



**HUBLINE/EAST TO WEST EXPANSION
PROJECT**

RESOURCE REPORT 5
Socioeconomics

FERC Docket No. CP08-____-000

June 2008



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RESOURCE REPORT 5—SOCIOECONOMICS

Filing Requirement	Location in Environmental Report
<input type="checkbox"/> For major aboveground facilities and major pipeline Projects that require an Environmental Impact Statement ("EIS"), describe existing socioeconomic conditions within the Project area. (§380.12 (g) (1)).	Section 5.2
<input type="checkbox"/> For major aboveground facilities, quantify impact on employment, housing, local government services, local tax revenues, transportation, and other relevant factors within the Project area. (§380.12 (g) (2-6)).	Section 5.2
<input type="checkbox"/> Evaluate the impact of any substantial immigration of people on government facilities and services and describe plans to reduce the impact on local infrastructure.	Section 5.3
<input type="checkbox"/> Describe on-site manpower requirements, including the number of construction personnel who currently reside within the impact area, would commute daily to the site from outside the impact area, or would relocate temporarily within the impact area.	Section 5.3.1
<input type="checkbox"/> Estimate total worker payroll and material purchases during construction and operation.	Section 5.3.4
<input type="checkbox"/> Determine whether existing housing within the impact area is sufficient to meet the needs of the additional population.	Section 5.3.2
<input type="checkbox"/> Describe the number and types of residences and businesses that would be displaced by the project, procedures to be used to acquire these properties, and types and amounts of relocation assistance payments.	Section 5.3.3
<input type="checkbox"/> Conduct a fiscal impact analysis evaluating local government expenditures in relation to incremental local government revenues that would result from construction of the project. Incremental expenditures include, but are not limited to, school operating costs, road maintenance and repair, public safety, and public utility costs.	Section 5.3



ACRONYMS AND ABBREVIATIONS

Algonquin	Algonquin Gas Transmission, LLC
Certificate	Certificate of Public Convenience and Necessity
E2W	HubLine/East to West Expansion Project
CWA	construction work area
FERC	Federal Energy Regulatory Commission
LNG	liquefied natural gas
M&NE	Maritimes & Northeast Pipeline, L.L.C.
MP	milepost
NGA	Natural Gas Act
O&M	operation and maintenance
Project	HubLine/East to West Expansion Project
ROW	right-of-way
Spectra or Spectra Energy	Spectra Energy Corp
U.S.	United States
USEPA	Environmental Protection Agency



5.0 RESOURCE REPORT 5 – SOCIOECONOMICS

5.1 Introduction

Algonquin Gas Transmission, LLC (“Algonquin”), an indirect wholly owned subsidiary of Spectra Energy Corp (“Spectra” or “Spectra Energy”), is seeking a Certificate of Public Convenience and Necessity (“Certificate”) from the Federal Energy Regulatory Commission (“FERC”) pursuant to Section 7(c) of the Natural Gas Act (“NGA”) authorizing the construction and operation of the HubLine/East to West Expansion Project (“E2W Project” or “Project”) located in Massachusetts, Connecticut, Rhode Island, and New Jersey. The E2W Project is designed to respond to significant interest from customers needing transportation capacity in order to accommodate increased receipts of natural gas from emerging natural gas supplies, including liquefied natural gas (“LNG”), at the east end of the Algonquin system, for redelivery to high growth markets in the Northeast Region.

The Project will consist of 31.4 miles of multi-diameter pipeline and associated pipeline support facilities, including compression facilities. Of this amount, 12.9 miles consists of new pipeline in Massachusetts and 18.5 miles consist of upgrades to existing pipeline in Massachusetts and Connecticut.

Massachusetts

- ◆ I-10 Extension – construct approximately 12.9 miles of new 36-inch-diameter pipeline from milepost (“MP”) 0.0 in the Town of Weymouth to MP 12.9 in the Town of Canton, Norfolk County, Massachusetts; and
- ◆ Q-1 System – install approximately 7.5 miles of 36-inch-diameter pipeline that will replace a segment of an existing 24-inch-diameter pipeline from MP 12.2 in the Town of Sharon to MP 19.7 in Canton, Norfolk County, Massachusetts.

Connecticut

- ◆ E-3 System – install approximately 11.0 miles of 12-inch-diameter pipeline that will replace a segment of an existing 6- and 4-inch-diameter pipeline from MP 0.0 in the City of Norwich to MP 11.0 in the Town of North Stonington, New London County, Connecticut.

A significant portion of the 31.4 miles of the proposed pipeline facilities will be either within the existing Algonquin rights-of-way (“ROW”) or adjacent to an existing powerline ROW.

New aboveground facilities in Massachusetts will include one compressor station as follows:

- ◆ Rehoboth Compressor Station – located near Algonquin’s G-5 Tap at about MP 16.8 on the G-1 System in the Town of Rehoboth, Bristol County.

Modifications to three existing compressor stations to accommodate bi-directional flow along Algonquin’s system will occur at the following facilities:

- ◆ Burrillville Compressor Station in Providence County, Rhode Island;
- ◆ Cromwell Compressor Station in Middlesex County, Connecticut; and
- ◆ Hanover Compressor Station in Morris County, New Jersey.



In addition, Algonquin will install aboveground over-pressure protection regulation at four locations along its ROW in Massachusetts.

Resource Report 5 describes the existing socioeconomic conditions in the Project area and the potential impacts to these conditions from proposed Project-related activities. Construction and operation of the proposed E2W Project may affect the communities located in the vicinity of the Project area in a number of ways, including temporary traffic disruption during construction, minor temporary impacts to agriculture, increased employment and commerce, particularly during construction, and increased tax revenues. Section 5.2 summarizes baseline socioeconomic conditions in the vicinity of the Project including population, economy and employment, housing, public services, and transportation and traffic, and also provides an environmental justice context. Section 5.3 addresses the socioeconomic impacts of the E2W Project construction and operation in the vicinity of the Project area. Also included in Resource Report 5 are the information sources used in the socioeconomic evaluation (Section 5.4). A checklist showing the status of the FERC filing requirements for Resource Report 5 is included in the Table of Contents.

5.2 Existing Socioeconomic Conditions

5.2.1 Data and Existing Conditions

The socioeconomic data used in this evaluation were obtained from the most recent United States (“U.S.”) Department of Commerce, Bureau of the Census, and Bureau of Labor Statistics online databases. Additional information on community public services and available housing, hotel lodging, and rental units was obtained from publicly available online sources. All information sources are cited in Section 5.4.

5.2.1.1 Massachusetts

The socioeconomic impact area of the E2W Project in Massachusetts includes Norfolk County and Bristol County. Both the I-10 Extension and the Q-1 System upgrade are entirely within Norfolk County. The I-10 Extension will pass through the municipalities of Weymouth, Braintree, Holbrook, Randolph, Avon, Stoughton, and Canton. The Q-1 System upgrades will occur in Sharon, Canton, and Stoughton. One new compressor station will also be located in Massachusetts: the Rehoboth Compressor Station in the Town of Rehoboth, Bristol County. Existing socioeconomic conditions for the counties and municipalities in Massachusetts affected by the Project are described in the subsequent sections.

In addition, Algonquin plans to install aboveground over-pressure protection regulation at four locations along its ROW. Given the nature of the facility modifications, it is anticipated that there will be no impact on socioeconomic conditions. The meter station modifications do not constitute “significant aboveground facilities” that could result in socioeconomic impacts and will not be discussed further in this Resource Report.

5.2.1.2 Connecticut

The socioeconomic impact area in Connecticut is defined by the location of the upgrades to the E-3 System located in the Towns of Norwich, Preston, Ledyard, and North Stonington in New London County. Existing socioeconomic conditions for the counties and towns in Connecticut affected by the E2W Project are described in the subsequent sections.



The compressor station modifications will occur within the fence line of the existing developed sites and do not constitute “significant aboveground facilities” that could result in socioeconomic impacts and will not be discussed further in this Resource Report.

5.2.1.3 Rhode Island and New Jersey

The E2W Project also includes compressor station modifications in Burrillville, Rhode Island; and Hanover, New Jersey. No impact on socioeconomic conditions will occur since existing compressor station modifications will occur within the existing fence line of the operating facility and do not constitute “significant aboveground facilities” that could result in socioeconomic impacts and will not be discussed further in this Resource Report.

5.2.2 Population

Tables 5.2-1 to 5.2-5 provide summary data for selected demographic and socioeconomic conditions of the E2W Project socioeconomic impact areas, as well as the Commonwealth of Massachusetts and the State of Connecticut.

5.2.2.1 Massachusetts

According to the U.S. Census Bureau the population of Norfolk County in 2000 was 650,308. The estimated 2006 population is 654,753, resulting in a 0.7 percent population increase. Massachusetts’s population, by contrast, rose from 6,349,097 to an estimated 6,437,193, a 1.4 percent increase (double the percent increase of Norfolk County). The population density in Norfolk County was 1,625.8 people per square mile in 2000.

The Rehoboth Compressor Station will be located in Bristol County. Bristol County had a population of 534,678 and a population density of 961.7 people per square mile in 2000. The estimated 2006 population is 545,379, a 2 percent population increase.

Additional population data for the E2W Project facilities in Massachusetts is provided in Table 5.2-1.

State, County Facility Name, Municipality	Population (2000)	Population Density (Persons/sq. mi.)	Per Capita Income (1999)	Unemployment Rate, Aug. 2007 (percent)*	Civilian Workforce	Top Three Industries a/
Massachusetts	6,349,097	809.8	\$25,952	4.3	3,312,039	E,M,P
Norfolk County	650,308	1,625.8	\$32,484	3.7	348,566	E,P,F
<u>I-10 Extension</u>						
Weymouth	53,988	3,174.2	\$24,976	4.0	29,590	E,R,F
Braintree	33,828	2,434.4	\$28,683	4.2	17,628	E,F,R
Holbrook	10,785	1,466.7	\$23,379	5.3	5,717	E,R,M
Randolph	30,963	3,075.2	\$23,413	5.1	16,765	E,R,F
Avon	4,443	1,014.7	\$24,410	4.8	2,319	E,R,M
Stoughton	27,149	1,692.6	\$25,480	4.1	14,896	E,R,P
Canton	20,775	1,097.3	\$33,510	3.4	10,934	E,P,F
<u>Q-1 System</u>						
Sharon	17,408	747.0	\$41,323	3.2	9,130	E,P,R



TABLE 5.2-1

Existing Economic Conditions for the E2W Project Facilities in Massachusetts

State, County Facility Name, Municipality	Population (2000)	Population Density (Persons/sq. mi.)	Per Capita Income (1999)	Unemployment Rate, Aug. 2007 (percent)*	Civilian Workforce	Top Three Industries ^{a/}
Stoughton	27,149	1,692.6	\$25,480	4.1	14,896	E,R,P
Canton	20,775	1,097.3	\$33,510	3.4	10,934	E,P,F
Rehoboth Compressor Station						
Bristol County	534,678	961.7	\$20,978	5.6	274,768	E,M,R
Rehoboth	10,172	218.8	\$26,467	4.3	5,813	E,M,R

Source: Census 2000.
^{a/} E: Educational, health, and social services
 F: Finance, insurance, real estate, and rental and leasing
 M: Manufacturing
 P: Professional, scientific, management, administrative and waste management services
 R: Retail trade
 *Unemployment data source: *Massachusetts Executive Office of Labor and Workforce Development*

5.2.2.2 Connecticut

New London County had a population of 259,088 and a population density of 389.0 people per square mile in 2000. The estimated 2006 population is 263,293, a 1.6 percent increase. New London County had a smaller population growth between 2000 and 2006 (estimated) than the State of Connecticut where the population increased by 2.9 percent.

Additional population data for the E2W Project facility in Connecticut is provided in Table 5.2-2.

TABLE 5.2-2

Existing Economic Conditions for the E2W Project Facility in Connecticut

State, County Facility Name, Municipality	Population (2000)	Population Density (Persons/sq. mi.)	Per Capita Income (1999)	Unemployment Rate, Aug. 2007 (percent)*	Civilian Workforce	Top Three Industries ^{a/}
Connecticut	3,405,565	702.9	\$28,766	4.6	1,757,108	E,M,R
E-3 System						
New London County	259,088	389.0	\$24,678	4.2	130,591	E,A,M
Norwich	36,117	1,274.7	\$20,472	4.9	18,628	A,E,R
Preston	4,688	151.7	\$24,752	3.9	2,476	E,A,M
Ledyard	14,687	385.1	\$24,953	3.4	7,545	E,A,M
North Stonington	4,991	91.9	\$25,815	3.5	2,849	M,A,E

Source: Census 2000.
^{a/} A: Arts, entertainment, recreation, accommodation and food services
 E: Educational, health, and social services
 M: Manufacturing
 P: Professional, scientific, management, administrative and waste management services
 R: Retail trade
 *Unemployment data source: Connecticut Department of Labor



5.2.3 Economy and Employment

5.2.3.1 Massachusetts

Norfolk County has a strong economic base when compared to the rest of Massachusetts. In 2000, Norfolk County had a higher per capita income, \$32,484, and lower percent of persons below the poverty line, 4.6 percent, compared to the state as a whole, \$25,952 and 9.3 percent, respectively. The latest unemployment data shows a relatively low unemployment rate in Norfolk County. In August 2007, the unemployment rate was 3.7 percent which represents a lower rate than Massachusetts, 4.3 percent, and the U.S., 4.6 percent. Table 5.2-1 provides summary data for the socioeconomic impact area of the I-10 Extension and Q-1 System in Norfolk County.

The Rehoboth Compressor Station will be located in Bristol County which exceeded the average per capita income for the state. The Town of Rehoboth had a per capita income of \$26,467 in 2000. The most recent unemployment data shows 4.3 percent unemployment, significantly lower than the rest of Bristol County which is at 5.6 percent (see Table 5.2-1 above).

5.2.3.2 Connecticut

The socioeconomic impact area of the E-3 System in New London County had a lower per capita income at \$24,678 compared to the State of Connecticut, \$28,766. Nevertheless, the percent of people below poverty was lower in New London County (6.4 percent) than the state as a whole (7.9 percent). Also, New London County has a lower unemployment rate (4.2 percent) than the State of Connecticut (4.6 percent). Table 5.2-2 provides data on the socioeconomic impact area of the E-3 System.

5.2.4 Housing

5.2.4.1 Massachusetts

In 2000, Norfolk County had 6,327 vacant housing units with a rental vacancy rate of 2.5 percent. Bristol County had 11,507 vacant housing units with a rental vacancy rate of 5.5 percent. In addition, there are a number of hotels/motels in the socioeconomic impact area. See Table 5.2-3.

5.2.4.2 Connecticut

In 2000, New London County had 10,839 vacant housing units with rental vacancy rates of 6.4 percent. Table 5.2-3 provides select housing data from the socioeconomic impact area.

State, County	Vacant Housing Units ^{a/}	Rental Vacancy Rate (percent) ^{a/}	Number of Hotels/Motels ^{b/}
Massachusetts			
Norfolk County	6,327	2.5	33
Bristol County	11,507	5.5	26
Connecticut			
New London County	10,839	6.4	39

Source: ^{a/} Census 2000.
^{b/} E-podunk 2007



5.2.5 Numbers and Composition of Workforce

5.2.5.1 Massachusetts

The civilian labor force in Norfolk County in 2000 was 348,566 individuals compared to 274,768 individuals in Bristol County. The major industries in Norfolk County from the standpoint of employment were: 1) educational, health, and social services, 2) professional, scientific, management, administrative, and waste management, and 3) finance, insurance, real estate, and rental and leasing. The major industries in Bristol County were: 1) educational, health, and social services, 2) manufacturing, and 3) retail trade (see Table 5.2-1 above).

5.2.5.2 Connecticut

The civilian labor force in New London County in 2000 was 130,591 individuals. Similar to Bristol County in Massachusetts, the major industries in New London County's major industries included: 1) educational, health, and social services, 2) arts, entertainment, recreation, accommodation and food services, and 3) manufacturing (see Table 5.2-2 above).

5.2.6 Public Services

5.2.6.1 Massachusetts

A wide range of public services and facilities are offered in Norfolk County and Bristol County. Services and facilities include hospitals, full-service law enforcement, paid and volunteer fire departments, and schools. While each municipality in the socioeconomic impact area has its own local police department and fire department, each of the two counties also has a Sheriff's department. In addition, each municipality has an independent school district operating its own public school system with the exception of a few regional schools. Select public service information is provided in Table 5.2-4.

County, Municipality	Fire Department (type)	Number of Fire Stations	Number of Public Schools	Police Contact Information	Number of Hospitals/ Medical Facilities
Norfolk County				Norfolk County Sheriffs Office (781)329-3705	12
Avon	Avon Fire Department (mostly volunteer)	1	2	Avon Police Department (508)583-6677	
Braintree	Braintree Fire Department (career)	3	9	Braintree Police Department (781)794-8600	
Canton	Canton Fire Department (mostly career)	2	8	Canton Police Department (781)821-5090	
Holbrook	Holbrook Fire Department (mostly career)	2	3	Holbrook Police Department (781)767-1212	
Randolph	Randolph Fire Department (mostly career)	2	6	Randolph Police Department (781)963-1212	
Sharon	Town of Sharon Fire Department (mostly career)	1	5	Sharon Police Department (781)784-1587	
Stoughton	Stoughton Fire/Rescue (career)	2	8	Stoughton Police Department (781)344-2424	



TABLE 5.2-4 Public Service Infrastructure for the E2W Project Facilities in Massachusetts					
County, Municipality	Fire Department (type)	Number of Fire Stations	Number of Public Schools	Police Contact Information	Number of Hospitals/Medical Facilities
Weymouth	Weymouth Fire Department (career)	4	12	Weymouth Police Department (781)335-1212	
Bristol County				Bristol County Sheriff's Office (508)995-6400	12
Rehoboth	Rehoboth Fire Department (mostly volunteer)	3	2	Rehoboth Fire Department (508)252-3722	

5.2.6.2 Connecticut

New London County also has a large variety of public services including hospitals, police and fire departments, and schools. Each municipality in the socioeconomic impact area has a volunteer fire department with the exception of the City of Norwich, which has paid, career fire personnel. Like Massachusetts, each municipality has its own independent school district. Select public service information is provided in Table 5.2-5.

TABLE 5.2-5 Public Service Infrastructure for the E2W Project Facilities in Connecticut					
County, Municipality	Fire Department (type)	Number of Fire Stations	Number of Public Schools	Police Contact Info	Number of Hospitals/Medical Facilities (county)
New London County				New London County Sheriff Department (860)443-5400	6
Ledyard	Ledyard Fire Company, District No. 1, Inc. (mostly volunteer)	1	6	Ledyard Police Department (860)464-8225	
North Stonington	North Stonington Volunteer Fire Department (volunteer)	1	3	Preston Police Department (860)887-8232	
Norwich	City of Norwich Fire Department (career)	2	11	Norwich Police Department (860)886-5561	
Preston	Preston City Volunteer Fire Department (volunteer)	1	2	North Stonington Police Department (860)535-1451	

5.2.7 Environmental Justice

This section provides socioeconomic data useful in determining whether the construction and operation of the E2W Project will have a significant and disproportionate adverse effect on minority and low-income populations. Environmental Justice Areas are defined by the U.S. Environmental Protection Agency (“USEPA”) as locations that have a “meaningfully greater” percent of minorities than the general population in the surrounding area. Low income populations are defined on the basis of the U.S. Census poverty statistics. In performing this environmental justice analysis, USEPA’s “Final Guidance for Incorporating Environmental Justice Concerns in USEPA’s National Environmental Policy Act Compliance Analyses”, dated April 1998 was used.



5.2.7.1 Massachusetts

In 2000, Massachusetts's ethnic composition was 84.5 percent white, 5.4 percent African American, 0.2 percent Native American, and 9.9 percent other. The poverty rate in the state was 9.3 percent. In comparison, Norfolk County's ethnic demographic was 89.0 percent white, 3.2 percent African American, 0.1 percent Native American, and 7.7 percent other. The county had a low poverty rate at 4.6 percent.

In the Town of Rehoboth, Bristol County, where the proposed new Rehoboth Compressor Station would be located, the ethnic composition was 97.7 percent white, 0.4 percent African American, 0.3 percent Native American, and 1.6 percent other. The poverty rate in Bristol County was 10.0 percent. Although the poverty rate in Bristol County was higher than the rate for the state as a whole, the poverty rate in the Town of Rehoboth was 3.1 percent.

As the population of the Project area (Norfolk County and Town of Rehoboth) consists of very low percentages of minorities and people living below the poverty level, concerns related to environmental justice issues are minimal. On the contrary, the E2W Project will provide a positive economic benefit via tax revenues for enhancement of services such as school funding and roadway improvements.

5.2.7.2 Connecticut

In 2000, the State of Connecticut had an ethnic composition of 81.6 percent white, 9.1 percent African American, 0.3 percent Native American, and 9.0 percent other and a poverty rate of 7.9 percent. In New London County, the socioeconomic impact area of the E-3 System, the ethnic composition was 87.0 percent white, 5.3 percent African American, 1.0 percent Native American, and 6.7 percent other and the poverty rate was 6.4 percent. As the population of the Project area in Connecticut consists of lower percentages of minorities and people living below the poverty level than the state as a whole, concerns related to environmental justice issues are minimal. As is the case with Massachusetts, the E2W Project will provide a positive economic benefit via tax revenues for enhancement of services such as school funding and roadway improvements.

5.3 Socioeconomic Impacts and Mitigation

Socioeconomic impacts during construction are generally related to the size and composition of the labor force and its potential need for public services (including transportation) and temporary housing. Other impacts are directly related to the construction and operation activities themselves, including the need to transport materials to and from the Project area, commerce generated by local materials purchases, and tax revenues generated by Project activities.

Most socioeconomic impacts will be short-term and localized, due primarily to the relatively short construction period when substantial numbers of workers will be active and the limited geographic scope of the E2W Project. Potential impacts associated with construction may include minor, short term traffic disruption and congestion in the general vicinity of the Project. Project construction and operation will also result in minor short- and long-term disturbance of agricultural activities. The E2W Project will not involve the displacement of any residences or businesses, and any disruptions of local residential use will be of short duration and fully mitigated.

Revenues from construction employment, as well as local expenditures by both the construction companies (for construction materials) and non-local construction workers (for temporary housing, food,



and entertainment) will benefit the local economy. The increased property tax base and (minimally) enhanced employment opportunities during Project operation will be beneficial in the long-term.

5.3.1 Population and Employment

Construction will temporarily increase the population in the general vicinity of the E2W Project area. The work force requirements for the Project will fluctuate depending on the construction activity. The highest concentration of workers for the Project will occur from the spring of 2009 through November of 2009. Work force numbers during this period will range from a low of approximately 100 workers to a high of approximately 840 workers. The peak work force coincides with the construction of the pipelines and the compressor station site. For the construction of the I-10 Extension and Q-1 System in Massachusetts, Algonquin anticipates two construction spreads consisting of 225 workers each. For the construction of the E-3 System in Connecticut, Algonquin anticipates one construction spread consisting of 170 workers. For the construction of the Rehoboth Compressor Station in Massachusetts, Algonquin anticipates one construction spread consisting of 100 workers at the site. One hundred and twenty workers will be required for the compressor station and meter station modifications, respectively. Once the pipelines and the compressor station are completed, the work force numbers will decrease substantially. Refer to Table 1-10 in Resource Report 1 for additional details on construction schedule and worker requirements.

Algonquin anticipates hiring a substantial number of local construction workers with the requisite experience for the installation of natural gas facilities. These local hires will include surveyors, welders, equipment operators, and general laborers. Approximately 40 to 50 percent of the construction workers (about 300 to 385 workers at peak) are expected to be local hires. The local supply of construction workers needed for the E2W Project is expected to be derived from workers employed in the construction industry in Massachusetts and Connecticut, including those employed in Norfolk and Bristol Counties, Massachusetts and in New London County, Connecticut. Construction personnel that may be hired from outside these areas include supervisory personnel and inspectors. These individuals will temporarily relocate to the Project vicinity.

If a larger than anticipated percentage of non-local workers is required to meet peak workforce requirements, sufficient workers should be available in the labor pool in the surrounding counties and states. Impacts to the local population in the vicinity of the E2W Project area from non-local worker activities would be temporary and minimal, as these individuals would not relocate their families to the Project area due to the relatively short duration of the work.

Three new permanent employees will be required for operation and maintenance (“O&M”) of the E2W Project facilities at a total annual labor cost of \$ 400,000. Additionally, Algonquin is planning to relocate employees currently working at its Dighton office to the Rehoboth Compressor Station.

5.3.2 Housing

Since non-local construction workers are not expected to relocate their families to the Project area, the construction workforce will be housed in area motels, camp grounds, short-term rentals and/or camping trailers. The approximately 6,327 vacant housing units, 1,161 additional seasonal units, and 33 motels in Norfolk County and approximately 11,507 vacant housing units, 2,038 additional seasonal units, and 26 motels in Bristol County, Massachusetts and the approximately 10,839 vacant housing units, 5,236 additional seasonal units, and 39 motels in New London County, Connecticut, along with similar facilities in surrounding counties should be sufficient to house these workers. The E2W Project is expected to have a short-term positive impact on the area rental industry through increased demand and higher rates of



occupancy. If a larger percentage of non-local workers are required, the housing capacity should still sufficiently serve the Project's needs.

5.3.3 Displacement of Residences or Businesses

The E2W Project will not involve the permanent displacement of any residences or businesses. Accordingly, no impacts are anticipated.

5.3.4 Economy and Tax Revenues

Project construction will result in short-term, beneficial impacts in terms of increased payroll and local material purchases. Since about 40 to 50 percent of the workers are expected to be local, and non-local workers will temporarily relocate to the Project vicinity, a substantial portion of the payroll will be spent with local vendors and businesses. Algonquin estimates that some additional money will be spent locally on the purchase of equipment and materials. While most of the materials for Project construction will be purchased from national vendors, common supplies (e.g., stone and concrete) will be purchased, as available, from vendors within Norfolk and Bristol Counties, Massachusetts and New London County, Connecticut. Construction of the E2W Project will also result in increased state and local sales tax revenues associated with the purchase of some construction materials as well as goods and services by the construction workforce.

Project O&M activities will result in long-term employment benefits for three employees as well as substantial long term benefits from an estimated \$750,000 to \$1,250,000 in annual property taxes and other revenues including ad valorem taxes, paid annually by Algonquin over the life of the E2W Project. Specifically, the host community of Rehoboth can expect to realize in excess of \$300,000 annually in additional tax revenues associated with the new compressor station, with minimal impact on community services. Communities along the I-10 Extension should experience an average of \$30,000 to \$50,000 per linear mile in ad valorem taxes on an annual basis.

5.3.5 Public Services

The communities in the vicinity of the E2W Project have adequate infrastructure facilities and community services to temporarily accommodate the construction work force.

Primary impacts to public services will include temporary increases in demand for retail, recreation, and related services. Because non-local construction personnel are not expected to relocate their families to the Project area, there should be no increase in demand for family-oriented community services such as schools. The education infrastructure in the vicinity of the Project can easily accommodate any temporary educational needs associated with Project construction.

In the event of an accident, Algonquin could require police, fire, and medical services, depending on the type of emergency. Algonquin will require its contractors to have a Health and Safety Plan in place to minimize the potential for on-the-job accidents. The anticipated demand for police, fire, and medical services is not expected to exceed the existing capability of the infrastructure in the Project area to provide them, as these services are expected to be used only in emergencies. These emergency services are located at reasonable distances from the E2W Project area. For example, Sturdy Memorial Hospital and the Southcoast Hospital Group are both located within 8.0 miles of the Town of Rehoboth. In addition, hospitals such as South Shore Hospital, Brockton Hospital, Faulkner Hospital and Caritas Norwood Hospital in the immediate vicinity of the I-10 Extension and the Q-1 System supplement the



medical facilities located in the downtown Boston area. Algonquin will continue to work closely with police, fire and medical services in each Municipality as necessary.

The three permanent employees required for Project O&M will minimally impact existing public infrastructure and community services. Algonquin anticipates that water and sanitary waste disposal needs will be addressed by the on-site potable water wells and septic systems of the Project. Therefore, with regard to these utilities, the facility is expected to be self-sufficient. Any minimal impacts to public services associated with the operation of E2W Project facilities will be adequately off-set by the revenues accruing to state and local governments from Project operation.

5.3.6 Transportation and Traffic

5.3.6.1 Pipeline and Aboveground Facilities

The E2W Project will cross a total of 67 public roads and six railroads (see Section 8.4.1.6 of Resource Report 8). To the extent feasible, existing public and private road crossings along the proposed pipelines will be used as the primary means of accessing the ROW. In addition to the existing access available by the use of public roads, Algonquin will use 41 existing roads on private land for temporary access that are proposed for use during construction. Of this amount, 16 access roads will be used along the I-10 Extension and 9 roads will be used along the Q-1 System in Massachusetts. In Connecticut, 15 access roads will be used along the E-3 System. One access road is proposed at the Rehoboth Compressor Station site (see Section 1.5.3 of Resource Report 1).

Construction of the E2W Project will result in minor, short term impacts on the transportation system in the E2W Project area. Constructing the E2W Project across public and private roadways, using either conventional open cut or road bore methods, will be based on site conditions and road opening permit requirements (see Section 1.6.1.7 of Resource Report 1). Public road crossings associated with the Project are identified in Resource Report 8. Roadway opening permits will be obtained from applicable state and local agencies. Permit conditions will ultimately dictate the day-to-day construction activities at road crossings.

Construction will be scheduled for work within roadways and specific crossings so as to avoid commuter traffic and schedules for school buses to the greatest extent practical. To minimize traffic delays at open-cut road crossings, Algonquin will establish detours before cutting these roads. If no reasonable detours are feasible, at least one traffic lane of the road will be left open, except for brief periods when road closure will be required to lay the pipeline. Appropriate traffic management and signage will be set up and necessary safety measures will be developed in compliance with applicable permits for work in the public roadway. Arrangements will be made with local officials to have traffic safety personnel on hand during periods of construction. Provisions will be made for detours or otherwise to permit traffic flow.

In addition to the traffic impacts caused by the open-cut road crossings, the movement of construction equipment and materials and the daily commuting of employees to and from the construction work areas may also slightly increase traffic volumes, affecting the transportation system in the E2W Project area. Several construction-related trips will be made each day (to and from the job site) on each spread. This level of traffic will remain consistent throughout the construction period and will typically occur during the early morning hours and evening hours. Traffic congestion caused by construction workers commuting to work could be significant if each worker used a personal vehicle to travel to the work site and if most of this travel took place during peak traffic hours. To minimize traffic congestion, Algonquin will encourage construction workers to share rides to the construction right-of-way. Contractors may also provide buses to move workers from common parking areas to the construction work areas.



Pipeline construction work is typically scheduled to take advantage of daylight hours, usually starting at 7:00 a.m. and completing at 6:00 p.m. (6 days a week); therefore, most workers will commute to and from the construction right-of-way during off-peak hours. Some discrete activities (e.g., hydrostatic testing, horizontal direction drills, tie-ins, purge and packing the pipeline facilities, etc.) may occur beyond these timeframes. Because construction will move sequentially along the pipeline routes, traffic flow impacts that do arise will be temporary on any given section of roadway.

To maintain safe conditions, Algonquin will direct its construction contractors to ensure enforcement of local weight restrictions and limitations by its vehicles and to remove any soil that is left on the road surface by the crossing of construction equipment. When necessary for equipment to cross roads, mats or other appropriate measures (e.g., sweeping) will be used to reduce deposition of mud.

Algonquin does not anticipate significant traffic impacts along the E2W Project pipeline routes during construction.

5.3.6.2 Pipe Yards and Contractor Ware Yards

At this time, Algonquin has identified six pipe yards and contractor ware yards proposed for temporary use during construction (see Section 1.5.4 of Resource Report 1). The surfaces of roadways in the general area are not expected to be affected by heavy equipment since such equipment will be restricted to off roadway operation once it reaches the E2W Project area. When it is necessary for heavy equipment to cross roads, mat placement and other appropriate measures will be used to reduce soil and mud deposition. Any soil or mud deposited on road surfaces will be quickly removed. The need for road detours and traffic control measures associated with the movement of large construction vehicles may temporarily increase the work load of law enforcement personnel. These impacts would be more than offset by either direct payments for police details or the revenue generated by E2W Project construction and operation.

The movement of other construction equipment and materials to and from the construction work area (“CWA”) will result in some incremental short-term impacts to the transportation network. Several construction-related trips will be made each day between the construction area and the pipe yards and contractor ware yards, which are located within 2.0 miles of the Massachusetts pipeline facilities and approximately 1.0 mile from the Connecticut pipeline facility. This level of traffic associated with such movement will vary depending on the stage of construction and the number of people employed. To help ensure safe roadway conditions, Algonquin will direct its construction contractors to strictly enforce local weight restrictions and related limitations on its vehicles. Once equipment and materials reach the Project area, construction-related traffic will largely be restricted to the CWA.

The relatively small number of permanent workers required for O&M should result in negligible long-term impacts on the transportation infrastructure.

5.3.7 Agriculture

Project construction and operation will result in the temporary and permanent disturbance of 9.75 and 1.56 acres of agricultural land (i.e., cultivated fields and hayfields), respectively. No areas currently in commercial timber production will be impacted. This acreage is small compared to the available acreages in the vicinity of the E2W Project. As such, Algonquin anticipates minimal impacts to agriculture. Further information on impacts of Project construction on agriculture is provided in Resource Report 8.



Algonquin will negotiate just compensation for loss of crop production with each affected landowner and will conduct post construction monitoring of crossed agricultural lands to identify areas that might need additional restoration in accordance with Algonquin's Erosion and Sedimentation Control Plan.

5.3.8 Property Values

Algonquin does not anticipate that the E2W Project will negatively impact any property values outside the proposed pipeline ROW or compressor station boundaries. In 2001, Allen, Williford & Seale, Inc. prepared a study for the Interstate Natural Gas Association of America Foundation, Inc. to determine the impact of natural gas pipelines on real estate. Four separate geographically diverse areas were selected for the case study: (1) a suburban area crossed by one natural gas pipeline, (2) a suburban area crossed by multiple natural gas and products pipeline, (3) a rural area crossed by one natural gas pipeline, and (4) a rural area crossed by multiple natural gas and one products pipeline. The results of the study revealed that there is no significant impact on property sales price located along natural gas pipelines and that the pipeline size or the product carried did not impact sales price. The study also revealed that there were no significant impacts on demand for properties within the geographically diverse areas and that the presence of a pipeline did not impede development of the surrounding properties. In addition, the existence of a pipeline had no significant impact on development decisions (e.g., lot size) and it did not impact specific property types more or less severely than other property types. (Allen, Williford & Seale, Inc. 2001).

5.3.9 Environmental Justice

The E2W Project will not result in disproportional negative impacts on the health, social conditions or economic conditions of minority or low income communities. In fact, it is difficult to identify any adverse health, social or economic impacts of the Project. As discussed in Section 5.2.7, given the low poverty rates and low percentages of minorities, the Project area does not fit the criteria for an Environmental Justice Area. Therefore, concerns related to environmental justice are negligible.

5.4 References

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