed compressor station would be designed to meet or exceed the USDOT safety standards. Iroquois proposes to use a centrifugal compressor driven by a natural gas fueled turbine, which would reduce vibration and pulsation effects on the equipment. Automatic emergency detection and shutdown systems would be installed at the proposed compressor station. Safety and emergency systems would be monitored 24 hours a day by Iroquois' Supervisory Control and Data Acquisition (SCADA) system. (Iroquois 1, vol. 2, p. 11-3)
98. Data collection, monitoring and remote control of the compressor, meter stations and mainline block valves are accomplished via the SCADA communications links. If operating conditions at the proposed compressor station were to fall outside of predetermined ranges, alarms would be activated at the Gas Control Center enabling diagnosis remotely from the Gas Control Center. The Gas Control Center would have the ability to initiate an emergency shutdown (ESD) through SCADA, if necessary. (Iroquois 1, vol. 2, p. 11-4; Iroquois 3, Kiefner Report, p. 16)
99. To insure reliability of the SCADA communication it would be made triple-redundant. Three unique and independent means of communication would be in place. The wide area network (WAN) is the primary system, satellite (VSAT) is the secondary backup system, and dialup modem (telephone line link) is the tertiary system. (Iroquois 1, vol. 2, p. 11-4; Iroquois 3, Kiefner Report, p. 16)
100. In the unlikely event that all three communications links are lost, the Programmable Logic (PLC) Controller plant control system would continue to operate the plant safely, as all equipment and system control functions are located within the station. Iroquois stated that in addition, an on-call person would be dispatched to the station to investigate the problem. (Tr. 2, p. 200, 208)
101. The proposed compressor station would be designed for unattended operation. Emergency response by on-call Iroquois personnel to a facility is approximately one hour. One primary, one secondary, and one tertiary Iroquois employee per region are assigned to be on-call 24 hours a day and seven days a week. (Iroquois 10, Q. 40; Tr. 2, p. 141, 142)
102. The proposed compressor station and ESD systems would be designed to exceed the minimum safety standards promulgated in the USDOT 49 CFR, Part 192. The ESD system would be designed to safely shutdown the station upon detection of a major failure or emergency event that could result in a release of gas. Iroquois' proposed compressor station ESD system exceeds the requirements of 49 CFR, Part 192 in the following respects:
 - The station would have five strategically located manual ESD activation pushbutton points, versus two required in Part 192;
 - Failsafe electrical wiring and system design, including loss of pneumatic signal pressures or loss of power to ESD circuits would initiate an ESD event;
 - The station ESD would be activated automatically upon detection of fire, or detection of 50% Lower Explosive Limit (LEL) natural gas levels.
 - Upon loss of essential electrical power, station ESD inlet and outlet block and vent valves would close or open, as necessary, to safely shut down the plant.
(Iroquois 1, vol. 1, Tab Z-3, p. 8-9; Iroquois 3, Kiefner Report, p. 12; Tr. 2, p. 126, 136)

103. Approximately 59,000 gallons of water would be required to test the proposed compressor station pipe prior to the start of operations. Water would be trucked to the proposed site for testing purposes. (Iroquois 1, vol.2, p. 208)
104. The proposed compressor station would be inspected daily. The daily walk-through has been Iroquois' policy and procedure since 1991, when the first compressor station in Wright, New York was placed into service. (Tr. 2, p. 148, 149)
105. There have been no failures on the Iroquois system resulting in property damage or personal injury since operations began in 1991. (Iroquois 1, vol. 2, p. 11-1, 11-2)
106. Compressor stations are designed with isolation valves on the suction and discharge piping. These valves are used during routine pipeline operation and emergency conditions. The proposed compressor station would be equipped with fail-safe isolation valves. If certain abnormal operating conditions were to occur, the valves would close and isolate the compressor station from the mainline. Emergency isolation of a compressor station is typically initiated automatically by controls at the station, but could also be initiated remotely through the SCADA system. (Iroquois 1, vol. 2, p. 11-1, 11-2; Iroquois 10, Q. 23)
107. USDOT regulations require an emergency plan to be developed that includes emergency procedures in the event of a natural gas ESD, particularly regarding communications with local officials; and procedures to ensure the availability of trained emergency personnel and adequate material and equipment resources. (Iroquois 1, vol. 2, p. 11-5)
108. Iroquois would hold training sessions in Brookfield with Town of Brookfield emergency personnel. (Tr. 2, p. 183)
109. In the event that an emergency were to occur on the Iroquois pipeline within the Town of Brookfield, Iroquois could have an alarm immediately transmitted over the telephone line to the Brookfield Fire Department. (Tr. 2, p. 183, 184)
110. Emergency vehicles would enter the proposed site from either the north or south entrance and turn around in a 100 foot by 100 foot area between the proposed control building and the proposed storage building. Emergency vehicles could also turn around in a 70 foot by 170 foot paved section in front of the compressor building. (Iroquois 3, Responses to FERC dated May 8, 2006, Q. 1k)
111. The potential impact radius (PIR), or worst-case hazard radius, is determined using a calculation that includes gas pipeline pressure, pipe diameter, and a threshold heat flux. Iroquois has calculated a PIR for a 24 inch pipeline at the MAOP of 1,440 psi, with a threshold heat flux of 5,000 Btu, which is related to the burning point of wood. Iroquois determined that the PIR for the proposed site would be approximately 624 feet. The PIR assumes that a person would witness an event for up to five seconds to assess the situation and then would run toward shelter or away from the fire, which would lower the exposure. Two residences would be located within the calculated PIR. (Iroquois 3, Hazard Analysis, App. B, p. B-2; Tr. 2, p. 9, 10, 30, 60)

112. Burn injury would occur at a threshold of 1,600 to 2,000 Btu per hour per foot squared. Using a threshold of 1,800 Btu per hour per square foot, the calculated PIR would be 1,040 feet. Within the PIR of 1,040 feet, there would be two residences on High Meadow Road, a residence in the Carriage Homes subdivision and two residences on Hunting Ridge. (Iroquois 3, Hazard Analysis, App. B, p. B-2; Tr. 2, p. 60-62, 244-245)
113. Calculated at either threshold heat flux, the PIR would not impinge on Whisconier Middle School property line, which is located approximately 2,000 feet to the north of the proposed compressor building stack centerline. (Iroquois 3, Kiefner Report, p. 36)
114. Worst credible event scenarios would include a leak or rupture within the station piping, a gas or lube oil fire within the compressor enclosure, loss of offsite power, loss of auxiliary power, sever storm, control panel failure, catastrophic compressor failure, ignition of blowdown gas, and vandalism. All worst credible event incidents would be mitigated by the safety systems planned for the facility and the public impact of such events would be negligible or nonexistent. (Iroquois 3, Kiefner Report, p. 3)
115. In the event of AC power loss at the proposed compressor station, a back-up generator would automatically come on line and provide power until commercial power service could be restored. DC power for essential equipment would be provided by a battery system during an outage. (Iroquois 1, vol. 2, p. 11-4)
116. If leaking gas ignited, typical practice would be to close valves to isolate the leak and let the fire burn itself out. The valves could be closed by automatic systems on-site, remote actuation or manual shut-off. (Iroquois 8, Q. 15; Tr. 2, p. 130)
117. The proposed compressor station would incorporate a turbo-compressor package, including both the gas turbine engine and natural gas compressor within an on-skid enclosure that provides lubricating oil containment, and an automatic fire detection and fire suppression system. (Iroquois 1, vol. 2, p. 11-3)
118. Upon detection of a fire, the system would flood the enclosure with carbon dioxide (CO₂) and close the enclosure ventilation openings. A primary suppression system would provide the proper concentration of CO₂ to extinguish the fire. A secondary metered system would extend the concentration of CO₂ for an additional 20 minutes. In addition, the station ESD system would immediately be activated and a fire alarm would be communicated via the SCADA system to alert the Iroquois Control Center in Shelton, Connecticut. (Iroquois 3, Kiefner Report, p. 12-15)
119. Iroquois is willing to investigate, with the Town of Brookfield, the possibility of installing a physical barrier such as an earthen berm, a fence, or other safeguards near the proposed site, to protect the homes and school near the proposed site. (Tr. 2, p. 185, 187, 188, 218)

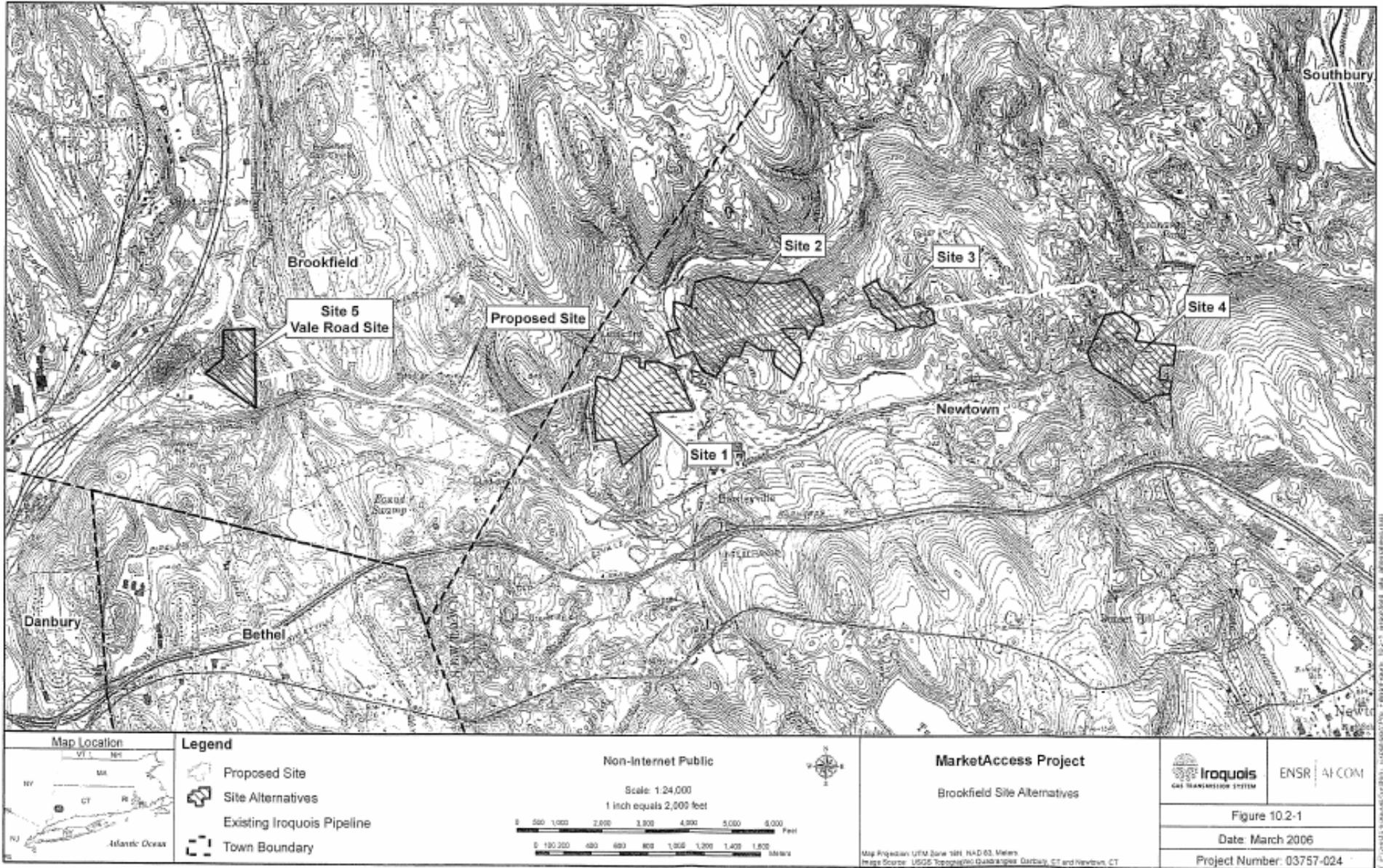


Figure 1. Proposed and alternative sites for the construction of a compressor station. (Iroquois 1, Vol. 3, App. K)