



PennEast Pipeline Company, LLC

## **PENNEAST PIPELINE PROJECT**

*RESOURCE REPORT 5*

*Socioeconomics*

*FERC Docket No. CP15-\_\_\_\_-000*

**Final**

**FERC Section 7(c) Application**

**September 2015**

## Resource Report 5 – Socioeconomics FERC Environmental Checklist

PART 380-APPENDIX A MINIMUM FILING REQUIREMENTS FOR ENVIRONMENTAL REPORTS	COMPANY COMPLIANCE OR INAPPLICABILITY OF REQUIREMENT
<b>Minimum FERC Requirements</b>	
<input type="checkbox"/> For major above ground facilities and major pipeline project that require an Environmental Impact Statement (EIS), describe existing socioeconomic conditions within the project area. (§380.12 (g)(1)).	Sections 5.2 – 5.12
<input type="checkbox"/> For major above ground 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)).	Sections 5.2 – 5.13
<b>Additional Information Often Missing and Resulting in Data Requests</b>	
<input type="checkbox"/> Evaluate the impact of any substantial immigration of people on governmental facilities and services and describe plans to reduce the impact on local infrastructure.	Section 5.9 (Public Services and Facilities)
<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 (Population)
<input type="checkbox"/> Estimate total worker payroll and material purchases during construction and operation.	Section 5.4 (Economy, Employment, and Income) and Appendix M
<input type="checkbox"/> Determine whether existing housing within the impact area is sufficient to meet the needs of the additional population.	Section 5.7 (Housing)
<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 5.7 (Housing)
<input type="checkbox"/> Conduct a fiscal impact analysis evaluating incremental 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 5.10 (Taxes and Revenues)

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## 5.0 SOCIOECONOMICS

PennEast Pipeline Company, LLC (PennEast) has prepared this Resource Report to support its application to the Federal Energy Regulatory Commission (FERC or Commission) for a certificate of public convenience and necessity (Certificate) for the Project. PennEast designed its Project to provide a direct and flexible path for transporting natural gas produced in the Marcellus Shale production area in northeastern Pennsylvania to growing natural gas markets in New Jersey, eastern Pennsylvania, southeastern Pennsylvania and surrounding states with the capability of providing approximately 1.1 MMDth/day of year-round natural gas transportation service.

This Resource Report focuses on the Project facilities and locations that PennEast selected as of September, 2015.

The Project consists of the following primary components:

- 114 miles of new 36-inch diameter mainline pipeline extending from Dallas Township in Luzerne County, Pennsylvania to Hopewell Township in Mercer County, New Jersey;
- 2.1-miles of new 24-inch diameter lateral near Hellertown, Northampton County, Pennsylvania to transport gas to an interconnection with Columbia Gas Transmission, LLC (Columbia Gas) and UGI Utilities, Inc.(UGI Utilities);
- 0.6-miles of new 12-inch diameter lateral near Holland Township, Hunterdon County, New Jersey to transport gas to Pivotal Utility Holdings, Inc. (d/b/a Elizabethtown Gas) (Elizabethtown Gas) and NRG REMA, LLC's Gilbert Power Station;
- 1.4-miles of new 36-inch diameter lateral in West Amwell Township, Hunterdon County, New Jersey to transport gas to an interconnection with Algonquin Gas Transmission, LLC (Algonquin) and Texas Eastern Transmission, LP (Texas Eastern);
- One new compressor station in Carbon County, Pennsylvania; and
- Various associated aboveground facilities including interconnects, launchers, receivers, and mainline block valves to support the pipeline system.

The PennEast Pipeline Project (PennEast Project or Project) will be rated for a maximum allowable operating pressure (MAOP) of 1,480 pounds per square inch gauge (psig). Figure 1.2-1 in Resource Report 1 provides a Project Overview Map showing the locations of the proposed pipeline route and associated facilities. A detailed discussion of the Project route selection and alternatives analysis is contained in Resource Report 10.

### 5.1 Introduction

Resource Report 5 summarizes the socioeconomic conditions in the vicinity of the PennEast Project area. To the extent possible, potential socioeconomic impacts of construction and operation of the Project are quantified and mitigation measures are identified to avoid or minimize these potential socioeconomic impacts.

PennEast compiled the information presented in this Resource Report from the Bureau of Census, U.S. Department of Labor and other reliable federal, state and local sources. Two studies were conducted on behalf of the Project. An economic study was conducted by Econsult Solutions and Drexel University School of Economics to specifically address the economic impacts of the Project (Econsult Solutions and Drexel University 2015) and an Energy Market Savings Report and Analysis was conducted by Concentric Energy Advisors (Concentric Energy Advisors 2015) to evaluate and estimate the potential savings of energy market participants within the Project area. This Resource Report relies on both of these studies, which are included as Appendices M and N, respectively.

## **5.2 Socioeconomic Impact Area**

Areas potentially impacted by the Project include the areas in Pennsylvania and New Jersey in which PennEast is proposing to locate all new pipeline facilities (PennEast Mainline Route, the 24-inch Hellertown Lateral, the 12-inch Gilbert Lateral, and the 36-inch Lambertville Lateral), all new associated aboveground facilities, and all access roads identified for use during construction of the Project. The socioeconomic issues considered in the area of the proposed Project include population, demographics, economy and employment sectors, agriculture and timber production, tourism, housing, land acquisition and displacement, community services, taxes and revenues, and environmental justice populations.

## **5.3 Population**

Affected counties have diverse population characteristics. The Project is expected to temporarily increase the population of cities and towns within its general vicinity, but the increase in population will be of short-term duration and dispersed between construction spreads along the entire length of the Project area. The characteristics of the existing population and potential impacts due to the Project are discussed below.

### **5.3.1 Existing Conditions**

The most current population and demographic information available at the time of report preparation was assembled from the U.S. Census Bureau's 2010 Census of Population and Housing (U.S. Census Bureau 2010), 2000 Census of General Demographic Characteristics (U.S. Census Bureau 2000a-d), and 2013 American Community Survey (1-year estimates) (U.S. Census Bureau 2013a-d).

The estimated population of Pennsylvania increased from 12,281,054 in 2000 to 12,773,801 in 2013. In 2013, average population density was 285 persons per square mile (mi<sup>2</sup>) (Table 5.3-1). The estimated population of New Jersey increased from 8,414,000 in 2000 to 8,899,339 in 2013 at an average population density of 1,206 persons per square mile (Table 5.3-1). The U.S. Census Bureau projects that Pennsylvania and New Jersey populations will continue to grow through the year 2030, totaling 4.0 and 16.5 percent increases, respectively, in population between 2000 to 2030 (U.S. Census Bureau 2005).

The average population growth rate between 2000 and 2013 for affected counties in Pennsylvania was approximately 5.5 percent (Table 5.3-1). In 2013, Luzerne County had an estimated population of 320,103, with an average population density of 360/mi<sup>2</sup>, showing a 0.3 percent increase from 319,250 in 2000 (Table 5.3-1). The 2013 population of Carbon County was estimated at 64,786, with an average density of 170/mi<sup>2</sup>, showing a 10.2 percent increase from 58,802 in 2000 (Table 5.3-1). The estimated 2013 population of Northampton County was 299,791, with an average density of 809/mi<sup>2</sup>, showing a 12.3 percent increase from 267,066 in 2000 (Table 5.3-1). Bucks County had an estimated population of 626,976 in 2013, with an average density of 1,037/mi<sup>2</sup>, showing a 4.9 percent increase from 597,635 in 2000 (Table 5.3-1).

The average population growth rate between 2000 and 2013 for the affected counties in New Jersey was approximately 5.0 percent (Table 5.3-1). The 2013 population of Hunterdon County was estimated at 126,250, with an average density of 296/mi<sup>2</sup>, showing a 3.5 percent increase from 121,989 in 2000 (Table 5.3-1). Mercer County had an estimated 2013 population of 370,414, with an average density of 1,643/mi<sup>2</sup>, showing a 5.6 percent increase from 350,761 in 2000 (Table 5.3-1). The potential impacts of the construction and operations phases of the Project on existing population conditions are discussed in Section 5.3.2 below.

**Table 5.3-1  
Selected Population Statistics**

State/County <sup>a</sup>	Total Population in 2000	Total Population in 2013 <sup>b</sup>	Percent Change (2000-2013)	Population Density in 2013 (persons per square mile) <sup>c</sup>
<b>Pennsylvania</b>	<b>12,281,054</b>	<b>12,773,801</b>	<b>3.90</b>	<b>285</b>
Luzerne	319,250	320,103	0.26	360
Carbon	58,802	64,786	10.17	170
Northampton	267,066	299,791	12.25	809
Bucks	597,635	626,976	4.90	1,037
<b>New Jersey</b>	<b>8,414,000</b>	<b>8,899,339</b>	<b>5.76</b>	<b>1,206</b>
Hunterdon	121,989	126,250	3.49	296
Mercer	350,761	370,414	5.60	1,643

Sources: U.S. Census Bureau 2000(a-d), 2010 and 2013(a-d)  
<sup>a</sup> Affected counties ordered from north to south according to state.  
<sup>b</sup> Populations for all counties in 2000 are from U.S. Census Bureau 2000(a-d), and populations for all counties in 2013 are from 2013(a-d).  
<sup>c</sup> Total land area of each county (U.S. Census Bureau, 2010) and 2013 population data were used to determine population density.

### 5.3.2 Construction and Operations Impacts

Local and regional affected areas are expected to experience temporary population growth during the construction of the Project beginning in 2017 (Table 5.3-2) due to a short-term influx of construction workers from outside the region. Non-local construction workers are not expected to relocate their families to the Project area, reducing the temporary increase in population. Approximately 2,660 temporary construction workers will be directly employed during the construction phase and 24 new permanent employees will be hired to directly support the operation phase of the Project (Table 5.3-2 and Section 5.4.2). The peak construction force of 2,660 workers will only last for a short duration of time, from the beginning of March to the end of April (Table 5.3-3). Even if these new employees are hired from outside of the region and all relocate into the over 100-mile Project area, the small number of individuals will have virtually no effect on the local populations.

The projected population growth in Pennsylvania and New Jersey populations over the next 15 years will lead to increased development and a higher demand for natural gas in the New Jersey and eastern and southeastern Pennsylvania markets. More details regarding the Purpose and Need for the Project can be found in Section 1.1 (Purpose and Need) of Resource Report 1.



**Table 5.3-2  
Approximate Construction Schedule and Workforce**

Facility	Mileposts	Number of Construction Spreads	Workforce (Peak)
PennEast Mainline and Above-ground Facilities	MP 0.0 - 17.8	1	665
PennEast Mainline and Kidder Compressor Station	MP 17.8 - 48.1	1	665
PennEast and Above-ground Facilities Hellertown Lateral	MP 48.1 – 77.6 MP HL 0.0 – 2.1	1	665
PennEast Mainline and Above-ground Facilities Gilbert Lateral Lambertville Lateral	MP 77.6 – 114 MP GL 0.0 – 0.6 MP LL 0.0 – 1.4	1	665

**Table 5.3-3  
Construction Workforce Schedule Breakdown by Duration**

Duration	Staffing Per Spread	Total Staff During Duration
<b>2016</b>		
1 October – 14 October	31	124
15 October – 29 October	31	124
30 October – 12 November	31	124
13 November – 26 November	44	176
26 November – 9 December	92	368
10 December – 23 December	-	-
24 December (2016) – 6 January (2017)	-	-
<b>2017</b>		
7 January – 20 January	249	996
21 January – 3 February	313	1252
4 February – 17 February	445	1780
18 February – 3 March	606	2424

Duration	Staffing Per Spread	Total Staff During Duration
4 March – 17 March	665	2660
18 March – 31 March	665	2660
1 April – 14 April	665	2660
15 April – 28 April	665	2660
29 April – 12 May	625	2500
13 May – 26 May	596	2384
27 May – 9 June	528	2112
10 June – 23 June	448	1792
24 June – 7 July	363	1452
8 July – 21 July	26	104
22 July – 4 August	139	556
5 August – 18 August	139	556
19 August – 1 September	90	360
2 September – 15 September	33	132
16 September – 29 September	20	80
30 September – 13 October	19	76
14 October – 27 October	19	76

#### 5.4 Economy, Employment, and Income

The Project is expected to have a substantial positive economic impact on the local and regional economy as a whole. Economic benefits will be generated from all phases of the Project lifecycle, including construction and ongoing operations. The new, abundant supply of natural gas in the region could potentially reduce energy prices (Concentric Energy Advisors 2015), which would in turn increase income (Econsult Solutions and Drexel University 2015). In addition, the Project provides important enhancements to the region’s current natural gas delivery system providing much needed supply reliability and flexibility critical to reducing volatility and periods of extraordinary prices due to unforeseen circumstances within the current pipeline network. Existing economic conditions and the Project’s potential impacts on the local and regional economy are discussed subsequently.

### 5.4.1 Existing Conditions

The most current information regarding income and industry sector employment, along with labor force and employment statistics, within the affected Project area available at the time of report preparation was obtained from the U.S. Census Bureau’s 2013 American Community Survey (1-year estimates) (U.S. Census Bureau 2013e).

The local economies in the Project area are similar in terms of industry sector employment. In 2013, the largest percentages of workers in all of the affected counties were employed by businesses in the educational services, health care, and social assistance industry sector. This equates to approximately one fourth of the civilian labor force within the Project area. Retail Trade and Manufacturing were the next largest employment sectors in all of the counties; cumulatively they account for more than one third of the labor force in the Project area (Table 5.4-1).

**Table 5.4-1**  
**2013 Civilian Labor Force in the Project Area by Industrial Sector (% of Total)**

State/County <sup>a</sup>	Agriculture, forestry, fishing and hunting, and mining	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation and warehousing, and utilities	Information	Finance and insurance, and real estate rental and leasing	Professional, scientific, and management, and administrative and waste management services	Educational services, and health care and social assistance	Arts, entertainment, and recreation, and accommodation and food services	Other services, except public administration	Public administration
<b>Pennsylvania</b>	<b>1.5</b>	<b>5.6</b>	<b>12.3</b>	<b>2.8</b>	<b>11.8</b>	<b>5.0</b>	<b>1.7</b>	<b>6.3</b>	<b>9.7</b>	<b>26.2</b>	<b>8.3</b>	<b>4.7</b>	<b>4.1</b>
Luzerne	0.5	4.8	14.0	3.4	14.6	6.3	1.6	5.0	7.3	24.3	8.5	4.3	5.3
Carbon	0.5	6.7	13.7	3.0	15.8	5.1	2.4	3.4	5.4	27.5	9.1	2.7	4.8
Northampton	0.7	4.7	14.8	2.4	12.7	5.9	1.4	5.4	8.2	27.3	8.4	4.9	3.2
Bucks	0.3	7.4	12.6	3.3	12.6	4.1	1.8	7.9	12.4	23.5	6.8	3.9	3.4
<b>New Jersey</b>	<b>0.3</b>	<b>5.6</b>	<b>8.4</b>	<b>3.4</b>	<b>11.4</b>	<b>5.7</b>	<b>2.7</b>	<b>8.4</b>	<b>12.9</b>	<b>23.8</b>	<b>8.5</b>	<b>4.6</b>	<b>4.2</b>
Hunterdon	1.5	6.3	12.2	5.0	12.6	2.9	3.1	7.1	13.8	21.7	5.7	4.1	4.0
Mercer	0.5	3.8	8.9	2.5	9.6	4.5	2.6	7.8	14.1	25.1	9.0	4.4	7.1

Source: U.S. Census Bureau 2013e.  
<sup>a</sup> Affected counties ordered from North to South according to state.

Unemployment rates in the affected counties in 2013 ranged from a low of 5.7 percent in Hunterdon County (New Jersey) to a high of 11.1 percent in Carbon County (Pennsylvania) (Table 5.4-2). The national average annual unemployment rate in 2013 was 8.4 percent (U.S. Census Bureau 2013f). Two of the six counties within the Project area – Carbon County (Pennsylvania) and Mercer County (New Jersey) – had average unemployment rates that were higher than the national average (Table 5.4-2).

**Table 5.4-2  
2013 Annual Average Labor Force Statistics**

State/County <sup>a</sup>	Civilian Labor Force	Employed	Unemployed	Average Annual Unemployment Rate (%)
<b>Pennsylvania</b>	<b>6,526,914</b>	<b>5,987,761</b>	<b>539,153</b>	<b>8.3</b>
Luzerne	158,341	145,850	12,491	7.9
Carbon	32,456	28,846	3,610	11.1
Northampton	155,527	143,289	12,238	7.9
Bucks	346,553	318,734	27,819	8.0
<b>New Jersey</b>	<b>4,677,032</b>	<b>4,252,626</b>	<b>424,406</b>	<b>9.1</b>
Hunterdon	68,405	64,479	3,926	5.7
Mercer	197,541	179,313	18,228	9.2

Source: U.S. Census Bureau 2013e.  
<sup>a</sup> Affected counties ordered North to South according to state.

Hunterdon County (New Jersey) is the most affluent county within the Project area, with a 2013 per capita income of \$53,134 and a median household income of \$110,457. Hunterdon County also has the smallest proportion of the population (3.7 percent) below the poverty line (U.S. Census Bureau 2013e). In contrast, Carbon County (Pennsylvania) is the least affluent county in the Project area, with a 2013 per capita income of \$23,084 and a median household income of \$44,017. Luzerne County has the largest proportion of the population (16.6 percent) below the poverty line (U.S. Census Bureau 2013e). The potential impacts of the construction and operations phase of the Project on existing economic, employment and income conditions are discussed in section 5.4.2, below.

### 5.4.2 Construction and Operations Impacts

The Project's various direct, indirect, and induced investments in the region are expected to have beneficial economic, employment, and labor income impacts in the affected counties.

This section breaks down the economic impacts of Project construction and operation into four categories, including impacts on the Commonwealth of Pennsylvania; impacts on the State of New Jersey; impacts on the Six-County Region (Luzerne, Carbon, Northampton and Bucks Counties Pennsylvania and Hunterdon and Mercer Counties, New Jersey); and finally, total impacts on Pennsylvania and New Jersey.

The Econsult Solutions and Drexel University (2015) study (Appendix M) projects that a total economic benefit of \$1.6 billion will result from the Project's design and construction activities. In addition, the Project's total economic impact will support 12,160 jobs and \$740 million in wages during the design and construction phases. Further, the continued investments related to the operation of the pipeline are estimated to provide \$23 million of direct, indirect, and induced ongoing annual economic benefit. This total economic benefit will support 98 permanent jobs and \$8.3 million in wages within Pennsylvania and New Jersey (Table 5.4-3 and 5.4-4). The jobs created and supported during design, construction, and operation will also have a positive impact on the average unemployment rates of the affected counties (Table 5.4-2).

These projected total employment and total economic benefit figures account for all direct, indirect and induced impacts from Project investments. Following the April 2015 Pre-Filing Draft, FERC

brought attention to the fact that certain information regarding estimated employment that PennEast circulated may have been misconstrued. A publicly available fact sheet on the PennEast website titled “Economic Impact of the PennEast Pipeline’s Construction and Operation” states that, “PennEast will support 12,160 jobs, of which a large portion will be related to the construction industry. Hundreds of architectural and engineering jobs, and many additional jobs in several related industries will also be supported. Within the six-county region, slightly less than half of the employment impact will occur in industries other than construction, including: food services, landscaping, legal services and the real estate establishment.” FERC noted that the underlined statement implies that more than 6,000 jobs would be introduced into the construction sector. The estimated employment numbers from the Econsult Solutions and Drexel University (2015) study, including the approximately 6,000 construction sector jobs, represent all direct, indirect and induced jobs supported by the Project. Definitions of the economic terms utilized in this section are available in Table A.1 (Glossary of Terms for Input-Output Models) in Appendix M.

**Table 5.4-3  
Potential Economic Impact of the PennEast Pipeline (Design and Construction) (\$ Million)**

Impact Area	Employment Supported (Design and Construction) <sup>b</sup>	Labor Income Supported (Design and Construction) <sup>c</sup>
Commonwealth of Pennsylvania	9,290	\$540
State of New Jersey	2,870	\$200
Six-County Region <sup>a</sup>	11,210	\$695
Total Pennsylvania & New Jersey	12,160	\$740

Source: Econsult Solutions and Drexel University 2015.  
<sup>a</sup> Luzerne, Carbon, Northampton, and Bucks County Pennsylvania and Hunterdon and Mercer County New Jersey.  
<sup>b</sup> The sum of total direct employment and indirect employment.  
<sup>c</sup> The sum of total direct labor income and indirect labor income.

**Table 5.4-4  
Potential Economic Impact of the PennEast Pipeline (Operation) (\$ Million)**

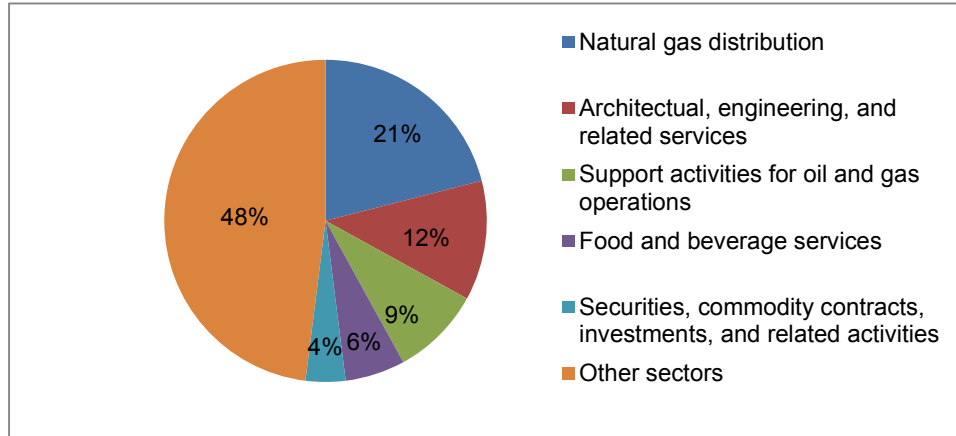
Impact Area	Employment Supported (Operation) <sup>b</sup>	Labor Income Supported (Operation) <sup>c</sup>
Commonwealth of Pennsylvania	88	\$7.5
State of New Jersey	10	\$0.8
Six-County Region <sup>a</sup>	80	\$6.4
Total Pennsylvania & New Jersey	98	\$8.3

Source: Econsult Solutions and Drexel University 2015.  
<sup>a</sup> Luzerne, Carbon, Northampton, and Bucks County Pennsylvania and Hunterdon and Mercer County New Jersey.  
<sup>b</sup> The sum of total direct employment and indirect employment.  
<sup>c</sup> The sum of total direct labor income and indirect labor income.

The 98 permanent jobs to be supported by the Project involve various industry sectors and represent direct, indirect and induced jobs supported by ongoing investments of the Project. Local laborers will

be utilized whenever possible. The counties suffering from 2013 unemployment rates above the national average – Carbon County (Pennsylvania) and Mercer County (New Jersey) – will benefit from both the temporary and permanent jobs generated by the Project’s construction and operation phases (Table 5.4-2).

**Figure 5.4-1  
Potential Impact on Employment in the Six-County Region**



Source: Econsult Solutions and Drexel University 2015.

The Project will require a significant capital investment to design, construct and operate. It is estimated that a total of \$890 million will be spent in Pennsylvania and New Jersey for Project design and construction. This total includes \$24 million in local materials expenditure (Table 5.4-5) to supply 10 percent of materials for the Project. This local expenditure will most likely be for the transport of materials purchased out of state (Econsult Solutions and Drexel University 2015). The entirety of the \$733 million construction labor expenditure will be spent within the six-county region. Of this \$733 million, an estimated \$679 million will go towards mainline pipeline construction, and \$45 million and \$9 million will go towards the construction of the compressor station and third party interconnects, respectively. Please note that these numbers represent the Project estimate in February, 2015, when the Economic Impact Analysis was produced. Since that time, these estimates have changed due to updated unit cost estimates and Project Scope changes.

**Table 5.4-5  
Design and Construction Expenditure Inputs in the Economic Impact Model (\$ Million)**

Design and Construction	Modeled Direct Expenditure (Design and Construction) <sup>a</sup>
Land Acquisition Program	\$15 <sup>b</sup>
Materials	\$24
Construction	\$733
Mainline Pipeline Construction	\$679 <sup>c</sup>
Compressor Station Construction	\$45 <sup>c</sup>
Third Party Interconnects	\$9 <sup>c</sup>
Project Management	\$19
All overhead construction services	\$99

Design and Construction	Modeled Direct Expenditure (Design and Construction) <sup>a</sup>
Other	\$0
<b>Total</b>	<b>\$890</b>

Source: Econsult Solutions and Drexel University 2015.

<sup>a</sup> Expenditures within the six-county region.

<sup>b</sup> Represents the labor costs for land agents only. \$41 million in land payments to residents were modeled as additional consumer spending. Additional consumer spending is modeled as an induced impact and therefore not included as a modeled direct expenditure

<sup>c</sup> Breakdown of total construction labor expenditure

The primary ongoing impact during the operation phase of the Project will be the expansion and stabilization of natural gas supply in both Pennsylvania and New Jersey, providing significant value to energy consumers within the Project area by lowering natural gas prices during high price periods. In its Energy Market Savings Report and Analysis, Concentric Energy Advisors estimated what the price of natural gas paid by customers in the winter of 2013-14 would have been, had an additional 1 Bcf/d of pipeline capacity been available to transport natural gas supplies into the Project area. They estimated that, with this additional pipeline capacity, energy consumers throughout eastern Pennsylvania and New Jersey would have realized \$893.4 million in reduced energy costs. Further, the Concentric study highlighted the growing demand for natural gas, in particular from increased power generation fueled by natural gas, while conservatively eliminating 19 “peak days” from its analysis. Concentric concluded that without additional natural gas infrastructure providing the region critical access to abundant natural gas supplies, the potential costs consumers will continue to pay for their energy on an ongoing basis and correspondingly, the potential savings offered by the Project, will continue to grow. The study breaks the potential annual savings by energy consumers in the winter of 2013-2014 down by energy consumers in Eastern Pennsylvania and New Jersey to approximately \$515 million and \$378.4 million, respectively (Concentric Energy Advisors 2015). Further, lower energy bills lead to an increase in disposable income for consumers, allowing for additional consumer spending that will further benefit the local economies (Econsult Solutions and Drexel University 2015). The Econsult Solutions and Drexel University studies state that for every \$10 million in estimated energy savings, there will be \$13.5 million in economic benefit derived from the spending of these savings, along with support for 90 additional jobs. Therefore, based upon Concentric’s conservative findings of \$893.4 million in potential savings, it is estimated the ongoing, annual economic benefit to the region will be \$1.21 billion and 8,041 jobs (Table 5.4-6).

During the FERC Pre-Filing, a report was filed by Delaware Riverkeeper Network that included an “expert analysis” conducted by Labyrinth Consulting Services, Inc. titled “Professional Opinion on the Proposed PennEast Pipeline Project Updated June 18, 2015”. While much of the report questioned the general purpose and need of the project, the expert’s qualifications on natural gas and electricity market dynamics specific to the northeast US was never explained nor was there any specific refute of any specific finding from the Concentric Energy Advisors 2015 or Econsult Solutions and Drexel University 2015 studies. Despite the concern of the credibility of the report, a comprehensive analysis and rebuttal of the Labyrinth report conducted by Concentric Energy Advisors can be found in Appendix R. Concentric reiterates the significant benefits offered by the Project based upon the potential \$893 million in consumer energy savings and links these savings with the additional economic benefits from increased disposable income as formulated by the Econsult Solutions and Drexel University 2015 study.

**Table 5.4-6  
Potential Energy Savings and Resulting Economic Impacts (\$Million)**

Impact Area	Energy Savings <sup>a</sup>	Economic Benefits <sup>b</sup>	Employment Supported <sup>b</sup>
Eastern Pennsylvania	\$515.0	\$695.3	4,635
New Jersey	\$378.4	\$510.8	3,406
Total Pennsylvania & New Jersey	\$893.4	\$1,206.1	8,041

Source: Econsult Solutions and Drexel University 2015.

<sup>a</sup> Concentric Energy Advisors 2015

<sup>b</sup> Econsult Solutions and Drexel University 2015, \$13.5 million economic benefits and 90 jobs for every \$10 million in energy savings

## 5.5 Agricultural and Timber Production

Agriculture is an important industry within the Project area. The effects of construction and restoration on agriculture will be temporary. Construction and restoration activities may hinder production from impacted agricultural land, but with the proper restoration and mitigation techniques, such as topsoil segregation, decompaction, aeration and fertilization, impacts are expected to be temporary. The Project will employ certain best management practices as further described in Section 5.5.2 to ensure agricultural productivity returns upon conclusion of the project construction. Farmers will be compensated for the temporary impacts to their crops and production. The agriculture and timber industry in the affected areas and the Project's potential impacts are discussed subsequently.

### 5.5.1 Existing Conditions

The most current information related to agricultural and timber production at the time of report preparation was obtained from the U.S. Department of Agriculture National Agricultural Statistics Service's *2012 Census of Agriculture* [2012(a-j)].

Farmland makes up a large portion of the land area in the affected counties. In 2012, Hunterdon County (New Jersey) had the largest acreage (96,025) of land actively used for agricultural purposes and greatest number of farms. Mercer County (New Jersey) had the smallest acreage (19,744) of land actively used for agricultural purposes, and Carbon County (Pennsylvania) had the fewest number of farms (195) (Table 5.5-1).

The average farm size in the Project area ranges from 66 acres to 132 acres. These farmlands are most often used as forage land and to grow corn or soybeans (Table 5.5-1). Forage land is land used for hay and haylage, grass silage, and greenchop.



**Table 5.5-1  
2012 Selected Agricultural Statistics**

County <sup>a</sup>	Number of Farms	Total Area in Farms (acres)	Average Size Farm (acres)	Top Three Crops <sup>b</sup> (based on acres in cultivation)
<b>Pennsylvania</b>				
Luzerne	556	60,930	110	-Corn for grain -Forage -Soybeans for beans
Carbon	195	21,162	109	-Forage -Corn for grain -Cut Christmas trees
Northampton	498	65,744	132	-Corn for grain -Soybeans for beans -Forage
Bucks	827	64,024	77	-Forage -Corn for grain -Soybeans for beans
<b>New Jersey</b>				
Hunterdon	1,447	96,025	66	-Forage -Corn for grain -Soybeans for beans
Mercer	272	19,744	73	-Soybeans for beans -Corn for grain -Forage
Sources: U.S. Department of Agriculture, National Agricultural Statistics Service 2012 (a-f).				
<sup>a</sup> Affected counties ordered from north to south according to state.				
<sup>b</sup> Forage land includes land used for hay and haylage, grass silage, and greenchop.				

The total value of agricultural products and livestock grown in the Project area varies greatly by county. Based on products sold in 2012, Hunterdon County's total market value (New Jersey) was the most lucrative (\$67.2 million), while Carbon County (Pennsylvania) had the lowest (\$9.3 million) total market value (Table 5.5-2).

**Table 5.5-2  
2012 Total Market Value of Crop and Livestock Sales**

County <sup>a</sup>	Total Market Value of Crop Sales	Total Market Value of Livestock Sales	Total Market Value of Crop and Livestock Sales	Average Market Value per Farm <sup>b</sup>
<b>Pennsylvania</b>				
Luzerne	\$17,259,000	\$3,734,000	\$20,993,000	\$37,757
Carbon	\$8,534,000	\$805,000	\$9,339,000	\$47,894
Northampton	\$36,053,000	\$7,443,000	\$43,496,000	\$87,342
Bucks	\$46,869,000	\$15,549,000	\$62,418,000	\$75,475
<b>New Jersey</b>				
Hunterdon	\$57,319,000	\$9,888,000	\$67,206,000	\$46,445

County <sup>a</sup>	Total Market Value of Crop Sales	Total Market Value of Livestock Sales	Total Market Value of Crop and Livestock Sales	Average Market Value per Farm <sup>b</sup>
Mercer	\$16,394,000	\$3,335,000	\$19,729,000	\$72,534

Sources: U.S. Department of Agriculture, National Agricultural Statistics Service n.d.(a-f).

<sup>a</sup> Affected counties ordered from north to south according to state.

<sup>b</sup> Total Number of Farms Per County (Table 5.4-1) divided by Total Market Value of Crop and Livestock Sales (Table 5.4-2).

In 2012, Hunterdon County (New Jersey) was ranked in the top three in the state for the production of certain agricultural commodities and categories. Hunterdon County was New Jersey’s largest producer of “other crops and hays” and the third largest producer of “nursery, greenhouse, floriculture and sod” in 2012. The remaining affected counties in Pennsylvania and New Jersey did not rank in the top three for their agricultural commodities categories (Table 5.5-3).

**Table 5.5-3  
2012 Top Agricultural Commodities**

County <sup>a</sup>	Top Three Agricultural Commodities (by value of sales)	Value of Sales by Commodity	State Rank <sup>b</sup>
<b>Pennsylvania</b>			
Luzerne	Grains, oilseeds, dry beans and dry peas	\$8,763,000	39
	Vegetables, melons, potatoes and sweet potatoes	\$2,976,000	16
	Milk from cows	\$2,690,000	54
Carbon	Nursery, greenhouse, floriculture and sod	\$3,961,000	22
	Grains, oilseeds, dry beans and dry peas	\$1,680,000	54
	Other crops and hay	\$1,052,000	57
Northampton	Grains, oilseeds, dry beans and dry peas	\$28,801,000	13
	Milk from cows	\$4,701,000	49
	Nursery, greenhouse, floriculture and sod	\$2,231,000	31
Bucks	Nursery, greenhouse, floriculture and sod	\$25,669,000	6
	Grains, oilseeds, dry beans and dry peas	\$12,591,000	32
	Milk from cows	\$6,531,000	45
<b>New Jersey</b>			
Hunterdon	Nursery, greenhouse, floriculture and sod	\$36,800,000	3
	Grains, oilseeds, dry beans and dry peas	\$10,093,000	5
	Other crops and hays	\$4,856,000	1
Mercer	Nursery, greenhouse, floriculture and sod	\$6,816,000	12
	Grains, oilseeds, dry beans and dry peas	\$4,656,000	9
	Fruits, tree nuts and berries	\$3,225,000	6

Sources: U.S. Department of Agriculture, National Agricultural Statistics Service n.d.(a-f).

<sup>a</sup> Affected counties ordered from north to south according to state.

<sup>b</sup> Rank in Pennsylvania is out of a total of 67 counties. Rank in New Jersey is out of 20 counties.

Other important agricultural commodities grown in the Project area include specialty crops, such as Christmas trees. In 2012, more than 30 percent of all Christmas trees harvested in New Jersey were

produced by farms within counties affected by the Project (Table 5.5-4). PennEast eliminated the potential of impacting these specialty crops during the routing process by avoiding commercial and retail Christmas tree farms. Comments received by FERC identified a private residence at MP 44.7 where an area of land is used to grow Christmas trees. The Project will temporarily impact approximately 1.0 acres of the area in production. Impacts will be addressed through landowner negotiations.

**Table 5.5-4  
2012 Christmas Tree Production and Harvesting Statistics**

County <sup>a</sup>	Number of Christmas Tree Farms	Number of Acres in Production	Number of Farms that Harvested Trees in 2012	Number of Trees Harvested in 2012
<b>Pennsylvania</b>				
Luzerne	32	770	24	7,957
Carbon	30	1,475	24	46,525
Northampton	30	642	23	24,561
Bucks	30	251	22	7,349
<b>New Jersey</b>				
Hunterdon	120	628	106	6,423
Mercer	31	142	29	3,166

Sources: U.S. Department of Agriculture, National Agricultural Statistics Service 2012(g-h).  
<sup>a</sup> Affected counties ordered from north to south according to state.

In 2012, total sales of organic products accounted for a small portion of total agriculture sales (generally less than one percent) for the counties in the Project area. Twelve farms (eight certified and four exempt organic farms) in Bucks County (Pennsylvania) sold approximately \$311,000 worth of organic products (Table 5.5-5). Due to a horizontal directional drill (HDD) already planned for the only USDA-certified farm near the workspace, PennEast avoids impact to any USDA-certified organic farm. However, PennEast could have mitigated any impact through construction techniques described in Section 5.5.2.

**Table 5.5-5  
2012 Total Sales of Organic Products and Number of Certified Organic Farms, Exempt Organic Farms, and Farms Transitioning into Organic Production**

County <sup>a</sup>	Total Sales of Organic Products	Number of Certified Organic Farms	Number of Exempt Organic Farms <sup>b</sup>	Number of Farms Transitioning to Organic Production
<b>Pennsylvania</b>				
Luzerne	0	0	0	0
Carbon	0	0	0	3
Northampton	\$21,000	3	4	5
Bucks	\$311,000	8	4	4

County <sup>a</sup>	Total Sales of Organic Products	Number of Certified Organic Farms	Number of Exempt Organic Farms <sup>b</sup>	Number of Farms Transitioning to Organic Production
<b>New Jersey</b>				
Hunterdon	\$44,000	6	4	3
Mercer	ND	1	6	0
Sources: U.S. Department of Agriculture, 2012(i-j).				
<sup>a</sup> Affected counties ordered from north to south according to state.				
<sup>b</sup> An exempt organic farm is exempt from USDA organic certification. These farms typically gross less than \$5,000 per year in organic sales (7 CFR §205 2015).				
Key:				
ND = Not Disclosed. Data on total sales of organic products in Mercer County, New Jersey was withheld by the USDA to prevent the disclosure of sensitive business information.				

The Project area does not include lands actively managed for timber production. As such, this Resource Report does not include detailed analyses of timber production.

### 5.5.2 Construction and Operations Impacts

As described in Resource Report 8, Section 8.3.4 (Existing Agricultural Areas), Project construction and operational activities will affect agricultural lands, including lands used for row and field crops, within several counties in the Project area.

Approximately 544.9 acres of agricultural land will be within the temporary ROW and 263.3 acres will be in the permanent ROW. Of these lands, approximately 6.0 acres of agricultural land will be permanently impacted and removed from production due to the construction and operation of the associated aboveground facilities and permanent access roads. A breakdown of this information is provided in Resource Report 8, Section 8.2 (Land Use).

On any pipeline ROW, proper restoration is required and monitored throughout the FERC process. After construction, the ROW will be regraded and seeded, and temporary erosion control devices will be installed, according to laws, regulations and approved Best Management Practices (BMPs). The BMPs that will be employed during these processes are described in detail in the Agricultural Impact Minimization Plan (AIMP), which is provided as Appendix Q. All agricultural land will be properly restored and returned to pre-Project contours in accordance with the AIMP, FERC's Upland Erosion Control, Revegetation, and Maintenance Plan and FERC's Wetland and Waterbody Construction and Mitigation Procedures (FERC Plan and Procedures).

Average market value of production per acre of agricultural land was calculated using data collected from the 2012 Census of Agriculture [U.S. Department of Agriculture 2012(k-l)] and dividing the market value of agricultural production by the total acres of agricultural land in each county. Agricultural land is equivalent to cropland, as defined by the 2012 Census of Agriculture [U.S. Department of Agriculture 2012] and includes harvested cropland, other pasture and grazing land, cropland on which all crops failed or were abandoned, cropland in cultivated summer fallow, and cropland that is idle or used for cover crops. These annual figures were then applied to the total acres of agricultural land temporarily impacted during the Project construction to determine the value of the average annual loss of agricultural production. Calculations assume that agricultural production will return to original levels after three years. As described in the AIMP, PennEast will work with farmers

to measure both pre- and post-construction crop yields during the first three years after construction. This time period should allow the crop yields to show the soil quality has not been impacted negatively by construction. This time period was chosen based on industry standards, but landowner specific concerns can be addressed in easement agreements. Therefore, the total loss of production assumes three times the average annual loss of agricultural land production (Table 5.5-6). Section 8.3.4 (Existing Agricultural Areas) of Resource Report 8 discusses specific mitigation measures that will be implemented. PennEast will compensate farmers for impacts to crop yields caused by the Project and will work diligently to eliminate these impacts.

**Table 5.5-6  
Acres of Non-Specialty Agricultural Temporarily Land Impacted from Production and the Estimated Total Monetary Value of Lost Agricultural Production**

County <sup>a</sup>	Market Value of Agricultural Production <sup>b</sup>	Acres of Agricultural Land <sup>c</sup>	Average Market Value of Agricultural Production per Acre	Acres of Agricultural Land Temporarily Removed from Production	Total Monetary Loss of Agricultural Land Production <sup>d</sup>
<b>Pennsylvania</b>					
Luzerne	\$17,259,000	34,383	\$501.96	17.0	\$25,600.00
Carbon	\$8,534,000	13,350	\$639.25	30.0	\$57,532.50
Northampton	\$36,053,000	55,555	\$648.96	214.2	\$417,021.70
Bucks	\$46,869,000	47,951	\$977.44	23.7	\$69,496.00
<b>New Jersey</b>					
Hunterdon	\$57,319,000	58,261	\$983.83	147.2	\$434,459.30
Mercer	\$16,394,000	12,395	\$1,322.63	59.9	\$237,676.60

Sources: U.S. Department of Agriculture, 2012(k-l).

Notes:

Agricultural Land - Active cropland, pasture, orchards, vineyards, and/or hay fields

<sup>a</sup> Affected counties ordered from north to south according to state.

<sup>b</sup> Agricultural production based on market value of total cropland sales (U.S. Department of Agriculture 2012(k-l))

<sup>c</sup> Agricultural lands, as presented herein, is equivalent to croplands as defined by U.S. Department of Agriculture ((2012) and includes: cropland harvested, other pasture and grazing land that could have been used for crops without additional improvements, cropland on which all crops failed or were abandoned, cropland in cultivated summer fallow, and cropland idle or used for cover crops of soil improvement but not harvested and not pastured or grazed.

<sup>d</sup> Assumes that after three years agricultural production will return to its original levels.

The assessment for the economic cost of removing agricultural lands from production should only be used as raw estimates during the environmental review process. Appropriate easements will be acquired to construct, operate, and maintain the pipelines and associated facilities, and all landowners will be compensated accordingly for the use of land. Because of the differences in crops grown and value associated with specialty crops, more detailed and site-specific evaluations will be made when actual compensation to affected landowners is determined. Easement negotiations will include

compensation for loss of use, loss of resources (temporary or permanent), and any damages that may occur to property during construction.

There has been public concern that construction and operation of the Project would result in organic farmers losing organic certification. Utilizing a variety of databases and publicly available information, PennEast performed a search of certified organic farms within the Project area. In Pennsylvania, no certified organic farms will be crossed by or abut the proposed Project. In New Jersey, one USDA-certified organic farm (Gravity Hill Farm) was identified adjacent to proposed MP 105.5. In order to avoid impacting this farm, PennEast is proposing to use horizontal directional drilling (HDD) under forested land adjacent to the farm, with bore pits located greater than 1,500 feet from the property boundary. Utilization of the HDD method to avoid impacts eliminates the potential for PennEast to affect Gravity Hill Farm's organic certification. A more detailed evaluation of this topic is included in Resource Report 8, Section 8.3.4.3 (Organic Farming).

While PennEast is planning to use the HDD method for the Gravity Hill Farm crossing, the implementation of specialized construction techniques can preserve an organic farm's certification during the utilization of the direct bury method. These construction techniques include specific construction materials, prohibited substances on the construction site, soil handling, erosion control, weed control, mitigation and monitoring that are tailored to preserve a USDA organic certification.

## **5.6 Tourism**

Tourism and the related industry contribute significantly to the local and state economies in the affected counties. The effects on outdoor recreation areas, important tourist attractions throughout the Project area, will be minimized through co-location, agency coordination, and appropriate construction timing. Details on the tourism industry are discussed below.

### **5.6.1 Existing Conditions**

The most current information related to the effects of tourism on the economy in the Project area at the time of report preparation was obtained from technical reports written in 2013 by Tourism Economics, Inc. for the Commonwealth of Pennsylvania and the State of New Jersey.

Primary regional attractions of the Project area differ by county. In Upstate Pennsylvania and the Pocono Mountain Regions (which include Luzerne and Carbon counties), outdoor activities, such as hiking, biking, skiing, fishing and canoeing, are the main tourist attractions along with the Pocono Raceway (Commonwealth of Pennsylvania 2014a and 2014b). In the Lehigh Valley and countryside of Philadelphia Regions (which include Northampton and Bucks Counties), tourists are drawn to commercial attractions such as the Sands Bethlehem Casino, Lehigh Valley Iron Pig Baseball games, Peddler's Village and Sesame Place (Commonwealth of Pennsylvania 2014c and 2014d). In New Jersey, the main tourist attractions for Hunterdon and Mercer Counties include historical sites and outdoor activities (State of New Jersey 2014).

Tourism-related direct sales ranged from \$288 million in Hunterdon County (New Jersey) to approximately \$1.2 billion in Mercer County (New Jersey). Tourism-related employment ranged from 3,980 persons in Carbon County (Pennsylvania) to 21,801 persons in Mercer County (New Jersey), and generated labor incomes of \$120 million in Carbon County (Pennsylvania) to \$565 million in Bucks County (Pennsylvania). Similarly, tourism-related state and local taxes ranged from \$31.6 million in Carbon County (Pennsylvania) to \$151 million in Mercer County (New Jersey) (Table 5.6-1).

**Table 5.6-1  
2013 Economic Contribution of Tourism**

County <sup>a</sup>	Direct Sales (\$ millions)	Employment (persons)	Labor Income (\$ millions)	State and Local Taxes (\$ millions)
<b>Pennsylvania</b>				
Luzerne	\$859.6	10,785	386.1	\$86.1 <sup>b</sup>
Carbon	\$354.4	3,980	120.1	\$31.6 <sup>b</sup>
Northampton	\$864.0	9,999	443.0	\$94.2 <sup>b</sup>
Bucks	\$741.8	15,329	564.7	\$90.5 <sup>b</sup>
<b>New Jersey</b>				
Hunterdon	\$288.4	4,896	-	\$40.5 <sup>c</sup>
Mercer	\$1,154.3	21,801	-	\$151.8 <sup>c</sup>
Source: Tourism Economics 2013a, Tourism Economics 2013b.				
<sup>a</sup> Affected counties ordered from north to south according to state.				
<sup>b</sup> Total Tourism Economy Impacts: State & Local Taxes				
<sup>c</sup> Tourism Tax Impacts by County				

## 5.6.2 Construction and Operations Impacts and Mitigation

As described in Section 5.6.1, outdoor activities are a primary regional attraction for many counties within the Project area. Section 8.4 (Public Land, Recreation, and Other Designated Areas) of Resource Report 8 will detail the parks and recreation areas that are within the Project area.

PennEast recognizes the public's concern regarding the effect that potential impacts to the natural beauty of these outdoor activity areas could have on the local recreation and tourism sectors. PennEast has identified outdoor recreational areas that are regional tourist attractions within the vicinity of the Project through a comprehensive search of publicly available data and agency consultation. These areas include public land, recreation areas, and other areas designated as having special land use. PennEast has attempted to reduce the potential impacts to these areas and eliminate the potential to impact the local and regional tourism industry as detailed further below and as referenced in other Resource Reports.

PennEast has been involved in coordination with public land-management agencies in order to integrate their impact minimization recommendations and maintain the current value that these areas hold in terms of the tourism industry. Section 8.4.1.1 (Federal Lands) and Section 8.4.1.2 (State-Managed Lands) in Resource Report 8 detail site specific efforts to minimize potential impacts to each publicly owned area crossed by the Project. As previously stated, these efforts are site specific, but generally include recreational and aesthetic buffers to high traffic areas and specialized restoration techniques based on the existing condition of the areas.

Specific concern has been raised about the Hickory Run Boulder Field, a Natural National Landmark and major tourist attraction located within Hickory Run State Park. The Boulder Field is separated from the project by approximately 0.5 miles of dense forest/woodland. Additionally, the Project is co-located with an existing product pipeline ROW for the entire crossing through Hickory Run State Park. PennEast eliminates the potential to compromise the natural beauty of the park by paralleling a previously clear-cut ROW.

PennEast also sought to preserve the tourism-industry value of private recreational and special use areas in the Project area. PennEast identified a list of campgrounds, golf courses, race tracks, churches and other recreational areas using publicly available databases, 2013 aerial photography and public input from open houses and FERC comments. Twenty-nine of the areas identified were within a quarter mile of the Project facilities. Of those 29 areas, three -- the Blue Mountain Ski Area, Calvary Baptist Church, and Curlis Lake Woods -- will experience temporary and permanent impacts (see Table 8.4-3). PennEast is consulting with the affected landowners to identify suitable measures to minimize disturbance to recreational and special use areas and their visitors; such measures will be addressed in ROW agreements. For example, PennEast has been in continued coordination with the Pocono Mountain Visitor's Bureau and has agreed to halt construction efforts and avoid the use of roadways during weekends when there is a high-traffic event planned at the Pocono Raceway in order to not put further pressure on the surrounding road network.

Overall, due to the relatively short duration construction period, co-location and continued coordination efforts, the Project is expected to have a negligible impact (both during and post-construction) on the local and regional tourism industry.

## 5.7 Housing

Available lodging within the Project area currently includes a significant amount of temporary housing including rental units, hotels, motels, and recreation vehicle campgrounds. Due to the abundance of available accommodations and the use of multiple spreads throughout the entire Project corridor, it is not expected that an influx of construction workers for the Project would affect the housing market in any particular area. Existing housing conditions and the potential impacts of the Project on housing are discussed subsequently.

### 5.7.1 Existing Housing Conditions

The most current housing data at the time of report preparation was collected from the U.S. Census Bureau's 2011, 2012 and 2013 American Community Survey (1-year estimates) (U.S. Census Bureau 2013g, 2012a-b, 2011). Vacant and temporary housing statistics were collected from the Pennsylvania Department of Community and Economic Development website. New Jersey data on the same was not readily available from the state agencies and hence were collected from two websites (rvparkreviews.com and hotelsmotels.info).

In 2012, the affected counties generally saw a higher number of owner occupied housing units than rental units (Table 5.7-1). The amount of total vacant units ranged from 2,826 (Hunterdon) to 19,244 (Luzerne). Total vacant units include both homeowner vacancy rates and rental vacancy rates and ranged from 2.6 percent (Carbon) and 8.2 percent (Bucks) within the Project area (Table 5.7-1).

**Table 5.7-1  
Existing Housing Statistics**

State/County <sup>a</sup>	Total Housing Units	Total Owner Occupied	Total Renter Occupied	Total Vacant Units	Homeowner Vacancy Rate (%)	Rental Vacancy Rate (%)
<b>Pennsylvania</b>	<b>5,572,765</b>	<b>3,416,499</b>	<b>1,452,194</b>	<b>614,516</b>	<b>1.8</b>	<b>5.9</b>
Luzerne	148,402	83,961	45,197	19,244	2.8	2.8
Carbon	34,380	20,003	6,354	7,904	1.6	2.6
Northampton	120,685	79,463	33,111	8,111	0.9	5.5
Bucks	245,865	178,352	51,420	14,239	0.9	8.2



State/County <sup>a</sup>	Total Housing Units	Total Owner Occupied	Total Renter Occupied	Total Vacant Units	Homeowner Vacancy Rate (%)	Rental Vacancy Rate (%)
<b>New Jersey</b>	<b>3,574,763</b>	<b>2,081,481</b>	<b>1,080,817</b>	<b>375,964</b>	<b>1.5</b>	<b>6.0</b>
Hunterdon	50,053	38,620	8,607	2,826	1.8	6.1
Mercer	144,051	86,024	45,980	12,047	1.3	6.7

Sources: U.S. Census Bureau 2012a.  
<sup>a</sup> Affected counties ordered from north to south according to state.

In 2012, median contract rent varied by up to \$600 per month across the Project area (Table 5.7-2). Median contract rent ranged from \$625 in Luzerne County (Pennsylvania) to \$1,229 in Hunterdon County (New Jersey) (Table 5.7-2). The number of hotels/motels properties, rooms and occupancy levels were provided by the research firm Smith Travel Research (Table 5.7.2 and Table 5.7.3). Occupancy information was not available for Carbon County, Pennsylvania. Year-round occupancy levels averaged between 53.1 percent in Hunterdon County (New Jersey) and 66.8 percent in Northampton County (Pennsylvania). The total number of available hotel rooms in a county ranged from approximately 4,446 in Bucks County (Pennsylvania) to 731 in Hunterdon County (New Jersey) within the Project area (Table 5.7-2).

**Table 5.7-2  
Temporary Housing Statistics**

State/County <sup>a</sup>	Total Vacant Housing Units	Housing Units for Rent	Median Contract Rent	Seasonal, Recreational or Occasional Use Units	Number of Hotels/Motels (Approx. Number of Rooms)	Number of RV Campgrounds
<b>Pennsylvania</b>	<b>614,516</b>	<b>95,520</b>	<b>\$798</b>	<b>170,441</b>	<b>1,420 (135,778)</b>	<b>N/A</b>
Luzerne	19,244	1,239	\$625	2,605	47 (3837)	9
Carbon	7,904	147	\$760	6,577	8 (770)	4
Northampton	8,111	1,247	\$925	595	20 (2023)	4
Bucks	14,239	4,166	\$1,079	1,084	55 (4446)	8
<b>New Jersey</b>	<b>375,964</b>	<b>76,171</b>	<b>\$1,148</b>	<b>134,203</b>	<b>1,030 (103,520)</b>	<b>N/A</b>
Hunterdon	2,826	559	\$1,229	396	9 (731)	5
Mercer	12,047	3,389	\$1,085	590	37 (4521)	0

Source: U.S. Census Bureau 2013g, 2012b, 2011, Hotels/Motels 2015a-g.  
<sup>a</sup> Affected counties ordered from north to south according to state.  
Key:  
N/A = Not available  
RV = Recreational vehicle

**Table 5.7-3  
Hotel Occupancy Rates by County**

County <sup>a</sup>	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
Luzerne	41.6%	49.4%	53.4%	62.8%	61.3%	63.9%	68.4%	68.9%	61.8%	62.8%	51.1%	43.0%	57.4%
Carbon	-	-	-	-	-	-	-	-	-	-	-	-	-
Northampton	52.9%	63.2%	61.2%	69.2%	70.6%	74.7%	75.9%	79.1%	69.3%	72.7%	68.2%	58.1%	66.8%
Bucks	46.7%	53.1%	56.9%	60.3%	64.5%	71.9%	72.1%	72.5%	60.9%	62.8%	59.1%	47.1%	60.4%
Hunterdon	37.4%	41.7%	46.0%	51.1%	56.4%	63.9%	62.7%	61.8%	60.2%	60.4%	55.0%	43.6%	53.1%
Mercer	44.6%	50.9%	54.0%	60.7%	65.9%	71.2%	67.0%	64.7%	60.3%	64.5%	59.4%	44.4%	58.8%

Source: STR 2015.  
<sup>a</sup> Affected counties ordered from north to south according to state.

## 5.7.2 Construction and Operations Impacts

The Project (during construction and post-construction) is not expected to impact the supply of and demand for housing in the affected area. To the extent possible, construction workers will be hired from the local area. Even if a majority of workers come from outside of the region, they are anticipated to rent rooms in local hotels, motels, or use proximate campgrounds. Availability of hotels, motels, and campgrounds near the Project area (Table 5.7-2) indicate that several options exist for worker housing, without adversely impacting the supply/demand and, thus, the price of housing in the Project area. Given the length of the Project area, the workers will be dispersed between the four construction spreads and not likely to choose housing in a single community (Table 5.3-2).

Some of the construction workforce may rent apartments near the Project area. Given the number of hotels and motels (Table 5.7-2) and the rental vacancy rates (Table 5.7-1) in the Project area, sufficient short-term housing is likely to be available for the approximately 2,660-member construction workforce (Table 5.3-2). Even if the entire workforce was brought in from outside the region, and all 2,660 members rented temporary housing units, they would only occupy 25 percent of the total housing units for rent within the Project area (Table 5.7-2). This would leave approximately 8,500 housing units for rent and not adversely impact the overall housing market of the area (Table 5.7-2).

As discussed in Section 5.6, PennEast recognizes that tourism and the related industry contribute significantly to the local and state economies in the affected counties. Even with a large number of tourists visiting the Project area annually, the possible influx of construction workers is not expected to have a notable effect on hotel availability. For example, in the Lehigh Valley and Countryside of Philadelphia Regions (Northampton and Bucks County), tourists are drawn to commercial attractions year-round. According to the research report completed by STR, there are a total of 6,469 hotel rooms and an average year round occupancy rate of 63.6 percent in these two counties (STR, 2015). This equates to approximately 2,354 vacant hotel rooms at all times in these two counties. During the construction phase, the peak amount of workers per spread will reach 2,660 for a short duration of time. With majority of these workers being local, the remaining workforce will have a negligible effect on tourists attempting to stay in the area overnight. While this is a specific example for Bucks and Northampton Counties, the total of 16,328 hotel rooms and average year round occupancy rate of 59.3 percent throughout the Project area further proves that the small influx of non-local construction workers during the yearlong construction phase will not likely have a significant impact on tourism in the area.

An estimated 24 new long-term employees will be hired directly by the Project for ongoing operations and maintenance. Given the availability of housing, the demand for permanent housing created by these new employees and/or their families is not expected to result in discernible impacts on housing in the region.

## 5.8 Land Acquisition/Displacements

Construction and operation of the Project are not anticipated to result in the significant displacement of businesses or residences. The proposed Project route has been designed to minimize direct impacts to residences.

An early and ongoing dialogue with property owners will allow PennEast to route the pipeline in mutually acceptable areas where practicable to minimize impacts to properties. Once the final Project corridor is finalized, PennEast will provide fair and equitable compensation to affected landowners, businesses, and residents. The property acquisition process begins with involvement of a state-licensed third party appraiser and performance of a “market analysis” of the study corridor. Title searches will be conducted to ensure property rights are being acquired from the legal owner. Equitable compensations will then be negotiated with legal landowners based on previously

mentioned market analysis. This one-time upfront payment will increase the property owner's disposable income and was modeled in the Econsult Solutions and Drexel University 2015 economic impact study.

### **5.8.1 Property Values**

Several historical and recent studies indicate that construction of natural gas pipelines does not adversely affect the values of the properties proximate to the pipelines. A 2001 study conducted by the Interstate Natural Gas Association of America Foundation (INGAA 2001) determined that natural gas pipelines have no significant impact on the sales price of properties in the areas of study. Furthermore, neither the size of a pipeline (diameter) nor the product carried by a pipeline has any significant bearing on sale prices.

Two further studies conducted in 2008 came to similar conclusions. Palmer (2008) concluded that there is no measurable impact on property values resulting from high-pressure natural gas pipelines. Similarly, Fruits (2008) concludes that proximity to a natural gas pipeline has no statistically or economically significant impacts on residential property values.

More recently, an article published in the International Right of Way Association's online journal showed the results of a matched-pairs analysis, designed to determine whether the presence of natural gas pipelines actually affects residential property values. The study treated adjacent parcels, as well as parcels with a pipeline easement, as being "on" a pipeline. The results validated the conclusion that there is not an identifiable relationship between proximity to a pipeline and property sale price (Diskin et al. 2011).

The above-mentioned studies support the conclusion that the construction of natural gas pipelines does not impact property values in the vicinity. Further, with millions of miles of pipelines traversing the United States, there are millions of properties impacted by pipelines. Yet, it has never been commonplace for consumers to identify the presence of natural gas pipelines as part of their real estate transaction diligence and therefore, it can be argued the presence of natural gas pipelines is not a significant determinant to the value for real estate transactions. In reviewing two of the most widely used resources available today to consumers for real estate research, Zillow and Realtor.com, neither site identifies the presence of, or lack thereof, a natural gas pipeline on listed properties while listing a myriad of other property features that undoubtedly affect property values. Therefore, the Project is not expected to impact underlying property values.

### **5.8.2 Planned Residential and Commercial Developments**

PennEast recognizes the public's concern regarding potential effects on landowners' ability to subdivide or develop their properties in the future. After receiving feedback in open houses, FERC's scoping meetings, and numerous conversations with landowners, state and local agencies, and various other stakeholders, PennEast compiled a comprehensive list of planned residential and commercial developments within ¼-mile of the Project (see Table 8.3-2, Resource Report 8). To the greatest extent possible, PennEast has worked to avoid and/or minimize potential direct impacts to the identified planned developments. PennEast has coordinated with the affected landowners, developers and planning officials to obtain details regarding development plans and to determine steps to minimize impacts. These efforts may include minor route variations, timing restrictions, or increased traffic control in areas where development is planned. In total, PennEast has implemented 14 reroutes to date to avoid planned residential or commercial developments (see Table 8.3-1, Resource Report 8).

### 5.8.3 Conservation Easements

PennEast performed an extensive title search and consultation with federal, state and local agencies in order to identify conserved public and private lands and existing easements on properties located within the Project Area. PennEast is affecting private preserved and conserved lands managed by land conservancies, public agencies and others that are associated with private, municipal and state funding. A comprehensive list of Private Conservation Easements Crossed by the Project facilities is available in Table 8.4-2 of Resource Report 8. To the extent possible, impacts to conservation areas have been minimized through co-location with existing utility easements. Conserved lands were always considered during the route selection and analysis of proposed alternatives. All conserved lands will be restored in accordance with agency and landowner agreements, and no long-term social or economic impacts are anticipated to occur as a result of the Project. The majority of impacts related to conserved lands will be limited to the Project construction period and the time required for vegetative regrowth after construction is completed. Permanent visual impacts will occur in areas where tree clearing will be required for the development of the permanent ROW.

### 5.8.4 Insurance Effects

Insurance underwriters do not consider the presence of a transmission pipeline when determining the cost and coverage of property insurance. The National Association of Insurance Commissioners (NAIC 2010) provides a consumer guide on homeowners insurance, which does not indicate that the presence of utilities is a factor considered in obtaining or maintaining an insurance policy.

Affected landowners have expressed concerns about possible adjustments to existing insurance policies and the risk of becoming uninsurable as a result of Project installation. The potential for insurance policy changes associated with a pipeline easement on a residential property are a common concern among gas pipeline projects. Project-related effects on insurance have been reviewed by FERC in several Final Environmental Impact Statements (FEISs).

In March 2012, the FERC issued its FEIS for the proposed New Jersey - New York Expansion Project (Docket No. CP11-56-000), which discussed the possibility for insurance adjustments related to pipeline proximity, and found the following:

Regarding the potential for insurance premium adjustments associated with pipeline proximity, insurance advisors consulted on other natural gas projects reviewed by the FERC indicated that pipeline infrastructure does not affect homeowner insurance rates (FERC, 2008). As such, we believe that homeowners' insurance rates are unlikely to change due to construction and operation of the proposed project.

Similarly, in the FEIS for the Crown Landing LNG Terminal and Logan Lateral Projects (Docket Nos. CP04-411-000 and CP04-416-000, respectively), the FERC staff found that:

Homeowner insurance rates are generally set on a county-wide basis, with individual rate adjustments made to reflect the age and value of the property and the claims record of the owner, insurance rates are not based on the surrounding landscape or structures at the local level.

Most recently, in the Algonquin AIM Order (*Algonquin Gas Transmission, LLC*, 150 FERC P 61163 at P 99 (2015)), the FERC stated that:

Insurance advisors consulted on other natural gas pipelines projects reviewed by the Commission indicated that pipeline infrastructure does not affect homeowner insurance rates. The final EIS concludes that homeowners' insurance rates are unlikely to change due to construction and operation of the project.

Based on FERC's conclusion that insurance rates would not be impacted by the presence of the proposed natural gas pipelines on residential properties, PennEast does not believe that there are any potential impacts to an affected homeowner's insurance policy, including the risk of becoming uninsurable.

Additionally, PennEast will carry sufficient insurance commensurate with similarly sized corporations with similar types of assets and will maintain insurance coverage from the start of the survey process through the lifetime of the pipeline that applies to qualifying claims from third-parties, including landowners.

## **5.9 Public Services and Facilities**

In general, the counties with larger populations have higher numbers of public services available. The infrastructure and public services available within the Project area are not expected to be impacted by the influx of the construction workforce during the construction and operation phases of the Project. Existing public services and facilities available and the potential impacts of the Project on these services are discussed subsequently.

### **5.9.1 Existing Public Services and Facilities**

The most current information regarding existing public services and facilities available in the Project area at the time of report preparation was obtained from the Pennsylvania Department of Education, the New Jersey Department of Health, the New Jersey Hospital Association (New Jersey HA), the US Census Bureau and USACOPS, the Nation's Law Enforcement Site.

The number of hospitals and hospital beds most directly correlates to the population of each county. Bucks County, the most populous county, has the largest number of hospitals and hospital beds, while Carbon County, the least populous county, has the smallest number of hospital beds. The affected counties follow this order, with more populous counties having more hospital beds (Table 5.9-1).

The number of fire and rescue departments does not align as closely to population size as hospital resources do. Luzerne County has the most fire and rescue units, despite being the third most populous county along the Project corridor. This difference in facilities could be due to a number of factors, such as the number of resources in each station (including firefighters, rescue workers, and engines) and the assigned area of service (Table 5.9-1).

The number of public schools ranges from 20 in Carbon County (Pennsylvania) to 126 in Bucks County (Pennsylvania); this generally aligns with the population size of each county. The number of public school districts for each county varies from 5 in Carbon County (Pennsylvania) to 27 in Hunterdon County (New Jersey). In addition, the number of private and charter schools ranges from 8 to 168 in the affected counties in Pennsylvania and 10 to 64 in the affected counties in New Jersey (Table 5.9-1).

The number of law enforcement agencies varies greatly by county, without a strong correlation to population size. Similar to the fire and rescue departments, this discrepancy could be due to the size of the various stations, as well as the geographic area they are expected to cover (Table 5.8-1). Of the total 149 law enforcement agencies within the Project area, 11 of them are located within a mile of the proposed pipeline (Table 5.9-2).

**Table 5.9-1  
Inventory of Hospitals, Fire and Rescue Units, Law Enforcement Agencies, and Schools**

County <sup>a</sup>	Total Population (2013 est.)	Total Hospitals	Number of Hospital Beds	Fire and Rescue Units	Law Enforcement Agencies <sup>b</sup>	Total Public Schools	Number of Public School Districts	Number of Private/Charter Schools
<b>Pennsylvania</b>								
Luzerne	320,103	8	1086	23	43	60	11	51
Carbon	64,786	2	155	5	14	20	5	8
Northampton	299,791	3	285	11	25	60	8	50
Bucks	626,976	9	1197	19	41	126	13	168
<b>New Jersey</b>								
Hunterdon	126,250	1	184	16	14	56	27	10
Mercer	370,414	7	1091	5	13	104	12	64
Sources: USACOPS 2015, New Jersey HA 2015, New Jersey Department of Health 2015, U.S. Census Bureau 2013(a-d), and Pennsylvania Department of Education 2015.								
<sup>a</sup> Affected counties ordered from north to south according to state.								
<sup>b</sup> Includes municipal and university police departments, state police offices, sheriff's offices, and constables.								

**Table 5.9-2  
Police and Fire Stations within 1 Mile of the Pipeline Facilities**

Facility	Closest MP	County	Name of Department
<b>Fire Stations</b>			
PennEast Mainline	0.0	Luzerne	Dallas Township Fire Department
	5.7	Luzerne	West Wyoming Hose Co
	5.5	Luzerne	West Wyoming Hose Co No. 2
	5.6	Luzerne	Malty Fire Department
	5.7	Luzerne	Exeter Park Volunteer Hose Co
	6.5	Luzerne	Wyoming Fire Department
	6.5	Luzerne	West Wyoming Fire Department
	9.8	Luzerne	Lafin Volunteer Fire Co
	31.5	Carbon	Albrightsville Fire Department
	31.7	Carbon	Penn Forest Township Fire Co
	43.8	Carbon	Towamensing Fire Co
	54.1	Northampton	Moore Township Fire Department
	57.8	Northampton	Bath Fire House
	73.8	Bucks	Riegelsville Fire Co
	80.3	Hunterdon	Milford Fire Department
	81.5	Hunterdon	Milford Fire Co-Station 2
	84.9	Hunterdon	Frenchtown Borough Ambulance
	89.5	Hunterdon	Kingwood Township Fire Co
	99.5	Hunterdon	Lambertville Fire House
	99.8	Hunterdon	West Amwell Township Fire Department
Hellertown Lateral	-	Northampton	-
Gilbert Lateral	-	Hunterdon	-
Lambertville Lateral	1.3	Hunterdon	West Amwell Township Fire Department
<b>Police Stations</b>			
PennEast Mainline	5.2	Luzerne	Swoyersville Boro Police Department
	5.7	Luzerne	West Wyoming Borough Police Department
	6.2	Luzerne	Wyoming Borough Police Department
	6.4	Luzerne	Pennsylvania State Police
	7.5	Luzerne	Jenkins Township Police Department
	11.3	Luzerne	Narcotics Bureau
	28.5	Carbon	Kidder Township Police Department



Facility	Closest MP	County	Name of Department
	78.8	Hunterdon	Holland Township Police Department
	94.1	Hunterdon	Delaware Township Police Department
	107.7	Mercer	Hopewell Police Department
Hellertown Lateral	-	Northampton	-
Gilbert Lateral	-	Hunterdon	-
Lambertville Lateral	1.3	Hunterdon	West Amwell Township Police Department
Source: USACOPS 2015.			

### 5.9.2 Construction and Operations Impacts

Most of the communities within the Project area are estimated to have adequate infrastructure and community services to accommodate the temporary construction workforce. The primary potential impacts to community facilities generally include increased demand for recreation, retail, and related services.

The majority of any non-local construction workforce is not expected to relocate their families to the construction area. Hence, increased demand for family-oriented community services such as schools is expected to be limited. The operation of the Project, including maintenance, is also expected to have minimal impacts on the demand for community services and amenities because a limited number of permanent jobs directly employed to operate and maintain PennEast's facilities will be created (5.4-3).

Community services will be properly prepared for emergencies that may arise due to the Project. Local emergency response and management personnel will receive emergency response training prior to the Project being placed into service and on an ongoing basis thereafter. Necessary information and instructions regarding the facilities will be provided to local emergency response and management personnel. A plan will be in place for coordination between PennEast and local emergency response and management personnel in the event of an incident. The operations of the community services in the Project area are unlikely to be negatively impacted by the Project.

### 5.9.3 Community Grant Programs

A Community Connector Grant Program has been established in conjunction with the development of the Project. Grants of up to \$5,000 have been awarded to support projects in communities along the proposed route. The program provides support for first responders and emergency management, improved community safety, conservation of important habitat, enhancement of open spaces, recreational areas and wildlife habitat, preservation of community culture and heritage, support for environmental or energy education programs, and support for local workforce development for the energy industry. The Community Connector Grant Program recently announced awards of \$50,000, bringing the program's total investment in Pennsylvania and New Jersey communities to \$240,000 to date. Various community efforts, including new fire engines and rescue equipment, a playground installation, a farm-to-table project, new personal protective equipment for fire companies and improvements to an evacuation shelter, have been supported through the program's grants.

## 5.10 Taxes and Revenues

The economic impacts generated by the Project also include tax revenue gains for both Pennsylvania and New Jersey. Existing tax and revenue information and the potential impacts of the Project are discussed below.

### 5.10.1 Existing Conditions

The most current tax and revenue information at the time of report preparation was obtained from the Commonwealth of Pennsylvania's Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2014 and the State of New Jersey Department of Treasury's Basic Financial Statements for the year 2013.

Table 5.10-1 provides basic fiscal data for Pennsylvania and New Jersey, including total revenues and tax revenues generated in the 2014 fiscal year in Pennsylvania and the 2013 fiscal year in New Jersey.

**Table 5.10-1  
Tax and Total Revenues (\$ Thousand)**

Affected States	Total Revenues	Taxes (net of refunds)
In Pennsylvania <sup>a</sup>	\$59,130,641	\$31,696,451
In New Jersey <sup>b</sup>	\$31,717,076	\$14,018,603

Sources: Commonwealth of Pennsylvania 2014e, State of New Jersey Department of Treasury 2013.  
<sup>a</sup> 2014 Data.  
<sup>b</sup> 2013 Data.

### 5.10.2 Construction and Operations Impacts

The Project will increase tax revenue for both Pennsylvania and New Jersey. The Project will result in increases in income tax revenues and increases in tax revenues associated with certain tax statuses relating to pipelines.

Through the supported labor demands of the Project during construction, estimated personal income taxes of \$11.1 million and \$6.4 million will be generated in Pennsylvania and New Jersey, respectively (Table 5.10-2).

**Table 5.10-2  
Potential Personal Income Tax Benefit (\$ Million)**

Affected States	Income Taxes
In Pennsylvania	\$11.1
In New Jersey	\$6.4

Sources: Econsult Solutions and Drexel University 2015.

During operations, federal, state and local tax revenue will also be increased through tax statutes regarding pipelines. The Project is expected to generate taxable income and Project owners will be subject to state and federal income tax liabilities. Additionally, the Project facilities will be subject to certain property tax assessments, and to a much lesser degree, certain services and materials associated with Project facilities will be subject to state sales and use tax.

**Table 5.10-3  
Potential Income, Property and Sales Tax Benefits (5-Year Cumulative)**

Affected States	Income, Property, and Sales Tax
Pennsylvania	\$26,875,703
New Jersey	\$36,039,784
Federal (Income Tax)	\$124,041,289

**Table 5.10-4  
Potential Public Utility Realty Tax Act (PURTA) Benefits in Pennsylvania (5-Year Cumulative)**

Affected States	PURTA Tax
Pennsylvania	\$345,661

**Table 5.10-5  
Potential Property Tax Benefits in New Jersey (5-Year Cumulative)**

Affected Municipalities (New Jersey)	Property Taxes
<b>Hunterdon County</b>	
Holland	\$4,114,657
Alexandria	\$1,002,162
Kingwood	\$2,984,329
Delaware	\$2,766,768
West Amwell	\$2,162,192
<b>Mercer County</b>	
Hopewell	\$5,290,329

## **5.11 Transportation**

The Project area is navigable via a web of interstate highways, as well as state, county, and other local roads, with sufficient accessibility to the pipeline facilities. In addition, freight rail lines, including the Reading Blue Mountain & Northern Railroad Main Line and the Norfolk Southern Railroad, service the majority of the Project area. Utilization of the appropriate crossing method will minimize impacts of the Project on traffic patterns within the affected area. The transportation system within the Project area and the potential effects of the Project on the system are discussed subsequently.

### **5.11.1 Existing Conditions**

The most current information regarding existing transportation routes and freight lines within the affected Project area at the time of report preparation was obtained from both the Pennsylvania and New Jersey Departments of Transportation and through publically available highway maps.

Interstate 81 (I-81) carries traffic throughout the most northern portion of the Project area in Luzerne County, Pennsylvania, while Interstate 476 (I-476) serves as the primary North-South corridor through eastern Pennsylvania. The Project intersects I-476 near milepost (MP) 12 and stays within 5 miles of I-476 to a point between MP 34 and MP 38, where I-476 heads Southwest and the Project heads Southeast. Pennsylvania Routes 33 (Pennsylvania 33) and 22 (Pennsylvania 22) convey traffic through a section of the Project area in Eastern Pennsylvania, and Interstate 78 (I-78) follows closely along the Hellertown Lateral. In New Jersey, multiple County Routes, including CR 627, CR 519, CR 619, CR 202, CR 179 and CR 31, and State Route 29 (SR 29) bring traffic within close proximity to the Project area. All of these routes allow for easy access to all of the pipeline facilities. In general, transportation infrastructure along the entire Project area is relatively robust.

### **5.11.2 Construction and Operations Impacts and Mitigation**

The pipeline will cross multiple interstate, federal, state, and local roadways in New Jersey and Pennsylvania, along with 12 active or abandoned railroads throughout the Project area. Hence, construction of the Project may result in short-term effects on transportation within the Project area. Construction activities at road crossings and the additional traffic generated by commuting construction workers could affect local traffic flow and volume during the construction period. As part of the Environmental Construction Plan, PennEast will develop a Traffic Management Plan. This detailed plan will identify roads that will be utilized for the transportation of construction equipment, the estimated usage frequency and the potential impacts of these planned actions. Effort will be put forth to avoid damage to existing roads and bridges, but in the event of that happening, PennEast would restore these features to their original condition. The Traffic Management Plan will also include proposed mitigation measures for potential transportation-related impacts such as avoidance of peak traffic periods, detours, consultation and coordination with local authorities, signage and public notification in newspapers.

Table 1.5-4, in Resource Report 1, provides the name, type, location by milepost and anticipated crossing method of each of the 189 roadways and railroads that the Project is projected to cross. Generally, construction of major road crossings and most high-volume state and local road crossings will be accomplished using conventional boring techniques, such as horizontal directional drilling. This is done specifically to minimize disturbance to existing roadways and decrease the effect on traffic patterns. Less traveled and smaller, paved and gravels roads or driveways will be crossed using an open cut technique. In addition, the short duration of construction activity relative to each individual roadway crossing minimizes the impact on traffic patterns.

## **5.12 Environmental Justice**

The siting of the proposed pipeline and the route selection process is outlined in Resource Report 1 and Resource Report 10. Emphasis was placed on co-location along existing utility corridors and avoiding environmental constraints. PennEast continues to fulfill its commitment as outlined in the Public Participation Plan. Since announcing the Project in August 2014, PennEast has participated in more than 200 meetings with public officials and groups; fielded more than 450 inquiries to the toll-free line; responded to more than 735 e-mails; and awarded \$190,000 to first responders and environmental programs under the Community Connector Grant Program that PennEast launched in November 2014.

Within the Project area, one potential environmental justice community (City of Easton in Northampton County, Pennsylvania) was identified based on minority population and none were identified based on income.

An environmental justice analysis was performed in accordance with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations" (EO 12898 1994). The analysis considers whether disproportionately high and adverse impacts on minority or low-income populations, or environmental justice communities, are expected in the surrounding area.

The demography within the affected Project area was evaluated relative to the entire region to identify whether the Project may disproportionately affect potential environmental justice communities. Guidance from the Council on Environmental Quality (1997) states that, "minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or the other appropriate unity of geographic analysis." Race or ethnicity can define a minority population. Therefore, the environmental justice analysis for this Project analyzed both racial and ethnic composition of the communities in the Project area, as well as income and poverty.

The most current information regarding demographics and income within the affected Project area at the time of report preparation was obtained from the U.S. Census Bureau's 2013 American Community Survey (1-year estimates) (U.S. Census Bureau 2013i-m) and the U.S. Census Bureau's 2005-2009 American Community Survey (5-year estimates) (U.S. Census Bureau 2009a-f). Following the April 2015 filing, FERC advised PennEast to identify potential environmental justice areas along the proposed route by census block group. Unfortunately, the requested information was not available from the U.S. Census Bureau. The data sets that were utilized for the Environmental Justice analysis, DP05: ACS Demographic and Housing Estimates and DP03: Selected Economic Characteristics, were not provided at the census block group level. To compromise, PennEast utilized Census Tracts as a geographical unit for the analysis. While a Census Block Group typically has a population of 600 to 3,000 people, Census Tracts average 4,000 inhabitants, making the two units relatively comparable. As advised by the U.S. Census Bureau, 1-year estimates were used to analyze the larger county demographics, while 5-year estimates were recommended for examining specific census tract data.

In Northampton County, total minorities and Hispanic or Latino populations make up 14.6 percent and 9.9 percent of the total population, respectively. Compared to this minority composition, Census Tract 146 (City of Easton) could be considered a potential environmental justice community with a total minority population of 37.9 percent and the Hispanic or Latino population of 17.0 percent (Table 5.12-1). The land within the City of Easton that will be traversed by the Project is a park owned by Easton City and the Commonwealth of Pennsylvania, relatively far removed from the urban section of the city and located along the banks of the Lehigh River.

In Carbon County, Hispanic or Latino populations make up 3.8 percent of the total population. Census Tract 201.1, which includes Kidder and Penn Forest Township, has a Hispanic or Latino population of 7.3 percent. While this exceeds Carbon County's percentage, the approximate 4 percent overage does not represent a meaningfully greater minority percentage, therefore negating the potential for this area to be an environmental justice community.

**Table 5.12-1  
Race, Ethnicity and Poverty**

County or U.S. Census Bureau Tract Number <sup>a</sup>	Percent Below Poverty	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races	Total Minority	Hispanic or Latino (of any race)
<b>Luzerne County</b>	<b>16.4%</b>	<b>89.9%</b>	<b>3.4%</b>	<b>0.3%</b>	<b>0.9%</b>	<b>0.0%</b>	<b>3.3%</b>	<b>2.3%</b>	<b>10.2%</b>	<b>8.5%</b>
2112.02	N/A	99.1%	0.0%	0.3%	0.0%	0.0%	0.4%	0.0%	0.7%	0.4%
2114	4.6%	99.0%	0.5%	0.0%	0.0%	0.0%	0.2%	0.4%	1.1%	1.6%
2115	4.6%	99.7%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.3%	1.2%
2116	12.3%	98.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%
2117.01	4.4%	98.0%	1.0%	0.0%	0.0%	0.0%	0.0%	1.0%	2.0%	1.3%
2117.02	0.7%	93.8%	0.0%	0.0%	5.2%	0.0%	0.1%	0.8%	6.1%	0.4%
2118	8.5%	92.0%	0.6%	0.9%	6.5%	0.0%	0.0%	0.0%	8.0%	0.0%
2119	10.5%	98.7%	0.8%	0.0%	0.1%	0.0%	0.0%	0.4%	1.3%	0.5%
2153	4.1%	99.3%	0.5%	0.1%	0.0%	0.0%	0.0%	0.1%	0.7%	0.7%
<b>Carbon County</b>	<b>15.7</b>	<b>95.8%</b>	<b>1.8%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.8%</b>	<b>1.3%</b>	<b>4.2%</b>	<b>3.8%</b>
201.01	N/A	90.1%	7.8%	0.0%	0.1%	0.0%	0.2%	1.8%	9.9%	7.3%
208	5.5%	98.0%	0.0%	0.0%	1.6%	0.0%	0.1%	0.3%	2.0%	0.1%
<b>Northampton County</b>	<b>9.9%</b>	<b>85.4%</b>	<b>5.3%</b>	<b>0.6%</b>	<b>2.6%</b>	<b>0.0%</b>	<b>3.4%</b>	<b>2.7%</b>	<b>14.6%</b>	<b>9.9%</b>
146	19.6%	62.2%	19.2%	1.0%	0.2%	1.1%	14.1%	2.3%	37.9%	17.0%
159.01	1.0%	95.9%	0.4%	0.0%	1.8%	0.0%	1.1%	0.7%	4.0%	2.8%
159.02	3.6%	98.7%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	1.3%	0.3%
160.01	3.6%	99.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.9%	0.7%
165	1.8%	97.0%	1.6%	0.0%	1.4%	0.0%	0.0%	0.0%	3.0%	3.7%
167	2.8%	92.9%	2.2%	0.0%	2.3%	0.0%	1.4%	1.2%	7.1%	3.2%
169.01	5.1%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

County or U.S. Census Bureau Tract Number <sup>a</sup>	Percent Below Poverty	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races	Total Minority	Hispanic or Latino (of any race)
176.01	N/A	87.6%	5.3%	0.4%	4.1%	0.0%	1.3%	1.3%	12.4%	6.2%
176.02	N/A	89.9%	2.3%	0.0%	3.7%	0.0%	3.0%	1.1%	10.1%	7.9%
180.01	1.8%	97.5%	0.0%	0.0%	0.0%	0.0%	0.5%	1.9%	2.4%	2.4%
181	2.2%	93.2%	0.3%	0.0%	5.1%	0.0%	0.0%	1.3%	6.7%	1.3%
<b>Bucks County</b>	<b>6.1%</b>	<b>89.0%</b>	<b>3.7%</b>	<b>0.2%</b>	<b>4.1%</b>	<b>0.0%</b>	<b>1.0%</b>	<b>2.0%</b>	<b>11.0%</b>	<b>4.7%</b>
1036	N/A	96.8%	0.0%	0.0%	0.0%	0.0%	0.7%	2.5%	3.2%	0.9%
1037	N/A	95.0%	0.0%	0.2%	2.9%	0.0%	1.4%	0.4%	4.9%	1.5%
<b>Hunterdon County</b>	<b>3.3%</b>	<b>91.2%</b>	<b>3.8%</b>	<b>0.0%</b>	<b>3.0%</b>	<b>0.0%</b>	<b>0.9%</b>	<b>1.2%</b>	<b>8.9%</b>	<b>5.9%</b>
105	0.8%	94.8%	0.0%	0.0%	0.5%	0.0%	0.0%	1.6%	2.1%	1.2%
106	0.2%	97.3%	0.3%	0.0%	0.6%	0.0%	0.8%	0.9%	2.6%	4.9%
115	2.8%	97.4%	1.0%	0.0%	0.3%	0.0%	0.8%	0.5%	2.6%	2.6%
116	0.1%	98.9%	0.0%	0.2%	0.9%	0.0%	0.0%	0.0%	1.1%	1.9%
118	2.6%	92.5%	1.4%	0.0%	3.3%	0.0%	0.6%	2.3%	7.6%	0.9%
<b>Mercer County</b>	<b>11.8%</b>	<b>60.5%</b>	<b>19.9%</b>	<b>0.1%</b>	<b>10.1%</b>	<b>0.0%</b>	<b>7.4%</b>	<b>2.0%</b>	<b>39.4%</b>	<b>16.2%</b>
38	2.0%	89.2%	9.2%	0.1%	0.5%	0.0%	0.7%	0.3%	10.8%	3.0%
39.01	N/A	84.1%	3.6%	0.0%	11.8%	0.0%	0.0%	0.6%	16.0%	2.8%

Source: U.S Census Bureau 2009(a-f) and 2013(i-m).

<sup>a</sup> Counties ordered from north to south according to state.

Overall, an environmental justice analysis of the Project area was performed based on race, ethnicity, income and poverty level in accordance with Executive Order 12898. Throughout the affected area, Census Tract 146 (City of Easton) was the only area that met the criteria to be considered an environmental justice community. This community is located between mileposts 70.8 and 70.9 of the Project area, totaling 0.1-mile of a public park located on the banks of the Lehigh River. PennEast is proposing to use HDD at the Lehigh River crossing, with the entrance bore pit located at approximate

milepost 70.4 and the exit bore pit located in on the opposite side of the river at approximate milepost 71.2. Through use of HDD under the Lehigh River, potential impacts to Census Tract 146 (City of Easton) are eliminated. Taking this information into consideration, the route does not disproportionately impact any environmental justice communities.

During the routing process, PennEast evaluated a variety of alternatives before selecting its proposed route for the Project (Resource Report 10 – Alternatives). PennEast’s siting process for the preferred pipeline route minimized effects to residential and high-density urban areas, eliminating adverse impacts to low income and minority populations. Due to the fact that PennEast was able to avoid any potential impacts to environmental justice communities, the Community Outreach efforts did not have to be tailored to impact these populations. Instead, PennEast focused on distributing the grants fairly among communities along the proposed pipeline route.

### **5.13 Cumulative Socioeconomic Impacts**

Past, present and reasonably foreseeable future projects could cumulatively impact socioeconomic conditions in the region of influence, or more specifically, the affected counties within Pennsylvania and New Jersey. To restate, these include Luzerne, Carbon, Northampton, and Bucks Counties in Pennsylvania, and Hunterdon and Mercer Counties in New Jersey. The socioeconomic issues considered in the area of the proposed Project were Population, Employment, Agriculture, Tourism, Housing, Land Acquisition/Displacements, Public Services and Utilities, Taxes and Revenues, Transportation and Environmental Justice.

#### **Population and Employment**

The projects considered in this section could have cumulative effects on population and employment during construction, particularly if more than one project is constructed within the same time frame. Construction on PennEast is scheduled to begin in 2017. PennEast has estimated that the Project will employ up to 665 workers for each of the 4 spreads to fill up 2,660 new jobs. PennEast is focused on utilizing local laborers and materials, to the extent possible. Local hires could include surveyors, welders, equipment operators, and general laborers. The local supply of construction workers needed for the Project is expected to be derived from workers employed in the construction industry in the affected counties of Pennsylvania and New Jersey. These affected counties also contain a substantial construction labor supply that may supplement the specialized construction workers.

Marcellus Shale development projects, specifically the construction of pipeline gathering systems and interstate natural gas pipeline projects, generally employ a similar labor force. There are two interstate natural gas pipeline projects within 2.0 miles of PennEast proposed to be in-service by 2017 (Table 1.4-2, Resource Report 1). Of the six-county Project area, Luzerne County is the only shared locality between PennEast and the other proposed interstate natural gas pipeline projects. Local supply of appropriately skilled labor is expected to be sufficient, even with multiple similar projects under construction at the same time.

The simultaneous construction of three interstate natural gas pipelines will support a variety of jobs and have a positive impact on the average unemployment rates of the affected counties. If specialized construction personnel, such as supervisory personnel and inspectors, need to be hired from outside the Project area, these individuals would temporarily relocate to the Project vicinity, which would not have a measurable impact on the population or employment.

#### **Housing**

Temporary housing would be required for the limited amount of specialized construction personnel not drawn from the local area. Availability of hotels, motels, and campgrounds near the Project area (Table 5.6-2) and current vacancy rates indicate that construction workers should not encounter any



difficulty in finding temporary housing within the Project area. Although the effect of the PennEast Project alone on temporary housing is negligible, in Luzerne County, where construction will occur concurrently with 2 other interstate natural gas pipeline projects, temporary housing may be slightly more difficult to find and/or more expensive to secure, particularly during peak tourist periods. These effects would be temporary and only last for the duration of construction. There would be no long-term cumulative impact on housing.

### **Land Acquisition**

The projects considered in this section are those that require a ROW corridor. Constructions of ROW corridors within the Project area have a potential cumulative effect on the probability of future land acquisition for ROW expansion. In order to minimize impacts, pipeline and transmission corridors are commonly co-located with existing, previously disturbed, and maintained ROWs. Possible co-location opportunities include existing pipelines, electric power lines, roads or other existing linear infrastructure.

Table 1.4-2 in Resource Report 1 lists numerous past, present and reasonably foreseeable future projects that require a ROW corridor. The introduction of several new ROW corridors brings the potential for other linear projects to piggyback a proposed route and attempt to acquire more land from affected landowners.

There is the possibility in the future that PennEast's ROW corridor will be employed as an opportunity for another transmission line or pipeline to co-locate. The expansion of PennEast's ROW corridor to house additional utilities is a long-term cumulative impact that cannot be fully evaluated at the present time.

### **Public Services and Utilities**

The cumulative impacts of the past, present, and reasonably foreseeable future projects listed in table 1.4-2 in Resource Report 1 on public services and utilities depends on the number of projects under construction at one time and their respective locations. With a Project area spanning six-counties, there is the possibility for two projects within the affected area to be under construction and have virtually no cumulative impact on public services and utilities. If multiple projects are within close proximity to one another, and being constructed concurrently, the small incremental demands could become difficult for police, fire, and emergency service personnel to address.

While this would be a temporary effect, project sponsors have the opportunity to mitigate by providing their own personnel or training for local personnel. PennEast has committed to provide local emergency response and management personnel with emergency response training prior to the Project being placed into service. Local personnel will also be provided with the necessary information and instructions regarding the facilities and there is a plan in place for coordination between PennEast and local emergency response personnel in the case of an emergency. PennEast implemented these precautionary measures in an attempt decrease the cumulative impact on public services and utilities.

No long-term cumulative effect on public services and utilities is expected.

### **Transportation**

Construction activities associated with road crossings, transportation of construction equipment and additional traffic generated by commuting construction workers may result in temporary impacts on road traffic and cumulatively impact traffic, parking and transit if one or more project is scheduled to be constructed simultaneously in close proximity. In general, transportation infrastructure along the entire route is relatively robust. There is a variety of routes (listed in section 5.11.1) throughout the Project area that allow for easy accessibility to all of the pipeline facilities. PennEast will utilize major interstate highways and the construction ROW in order to reduce impacts on local roadways.

PennEast is proposed to cross 189 roadways throughout the Project area (Table 1.5-4, Resource Report 1). Utilization of the appropriate crossing method will minimize impacts of the Project on traffic patterns. Construction of major road crossings and most high-volume state and local road crossings will be accomplished using conventional borings in order to minimize disturbance and decrease any impacts on traffic patterns.

PennEast will release a Traffic Management Plan as part of its Environmental Construction Plan. The plan will identify all roads that will be utilized during the construction period. It is expected that other projects will provide the same information in order to coordinate efforts and minimize disturbances.

The effects of construction on local traffic flow and volume are temporary. PennEast would not contribute to any long-term cumulative impact on transportation infrastructure.

## 5.14 References

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