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## Transportation Job Needs and Priorities Report, Phase 1: Northeast Region

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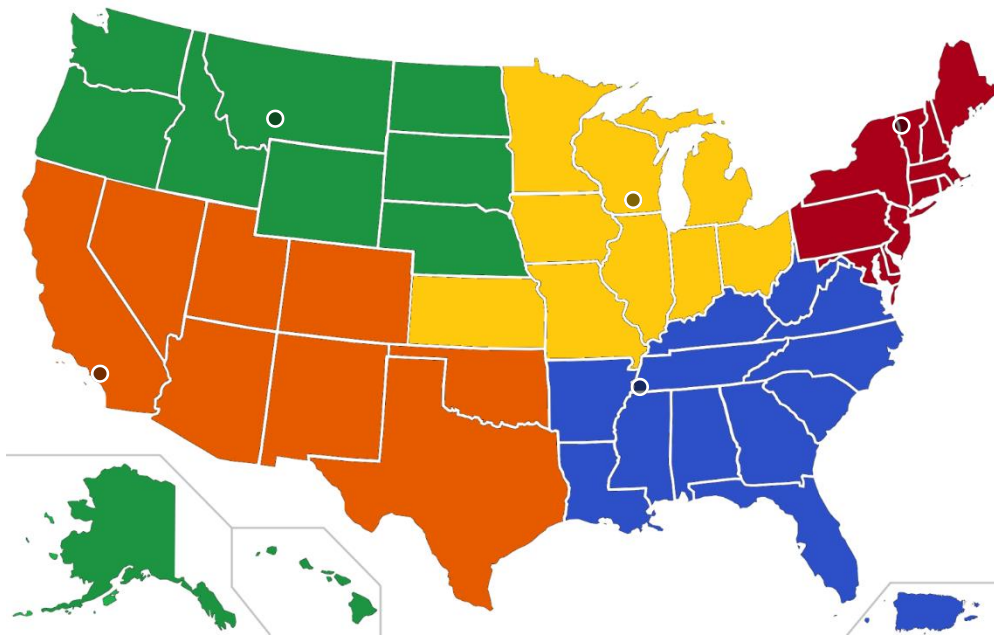
### Recommended Citation

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*Transportation Research Center Research Reports*. 44.  
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# **Transportation Job Needs and Priorities Report, Phase 1: Northeast Region**



**Northeast Transportation Workforce Center – January 2016**  
<http://netwc.net/>  
**at the University of Vermont Transportation Research Center**



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*This material is based upon work supported by the U.S. Department of Transportation under Cooperative Agreement No. DTFH6114H00022.*

*Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the Author(s) and do not necessarily reflect the view of the U.S. Department of Transportation.*

## Job Needs and Priorities Report, Phase 1 Northeast Region

### Introduction and Overview of the Report

As with any industry, the transportation industry has challenges that it faces in terms of having the best employees available to do needed work. The purpose of this report is to identify areas in which skill development is most important for employees, as well as key transportation careers in the Northeast Region of the U.S. that should be the focus of workforce development efforts in the next 10 years. However, while focusing on transportation workforce needs, it is also important to understand challenges that will be faced when looking to improve the workforce. Through the National Transportation Workforce Summit that was conducted in 2012 by the Council of University Transportation Centers (CUTC), four major challenges to the transportation workforce were discussed (CUTC, 2012). These challenges include:

- Demographic changes, particularly retiring baby boomers
- Career awareness and recruitment
- New technologies and the need for operators and managers who can use them
- Rising demand on transportation organizations requiring a workforce with a wider range of experience.

Each of these challenges affects transportation organizations across the Nation. For example, baby boomer retirements are one of the major challenges discussed by transportation organizations (Warne, 2005). The retirement of this large group of workers in itself is problematic due to the large number of positions that will need to be filled; however, it is exacerbated by demographic differences in those who are available to fill the open positions. For example, the workforce is more diverse than it has been in the past and recruiting and retaining women in transportation organizations has been a challenge due to a lack of career interest in transportation (Agrawal & Dill, 2008), few female role models in transportation careers (Rivera, Chen, Flores, Bumberg, & Ponterotto, 2007), and negative perceptions of the industry, such as a gender barrier and lack of flexibility (Dainty, Bagilhole, Ansari, & Jackson, 2004). Further, the younger generation of employees, beyond just women, typically expects more support from their employers with respect to flexibility and work-life balance (Zemke, Raines, & Filipczak, 2000). Because this has not been as important to previous generations of transportation workers, occupations and organizations are often not currently structured to offer these elements to employees.

With regard to technology, there are constantly updates and new technologies that impact how transportation work is done. For example, the air transportation industry is currently experiencing the implementation of NextGen, which utilizes new technology and requires wide-ranging transformations to the work that has been done in the past. Additionally, other modes of transportation are also experiencing technology changes in the types of technology and equipment used to do work. With increases in the usage of computers and computerized equipment, employees who are able to understand and work with the new technology are needed. Further, technology advances, new safety requirements, and changing legislation place additional burdens on transportation organizations to be able to meet emerging requirements for success.

Along with technology, the rise of green jobs and green transportation will influence the transportation industry. There are many strides being made toward more environmentally sustainable transportation options, meaning more job opportunities for positions in this area. In addition to vehicles becoming more

fuel-efficient and/or using alternative sources of energy, freight is an area where there is potential for improvement. For example, freight companies are also moving towards cleaner transportation by updating their equipment in ways that improve fuel efficiency, reducing the length of time trucks idle, and rethinking distribution routes with the help of geographic information system (GIS) software that allows companies to create queries to evaluate different routes. Modes of non-motorized transportation also contribute to green transportation. Some examples of potential jobs in green transportation include mechanical engineers, civil engineers, freight agents, freight planners, transit planning analysts, rail inspectors, and highway safety specialists.

The above described transportation workforce challenges exist across the nation as a whole, and conditions in the Northeast Region of the United States are no different in that these same challenges are experienced when working to develop a high-quality transportation workforce. This report will focus on issues related specifically to the workforce in the Northeast Region. It will provide an overview of the transportation industry in the Northeast and specific workforce needs within the region. It will also detail information on the key types of transportation occupations in the region currently as well as job projections for the next 10 years. Based on these findings, skills required for key occupations (current and future) will be identified, and skills requiring additional training/development, based on the experiences of transportation stakeholders within the region, will be noted.

## METHODOLOGY

The methodology for developing this report includes several key phases described below.

**Background Review.** Our team identified and analyzed information from Federal, State, and private sector research, technical reports, conference presentations, case studies and HR documents (e.g., position descriptions, job advertisements, career ladders, trainings, strategic plans). The goal is to assess transportation industry and employment trends in the Northeast. Results will increase our team's overall understanding of the region's transportation workforce and related issues.

**Engage Stakeholders.** Next, we engaged industry stakeholders throughout the region-- both public and private partners-- who are specifically knowledgeable about transportation occupations. In preparation we first developed an evaluation system for the occupations identified in the background review, based on criteria important to the Northeast Transportation Workforce Center as well as stakeholders and workforce in the region. We used these criteria to conduct an initial screening, in order to narrow down the list of occupations to 'In-Demand' occupations. These 'In-Demand' occupations were the subject of our discussions with stakeholders, framed around the evaluation criteria. We leveraged our contacts within state DOLs, DOTs, universities, associations, and private sector organizations throughout the region to gather input from stakeholders regarding the broad work environment of personnel, critical job functions, reliance on contracted staff and outsourcing of staff functions, anticipated workforce trends over the next 5 to 10 years. The process also addressed the recruitment and retention challenges they have faced within their organization and industry, and the solutions they have used to successfully address their workforce challenges. This information has been used to further narrow down and refine the list of 'In-Demand' occupations. Results of this subtask help to define the workforce at the region-level and provide a preliminary list of critical workforce occupations and functions.

**Estimating regional workforce demand for occupations.** Using the data collected in earlier phases and input from our partners, we generated and analyzed historic, current, and future occupational estimates for all priority transportation occupations identified. This longitudinal approach allows our team to accurately assess workforce trends across disciplines. In developing numerical occupational estimates, our team created five sets of analytics, organized as historical analysis, current occupational scenario, 1 year projection, 5 year projection, and 10 year projection. These analyses will be provided at the region level for key occupations.



The following sections provide an overview of our research and modes under study. The focus of this report is on surface transportation, and thus the categories discussed are geared towards surface transportation. Other modes (e.g., airports) were not included because they are outside of the purview of surface transportation.

## Description of Industry in Northeast Region and Major Drivers of Transportation Needs

The Northeast Transportation Center includes eleven states and the District of Columbia. This covers 181,261 square miles of land, or 5% of the United States (which is approximately 3.8 million miles, in total). In contrast, it contains 15.96% of the US population (Census, 2014). Within these twelve areas, the landscape of the transportation industry varies substantially. The area covered by each area varies from 61 square miles (the District of Columbia) to 49,112 square miles (New York State). It has 4 of the top 25 US cities in terms of population (New York, Philadelphia, Boston and The District of Columbia), while also including two states, and the District of Columbia, out of seven states within the US that have populations that do not exceed 1,000,000 people (i.e., Delaware, Vermont, and the District of Columbia). Exhibit 1 provides an overview of the states included in the Northeast Region, with information regarding population, land area, and transportation infrastructure information.



<b>Exhibit 1: Overview of Population and Transportation Information by State for the Northeast Region (Census, 2014; US DOT Bureau of Transportation Statistics, 2012)</b>						
	<b>Population</b>	<b>Area</b>	<b>Public Road Miles</b>	<b>Commuters using Public Transit</b>	<b>Freight Railroad Miles</b>	<b>Inland Waterway Miles</b>
Connecticut	3,596,677	4,842.36	21,431	4.78%	364	120
Delaware	935,614	1,948.54	6,377	2.54%	250	100
District of Columbia	658,893	61.05	1,502	38.60%	23	10
Maine	1,330,089	30,842.92	22,871	0.57%	1,116	70
Maryland	5,976,407	9,707.24	32,372	8.88%	762	530
Massachusetts	6,745,408	7,800.06	36,330	9.44%	892	90
New Hampshire	1,326,813	8,952.65	16,105	0.67%	344	10
New Jersey	8,938,175	7,354.22	39,272	10.59%	983	360
New York	19,746,227	47,126.40	114,709	27.25%	3,532	390
Pennsylvania	12,787,209	44,742.70	119,846	5.42%	5,127	260
Rhode Island	1,055,173	1,033.81	6,480	3.06%	19	40
Vermont	626,562	9,216.66	14,291	1.19%	590	0

The total transportation expenditures by state and local governments in the Northeast Region exceeds 63 billion dollars per year (Census, 2011; Department of Commerce, 2011). This makes up approximately 26.2% of the 241 billion spent by state and local governments within the United States. The Northeast Region contributes 22.78% of funds in the United States for highways, 49.17% of total funds for transit, and approximately 22% of total funds for water transportation. Major employers in the area include state and local DOTs, Amtrak, Norfolk Southern, CSX Railways, transit systems (including the New York

Metropolitan Transit Authority and Washington Metropolitan Area Transit Authority), and motor freight companies (e.g., Swift Transportation, Schneider National).

<b>Exhibit 2: Budget by State and Mode (in Millions of Dollars) (Census, 2011; Department of Commerce, 2011)</b>				
	<b>Total</b>	<b>Highway</b>	<b>Transit</b>	<b>Water</b>
Connecticut	\$2,379	\$1,595	\$718	\$3
Delaware	\$719	\$549	\$126	\$37
District of Columbia	\$2,575	\$267	\$2,307	Not Provided
Maine	\$1,079	\$935	\$16	\$11
Maryland	\$4,476	\$3,007	\$1,139	\$100
Massachusetts	\$3,554	\$2,584	\$330	\$106
New Hampshire	\$824	\$760	\$20	<\$.5
New Jersey	\$6,690	\$4,388	\$2,225	\$27
New York	\$32,771	\$11,109	\$19,176	\$466
Pennsylvania	\$12,182	\$9,082	\$2,564	\$458
Rhode Island	\$807	\$348	\$239	\$2
Vermont	\$715	\$593	\$29	<\$.5
<b>Total</b>	<b>\$63,098</b>	<b>\$35,217</b>	<b>\$28,889</b>	<b>\$1,211</b>

Transportation systems across the Northeast Region are multimodal, with many different types of occupations that individuals can fill. For example, transportation employers in the state of Vermont need employees to maintain 305 miles of state-owned operating rail, sustain 14,291 miles of roadway, and operate transportation systems including ferries, buses, and trains (VTrans, 2015). In another vein, in New Jersey transportation workers are needed by public and private employers to operate and maintain 262 bus routes, 12 commuter rail lines, and 3 light rail lines (NJ Transit, 2014) while also working to increase transportation safety, reduce traffic congestion, deal with an aging infrastructure, and move freight (NJ Transit, n.d.). As can be seen in these two states, there are many differing needs for the transportation industry workforce. The requirements for various jobs will differ; however, key skills that require training and development will likely overlap across these various occupations.

Five of the 10 largest rapid transit systems and 7 of the 10 largest commuter rail systems in the nation reside in the Northeast Region (APTA, 2014). Given the high level of ridership within these systems and the large number of miles covered and transit lines and stations served, transit is a significant contributor to transportation employment in the Northeast. There are over 431,000 miles of highway that need to be maintained by transportation employees, 63 ports of entry and numerous water transportation systems in the region that must be staffed with transportation employees (Census, 2012; Customs and Border Patrol, n.d.). In the remainder of this section, each of major modes of transportation in the Northeast Region are described in additional detail.

## **Mode by Mode Descriptions of the Northeast Region**

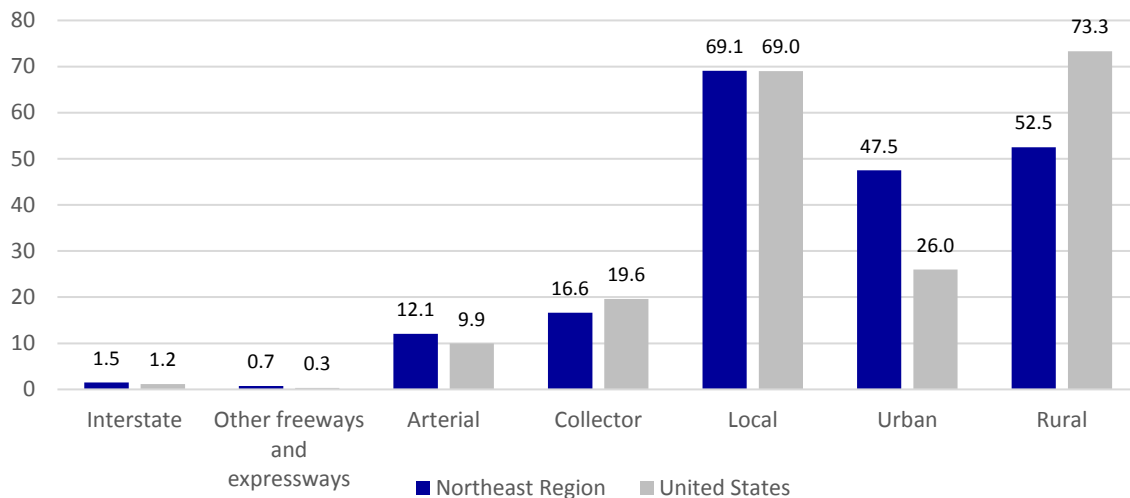
### **Highways**

The national highway system is a network of highways within the United States, including the Interstate Highway System, other freeways and expressways, arterial highways, collector highways, and local highways. Many of these roads, in addition to streamlining the transportation of people, also enable other forms of transportation, serving airports, rail or truck terminals, railway stations, and ports. The United States contains the largest highway system in the world, covering over 4.05 million miles (Census, 2009). The Northeast Region encompasses 431,729 miles of highway, approximately 10.7% of the highways in the US. This includes 6,366 miles of interstate highways, 13.6% of the interstate highway mileage in the



country. Of these roads, 195,072 miles are urban, comprising 18% of the urban roads in the country. More than 45% of the roads in the area covered by the Northeast Transportation Center are urban, compared with only 26.7% being urban across the United States (Census, 2009). This poses a unique situation in terms of workforce planning and staffing.

**Exhibit 3: Percentage of Highway Type, Northeast Region and Entire US, (APTA, 2014)**



**Exhibit 4: Bridge Totals and Condition in the NE Region (APTA, 2014)**

	All Bridges	Structurally Deficient	Functionally Obsolete
Connecticut	4,218	413 (9.8%)	1,059 (25.1)
Delaware	864	56 (6.5%)	121 (14%)
District of Columbia	252	21 (8.3%)	159 (63.1%)
Maine	2,401	366 (15.2%)	425 (17.7%)
Maryland	5,291	333 (6.3%)	1,085 (20.5%)
Massachusetts	5,136	487 (9.5%)	2,207 (43%)
New Hampshire	2,438	355 (14.6%)	435 (17.8%)
New Jersey	6,566	624 (9.5%)	1,710 (26%)
New York	17,442	2,078 (11.9%)	4,697 (26.9%)
Pennsylvania	22,660	5,218 (23%)	4,343 (19.2%)
Rhode Island	766	167 (21.8%)	266 (34.7%)
Vermont	2,731	251 (9.2%)	652 (23.9%)

There are a total of 70,765 bridges contained within the Northeast Region. This represents 11.7% of the 605,471 bridges in the United States (APTA, 2014). Of the bridges in the region, 10,369 are structurally deficient, and 17,159 are functionally obsolete. This comprises 16.5% of structurally deficient bridges and 20.6% of functionally obsolete bridges nationwide (APTA, 2014). Despite the lower percentage of total bridges, the increased totals of deficient and obsolete bridges indicate that the Northeast Region will likely encounter a higher demand for

bridgework, requiring workers who are familiar with both traditional and newer forms of bridge construction and maintenance.

### Transit

Public transit encompasses city buses, trolleys, trams or light rail, rapid transit, passenger trains, and ferries. Because bus systems operate on normal roads, they require less infrastructure. Buses and bus systems are often used in smaller cities and towns, and are used to supplement other means of transit in large cities. Trains, particularly rapid transit systems, provide the ability to move a high capacity of individuals over short or long distances, but since they have full grade separation from other traffic,

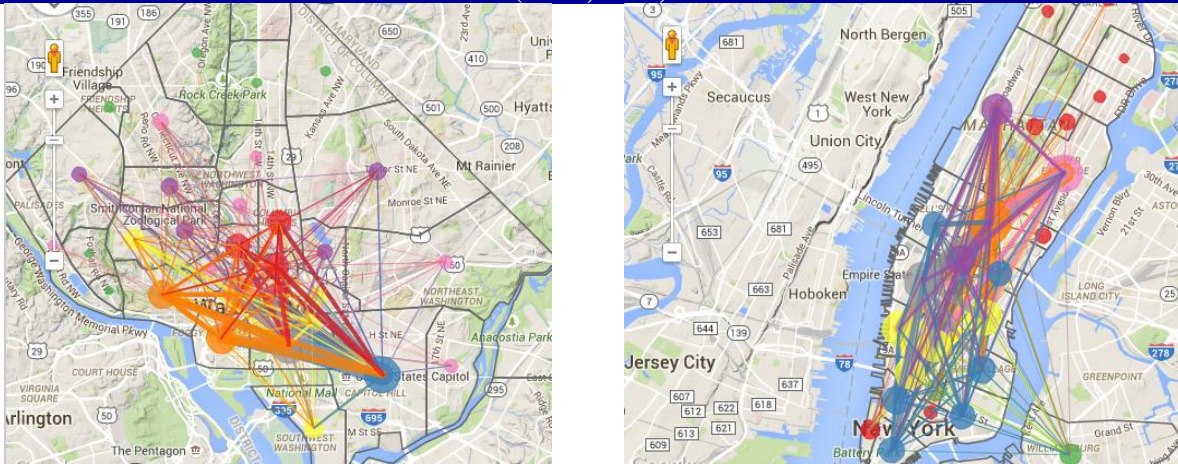
require additional infrastructure, including the building and maintenance track, signaling and stations. Light rail systems are not fully separated from traffic, operating typically at street or curb level on existing streets, and are often integrated into rapid transit systems. Examples of this integration include Baltimore, Boston, Philadelphia, and the MARC train system, serving the Maryland suburbs of the District of Columbia. Half of the areas covered contain a light rail system, and additional states are planning to build these systems. New York City and the District of Columbia are home to the two largest urban rail (metro/rapid transit) systems in the United States, and the region includes six more metropolitan areas within the top 15. In contrast, multiple states in this region do not contain any type of urban rail systems. This poses a workforce planning and staffing challenge that is unique to the Northeast. Usage of public transportation in the region varies from .5% to 38%, with a large dependence on buses and heavy rail (United States Department of Transportation Bureau of Transportation Statistics, 2012). The New York City Bus system is the largest in the country, with a daily ridership of over 2.6 million passengers (APTA, 2012). Philadelphia, the District of Columbia, Boston, and Baltimore are also in the top in terms of daily ridership. Ferries (publicly and privately owned and operated) carry passengers, and sometimes their vehicles, across bodies of water, whether fresh water or ocean water. They are a part of public transportation in many waterside cities and islands, and allow direct transit between points at a much lower cost than bridges or tunnels. The majority of states within the Northeast include ferry service. Public transit in the Northeast is varied in terms of specific modes, indicating differing needs for the workforce.

<b>Exhibit 5: Public Transit Commuters, by Mode, in the Northeast Region (US DOT Bureau of Transportation Statistics, 2012)</b>					
	<b>Bus</b>	<b>Heavy Rail</b>	<b>Light Rail</b>	<b>Commuter Rail</b>	<b>Other</b>
Connecticut	94.5%	0.0%	0.0%	1.4%	4.1%
Delaware	91.4%	0.0%	0.0%	0.0%	8.6%
District of Columbia	32.2%	67.3%	0.0%	0.0%	0.5%
Maine	60.9%	0.0%	0.0%	9.5%	29.7%
Maryland	76.3%	10.2%	5.9%	5.7%	1.9%
Massachusetts	33.3%	38.7%	17.4%	8.4%	2.2%
New Hampshire	98.1%	0.0%	0.0%	0.0%	1.9%
New Jersey	49.8%	22.4%	5.4%	20.2%	2.2%
New York	27.9%	66.4%	0.2%	4.6%	0.8%
Pennsylvania	59.9%	21.9%	7.1%	8.0%	3.1%
Rhode Island	96.5%	0.0%	0.0%	0.0%	3.5%
Vermont	98.0%	0.0%	0.0%	0.0%	2.0%

*Note.* Other includes automated guideway, cable car, demand response, ferry boat, inclined plane, monorail, trolley bus, and van pool.

Increasingly new services are emerging to offer more “just-in-time” and flexible transport operations, such as Uber, Lyft, and Bridj. In addition, add-on connector services such as CarShare, ZipCar, and Bikeshare programs are connecting to transit operations. These services have the potential to transform, or potentially disrupt, current transit operations, especially in urban areas, as well as the workforce needed to ensure transit systems are successful. For example, rideshare programs can be a complement to public transit in that they can help to close gaps in service and serve difficult to reach areas (TCRP Synthesis 98, 2012). However, car share services could also decrease transit usage (Martin & Shaheen, 2011).

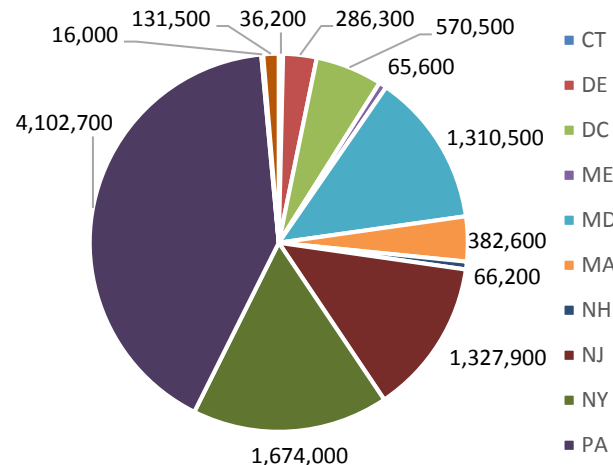
**Exhibit 6: Uber Flow Patterns in Washington, DC and New York, NY  
 (Uber, 2012)**



**Rail**

Freight rail transportation transports cargo. The United States is connected by an extensive, unified standard gauge rail network and ties into systems in Canada and Mexico. Most trackage is owned by private companies that also operate trains on those tracks. Freight trains are typically hauled by diesel locomotives. There are four different types of freight railroad: Class I, regional, local line haul, and switching & terminal. As of 2000, rail moved more than 25% of the United States’ freight. All of the states within the Northeast Region include freight rail. New Jersey, in particular, is focusing on freight rail, calling it “an essential transportation role,” moving nearly 37 million tons of freight through the state in 2009 (New Jersey Department of Transportation, 2012). Rail also contributes to other forms of transportation, as approximately 15% of containers going through the Ports of New York and New Jersey currently move by rail and is expected to increase over time. In total, 8.86% of freight in the United States terminates in the area covered by NETWC (USDOT BTS, 2011).

**Exhibit 7: Freight Rail Carloads Carried**



<b>Exhibit 8: Busiest Passenger Rail Stations located in the Northeast (Amtrak, 2013)</b>	
	<b>Total Ridership</b>
New York, NY	9,556,424
Washington, DC	5,033,392
Philadelphia, PA	4,125,503
Boston South Station, MA	1,434,148
Baltimore, MD	1,065,576
Albany-Rensselaer, NY	764,898
New Haven, CT	745,530
Wilmington, DE	738,313
BWI Airport, MD	710,513
Providence, RI	660,267
Newark, NJ	656,822
Lancaster, PA	578,731
Harrisburg, PA	571,940
Boston Back Bay, MA	540,770
Boston North Station, MA	475,447

Rail is also a passenger mode. The Northeast Corridor (NEC) is the busiest railroad in North America, with more than 2,200 trains operating over some portion of the Washington-Boston route each day (Amtrak, 2013). In FY 2013, Amtrak carried 11.4 million passengers on the NEC between Washington – New York – Boston. The Northeast Region includes 15 of the 25 busiest Amtrak stations in the United States, serving a total ridership of 37,699,031. The Northeast contains the only sections of electrified tracks, from The District of Columbia to Boston, and from Philadelphia to Harrisburg. Diesel locomotives are used in the remainder of the system. In 2012, an average of more than 847,000 people every weekday depended on commuter rail services that used Amtrak-owned infrastructure, dispatching, shared operations, or rode commuter trains operated or maintained by Amtrak under contracts with local or regional agencies.

The Northeast also has a robust commuter rail system. Commuter rail is different from rapid transit systems that are larger, providing more seating (and less standing room) due to the long distances covered, and having less frequent, services. The region contains 5 of the 6 largest commuter rail systems in the country, serving roughly 1.14 million passengers each weekday, and 342 million passengers each year (APTA, 2014). The strong presence of rail, both freight and passenger, in the Northeast show the need for employees who can operate, repair, and maintain the cars and other infrastructure while assuring the safety of freight and passengers.

**Motor**

Trucking transports large quantities of raw materials, works in progress, and finished goods over land, typically from manufacturing plants to distribution centers. The motor mode focuses on this transport and includes freight. Large trucks require a commercial driver's license (CDL) to operate. Obtaining a CDL requires extra education and training dealing with the special knowledge requirements and handling characteristics of such a large vehicle.

The shipping industry (which does not include the USPS in this definition) also influences motor transportation: FedEx Freight is the top less than truckload (LTL) carrier, and UPS Freight is fourth LTL in the country (Logistics Management, 2012). LTLs carry small freight such as packages, rather than shipments that require a full semi-trailer. An increased dependence on eCommerce has driven consistent increases in the usage of the shipping industry, including ground shipping, within the United States (FedEx, 2014). This increased usage occurs across the country, including in the Northeast.





## Marine

Maritime transportation is used for moving both passengers (ferry) and cargo (freight), though maritime transportation for passengers has decreased. Water transportation can be over any distance, by boat, sailboat, ship or barge, through canals, along rivers, or across lakes and oceans. The US Department of Transportation Maritime Administration maintains 21 Marine Highway routes, multiple of which go through or adjacent to the areas covered by NETWC. These marine highways serve as extensions of the surface transportation system, and follow established navigable waterways and shipping lanes. They are commercially navigable coastal, inland, and intracoastal waters of the United States or connections between US ports on those waterways, described in terms of the specific landside transportation routes (road or rail line) that they supplement or connect. Vermont is the only state in the region without maritime freight. The Northeast moves 376,222 short tons of cargo by water every year, which is approximately 13% of all maritime freight moved in the US (USDOT BTS, 2012).

**Exhibit 10: Northeast  
 Marine Highway Routes  
 (SOURCE)**



## Non-Motorized

Non-motorized transportation includes both pedestrian and bicycles. While the majority of short trips are still conducted using motorized vehicles (APTA, 2009), trends illustrate that non-motorized transportation is increasing, and is likely to continue increasing over time (Davis, Dutzik & Baxandall, 2012; World Bank, 2008). The introduction of programs such as bike sharing, where a fleet of public-accessible short-term bike rentals are located at multiple stations is increasing this (Ma, Liu, & Erdogan, 2015). As of 2011, there were 15 bike sharing programs, offering 5,238 bicycles and over 172,000 members (Shaheen, Martin, Cohen & Finson, 2012). Non-motorized transportation is particularly important within the Northeast Region because it influences the design and construction of roads, and changes the way that the transportation world does business. This includes adjusted delay estimation and signal timing design techniques (Farth, Wang & Wang, 2015), more effective signage (Greenwood & Grossman, 2015) and additional bike parking (Kamargianni, 2015; Ma et al., 2015) as well as wider painted shoulders and special bike lanes. These new challenges require an array of workers well versed in the safe usage of non-motorized transportation as a unique and increasing mode within the area.

## Pipeline

Pipeline transportation moves liquids or gas, including crude and refined petroleum, fuels, slurry, and water. Transportation pipelines are mainly long pipes with large diameters between cities, countries, and continents. The Northeast Region includes the majority of what is referred to as Region 1 or Northeast Region in the gas pipeline network (Region 1 also includes Virginia and West Virginia). All states include some sort of pipeline transportation, moving natural gas, crude oil, and refined oil. These include interstate, intrastate, and international pipelines. Three of the major natural gas transportation corridors terminate in the Northeast Region.

As illustrated above, transportation systems across the Northeast Region are multimodal, with many different types of occupations that individuals can fill. Further, the Northeast faces multiple workforce challenges that are unique compared to the rest of the country. As a result, there are many differing needs for the transportation industry workforce. While the specific requirements for numerous jobs will differ, key skills that require training and development will likely overlap across different occupations.

## Transportation Workforce with the Northeast Region

Given the wide range of transportation modes important in the Northeast and the varying types of occupations that are needed to ensure transportation functions smoothly and efficiently within each of these modes, it is necessary to consider the various jobs that need to be completed by employees. As such, occupations that serve the modes described above were identified for inclusion in this effort. Using occupational codes, data were identified from existing Department of Labor (DOL) and Bureau of Labor Statistics (BLS) databases to provide an overview of the current transportation workforce in the Northeast.

The transportation industry employs a great number of people across the Northeast Region of the US. In total, there are over one million transportation and warehousing employees in the region, as reported by the BLS (see Exhibit 11). Over three quarters (78%) of these employees work in private organizations, with the remaining employed by Federal, State, or local government. While these individuals work in different modes of transportation and different types of organizations, this overview of the total number of positions serves to show the importance of focusing on transportation positions and careers in the region due to the prevalence of these types of jobs.

<b>Exhibit 11: Number of Employees in Transportation and Warehousing Occupations (NAICS Codes 48-49) by State, September 2014</b>			
	<b>Employees in Private Organizations</b>	<b>Employees in Federal, State, and Local Government</b>	<b>Total Number of Employees</b>
<b>United States Total</b>	<b>4,432,813</b>	<b>934,547</b>	<b>5,367,360</b>
Connecticut	43,213	15,252	58,465
Delaware	12,094	20,413	32,507
District of Columbia	2,179	21,845	24,024
Maine	16,001	12,801	28,802
Maryland	67,555	21,397	88,952
Massachusetts	76,761	13,654	90,415
New Hampshire	13,081	12,517	25,598
New Jersey	149,327	16,852	166,179
New York	233,009	72,688	305,697
Pennsylvania	222,013	27,289	249,302
Rhode Island	9,809	2,357	12,166
Vermont	6,793	1,796	8,589
<b>Total in Northeast Region</b>	<b>851,835</b>	<b>238,861</b>	<b>1,090,696</b>

Source. BLS Quarterly Census of Employment and Wages.

[http://www.bls.gov/cew/apps/data\\_views/data\\_views.htm#tab=Tables](http://www.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables)

Interestingly, one state and the District of Columbia reverse the trend of having larger numbers of employees in private organizations than federal, state or local government. It may come as no surprise that the number of transportation employees in government positions in the District is larger than that in private organizations given the presence of government jobs in the capital city. However, Delaware also has more government transportation employees than transportation employees in private organizations.

Moving from employees across the transportation industry, the next element of the workforce to consider is specific occupations. There is a variety of transportation occupations across the Northeast Region. Federal agencies and other organizations that collect, analyze, and share information about occupations organize the data using a Standard Occupational Classification (SOC) system. This allows for consistent



reporting and analysis of occupations. Within the SOC system, there are 23 major groups of occupations. One of these is Transportation and Material Moving Occupations, which are designated by SOC codes that begin with “53.” Exhibit 12 provides data for occupations within this major group that were identified as relevant for the NETWC. For each occupation, the table includes the SOC code (used to identify occupations by the BLS), occupation title, number of employees in the Northeast in May 2014, average hourly wage, and the typical education required for entry into the occupation. An expanded version of this table, which includes the same data for all of the states in the Northeast Region, is provided in Appendix A.

When considering the landscape of the transportation workforce across the region, it is also important to examine changes that might influence the number and type of employees required for transportation organizations in the near future. For example, some occupations are expected to grow rapidly in numbers in the near future, while other occupations will be expected to decrease in number or remain steady in terms of the number of employees. The BLS and individual state DOLs develop 10-year predictions to help with long term planning, specifically with regard to career choice. Typical required education is provided for each occupation; however, these data sets do not necessarily reflect the changes in skills needed for existing occupations and do not predict emerging or new occupations or occupational subsets that do not currently exist. The projections are based on how fast employment is expected to grow or decline for each occupation base on existing data and occupational categories. The projections are updated every two years. As such, the data in this report include the number of employees in the Northeast in each occupation, as well as a 10-year projection. This information is provided based on the most recent projections (i.e., 2012 and 2022). Based on this data, Exhibit 12 provides a glimpse at projected changes in employment within each occupation from 2012 to 2022.

**Exhibit 12: Occupational Data and Projections for Relevant Occupations in the Northeast Region within the SOC Major Group of “Transportation and Material Moving Occupations”**

SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
53-1021	First-line supervisors of helpers, laborers, and material movers, hand	31,900	\$23.55	High school diploma or equivalent	23,900	26,000	2,100	8.8%
53-1031	First-line supervisors of transportation and material-moving machine and vehicle operators	39,770	\$27.66	High school diploma or equivalent	40,290	43,360	3,070	7.6%
53-3021	Bus drivers, transit and intercity	35,900	\$18.95	High school diploma or equivalent	45,940	48,750	2,810	6.1%
53-3022	Bus drivers, school or special client	143,290	\$14.38	High school diploma or equivalent	140,260	153,380	13,120	9.4%
53-3031	Driver/sales workers	74,880	\$13.33	High school diploma or equivalent	85,530	93,490	7,960	9.3%
53-3032	Heavy and tractor-trailer truck drivers	249,400	\$20.16	Postsecondary non-degree award	258,630	287,450	28,820	11.1%
53-3033	Light truck or delivery services drivers	171,260	\$16.28	High school diploma or equivalent	176,310	184,750	8,440	4.8%
53-3041	Taxi drivers and chauffeurs	50,840	\$12.35	Less than high school	86,250	96,920	10,670	12.4%
53-3099	Motor vehicle operators, all other	7,730	\$16.02	High school diploma or equivalent	10,140	10,560	420	4.1%
53-4011	Locomotive engineers	3,840	\$27.41	High school diploma or equivalent	5,670	5,730	60	1.1%
53-4012	Locomotive firers	310	\$25.81	High school diploma or equivalent	0	0	0	0.0%
53-4013	Rail yard engineers, dinkey operators, and hostlers	280	\$21.54	High school diploma or equivalent	760	800	40	5.3%
53-4021	Railroad brake, signal, and switch operators	1,920	\$25.14	High school diploma or equivalent	2,860	2,920	60	2.1%
53-4031	Railroad conductors and yardmasters	9,130	\$26.84	High school diploma or equivalent	10,870	10,900	30	0.3%
53-5021	Captains, mates, and pilots of water vessels	4,420	\$38.07	Bachelor's degree	4,910	5,170	260	5.3%
53-5022	Motorboat operators	370	\$19.78	High school diploma or equivalent	230	260	30	13.0%
53-5031	Ship engineers	850	\$35.87	Bachelor's degree	1,220	1,250	30	2.5%
53-6011	Bridge and lock tenders	1,420	\$22.22	High school diploma or equivalent	330	320	-10	-3.0%
53-6021	Parking lot attendants	36,520	\$10.39	Less than high school	34,050	36,920	2,870	8.4%
53-6041	Traffic technicians	1,790	\$22.38	High school diploma or equivalent	2,030	2,240	210	10.3%
53-6051	Transportation inspectors	2,600	\$34.05	High school diploma or equivalent	6,660	7,080	420	6.3%
53-6061	Transportation attendants, except flight attendants	2,860	\$13.01	High school diploma or equivalent	6,440	6,890	450	7.0%
53-6099	Transportation workers, all other	3,440	\$17.28	High school diploma or equivalent	4,240	4,380	140	3.3%
53-7011	Conveyor operators and tenders	3,630	\$16.35	Less than high school	3,730	3,850	120	3.2%

**Exhibit 12: Occupational Data and Projections for Relevant Occupations in the Northeast Region within the SOC Major Group of “Transportation and Material Moving Occupations”**

SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
53-7021	Crane and tower operators	5,530	\$25.75	High school diploma or equivalent	5,190	5,840	650	12.5%
53-7031	Dredge operators	160	\$21.94	Less than high school	120	110	-10	-8.3%
53-7032	Excavating and loading machine and dragline operators	8,420	\$21.23	High school diploma or equivalent	8,420	9,390	970	11.5%
53-7033	Loading machine operators, underground mining	180	\$22.84	Less than high school	N/A	N/A	N/A	N/A
53-7063	Machine feeders and offbearers	17,920	\$14.73	Less than high school	15,570	15,400	-170	-1.1%
53-7064	Packers and packagers, hand	128,220	\$11.08	Less than high school	136,150	146,490	10,340	7.6%
53-7071	Gas compressor and gas pumping station operators	960	\$26.65	Less than high school	990	1,060	70	7.1%
53-7072	Pump operators, except wellhead pumpers	1,860	\$22.45	Less than high school	1,740	1,850	110	6.3%
53-7073	Wellhead pumpers	940	\$23.36	Less than high school	1,100	1,260	160	14.5%
53-7081	Refuse and recyclable material collectors	28,320	\$17.32	Less than high school	33,710	37,090	3,380	10.0%
53-7111	Mine shuttle car operators	300	\$26.36	Less than high school	250	220	-30	-12.0%
53-7121	Tank car, truck, and ship loaders	2,380	\$21.41	Less than high school	2,180	2,180	0	0.0%

Sources. <sup>a</sup> BLS Employment Data ([http://www.bls.gov/oes/current/oes\\_nat.htm](http://www.bls.gov/oes/current/oes_nat.htm)) and <sup>b</sup> BLS Long Term Projections (<http://www.projectionscentral.com/Projections/LongTerm>).

In looking at these employment data, the greatest numbers of employees in these occupations in Northeast Region are Heavy and Tractor-Trailer Truck Drivers and Light Truck or Delivery Services Drivers. With regard to the modes discussed previously, both of these occupations fit into the Motor mode. As can be seen in these data, most of the transportation occupations in the Northeast (with the exception of locomotive firers; railroad conductors and yardmasters; bridge and lock tenders and tank car, truck, and ship loaders) are expected to see an increase in employees in the long-term (i.e., from 2012 to 2022). Each of the modes described in this report are represented in the occupations presented in the previous exhibit, showing that the workforce in each of these areas is important for transportation in the Northeast Region.

When considering the transportation workforce, one important thing to note is that many employees are not in occupations specific to transportation. For example, many transportation agencies and companies employ engineers, which are not included in the list of occupations in Exhibit 12. This is because, while engineers are often employed by transportation organizations, they also work in other industries. Because of this cross-industry employment, occupations in other SOC major groupings, outside of Transportation and Materials Moving Occupations were also examined. Therefore, while not in transportation-specific occupations, these employees play an important role in and have a large impact on transportation organizations. For the occupations that are not unique to transportation, employees need to come into their jobs with broader foundational skills related to their occupations. Then, during their careers, they can develop contextual skills and knowledge that are relevant to transportation. For example, a financial analyst would need to come into a transportation organization knowing about finances and financial reporting. He/she would then be able to learn about specific elements related to the transportation organization by working there.

One group of employees who serve an important role in transportation are engineers and other scientists who are responsible for designing and building needed infrastructure as well as monitoring and mitigating environmental impacts. In addition, there are also workers in the construction and maintenance/repair of roads, tracks, or other structures used in transportation. To provide information on these types of occupations, Exhibit 13 includes data for relevant occupations from the following SOC Major Groups:

- Architecture and Engineering Occupations (17-0000)
- Life, Physical, and Social Science Occupations (19-0000)
- Construction and Extraction Occupations (47-0000)
- Installation, Maintenance, and Repair Occupations (49-0000)
- Production Occupations (51-0000)

When considering the outlook for these occupations, in terms of number of employees, it is important to note that in these industry-spanning occupations there will likely be more competition for employees due to the diverse employers for which they can work. This is especially true for occupations that are expected to grow, as well as emerging occupations, in the next 10 years. Skilled workers who are able to continue to learn and adapt to the changing conditions and needs across all disciplines and modes are going to continue to be a highly sought after resource for all employers.

**Exhibit 13: Occupational Data and Projections for Relevant Occupations in the Northeast Region within Engineering, Science, Construction, and Maintenance/Repair SOC Codes**

SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
17-1021	Cartographers and photogrammetrists	1,350	\$31.04	Bachelor's degree	1,490	1,730	240	16.1%
17-1022	Surveyors	6,590	\$29.00	Bachelor's degree	7,460	7,910	450	6.0%
17-2051	Civil engineers	55,480	\$41.89	Bachelor's degree	55,790	65,160	9,370	16.8%
17-2071	Electrical engineers	39,660	\$46.05	Bachelor's degree	36,030	38,260	2,230	6.2%
17-2081	Environmental engineers	14,260	\$41.51	Bachelor's degree	14,650	16,390	1,740	11.9%
17-3022	Civil engineering technicians	9,550	\$24.18	Associate's degree	9,850	9,830	-20	-0.2%
17-3023	Electrical and electronics engineering technicians	26,960	\$29.01	Associate's degree	30,130	30,520	390	1.3%
17-3025	Environmental engineering technicians	4,540	\$24.53	Associate's degree	4,150	4,910	760	18.3%
17-3029	Engineering technicians, except drafters, all other	11,120	\$30.35	Associate's degree	12,080	12,090	10	0.1%
17-3031	Surveying and mapping technicians	6,100	\$21.09	High school diploma or equivalent	5,960	6,570	610	10.2%
19-1031	Conservation scientists	2,750	\$30.97	Bachelor's degree	3,230	3,430	200	6.2%
19-3051	Urban and regional planners	7,140	\$33.18	Master's degree	7,590	8,050	460	6.1%
47-2051	Cement masons and concrete finishers	18,920	\$19.70	Less than high school	18,590	21,940	3,350	18.0%
47-2061	Construction laborers	163,190	\$17.19	Less than high school	194,500	224,490	29,990	15.4%
47-2071	Paving, surfacing, and tamping equipment operators	10,040	\$20.41	High school diploma or equivalent	10,750	12,290	1,540	14.3%
47-2073	Operating engineers and other construction equipment operators	57,110	\$23.09	High school diploma or equivalent	60,870	68,170	7,300	12.0%
47-2111	Electricians	114,320	\$26.21	High school diploma or equivalent	115,810	133,570	17,760	15.3%
47-2152	Plumbers, pipefitters, and steamfitters	80,400	\$26.26	High school diploma or equivalent	83,160	96,590	13,430	16.1%
47-4051	Highway maintenance workers	38,680	\$18.22	High school diploma or equivalent	41,910	43,020	1,110	2.6%
47-4061	Rail-track laying and maintenance equipment operators	3,910	\$24.39	High school diploma or equivalent	5,000	5,380	380	7.6%
49-2093	Electrical and electronics installers and repairers, transportation equipment	1,660	\$26.65	Postsecondary non-degree award	1,560	1,600	40	2.6%
49-3031	Bus and truck mechanics and diesel engine specialists	44,790	\$21.71	High school diploma or equivalent	43,780	46,970	3,190	7.3%
49-3043	Rail car repairers	3,360	\$25.27	High school diploma or equivalent	3,110	3,170	60	1.9%

**Exhibit 13: Occupational Data and Projections for Relevant Occupations in the Northeast Region within Engineering, Science, Construction, and Maintenance/Repair SOC Codes**

SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
49-3051	Motorboat mechanics and service technicians	4,260	\$18.56	High school diploma or equivalent	4,980	5,240	260	5.2%
49-3052	Motorcycle mechanics	2,780	\$17.21	High school diploma or equivalent	2,390	2,510	120	5.0%
49-3091	Bicycle repairers	1,530	\$12.96	High school diploma or equivalent	1,990	2,340	350	17.6%
49-3092	Recreational vehicle service technicians	1,110	\$17.80	High school diploma or equivalent	1,480	1,610	130	8.8%
49-3093	Tire repairers and changers	12,120	\$12.31	High school diploma or equivalent	12,850	13,800	950	7.4%
49-9092	Commercial divers	260	\$24.55	Postsecondary non-degree award	230	280	50	21.7%
49-9097	Signal and track switch repairers	180	\$28.81	High school diploma or equivalent	900	930	30	3.3%
51-4121	Welders, cutters, solderers, and brazers	42,090	\$19.25	High school diploma or equivalent	39,660	41,620	1,960	4.9%
51-8092	Gas plant operators	2,310	\$30.48	High school diploma or equivalent	1,930	2,050	120	6.2%
51-8093	Petroleum pump system operators, refinery operators, and gaugers	2,320	\$30.37	High school diploma or equivalent	1,800	1,780	-20	-1.1%
51-9197	Tire builders	930	\$20.17	High school diploma or equivalent	870	820	-50	-5.7%

Sources. <sup>a</sup> BLS Employment Data ([http://www.bls.gov/oes/current/oes\\_nat.htm](http://www.bls.gov/oes/current/oes_nat.htm)) and <sup>b</sup> BLS Long Term Projections (<http://www.projectionscentral.com/Projections/LongTerm>).



The findings in Exhibit 13 show that in general, an increase in the number of engineers employed in the Northeast Region by 2022 is expected, especially in civil and environmental engineering. When looking at occupations, it is important to not only focus on occupations with high numbers of employees, because specialized occupations are also key to completing transportation work and may require focus in terms of training employees to be ready for future open positions. For example, in the set of occupations included in this table, the greatest projected percentage increase is for commercial divers. While there are less than 300 workers employed or projected to be employed in this occupation in the Northeast, these employees may be needed to provide a vital role for transportation occupations, such as diving to inspect bridge supports that are underwater or working on underwater tunnels and pipelines. Commercial divers are highly skilled, work in high-risk conditions, and must maintain an extremely high level of safety knowledge and awareness. Therefore, it is beneficial to focus on smaller occupations such as these to ensure there are adequate training programs to provide needed employees.

Beyond the engineering and technical employees that support transportation organizations, there are also employees in the areas of management, finance, and support. Exhibit 14 provides occupational data and projections for these types of occupations, which come from the following SOC major groups:

- Management Occupations (11-0000)
- Business and Financial Operations Occupations (13-0000)
- Protective Service Occupations (33-0000)
- Office and Administrative Occupations (43-0000)

Like the previous occupational data and projections exhibits, Exhibit 14 provides the SOC code, occupation title, number of employees in the Northeast in May 2014, average hourly wage, and the typical education required for entry into the occupation as well as occupational projections from 2012 to 2022.

Exhibit 14: Occupational Data and Projections for Relevant Occupations in the Northeast Region within Management, Service, and Support Occupations								
SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
11-3021	Computer and information systems managers	89,680	\$65.52	Bachelor's degree	95,300	109,670	14,370	15.1%
11-3071	Transportation, storage, and distribution managers	18,540	\$44.80	High school diploma or equivalent	19,260	20,450	1,190	6.2%
13-2031	Budget analysts	14,850	\$35.55	Bachelor's degree	15,350	16,440	1,090	7.1%
13-2051	Financial analysts	95,300	\$44.35	Bachelor's degree	89,120	100,000	10,880	12.2%
33-3041	Parking enforcement workers	2,730	\$18.15	High school diploma or equivalent	2,700	2,520	-180	-6.7%
33-3052	Transit and railroad police	720	\$25.56	High school diploma or equivalent	7,070	7,380	310	4.4%
43-3061	Procurement clerk	15,030	\$19.35	High school diploma or equivalent	15,650	16,340	690	4.4%
43-5011	Cargo and freight agents	11,620	\$21.14	High school diploma or equivalent	14,700	16,130	1,430	9.7%

Sources: <sup>a</sup> BLS Employment Data ([http://www.bls.gov/oes/current/oes\\_nat.htm](http://www.bls.gov/oes/current/oes_nat.htm)) and <sup>b</sup> BLS Long Term Projections (<http://www.projectionscentral.com/Projections/LongTerm>).

Two of the occupations shown in Exhibit 14 are expected to see large increases in employees, both in terms of the number of employees as well as the percent change. As such, transportation organizations are likely to see increased competition for both Computer and Information Systems Managers and Financial Analysts.

Finally, occupational data and projections were analyzed at the state level to begin identifying differences in the workforce, and potential workforce needs, across the Northeast Region. Exhibit 15 provides a first look at this state-level information. Specifically, for each state the occupations with the largest expected increases and decreases in employment from 2012 to 2022 are identified. Complete data for occupations by state is provided in Appendix A.

<b>Exhibit 15: Transportation Occupations with Greatest Expected Increases and Decreases in Employment, by State in the Northeast Region</b>						
<b>State</b>	<b>SOC Code</b>	<b>Occupation Title</b>	<b># of Employees, 2012</b>	<b>Projected # of Employees, 2022</b>	<b>Change</b>	<b>Percent Change</b>
Connecticut	47-2061	Construction Laborers	7,470	8,850	1,380	18.5%
	53-3032	Heavy and Tractor-Trailer Truck Drivers	13,030	14,370	1,340	10.3%
	47-2111	Electricians	6,000	7,280	1,280	21.2%
	49-3043	Rail Car Repairers	40	30	-10	-25.0%
	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	10	0	-10	-100.0%
	53-6021	Parking Lot Attendants	1,410	1,370	-40	-2.8%
Delaware	47-2061	Construction Laborers	2,520	3,150	630	25.0%
	53-3032	Heavy and Tractor-Trailer Truck Drivers	3,340	3,740	400	12.0%
	13-2051	Financial Analysts	2,370	2,700	330	13.9%
	53-4031	Railroad Conductors and Yardmasters	30	30	0	0.0%
	53-5021	Captains, Mates, and Pilots of Water Vessels	40	30	-10	-25.0%
	17-3022	Civil Engineering Technicians	360	340	-20	-5.6%
District of Columbia	13-2051	Financial Analysts	2,750	3,300	550	20.0%
	53-3041	Taxi Drivers and Chauffeurs	2,510	2,920	410	16.3%
	11-3021	Computer and Information Systems Managers	4,210	4,460	250	5.9%
	53-6099	Transportation Workers, All Other	1,220	1,180	-40	-3.3%
	17-3029	Engineering Technicians, Except Drafters, All Other	630	570	-60	-9.5%
	43-3061	Procurement Clerks	390	330	-60	-15.4%
Maine	47-2061	Construction Laborers	3,790	3,930	140	3.7%
	11-3021	Computer and Information Systems Managers	940	1,010	70	7.4%
	53-3041	Taxi Drivers and Chauffeurs	1,390	1,440	50	3.6%
	53-3032	Heavy and Tractor-Trailer Truck Drivers	9,580	9,530	-50	-0.5%
	47-4051	Highway Maintenance Workers	2,020	1,960	-60	-3.0%
	53-3022	Bus Drivers, School/ Special Client	1,720	1,570	-150	-8.7%
Maryland	47-2061	Construction Laborers	21,330	23,210	1,880	8.8%

<b>Exhibit 15: Transportation Occupations with Greatest Expected Increases and Decreases in Employment, by State in the Northeast Region</b>						
<b>State</b>	<b>SOC Code</b>	<b>Occupation Title</b>	<b># of Employees, 2012</b>	<b>Projected # of Employees, 2022</b>	<b>Change</b>	<b>Percent Change</b>
	11-3021	Computer and Information Systems Managers	10,670	12,250	1,580	14.8%
	17-2051	Civil Engineers	7,160	8,280	1,120	15.6%
	33-3041	Parking Enforcement Workers	210	200	-10	-4.8%
	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	80	70	-10	-12.5%
	17-3022	Civil Engineering Technicians	1,510	1,470	-40	-2.6%
Massachusetts	47-2061	Construction Laborers	20,620	24,920	4,300	20.9%
	47-2111	Electricians	13,660	16,620	2,960	21.7%
	11-3021	Computer and Information Systems Managers	16,460	19,000	2,540	15.4%
	53-6099	Transportation Workers, All Other	620	610	-10	-1.6%
	17-3029	Engineering Technicians, Except Drafters, All Other	1,220	1,160	-60	-4.9%
	17-3023	Electronics Engineering Technicians	6,060	5,770	-290	-4.8%
New Hampshire	53-3032	Heavy and Tractor-Trailer Truck Drivers	6,580	7,310	730	11.1%
	47-2061	Construction Laborers	3,300	3,820	520	15.8%
	11-3021	Computer and Information Systems Managers	2,080	2,510	430	20.7%
	53-6099	Transportation Workers, All Other	110	110	0	0.0%
	33-3041	Parking Enforcement Workers	50	40	-10	-20.0%
	17-3023	Electronics Engineering Technicians	830	800	-30	-3.6%
New Jersey	53-3032	Heavy and Tractor-Trailer Truck Drivers	41,560	47,020	5,460	13.1%
	47-2061	Construction Laborers	22,640	26,460	3,820	16.9%
	47-2111	Electricians	11,800	14,160	2,360	20.0%
	51-9197	Tire Builders	180	130	-50	-27.8%
	53-3021	Bus Drivers, Transit and Intercity	8,640	8,590	-50	-0.6%
	53-7121	Tank Car, Truck, and Ship Loaders	1,320	1,260	-60	-4.5%
New York	47-2061	Construction Laborers	66,740	75,960	9,220	13.8%
	47-2111	Electricians	36,960	43,240	6,280	17.0%
	53-3022	Bus Drivers, School or Special Client	49,920	55,280	5,360	10.7%
	53-4011	Locomotive Engineers	1,500	1,500	0	0.0%
	53-4031	Railroad Conductors and Yardmasters	6,130	6,120	-10	-0.2%
	33-3041	Parking Enforcement Workers	750	690	-60	-8.0%
Pennsylvania	53-3032	Heavy and Tractor-Trailer Truck Drivers	75,960	87,820	11,860	15.6%
	47-2061	Construction Laborers	39,220	46,290	7,070	18.0%
	47-2073	Operating Engineers and Other Construction Equipment Operators	22,960	25,700	2,740	11.9%
	53-4021	Railroad Brake, Signal, and Switch Operators	1,400	1,370	-30	-2.1%

<b>Exhibit 15: Transportation Occupations with Greatest Expected Increases and Decreases in Employment, by State in the Northeast Region</b>						
<b>State</b>	<b>SOC Code</b>	<b>Occupation Title</b>	<b># of Employees, 2012</b>	<b>Projected # of Employees, 2022</b>	<b>Change</b>	<b>Percent Change</b>
	53-4011	Locomotive Engineers	2,230	2,190	-40	-1.8%
	53-4031	Railroad Conductors and Yardmasters	2,390	2,340	-50	-2.1%
Rhode Island	47-2061	Construction Laborers	2,320	2,820	500	21.6%
	47-2111	Electricians	1,920	2,360	440	22.9%
	53-3032	Heavy and Tractor-Trailer Truck Drivers	2,950	3,260	310	10.5%
	33-3041	Parking Enforcement Workers	40	30	-10	-25.0%
	47-4051	Highway Maintenance Workers	690	670	-20	-2.9%
	17-3022	Civil Engineering Technicians	320	290	-30	-9.4%
Vermont	47-2061	Construction Laborers	2,200	2,490	290	13.2%
	53-3032	Heavy and Tractor-Trailer Truck Drivers	4,780	4,980	200	4.2%
	47-2073	Operating Engineers and Other Construction Equipment Operators	1,250	1,430	180	14.4%
	17-2071	Electrical Engineers	500	490	-10	-2.0%
	43-5011	Cargo and Freight Agents	60	50	-10	-16.7%
	53-6061	Transportation Attendants, Except Flight Attendants	40	30	-10	-25.0%

Examining projected changes in the transportation workforce in the Northeast in this way allows for beginning to see similarities and differences across the region. For example, all of the states in the Region except Maine and the District of Columbia are expected to see a large increase in demand for Heavy Tractor-Trailer Truck drivers during the studied period. This could indicate that efforts to train and recruit these employees would be beneficial across the Northeast Region. Further, all states in the Northeast region except for the District of Columbia are expected to see large increases in the need for construction laborers. If transportation organizations and businesses need these types of employees, it will be important to identify other industries that compete for these same trained workers to determine what conditions and opportunities need to be created to attract them to transportation specific jobs. Simply producing more skilled workers in an occupation does not necessarily mean that any single industry need will be fulfilled. There are also differences between the states when starting to examine expected changes in the workforce. For example, Pennsylvania will likely see a decrease in occupations related to the rail mode (i.e., largest expected decreases in Railroad Brake, Signal, and Switch Operators; Locomotive Engineers; and Railroad Conductors and Yardmasters) whereas Massachusetts is likely to see the biggest decreases in Engineering Technicians. Understanding the workforce across states can help identify areas where coordination of effort or sharing of ideas would be most useful for transportation organizations and stakeholders.

## Key Occupations across the Region as Identified through Stakeholders and Archival Information

The initial broad focus on the transportation workforce was essential in providing an overarching view of the workforce and occupations in the region to show the breadth of the transportation workforce. With more than 70 occupations initially identified, it was necessary to develop an evaluation system to narrow the list down to 10-12 key occupations throughout the region. These key occupations will be explored in greater depth. Focusing in on the key occupations involved considering criteria that are most important to the Northeast Transportation Workforce Center, as well as the stakeholders and workforce in the region in terms of identifying key occupations.

The evaluation criterion includes two phases: the first phase involves evaluating occupations using quantitative criteria that must be met for the occupation to be considered a key occupation. This screen is based on a review of industry documents and the BLS data. The second phase involves applying qualitative criteria based on results from participant interviews and alignments with NE focus areas. See Exhibit 16 below for the full criteria.

<b>Exhibit 16: Criteria for the Prioritization of Transportation Occupations in the Northeast Region</b>	
<b>Criteria</b>	<b>Potential Qualification(s) for Inclusion</b>
<b><i>Phase 1 Screening Criteria: Based on Industry Assessment and BLS Data</i></b>	
Increasing demand for employees/ High growth of occupation	<ul style="list-style-type: none"> <li>▪ Examine gross “percentage” of increasing demand change to identify those occupations with the greatest percentage of expected growth</li> <li>▪ Eliminate occupations that are expected to decrease in terms of number of employees the near future because less employees will be needed to fill these occupations</li> </ul>
Established high demand for employees	<ul style="list-style-type: none"> <li>▪ Examine historic, current, and future “number” of employees in the occupation</li> <li>▪ Select occupations with the greatest number of employees or job openings, as there will be many positions that will need to be filled in these occupations</li> </ul>
Limited supply of new graduates	<ul style="list-style-type: none"> <li>▪ Use data from training programs to identify areas where there may not be enough graduates to fill needed positions</li> <li>▪ Select occupations with the greatest gaps between number of available positions and new graduates because these occupations will likely require support in terms of identifying new sources of employees or increasing the number of students in training programs</li> </ul>
<b><i>Phase 2 Screening Criteria: Based on Stakeholder Interviews and Alignment with NE \Focus Areas</i></b>	
Experienced challenges in recruiting or retaining employees	<ul style="list-style-type: none"> <li>▪ Gather input from stakeholders regarding occupations in the region that there have traditionally been challenges in filling or keeping filled</li> <li>▪ Selected occupations that have traditionally had these problems because these occupations may benefit from additional attention</li> </ul>



<b>Exhibit 16: Criteria for the Prioritization of Transportation Occupations in the Northeast Region</b>	
<b>Criteria</b>	<b>Potential Qualification(s) for Inclusion</b>
Occupation has requirements for or relies upon new or up-and-coming technology	<ul style="list-style-type: none"> <li>▪ Based on job requirements or stakeholder input, identify occupations in which employees must use technology frequently. Then, determine if the technology used in the occupation is new or evolving</li> <li>▪ Select occupations with the greatest reliance on new technology as it is likely employees in these areas will have new training or educational requirements or the occupations will require different types of employees than in the past</li> </ul>
Uniqueness of critical job functions	<ul style="list-style-type: none"> <li>▪ Based on job requirements, identify unique occupations that do not share job functions with other occupations</li> <li>▪ Select these occupations because they have the most individualized needs and would benefit from specialized attention.</li> </ul>
Occupations that are unique to the Northeast or have a higher demand in the region than in other regions	<ul style="list-style-type: none"> <li>▪ Use existing job data to identify occupations that are unique to the region or in higher demand in the Northeast states (e.g., specialized job functions, reliance on specific technology, certain seasonal work)</li> <li>▪ Select these occupations because they are specific to the region and therefore likely important elements of the workforce that will not be examined by other regions</li> </ul>
Aligned with focus areas of the NE Center	<ul style="list-style-type: none"> <li>▪ Determine if the occupation or the potential workforce align with any of the region’s areas of focus:               <ul style="list-style-type: none"> <li>○ Disadvantaged youth</li> <li>○ Climate change</li> <li>○ Alternative fuels</li> <li>○ Community colleges</li> <li>○ Living wage jobs or stepping stone to LW job</li> <li>○ Career ladder step to future employment options (identifiable linkages)</li> </ul> </li> </ul>

Initially the evaluation of the transportation workforce in the NE was conducted using labor market data to identify those jobs within the full list of occupations that are projected to be in the highest demand over the next 5-7 years. This includes those occupations with a projected demand increase of 7% or more by 2022 and those jobs with more than 150 annual openings in the Northeast Region. This analysis reduced the overall listing to 26 ‘In-Demand’ jobs with this screening.

A second evaluation was conducted with the list of 26 ‘In-Demand’ jobs. The criteria of this second level evaluation system were developed with stakeholder interviews in mind; the questions included in the interview protocol were framed around the criteria in Exhibit 15, such as:

- ‘In reviewing the jobs list, which transportation-related occupations have you experienced the most difficulties in recruiting and hiring employees?’ and
- ‘Thinking across all of the transportation occupations that you are aware of or interact with, which occupations have the most unique critical job functions?’).

See Appendix B for the full interview protocol. These interviews provided the opportunity to collect input regarding current and anticipated workforce challenges within the stakeholders’ organizations.

Stakeholders were provided with the list of 26 ‘In-Demand’ jobs, so that information gathered in the interviews could be used to narrow down the list. NETWC staff at the University of Vermont and Rutgers identified stakeholders with the goal of collecting input from representative employers and workforce agencies across the industry. See Exhibit 17 below for a full list of stakeholders interviewed.

<b>Exhibit 17: Northeast Region Stakeholders Interviewed</b>		
<b>Name</b>	<b>Organization</b>	<b>Position Title</b>
Dan Fogarty	Berks County Workforce Development Board	Director of Workforce Development
Deb Presbie	CBIA Education & Workforce Partnership	Program Manager
Jeffrey Turgeon	Central Massachusetts Workforce Investment Board	Executive Director
Michael Beaudry	Central Massachusetts Workforce Investment Board	Industry Team Coordinator
Dave Orr	Cornell Local Roads	Director
Becky Greene	Maine DOT	Human Resources Director
Kari Gould	Maine DOT	Human Resources Associate
Bill Barnard	Maryland State Highway Administration	Manager of Workforce Planning and Development
Darren Benoit	McFarland Johnson	Transportation Manager
Aleyda Meyers	Metropolitan Transportation Authority	Director of Veteran Recruitment and Staffing Initiatives
Garry Douglas	North American Center of Excellence in Transportation Equipment	President, North Country Chamber of Commerce
Bob Pleasure	North America’s Building Trades Unions	Director of Education and Special Assistant to the President
Sylvie Nelson	North Country Workforce Development Board	IOM Executive Director
Leon Heyward	NYCDOT	Deputy Commissioner
Bob Chamberlin	RSG	Director of Transportation Air Quality
Jesse McCree	South Central Workforce Investment Board	Director of Strategic Initiatives
Kevin Perkey	South Central Workforce Investment Board	Executive Director
Bruce England	Susquehanna Workforce Network	Executive Director
Dan McDermott	Upper Shore Workforce Investment Board	Executive Director

The industry documents, BLS data, and stakeholder interviews provided the information necessary to narrow down the full list of occupations to a list of critical workforce occupations and functions. Examining the occupations in a more narrow scope also helps to define the workforce at the regional level. These key occupations are the focus of analyses to explore workforce trends and determine gaps in skills needed over the next 1, 5 and 10 years throughout the region. These occupations are organized into four categories:

- STEM (Science, Technology, Engineering & Mathematics) Occupations
- Career and Technical Education (CTE) Occupations
- Laborer Occupations

- Professional Occupations

The identified occupations are described further below:

### STEM Occupations

STEM occupations typically require an advanced degree that comes with technical expertise, such as engineering. As the transportation industry shifts towards a greater reliance and focus on complex technology, there is increasing demand for individuals in STEM occupations. As displayed in Exhibit 18, critical STEM occupations for the Northeast Region include Computer and Information Systems Managers, Civil Engineers, Surveyors, and Urban and Regional Planners. Due to rapidly progressing technology, the skills within these occupations are constantly changing, meaning there is a continuous high demand for individuals in these fields with new skills to enter the industry. The technical expertise that comes with these occupations is vital to transportation.

<b>Exhibit 18: Northeast Region Key STEM Occupations</b>		
<b>Occupation</b>	<b>SOC Code</b>	<b>Rationale</b>
Computer and Information Systems Managers	11-3021	<ul style="list-style-type: none"> <li>• Growing need for employees with ITS knowledge</li> <li>• Growing defense community</li> <li>• Industry currently lacks a solid pipeline or recruitment methodology</li> </ul>
Civil Engineers	17-2051	<ul style="list-style-type: none"> <li>• One Civil Engineer can take on multiple responsibilities but many of them are approaching retirement in the NE, which will lead to a large gap in the workforce</li> <li>• Many start at state agencies but switch to private employers upon receiving professional engineer certification, leaving gaps in state agencies</li> <li>• Difficult to attract Civil Engineers due to the unconventional trajectory in the transportation industry</li> <li>• Growing need for employees with ITS and GIS knowledge</li> </ul>
Surveyors	17-1022	<ul style="list-style-type: none"> <li>• Growing need for employees with GIS knowledge</li> <li>• The small job market for Surveyors makes them difficult to find</li> </ul>
Urban and Regional Planners	19-3051	<ul style="list-style-type: none"> <li>• Growing need for employees with GIS knowledge</li> <li>• The small job market for Urban and Regional Planners makes them difficult to find</li> <li>• Many start at state agencies, quickly develop, and rise to the top of the organization, and then leave the organization to go somewhere bigger with potentially better pay</li> </ul>

As new software tools are introduced to the transportation industry, there is an increased need for employees who can work with the software to process new types of data. Therefore, there is a high demand for Computer and Information Systems Managers. With regard to Civil Engineers, their ability to fulfill multiple roles given their broad range of skills makes them valuable and in high demand with transportation employers across the region. However, for all four STEM occupations identified, it is difficult for public agencies in the transportation industry to compete with private sector organizations, which tend to offer better pay than public sector organizations. As a result, public sector organizations face even more difficulties in hiring and retention of these STEM employees in the transportation industry in the Northeast Region.

### Career and Technical (CTE) Occupations

CTE occupations in transportation typically require some type of additional education, training, or certification beyond high school to enter the field. The specialized skills and technical training that are learned for these occupations help employees to contribute to the transportation industry in a meaningful and important way. Exhibit 19 displays the key CTE Occupations that were identified for the Northeast Region. These occupations include Heavy and Tractor-Trailer Drivers, Bus and Truck Mechanics and Diesel Engine Specialists, Surveying and Mapping Technicians, and Operating Engineers and Other Construction Equipment Operators. Due to growing needs for equipment operators and employees who are technology-savvy, these occupations will become more important, but also potentially require new or updated training to ensure alignment with the current state of the transportation industry.

<b>Exhibit 19: Northeast Region Key CTE Occupations</b>		
<b>Occupation</b>	<b>SOC Code</b>	<b>Rationale</b>
Surveying and Mapping Technicians	17-3031	<ul style="list-style-type: none"> <li>• Growing need for employees with GIS knowledge</li> <li>• Mapping is related to GIS, with a focus on new technologies that may require training or additional information</li> </ul>
Operating Engineers and Other Construction Equipment Operators	47-2073	<ul style="list-style-type: none"> <li>• Growing need for heavy equipment operators</li> <li>• Increasingly wide variety of projects requires broader training</li> </ul>
Plumbers, Pipefitters, and Steamfitters	47-2152	<ul style="list-style-type: none"> <li>• Need employees to build and maintain pipelines</li> <li>• Difficult to find employees who are journeymen or higher level to fill open positions</li> <li>• Because of changing technologies, plumbers must be recertified frequently, meaning that they need to be able to learn what is new and important to their jobs.</li> </ul>
Bus and Truck Mechanics and Diesel Engine Specialists	49-3031	<ul style="list-style-type: none"> <li>• New technologies in terms of hybrids and alternative fuels</li> <li>• DOT needs diesel engine specialists for heavy equipment</li> <li>• This was identified as one of the most difficult positions to fill overall</li> </ul>
Heavy and Tractor-Trailer Drivers	53-3032	<ul style="list-style-type: none"> <li>• Individuals ages 18-25 cannot be truck drivers due to insurance barrier, so they follow other career paths and do not return to pursue truck driving</li> <li>• Background checks and drug checks present a barrier</li> <li>• Generation currently entering the workforce does not prefer being on the road for extended periods of time, and seeks an 8-hour workday and work-life balance which truck driving does not always provide</li> </ul>

### Skilled Labor Occupations

Skilled labor occupations do not usually require education beyond high school to enter the field. These occupations are critical for building and repairing transportation infrastructure. They are often have Apprenticeships and On-the-job training as transitional steps in entering full employment. Transportation construction activity in the Northeast can be largely seasonal, meaning that steady employment for these workers can be problematic. Equally so employers can be challenged when construction season starts up again and demand is high, limiting the ability to fill these occupations in a timely manner. Additionally, new construction technology is constantly being introduced, requiring employees to have access to

programs and opportunities to increase their skillset. As displayed in Exhibit 20, key skilled labor occupations in the Northeast are Construction Laborers; Cement Masons and Concrete Finishers; Welders, Cutters, Solderers, and Brazers; and First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators.

<b>Exhibit 20: Northeast Region Key Skilled Labor Occupations</b>		
<b>Occupation</b>	<b>SOC Code</b>	<b>Rationale</b>
Construction Laborers	47-2061	<ul style="list-style-type: none"> <li>• Crucial occupation in terms of building and developing infrastructure</li> <li>• Increasingly wide variety of projects requires broader training</li> <li>• Growing need for employees familiar with new construction technology</li> <li>• Cross-training may be needed due to seasonal projects</li> <li>• Employers report shortage of worker supply while demand projected to increase over next 5 years</li> </ul>
Cement Masons and Concrete Finishers	47-2051	<ul style="list-style-type: none"> <li>• Crucial occupation in terms of building and developing infrastructure</li> <li>• Necessary occupation for highway construction and repair and demand for highway construction will increase the need for these employees</li> <li>• Growing need for employees with knowledge of new green techniques</li> </ul>
Welders, Cutters, Solderers, and Brazers	51-4121	<ul style="list-style-type: none"> <li>• Crucial occupation in terms of building and developing infrastructure</li> <li>• Essential for bridge construction and reinforcement, which may be a large need in the Northeast in the near future</li> <li>• High demand skills despite a small job market</li> </ul>
First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	53-1031	<ul style="list-style-type: none"> <li>• Crucial occupation in terms of building and developing infrastructure</li> <li>• Growing need for development of lower level employees</li> <li>• Greater literacy skills required</li> <li>• Requires a significant amount of specialized training to fulfill both craftwork and supervisory/superintendent work</li> </ul>

In order to better retain the employees within these occupations, it is important to have individuals fulfilling supervisor roles to develop them. This results in a high demand for First-Line Supervisors. First-Line Supervisors also require additional training, in order to fulfill both craftwork and supervisory work. This further increases the importance of developing and retaining employees in First-Line Supervisor positions as well as the other Laborer occupations identified.

### Professional Occupations

Professional occupations sometimes require formal education beyond high school or they may require a high school diploma or equivalent with additional experience. These occupations support the work of transportation organizations, but that are not in transportation-specific fields. For example, these include occupations that focus on finance or budgets. While not specific to transportation, these occupations are

important because they make sure that the work of the transportation industry can be completed effectively. In the Northeast Region, one professional occupation identified as a key occupation for further analysis is that of Procurement Clerks. Employees in this occupation support projects conducted within transportation by ensuring that materials are obtained and required paperwork is completed correctly, all in a timely and very accurate manner.

<b>Exhibit 21: Northeast Region Key Professional Occupation</b>		
<b>Occupation</b>	<b>SOC Code</b>	<b>Rationale</b>
Procurement Clerk	43-3061	<ul style="list-style-type: none"> <li>• Need employees who are familiar with paperwork and regulations to handle procurement</li> <li>• Important occupation to help transportation organizations work with new environmental regulations and documentation (e.g., alternative fuel bus programs)</li> <li>• Procurement clerks must have a wide skill set, which includes varied skills such as negotiating with vendors, understanding environmental concerns, and knowing which problems are major or minor in a transportation organization; it is difficult to find employees with the full required skillset</li> </ul>

## Analysis of Key Occupations using Labor Market Databases

This section provides information about each of the key occupations identified across the region. For each key occupation the demand across the region, types of employers, and educational requirements for employees are described. Within this section, data from Burning Glass Technologies, which provides statistical information and labor insight based on actual job postings. For these analyses, job postings within the Northeast Region were examined for a 30-day period. It should be noted that these data are included to provide insight into the identified key occupations. However, data should be interpreted with caution because the job listing may vary based on season, economic outlook or situations in the region, or based on other factors.

### STEM Occupations

Computer and Information Systems Managers plan and direct the installing and upgrading of computer hardware and software, look for ways to incorporate new technology into the organization, and analyze the organization’s computer and technology needs to recommend upgrades. Within the Northeast Region Computer and Information Systems Managers typically have job titles such as Information Technology Project Manager, Technical Project manager, Technology Manager, Information Technology Manager, and Infrastructure Project Manager. As shown in Exhibit 22, employment of Computer and Information Systems Managers is projected to increase 15.1% by 2022, leading to an increase of 14,370 employees within this occupation in the Northeast Region.

Civil Engineers supervise and perform the design, construction, and operation of transportation systems (i.e., roads, tunnels, bridges). This consists of analyzing survey reports, testing building materials, using design software, and managing the repair, maintenance, and replacement of infrastructure. They may also identify engineering solutions to build environmentally sustainable infrastructure. A majority of Civil Engineers within the region has the job title of Civil Engineer, but other frequently filled titles include Structural Engineer, Environmental Engineer, and Transportation Engineer. As shown in Exhibit 22, employment of Civil Engineers is projected to increase 16.8% by 2022 across the region. This is the greatest increase among the four STEM occupations identified.



Surveyors collect field data and make exact measurements to determine property boundaries and geological features. This data is then used to design and construct transportation infrastructure. Surveyors frequently use GPS and GIS to locate reference points and present data and measurements visually. During construction projects, they work closely with Civil Engineers and Urban and Regional Planners to develop design documents, such as blueprints. Within the region, Surveyors typically have job titles such as Site Surveyor, Land Surveyor, Solar Site Surveyor, and Home Surveyor. As shown in Exhibit 22, employment of Surveyors in the Northeast Region is expected to increase 6.0% by 2022, resulting in 450 more employees within the occupation.

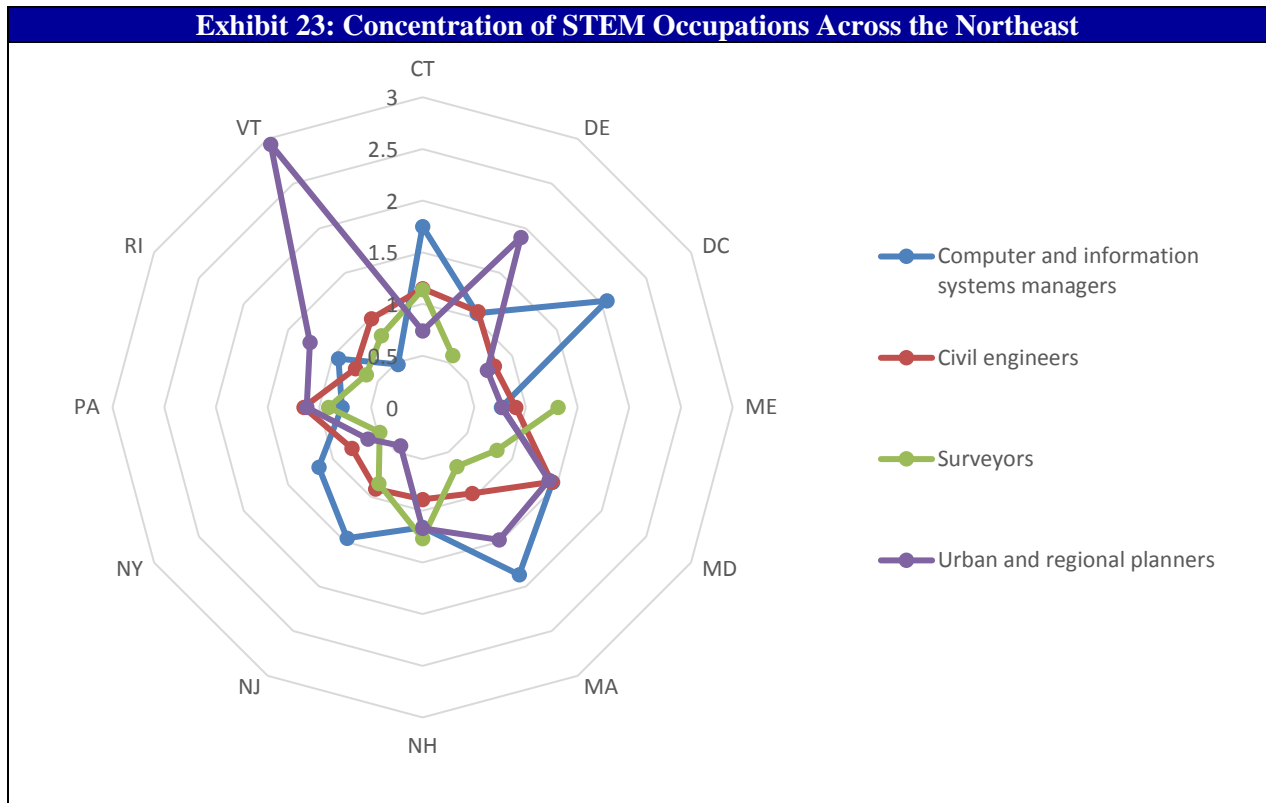
Finally, Urban and Regional Planners develop plans and programs for using land, while accommodating populations and communities in the area. To do so, they gather and analyze economic, environmental, and market research data, review site plans, and meet with public officials and community members to discuss land use. They frequently use GIS to integrate geographic data with population and community data (e.g., population density, varied land use). In the Northeast, they have the job titles Regional Planner, Merchandise Planner, Senior Urban Planner and Project Manager, Regional Planner Community Development and Planning Division, and Project Manager/Urban Planner. As shown in Exhibit 22, in the Northeast Region employment of Urban and Regional Planners is projected to increase 6.1% by 2022. Although the projected increase for Surveyors and Urban and Regional Planners is lower than the projected increase for Computer and Information Systems Managers and Civil Engineers, it is important to note that Surveyors and Urban and Regional Planners are specialized occupations that play a critical role in completing transportation work.

<b>Exhibit 22: Occupational Projections for Key STEM Occupations in the Northeast</b>					
<b>SOC Code</b>	<b>Occupation Title</b>	<b># of Employees, 2012<sup>b</sup></b>	<b>Projected # of Employees, 2022<sup>b</sup></b>	<b>Change in # of Employees<sup>b</sup></b>	<b>Percent Change<sup>b</sup></b>
11-3021	Computer and Information Systems Managers	95,300	109,670	14,370	15.1%
17-2051	Civil Engineers	55,790	65,160	9,370	16.8%
17-1022	Surveyors	7,460	7,910	450	6.0%
19-3051	Urban and Regional Planners	7,590	8,050	460	6.1%

*Demand for Key STEM Occupations across the Northeast Region*

Although demand for the four STEM occupations identified is generally high across the Northeast Region, there are varying degrees of demand when focusing on different states within the region. This is important to consider when determining which occupations specifically different areas within the region need to focus on in terms of recruiting, hiring, retaining, and training. Exhibit 23 shows the concentration of the four STEM occupations across the Northeast region, based on BLS data. Specifically, this exhibit displays the location quotient (LQ) for each STEM occupation in all of the Northeast Region States. The LQ shows the concentration in a region compared to the national concentration of the occupation. So an LQ of 1.0 means that the percentage of employees in a certain occupation is the same for the state and the nation as a whole. Conversely, an LQ of less than 1.0 means that there is a lower concentration of that occupation in the state (e.g., an LQ of 0.5 would mean that the U.S. has twice as great a concentration of the occupation than the state – such as 5% of employees in a state are civil engineers and 10% of employees in the country are civil engineers). An LQ above 1.0 means that there is a greater concentration of that occupation in the state than in the nation. For the key STEM occupations in the Northeast Region, Computer and Information Systems Managers, Civil Engineers, and Surveyors are all highly concentrated in Connecticut. Computer and Information Systems Managers are also concentrated in the District of Columbia, Massachusetts, and New Jersey. Civil Engineers are more highly

concentrated in Maryland and Pennsylvania. Maine and New Hampshire, which have a higher concentration of surveyors than the U.S. as a whole. Finally, Urban and Regional Planners are very highly concentrated in Vermont, with Delaware and Massachusetts also experiencing a greater percentage of these employees than other states in the nation.



Job postings in the region for these occupations provide information regarding where demand is highest. According to Burning Glass data based on job postings for the past 30 days, demand for Computer and Information Systems Managers is highest in the region’s larger metropolitan areas, including the New York City, Boston, and Washington D.C. metropolitan areas. Similarly, demand for Civil Engineers is highest in the New York City, Philadelphia, and Washington D.C. metropolitan areas. This indicates that demand for Computer and Information Systems Managers and Civil Engineers are highest in areas of the region where there are higher concentrations of employees within those occupations. This in turn provides a larger market of employees for the transportation organizations in those areas. For Surveyors, demand is highest in the New York City, Philadelphia, and Boston metropolitan areas. Similarly, demand for Urban and Regional Planners is highest in the New York City, Worcester, MA, and Boston metropolitan areas. This indicates that demand for Surveyors and Urban and Regional Planners is not necessarily highest where concentration of employees is also highest, which may pose a challenge for transportation organizations in high-demand areas.

*Employers of Key STEM Occupations across the Northeast Region*

Although these STEM occupations are in high demand in the transportation industry, they are in demand in other industries in the Northeast Region as well. This makes for a more competitive market for employers, while providing a variety of opportunities for employees. As shown in Exhibit 24, although the four occupations are in high demand in the industry, there is a small percentage of job listings in transportation compared to other industries. This can make it difficult for transportation organizations to

hire and retain these employees, as there are a greater number of job listings and potential opportunities in other sectors. This is especially true for Computer and Information Systems Managers and Urban and Regional Planners. For Civil Engineers and Computer and Information Systems Managers, the transportation industry faces the greatest amount of competition with Professional, Scientific, and Technical Services. For Surveyors and Urban and Regional Planners, the greatest amount of competition is with Finance and Insurance. This small amount of job listings in the transportation industry available across these four occupations will make it difficult for the employers in the transportation industry to hire and retain these employees, particularly for Surveyors and Urban and Regional Planners as the market for employees in these occupations already relatively small. However, it is known that Urban and Regional Planners are employed within the transportation industry, so it could be that during the time job postings were examined, there were not any transportation organizations currently hiring these employees.

<b>Exhibit 24: Industries Employing Key STEM Occupations</b>		
<b>Occupation Title</b>	<b>Percentage of Job Listings in Transportation Industry</b>	<b>Other Major Industries Employing this Occupation</b>
Computer and Information Systems Managers	0.8%	<ul style="list-style-type: none"> <li>▪ Professional, Scientific, and Technical Services</li> <li>▪ Finance and Insurance</li> <li>▪ Information</li> <li>▪ Manufacturing</li> <li>▪ Health Care and Social Assistance</li> </ul>
Civil Engineers	3.7%	<ul style="list-style-type: none"> <li>▪ Professional, Scientific, and Technical Services</li> <li>▪ Manufacturing</li> <li>▪ Health Care and Social Assistance</li> <li>▪ Construction</li> <li>▪ Utilities</li> </ul>
Surveyors	5.2%	<ul style="list-style-type: none"> <li>▪ Finance and Insurance</li> <li>▪ Professional, Scientific, and Technical Services</li> <li>▪ Public Administration</li> <li>▪ Administrative and Support and Waste Management and Remediation Services</li> </ul>
Urban and Regional Planners	< 0.1%	<ul style="list-style-type: none"> <li>▪ Finance and Insurance</li> <li>▪ Real Estate and Rental and Leasing</li> </ul>

The top employers for these occupations largely fall within the private sector, further increasing competition for transportation public agencies, which tend to offer lower salaries compared to private sector organizations. In many fields public agency employers struggle to identify incentives and opportunities to compete with private sector employers for qualified workers in most occupations. Strategies for attracting and retaining workers in public agencies are likely to be different from the private sector and need further development. Both public and private employers will however benefit from joint efforts to attract new candidates to the fields that are likely to be in highest demand. In the Northeast Region, the top employers for Computer and Information Systems Managers are Oracle, Accenture, and Deloitte. For Civil Engineers the top employers are AECOM Technology Corporation, URS Corporation, and HNTB. For Surveyors, the top regional employers are Solar City, Mueller Services, and Army National Guard. Lastly, the top employers for Urban and Regional Planners are American Planning Association, The Cecil Group, and Topology Corporation. As many employees in these occupations are finding opportunities in the private sector, it may be difficult for transportation agencies in the public sector to attract these employees.

*Educational Requirements for STEM Occupations in the Northeast Region*

For all four STEM occupations, a higher education degree is required. For Computer and Information Systems Managers, as shown in Exhibit 25 below, BLS data indicates at least a Bachelor’s degree is required. However, according to Burning Glass data, a majority of job listings in the Northeast Region require not only a Bachelor’s degree, but also at least 3 years of experience. Very few job listings accept a Bachelor’s degree with 0 to 2 years of experience. This is similar to Civil Engineering positions, for which BLS data shows at least a Bachelor’s degree is required. In reality, a majority of job listings in the region require at least 3 years of experience in addition to a Bachelor’s degree. For 26% of job listings that require a Bachelor’s degree, 0 to 2 years of job experience is acceptable. Urban and regional planners typically require a graduate or professional degree, such as Master’s degree. However, nearly an equal amount of job listings for this occupation in the region requires either a Bachelor’s degree or graduate/professional degree. Most job listings also require at least 6 years of experience in addition to a Bachelor’s degree or graduate/professional degree. These three occupations stand in contrast with most Surveying positions. Although BLS data identifies Surveying positions as typically requiring a Bachelor’s degree, Burning Glass data shows that a majority of the job listings for this occupation within the region require a high school diploma or vocational training along with 0 to 5 years of experience. Few of the job listings require a Bachelor’s degree with over 5 years of experience.

<b>Exhibit 25: Educational and Salary Data for Key STEM Occupations in the Northeast</b>			
<b>SOC Code</b>	<b>Occupation Title</b>	<b>National Average Hourly Wage <sup>a</sup></b>	<b>Typical Education Needed For Entry <sup>a</sup></b>
11-3021	Computer and Information Systems Managers	\$65.52	Bachelor’s degree
17-2051	Civil Engineers	\$41.89	Bachelor’s degree
17-1022	Surveyors	\$29.00	Bachelor's degree
19-3051	Urban and Regional Planners	\$33.18	Master's degree

Salary for the four STEM occupations varies. Salary is highest for Computer and Information Systems Managers, with an average hourly wage of \$65.52, according to BLS data. Based on Burning Glass data, this is in-line with the salary typically included in job postings. Most job postings indicate an annual salary over \$75,000 in the Northeast Region. Civil Engineers have an average hourly wage of \$41.89. Similarly, a majority of job postings for this occupation within the region indicate an annual salary over \$75,000. Surveyors have the lowest salary of the four STEM occupations, with an average hourly wage of \$29.00. This is higher than what is found in most job postings, which indicate an annual salary under \$35,000 for employees in the Northeast. Urban and Regional Planners have an average hourly wage of \$33.18. This matches a majority of job postings in the region, which indicate an annual salary between \$50,000 and \$74,999. However, it is important to keep in mind that this data combines both public sector and private sector salaries.

**Career and Technical Education (CTE) Occupations**

While five jobs are grouped together within the category of CTE Occupations, they are each different in terms of job requirements and the type of work that is done. The first occupation listed, Surveying and Mapping Technicians, involve work related to construction, mapmaking, boundary location, or other tasks associated with physical locations and mapping. In addition, these employees may also verify accuracy and completeness of maps for industries such as transportation. Within the Northeast Region, employees within this occupation can have job titles such as Engineering/ Planning/ Surveying Technician – Roadside Enforcement Agent or Construction Inspector. As can be seen in Exhibit 26, Surveying and

Mapping Technicians in the Northeast Region are expected to increase in number by 10.2 percent by 2022. While not all of these employees will be within transportation organizations, this is an increase that will impact the transportation industry both in terms of needed employees experienced in mapping and GIS as well as potential increased competition for these employees.

Operating Engineers and Other Construction Equipment Operators are responsible for operating various types of power construction equipment such as motor graders, bulldozers, scrapers, compressors, pumps, tractors, or front-end loaders. They may also be responsible for repairing and maintaining equipment in addition to operating. Example job titles within this occupation in the Northeast include Operating Engineer, Operating Engineer Apprentice, Construction Equipment Operator, or Heavy Equipment Operator. Regional projections show that this occupation is expected to increase by 7,300 employees (12.0%) in the Northeast Region by 2022. As with Surveying and Mapping Technicians, not all of the employees within this occupation are in transportation organizations, but many transportation or transportation-related companies will see the increased need for these employees to assist in things like road construction and maintenance, bridge building, or other activities that require the use of heavy equipment.

The third occupation in this grouping is Plumbers, Pipefitters, and Steamfitters. These employees work to assemble, install, or repair pipelines or pipe systems that carry water, steam, air or other liquids and gases. In terms of transportation, these employees are important for the pipelines mode, but also for other construction and maintenance, that requires piping, such as subways. Job listings for this occupation in the Northeast Region include job titles such as Plumber, Pipefitter, Steamfitter, HVAC Technician, or Maintenance Engineer. The number of Plumbers, Pipefitters, and Steamfitters in the region is expected to increase by 16.1 percent from 2012 to 2022, with an additional 13,430 employees needed across the region.

Bus and Truck Mechanics and Diesel Engine Specialists work to maintain and repair any types of diesel engines. They also are responsible for the diagnostics and report of buses and trucks, such as those used for public transportation or hauling goods. Example job titles for this occupation include Diesel Mechanic, Diesel Technician, Truck Mechanic, and Maintenance Mechanic. Exhibit 26 shows that the number of Bus and Truck Mechanics and Diesel Engine Specialists is expected to increase by 7.3 percent from 2012 to 2022. As the use of alternative fuels (e.g., electric, biodiesel, CNG) and alternative fueled vehicles (AFV) increases new skills and perhaps new occupations will be developed under this general heading.

The final occupation in this category is Heavy and Tractor-Trailer Drivers. This occupation requires a commercial driver's license and has employees who drive tractor-trailer combinations or trucks with a capacity over 26,000 pounds Gross Vehicle Weight (GVW). This occupation includes job titles such as Tractor Trailer Driver, CDL Driver, and Truck Driver. In the Northeast Region, estimates predict that an additional 28,820 (11.1%) employees will be needed from 2012 to 2022. All of these employees fall within the transportation industry; as such this occupation will be very important given the number of employees that will be needed coupled with challenges to the occupation, such as a lack of desire of younger generations to be Heavy and Tractor-Trailer Drivers.

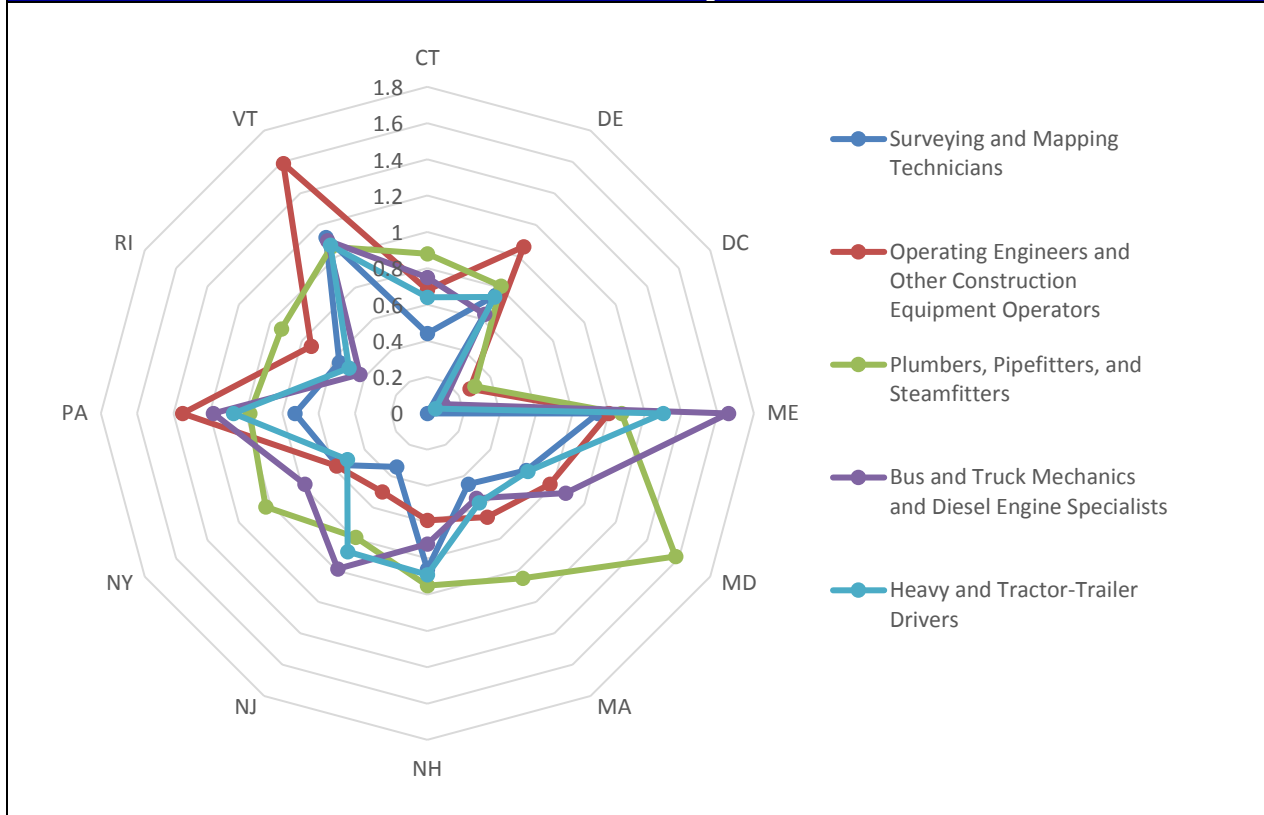
<b>Exhibit 26: Occupational Projections for Key CTE Occupations in the Northeast</b>					
<b>SOC Code</b>	<b>Occupation Title</b>	<b># of Employees, 2012<sup>b</sup></b>	<b>Projected # of Employees, 2022<sup>b</sup></b>	<b>Change in # of Employees<sup>b</sup></b>	<b>Percent Change<sup>b</sup></b>
17-3031	Surveying and Mapping Technicians	5,960	6,570	610	10.2%
47-2073	Operating Engineers and Other Construction Equipment Operators	60,870	68,170	7,300	12.0%
47-2152	Plumbers, Pipefitters, and Steamfitters	83,160	96,590	13,430	16.1%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	43,780	46,970	3,190	7.3%
53-3032	Heavy and Tractor-Trailer Drivers	258,630	287,450	28,820	11.1%

*Demand for Key CTE Occupations across the Northeast Region*

While all of the CTE occupations identified by data and stakeholders are important across the region, there is a greater concentration of these workers in some areas. This high concentration can indicate that the state identified would be a good place for employees to find a job in the identified occupation given a larger percentage of jobs in the area. Exhibit 27 displays the LQ for each of the CTE Occupations in each of the Northeast Region states. As can be seen in this chart, Washington, D.C. has relatively few employees comparatively within the CTE Occupations, meaning that they percentage of employees in these occupation is much lower in Washington, D.C. than in the nation as a whole. Operating Engineers and Other Construction Equipment Operators are more highly concentrated in Pennsylvania and Vermont than in other areas of the nation. In looking at the concentration of Plumbers, Pipefitters, and Steamfitters, there is a high concentration in Maryland. Bus and Truck Mechanics and Diesel Engine Specialists appear to be more common in Maine than in other states. Finally, Heavy and Tractor-Trailer Drivers are the most concentrated in Maine, with relatively low concentrations in Connecticut, Rhode Island, and New York.



**Exhibit 27: Concentration of CTE Occupations Across the Northeast**



Job postings in the region for these occupations provide additional insight into where demand for each of the occupation is highest. While there were few job postings for Surveying and Mapping Technician positions, these positions were found in the New York City and Philadelphia metropolitan areas. For Operating Engineers and Other Construction Equipment Operators, metropolitan areas that had the greatest number of jobs openings were New York City; Rochester, NY; Pittsburgh, PA; and the District of Columbia. While Pennsylvania is seen to have a high concentration of these employees, New York and the District of Columbia have low concentrations. Because the District metropolitan area also includes Virginia and West Virginia, which are outside of the Northeast Region, some of these jobs may be in that area. According to the Burning Glass data, the highest demand for Plumbers, Pipefitters, and Steamfitters is in the metropolitan areas of Baltimore, MD and New York City. This aligns directly with the BLS data regarding concentration of occupation, as these two states have the highest concentration of employees in this occupation across the region. New York City and Philadelphia have the highest demand for both Bus and Truck Mechanics and Diesel Engine Specialists and Heavy and Tractor-Trailer Drivers.

*Employers of Key CTE Occupations across the Northeast Region*

As previously described, while transportation organizations in the region have a need for employees in each of these CTE, other industries also hire these employees. This means that there can be increased competition for CTE employees, but also that the transportation industry could potentially benefit from collaboration with other industries in the training and recruitment of employees. As shown in Exhibit 28, the transportation industry is the main employer listed in job posting for Heavy and Tractor-Trailer Drivers in the region. However, it employs a much smaller percentage of employees in the other occupations. The 30-day period that was examined in Burning Glass for the Northeast Region did not include a listing for Surveying and Mapping Technicians in transportation; however there were very few



listings overall for this occupation. It very well could be that at other times of the year more employees in this occupation are hired, or that because it is a relatively small occupation Surveying and Mapping Technicians are not hired frequently. Approximately 3 percent of the job listings for Operating Engineers and Other Construction Equipment Operators and Plumbers, Pipefitters, and Steamfitters were for organizations within the transportation industry. However there could be a much larger percentage of workers in these occupations involved in transportation work through sub-contracted companies that do not show up as part of the transportation industry. Finally, over 20 percent of the Bus and Truck Mechanics and Diesel Engine Specialist job listings were identified as being in the transportation industry.

<b>Exhibit 28: Industries Employing Key CTE Occupations</b>		
<b>Occupation Title</b>	<b>Percentage of Job Listings in Transportation Industry</b>	<b>Other Major Industries Employing this Occupation</b>
Surveying and Mapping Technicians	<0.1%	<ul style="list-style-type: none"> <li>▪ Public Administration</li> </ul>
Operating Engineers and Other Construction Equipment Operators	3.2%	<ul style="list-style-type: none"> <li>▪ Professional, Scientific, and Technical Services</li> <li>▪ Health Care and Social Assistance</li> <li>▪ Educational Services</li> <li>▪ Real Estate and Rental and Leasing</li> </ul>
Plumbers, Pipefitters, and Steamfitters	3.2%	<ul style="list-style-type: none"> <li>▪ Construction</li> <li>▪ Finance and Insurance</li> <li>▪ Public Administration</li> <li>▪ Health Care and Social Assistance</li> <li>▪ Manufacturing</li> </ul>
Bus and Truck Mechanics and Diesel Engine Specialists	22.7%	<ul style="list-style-type: none"> <li>▪ Real Estate and Rental and Leasing</li> <li>▪ Administrative and Support and Waste Management and Remediation Services</li> <li>▪ Professional, Scientific, and Technical Services</li> <li>▪ Manufacturing</li> </ul>
Heavy and Tractor-Trailer Drivers	90.7%	<ul style="list-style-type: none"> <li>▪ Retail Trade</li> <li>▪ Construction</li> </ul>

The top employers for these occupations, according to Burning Glass analysis of job postings, fall mainly within the private sector. For example, Mike’s Plumbing and Heating and CLP had the greatest number of job posting for Plumbers, Pipefitters, and Steamfitters. Most of the job postings for Bus and Truck Mechanics and Diesel Engine Specialists were from Ryder System Incorporated, Transervice Logistics, and Penske. However, there are some employees of these occupations that are state or federal agencies or organizations; for example, the University of Pittsburgh Medical Center and Rutgers, the State University of New Jersey employ Operating Engineers and Other Construction Equipment Operators.

*Educational Requirements for CTE Occupations in the Northeast Region*

While each of the CTE Occupations discussed in the Northeast Region, with the exception of Heavy and Tractor-Trailer Drivers, only requires a high school diploma or equivalent according to BLS data, in reality the requirements for actual job listing tend to be higher than this. The job listings for Operating Engineers and Other Construction Equipment Operators show that for most jobs that list requirements, a high school diploma or vocational training plus at least three years of experience is required. Some of the positions also require an Associate’s or Bachelor’s degree. For jobs listings within the occupation of Plumbers, Pipefitters, and Steamfitters, 80 percent of the listings require high school or vocational training; however 85 percent of the jobs with a high school diploma requirement require at least three years of experience. While the BLS data states that Bus and Truck Mechanics and Diesel Engine Specialists require only a high school diploma or equivalent, of the job listing examined in the Northeast Region that provided education information, 33 percent require an Associate’s degree, 8 percent require a Bachelor’s degree, and 8 percent require a graduate or professional degree. Education and salary information for the key CTE Occupations in the Northeast is provide in Exhibit 29.

<b>Exhibit 29: Educational and Salary Data for Key CTE Occupations in the Northeast</b>			
<b>SOC Code</b>	<b>Occupation Title</b>	<b>National Average Hourly Wage <sup>a</sup></b>	<b>Typical Education Needed For Entry <sup>a</sup></b>
17-3031	Surveying and Mapping Technicians	\$21.09	High school diploma or equivalent
47-2073	Operating Engineers and Other Construction Equipment Operators	\$23.09	High school diploma or equivalent
47-2152	Plumbers, Pipefitters, and Steamfitters	\$26.26	High school diploma or equivalent
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	\$21.71	High school diploma or equivalent
53-3032	Heavy and Tractor-Trailer Drivers	\$20.16	Postsecondary non-degree award

In looking at salary, many of the job listings analyzed in Burning Glass provided detail for these CTE Occupations in the Northeast. All of the Surveying and Mapping Technician job listings indicated a salary between \$50,000 and \$75,000, which is a bit higher than the BLS listed hourly pay of \$21.09 (equaling a salary of just over \$44,000 for a year with no overtime pay). For Plumbers, Pipefitters, and Steamfitters, the majority of the job listings that provided salary information said that the average annual salary is in the range of \$50,000 to \$74,999. This is in line with the average hourly wage information from BLS, which lists \$26.26 per hour for this occupation; this hourly wage would equate to a salary of about \$55,000. The Bus and Truck Mechanics and Diesel Engine Specialist job listings varied more in terms of salary, with 36 percent of the available listing showing a salary of \$50,000 to \$74,999, 36 percent showing a salary of \$35,000 to \$49,999, and 20 percent showing a salary of less than \$35,000 annually. Of these listings, however, the average salary was \$52,542. It should be noted that only 7 percent of the Bus and Truck Mechanics and Diesel Engine Specialist job listings provided salary information, so these results should be interpreted with caution. Finally, Tractor-Trailer Drivers: 111,213, with almost 75 percent of the job listings that provide salary information indicating that it is above \$75,000 per year. However, over half of the job listing did not provide salary information, so this could be skewed upward in that only those with the most enticing pay provide salary information in their job listings. Unfortunately, job postings for Operating Engineers and Other Construction Equipment Operators did not provide salary information.

### Skilled Labor Occupations

Construction Laborers perform tasks requiring physical labor on a variety of construction sites. This mainly consists of preparing and cleaning construction sites, but it can also include loading and unloading building materials, operating or tending construction equipment and machines, and controlling traffic around work zones. In the Northeast Region, they usually have the job title of Construction Laborer, but others include Tile Laborer Apprentice Construction and Heavy Equipment Operator. As shown in Exhibit 30, Construction Laborers have a bright outlook with a project growth of 25.0% by 2022. This will lead to an increase of 259,800 additional employees within this occupation.

Cement Masons and Concrete Finishers place and finish concrete. This consists of setting forms to hold concrete in place; spreading, leveling, and smoothing concrete; and applying sealants or waterproofing to protect concrete. Within the region, they usually have the job title Concrete Finisher, but others include Cement Mason and Concrete Carpenter. They have the greatest projected growth of the four Laborer Occupations. Cement Masons and Concrete Finishers are expected to increase in number in the Northeast Region by 29.0% by 2022, resulting in 41,000 additional employees filling jobs within this occupation.

Welders, Cutters, Solderers, and Brazers use welding, cutting, soldering, or brazing techniques and/or equipment to join metal parts and fill holes, indentations, and seams of metal products. They typically use hand-held equipment to complete these tasks. Within the region, they typically have job titles such as Welder, Mig Welder, Tig Welder, and Structural Welder. This occupation has the lowest projected growth rate of the four Laborer occupations, with a projected increase of 4.9%. However, given that there is a small market of these employees available and that their specialized skills are in high demand, it is still very critical to the transportation industry in the Northeast.

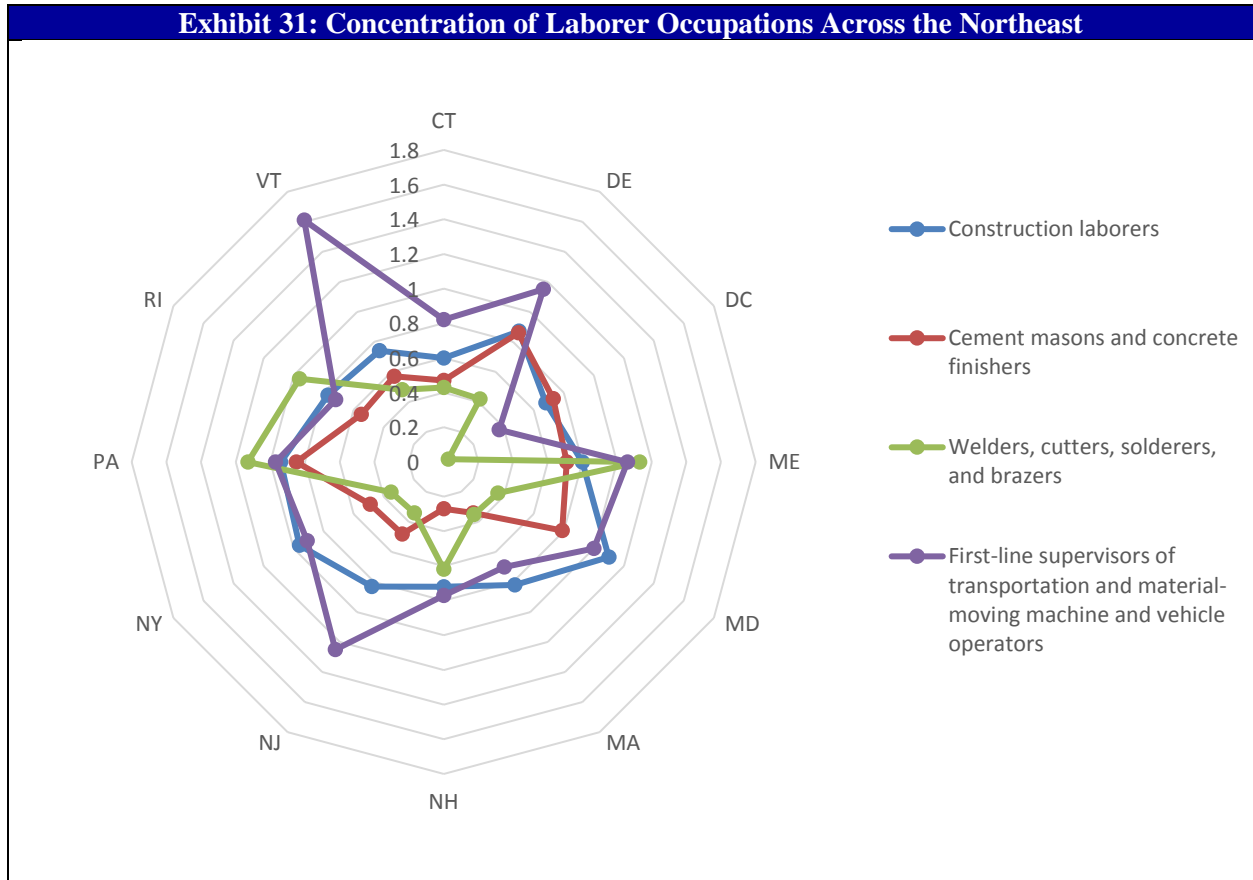
Finally, First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators supervise and coordinate the activities of Material-Moving Machine and Vehicle operators. This includes enforcing rules and regulations, planning work assignments and equipment allocations, inspecting materials and vehicles, and reviewing orders, schedules, blueprints, and other forms and documents to ensure proper completion of tasks and assignments. In the Northeast Region, they usually have the job title of Transportation Supervisor. This occupation has a projected change of 7.6% by 2022, resulting in an expected 3,070 additional employees in this occupation across the region.

<b>Exhibit 30: Occupational Projections for Key Skilled Labor Occupations in the Northeast</b>					
<b>SOC Code</b>	<b>Occupation Title</b>	<b># of Employees, 2012<sup>b</sup></b>	<b>Projected # of Employees, 2022<sup>b</sup></b>	<b>Change in # of Employees<sup>b</sup></b>	<b>Percent Change<sup>b</sup></b>
47-2061	Construction Laborers	1,071,100	1,331,000	259,800	25.0%
47-2051	Cement Masons and Concrete Finishers	140,800	181,800	41,000	29.0%
51-4121	Welders, Cutters, Solderers, and Brazers	39,660	41,620	1,960	4.9%
53-1031	First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	40,290	43,360	3,070	7.6%

#### *Demand for Key Skilled Labor Occupations across the Northeast Region*

Demand for the four skilled labor occupations varies across the Northeast Region. Additionally, the number of employees in these occupations varies when examining different areas within the region,

which may in turn make it more or less challenging for transportation organizations to hire these employees. As shown in Exhibit 31, according to BLS data the concentration of Supervisors of Transportation and Material-Moving Machine and Vehicle Operators is higher than the national concentration in Delaware, Maine, New Jersey and Vermont. Construction Laborers are also highly concentrated in Maryland. Welders, Cutters, Solderers, and Brazers are highly concentrated in Maine and Pennsylvania. While an important occupation in the region, Cement Masons and Concrete Finishers are less concentrated in each of the Northeast states than the national average.



According to Burning Glass data, job listings for these occupations in the region indicate that demand for Construction Laborers is highest in the Boston, New York City, and Bridgeport-Stamford-Norwalk, CT metropolitan areas. For Cement Masons and Concrete Finishers demand is highest in Baltimore and Pittsburgh. Demand for Welders, Cutters, Solderers, and Brazers is highest in the New York City, Philadelphia, and Boston metropolitan areas. Lastly, demand for First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators is highest in the New York City, Boston, and Washington D.C. metropolitan areas. Because demand for these occupations is not necessarily highest in areas of the region with high concentrations of employees within these occupations, it will likely be challenging for transportation organizations to attract and recruit employees to fill the demand.

*Employers of Key Laborer Occupations across the Northeast Region*

Employees within these Laborer occupations work across a variety of industries, with transportation being one industry. This poses a challenge for transportation organizations across the region, as they must compete with other industries for these high-demand critical occupations. As shown in Exhibit 32, the percentage of job listings in the transportation industry for these occupations varies widely. In the 30-day

period examined, none of the Construction Laborer job postings in the Northeast Region were identified as being for transportation-specific employers. However, many Construction Laborers are contracted by transportation organizations, so they may fall into the Construction industry because they are working on transportation projects. Similarly, none of the identified job postings for Cement Masons and Concrete Finishers were for transportation organizations; however other employees are likely contracted to do this work for transportation organizations. The situation is similar for Welders, Cutters, Solderers, and Brazers, as they are often contracted rather than being in-house employees. Despite this, the market for this occupation is small and the skills are in high demand, increasing competition for the transportation industry. In contrast, the transportation industry does not face a great deal of competition for First-Line Supervisors, since nearly 60% of the job listings for this occupation were in the transportation industry.

<b>Exhibit 32: Industries Employing Skilled Labor Occupations</b>		
<b>Occupation Title</b>	<b>Percentage of Job Listings in Transportation Industry</b>	<b>Other Major Industries Employing this Occupation</b>
Construction Laborers	< 2.5%	<ul style="list-style-type: none"> <li>▪ Construction</li> <li>▪ Mining, Quarrying, and Oil and Gas Extraction</li> <li>▪ Finance and Insurance</li> <li>▪ Real Estate and Rental and Leasing</li> </ul>
Cement Masons and Concrete Finishers	< 33.3%	<ul style="list-style-type: none"> <li>▪ Finance and Insurance</li> <li>▪ Educational Services</li> </ul>
Welders, Cutters, Solderers, and Brazers	2.78%	<ul style="list-style-type: none"> <li>▪ Manufacturing</li> <li>▪ Construction</li> <li>▪ Retail Trade</li> <li>▪ Finance and Insurance</li> <li>▪ Administrative and Support and Waste Management and Remediation Services</li> </ul>
First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	58.3%	<ul style="list-style-type: none"> <li>▪ Manufacturing</li> <li>▪ Accommodation and Food Services</li> </ul>

Based on job listings, the top employer for Construction Laborers is CLP. Other popular employers in the region include General Labor Top Pay, MBS Solutions Incorporated, and Ceco Concrete Construction LLC. In the Northeast, top employers for Cement Masons and Concrete Finishers include Leonard Fiore Incorporated, San Juan Construction, and Dabbco Construction Incorporated. Top employers for Welders, Cutters, Solderers, and Brazers are Harris Teeter, BJ’s Wholesale Club, Inc., Food Lion Incorporated, and The Fresh Market, Inc. Lastly, top employers in the Northeast Region for First-line Supervisors include The Department of Administrative Services, East Windsor Regional Schools, and Ahold Ecommerce Sales Company. The majority of top employers for the four Laborer occupations are within the private sector, further increasing competition for transportation public agencies, as private sector organizations tend to offer higher salaries than public sector organizations.

*Educational Requirements for Skilled Labor Occupations in the Northeast Region*

All four Laborer occupations require at least a high school diploma or equivalent, according to BLS data. This information from the BLS data is provided in Exhibit 33. However, Burning Glass data shows that actual requirements differ across the four occupations based on job listings in the region. For Construction



Laborers, one-third of job listings required one of the following in addition to a high school diploma or training: 0 to 2 years of experience, 3-5 years of experience, or 9+ years of experience. Job listings for Cement Masons and Concrete Finishers match BLS data, specifying 0 to 2 years of experience along with a high school diploma or training. For Welders, Cutters, Solderers, and Brazers, nearly half job listings in the region required 0 to 2 years of experience, while the other required 3 to 5 years of experience. Job listings for First-line Supervisors strayed furthest from the BLS data. A majority of job listings required either an Associate’s degree or a Bachelor’s degree along with at least 3 years of work experience. However, there were also a smaller portion of job listings requiring a high school diploma or training, along with at least 3 years of experience.

<b>Exhibit 33: Educational and Salary Data for Key Skilled Labor Occupations in the Northeast</b>			
<b>SOC Code</b>	<b>Occupation Title</b>	<b>National Average Hourly Wage<sup>a</sup></b>	<b>Typical Education Needed For Entry<sup>a</sup></b>
47-2061	Construction Laborers	\$17.19	High school diploma or equivalent
47-2051	Cement Masons and Concrete Finishers	\$19.70	High school diploma or equivalent
51-4121	Welders, Cutters, Solderers, and Brazers	\$19.25	High school diploma or equivalent
53-1031	First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	\$27.66	High school diploma or equivalent

According to BLS data, salary is highest for First-line Supervisors, with an average hourly wage of \$27.66. This is similar to what is included in most job postings, based on Burning Glass data. A majority of job postings indicate a salary of \$50,000 to \$74,999. Cement Masons and Concrete Finishers and Welders, Cutters, Solderers, and Brazers have similar salaries, with average hourly wages of \$19.70 and \$19.25, respectively. Similarly, job postings for these occupations indicate salaries between \$35,000 and \$49,999. Construction Laborers have the lowest salary of the four Laborer occupations, with an average hourly wage of \$17.19. Most job postings match this rate, indicated annual salaries of less than \$35,000.

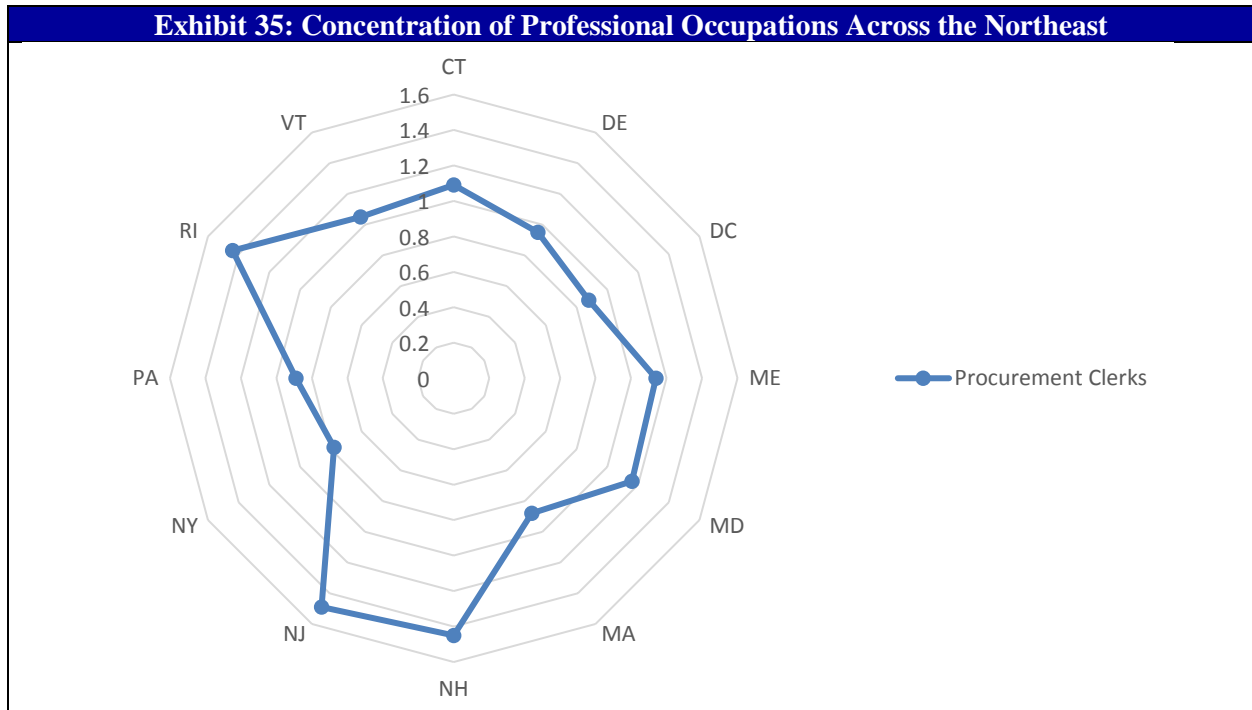
**Professional Occupations**

Only one occupation was identified for inclusion in the list of key occupations in the Northeast from the Professional Occupations Category, procurement clerk. Procurement clerks are responsible for gathering and compiling information needed to purchase goods and services for their organizations. They must have knowledge of both organizational and governmental regulations that influence the acquisition of materials. Procurement Clerks are also often responsible for completing paperwork for purchases required by various governmental regulations; for example, they must know how to complete paper work related to programs for the purchase of green buses or equipment. From 2012 to 2022, this occupation is expected to increase by 4.4% in the Northeast Region. Exhibit 34 provides the growth potential in this occupation. While this is not a large percentage, the work of Procurement Clerks was confirmed by interview participants as one growing in importance. They also indicated that it is difficult to find employees to fill these positions.

<b>Exhibit 34: Occupational Projections for Key Professional Occupations in the Northeast</b>					
<b>SOC Code</b>	<b>Occupation Title</b>	<b># of Employees, 2012<sup>b</sup></b>	<b>Projected # of Employees, 2022<sup>b</sup></b>	<b>Change in # of Employees<sup>b</sup></b>	<b>Percent Change<sup>b</sup></b>
43-3061	Procurement clerk	15,650	16,340	690	4.4%

*Demand for Key Professional Occupations across the Northeast Region*

Exhibit 35 provides the LQ data from the BLS for Procurement Clerks in each state of the Northeast Region. The concentration of Procurement Clerks is highest in New Hampshire, New Jersey, and Rhode Island. The concentration is also higher than the national average in both Maine and Maryland. As such, it is likely that demand is highest for Procurement Clerks in these five states; however, the 30-day period that was examined in Burning Glass did not identify any open Procurement Clerk positions in the Northeast. It is likely that because this is a smaller occupation, there were just no openings at the current time. However, it is still important to consider the need for Procurement Clerks across the region.



*Educational Requirements for Professional Occupations in the Northeast Region*

While many of the job listings for Procurement Clerks require only a high school diploma, they also require experience in either contracts or customer service. This educational requirement aligns with the BLS information that states employees need a high school diploma or equivalent. Exhibit 36 provides the salary and education information for Procurement Clerks that was gathered from BLS.

**Exhibit 36: Educational and Salary Data for Professional Occupations in the Northeast**

SOC Code	Occupation Title	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>
43-3061	Procurement Clerk	\$19.35	High school diploma or equivalent

According to BLS data, the national average hourly wage for Procurement Clerks is \$19.35. An interview participant noted that pay is a key factor making the hiring of Procurement Clerks difficult; because so many industries and organizations require these employees and there are relatively few of them, it can be difficult particularly for transportation public agencies with lower budgets or salaries to attract high quality candidates.



## Skills Needs for Key Occupations

Understanding the skills needs for these key occupations is important, as it provides a basis for training and developing employees in an organization. Exhibit 33 displays skills needs for key occupations in the Northeast Region. Burning Glass data provided top skills highlighted in job postings. In other words, these skills are in high demand by employers in the region. A majority of these skills are technical skills, related to the use of specific tools and technologies. Additional skills were identified in O\*NET data. For the most part, these are soft skills such as critical thinking and problem solving.

<b>Exhibit 33: Skill Requirements for Regional Key Occupations</b>		
<b>Occupation</b>	<b>Top Skills Highlighted in Job Postings</b>	<b>Additional Required Skills</b>
<i>STEM Occupations</i>		
Computer and Information Systems Manager	<ul style="list-style-type: none"> <li>▪ Business Process</li> <li>▪ Oracle</li> <li>▪ Collaboration</li> <li>▪ Systems Development Life Cycle (SDLC)</li> <li>▪ Scrum</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reading Comprehension</li> <li>▪ Active Listening</li> <li>▪ Critical Thinking</li> <li>▪ Complex Problem Solving</li> <li>▪ Monitoring</li> </ul>
Civil Engineer	<ul style="list-style-type: none"> <li>▪ Civil Engineering</li> <li>▪ AutoCAD</li> <li>▪ Civil 3D</li> <li>▪ Engineer in Training</li> <li>▪ Storm Water Management</li> </ul>	<ul style="list-style-type: none"> <li>▪ Critical Thinking</li> <li>▪ Reading Comprehension</li> <li>▪ Active Listening</li> <li>▪ Complex Problem Solving</li> <li>▪ Mathematics</li> </ul>
Surveyor	<ul style="list-style-type: none"> <li>▪ Photovoltaic (PV) Systems</li> <li>▪ Estimating</li> <li>▪ Energy Efficiency</li> <li>▪ Electrical Systems</li> <li>▪ Hand Tools</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reading Comprehension</li> <li>▪ Mathematics</li> <li>▪ Critical Thinking</li> <li>▪ Speaking</li> <li>▪ Writing</li> </ul>
Urban and Regional Planner	<ul style="list-style-type: none"> <li>▪ Urban Design</li> <li>▪ Environmental Planning</li> <li>▪ Historic Preservation</li> <li>▪ Land Use</li> <li>▪ Retail Sales</li> </ul>	<ul style="list-style-type: none"> <li>▪ Active Listening</li> <li>▪ Reading Comprehension</li> <li>▪ Critical Thinking</li> <li>▪ Judgment and Decision Making</li> <li>▪ Speaking</li> </ul>
<i>Technical and Vocational Occupations</i>		
Surveying and mapping technicians	<ul style="list-style-type: none"> <li>▪ Schematic Diagrams</li> <li>▪ Data Analysis</li> <li>▪ Technical Drawings</li> <li>▪ Dimensions</li> <li>▪ Materials Testing</li> <li>▪ Inspecting</li> <li>▪ Blueprints</li> </ul>	<ul style="list-style-type: none"> <li>▪ Critical Thinking</li> <li>▪ Active Listening</li> <li>▪ Complex Problem Solving</li> <li>▪ Mathematics</li> <li>▪ Speaking</li> <li>▪ Coordination</li> </ul>

<b>Exhibit 33: Skill Requirements for Regional Key Occupations</b>		
<b>Occupation</b>	<b>Top Skills Highlighted in Job Postings</b>	<b>Additional Required Skills</b>
Operating engineers and other construction equipment operators	<ul style="list-style-type: none"> <li>▪ Repair</li> <li>▪ HVAC</li> <li>▪ Boilers</li> <li>▪ Decision Making</li> </ul>	<ul style="list-style-type: none"> <li>▪ Operation and Control (of equipment)</li> <li>▪ Operation Monitoring</li> <li>▪ Coordination</li> <li>▪ Equipment Maintenance</li> </ul>
Plumbers, pipefitters, and steamfitters	<ul style="list-style-type: none"> <li>▪ Plumbing Repair and Maintenance</li> <li>▪ Hand Tools</li> <li>▪ Soldering</li> <li>▪ Schematic Diagrams</li> <li>▪ Inspection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Active Listening</li> <li>▪ Critical Thinking</li> <li>▪ Reading Comprehension</li> <li>▪ Time Management</li> <li>▪ Judgment and Decision Making</li> </ul>
Bus and truck mechanics and diesel engine specialists	<ul style="list-style-type: none"> <li>▪ Repair</li> <li>▪ Inspection</li> <li>▪ Vehicle Maintenance</li> <li>▪ Physical Demand</li> <li>▪ Oil Changes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Repairing</li> <li>▪ Troubleshooting</li> <li>▪ Operation and Control (of equipment)</li> <li>▪ Critical Thinking</li> <li>▪ Equipment Maintenance</li> <li>▪ Quality Control Analysis</li> </ul>
Heavy and tractor-trailer drivers	<ul style="list-style-type: none"> <li>▪ Repair</li> <li>▪ Electrical Experience</li> <li>▪ HVAC</li> </ul>	<ul style="list-style-type: none"> <li>▪ Operation and Control (of equipment)</li> <li>▪ Time Management</li> <li>▪ Critical Thinking</li> <li>▪ Monitoring (oneself and others)</li> <li>▪ Troubleshooting</li> </ul>
<i>Laborer Occupations</i>		
Construction Laborer	<ul style="list-style-type: none"> <li>▪ Construction Labor</li> <li>▪ Cleaning</li> <li>▪ Power Tools</li> <li>▪ Tampers</li> <li>▪ Machinery</li> </ul>	<ul style="list-style-type: none"> <li>▪ Active Listening</li> <li>▪ Coordination</li> <li>▪ Operation Monitoring</li> <li>▪ Reading Comprehension</li> <li>▪ Social Perceptiveness</li> </ul>
Cement Masons and Concrete Finishers	<ul style="list-style-type: none"> <li>▪ Concrete Finishing</li> <li>▪ Carpentry</li> <li>▪ Hammering</li> <li>▪ Hand Tools</li> <li>▪ Mixing Machines</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitoring</li> <li>▪ Active Listening</li> <li>▪ Coordination</li> <li>▪ Critical Thinking</li> <li>▪ Judgment and Decision Making</li> </ul>

<b>Exhibit 33: Skill Requirements for Regional Key Occupations</b>		
<b>Occupation</b>	<b>Top Skills Highlighted in Job Postings</b>	<b>Additional Required Skills</b>
Welders, Cutters, Solderers, and Brazers	<ul style="list-style-type: none"> <li>▪ Welding</li> <li>▪ TIG Welding</li> <li>▪ Repair</li> <li>▪ Blueprints</li> <li>▪ Mig and Tig Welding</li> </ul>	<ul style="list-style-type: none"> <li>▪ Critical Thinking</li> <li>▪ Operation and Control</li> <li>▪ Monitoring</li> <li>▪ Reading Comprehension</li> <li>▪ Quality Control Analysis</li> </ul>
First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	<ul style="list-style-type: none"> <li>▪ Scheduling</li> <li>▪ Repair</li> <li>▪ Operations Management</li> <li>▪ Key Performance Indicators</li> <li>▪ Performance Appraisals</li> </ul>	<ul style="list-style-type: none"> <li>▪ Active Listening</li> <li>▪ Coordination</li> <li>▪ Management of Personnel Resources</li> <li>▪ Time Management</li> <li>▪ Critical Thinking</li> </ul>
<i>Professional Occupations</i>		
Procurement Clerks	<ul style="list-style-type: none"> <li>▪ Multi-tasking</li> <li>▪ Detail-oriented</li> <li>▪ Communication</li> <li>▪ Organizational Skills</li> <li>▪ Interpersonal Skills and Customer Service</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reading Comprehension</li> <li>▪ Speaking</li> <li>▪ Active Listening</li> <li>▪ Writing</li> <li>▪ Complex Problem Solving</li> </ul>

In addition to the skills required for the key occupations across the region, interview and focus group participants indicated additional skills that are currently lacking and applicants or current employees need to work to develop, particularly with regards towards environmentally-friendly or green technology.

## **Conclusion**

By identifying the region's key occupations, the findings of this report provide for a coordinated, strategic, and structured approach to transportation workforce development at the region, state and local levels. These results will help to focus the work of the Center going forward and guide its interactions with the Center's public and private sector stakeholders. Through partnership, the Center can work with the transportation, education, workforce investment, and labor/union communities throughout the region to address pressing workforce challenges related to these key occupations. This collaborative approach will be important to the success of transportation workforce development and to the efficiency and effectiveness of the region's transportation system. This focus will also ensure the region's workforce development efforts, particularly around these 14 critical occupations, are meeting the needs of the industry as these careers continue to become more complex and technologically advanced.

The Phase 2 Job Needs Report will further build upon the findings included in this document. In Phase 2, we will identify and discuss potential workforce development programs to address the skills needs identified. We will also include detailed action plans and recommendations to address workforce needs regarding the key occupations in the Northeast Region. These initiatives will allow for the Center and partners to better support the rapidly progressing transportation industry.

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## **Appendix A: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
<b>United States</b>	<b>11-3021</b>	<b>Computer and Information Systems Managers</b>	<b>330,360</b>	<b>\$65.52</b>	<b>Bachelor's degree</b>	<b>332,700</b>	<b>383,600</b>	<b>50,900</b>	<b>15.3%</b>
Connecticut	11-3021	Computer and Information Systems Managers	7,040	\$66.18	Bachelor's degree	7,150	8,300	1,150	16.1%
Delaware	11-3021	Computer and Information Systems Managers	1,090	\$73.82	Bachelor's degree	1,430	1,540	110	7.7%
District of Columbia	11-3021	Computer and Information Systems Managers	3,400	\$70.44	Bachelor's degree	4,210	4,460	250	5.9%
Maine	11-3021	Computer and Information Systems Managers	1,080	\$48.34	Bachelor's degree	940	1,010	70	7.4%
Maryland	11-3021	Computer and Information Systems Managers	9,070	\$67.92	Bachelor's degree	10,670	12,250	1,580	14.8%
Massachusetts	11-3021	Computer and Information Systems Managers	15,160	\$69.07	Bachelor's degree	16,460	19,000	2,540	15.4%
New Hampshire	11-3021	Computer and Information Systems Managers	1,780	\$60.39	Bachelor's degree	2,080	2,510	430	20.7%
New Jersey	11-3021	Computer and Information Systems Managers	13,830	\$73.33	Bachelor's degree	14,590	16,740	2,150	14.7%
New York	11-3021	Computer and Information Systems Managers	25,020	\$75.66	Bachelor's degree	26,930	31,440	4,510	16.7%
Pennsylvania	11-3021	Computer and Information Systems Managers	10,780	\$64.79	Bachelor's degree	9,160	10,520	1,360	14.8%
Rhode Island	11-3021	Computer and Information Systems Managers	1,070	\$63.08	Bachelor's degree	1,110	1,310	200	18.0%
Vermont	11-3021	Computer and Information Systems Managers	360	\$63.35	Bachelor's degree	570	590	20	3.5%
<i>NE Region</i>	<i>11-3021</i>	<i>Computer and Information Systems Managers</i>	<i>89,680</i>		<i>Bachelor's degree</i>	<i>95,300</i>	<i>109,670</i>	<i>14,370</i>	<i>15.1%</i>
<b>United States</b>	<b>11-3071</b>	<b>Transportation, Storage, and Distribution Managers</b>	<b>106,000</b>	<b>\$44.80</b>	<b>High school diploma or equivalent</b>	<b>105,200</b>	<b>110,300</b>	<b>5,100</b>	<b>4.8%</b>
Connecticut	11-3071	Transportation, Storage, and Distribution Managers	1,260	\$53.77	High school diploma or equivalent	1,380	1,460	80	5.8%
Delaware	11-3071	Transportation, Storage, and Distribution Managers	290	\$55.82	High school diploma or equivalent	320	320	0	0.0%
District of Columbia	11-3071	Transportation, Storage, and Distribution Managers	460	\$57.41	High school diploma or equivalent	410	370	-40	-9.8%
Maine	11-3071	Transportation, Storage, and Distribution Managers	510	\$37.07	High school diploma or equivalent	690	690	0	0.0%
Maryland	11-3071	Transportation, Storage, and Distribution Managers	1,420	\$44.73	High school diploma or equivalent	1,510	1,590	80	5.3%
Massachusetts	11-3071	Transportation, Storage, and Distribution Managers	2,360	\$46.16	High school diploma or equivalent	2,180	2,340	160	7.3%
New Hampshire	11-3071	Transportation, Storage, and Distribution Managers	370	\$48.49	High school diploma or equivalent	470	480	10	2.1%
New Jersey	11-3071	Transportation, Storage, and Distribution Managers	4,520	\$57.47	High school diploma or equivalent	4,980	5,420	440	8.8%
New York	11-3071	Transportation, Storage, and Distribution Managers	3,460	\$52.98	High school diploma or equivalent	3,310	3,470	160	4.8%
Pennsylvania	11-3071	Transportation, Storage, and Distribution Managers	3,500	\$45.91	High school diploma or equivalent	3,580	3,840	260	7.3%
Rhode Island	11-3071	Transportation, Storage, and Distribution Managers	260	\$48.48	High school diploma or equivalent	260	290	30	11.5%
Vermont	11-3071	Transportation, Storage, and Distribution Managers	130	\$39.45	High school diploma or equivalent	170	180	10	5.9%
<i>NE Region</i>	<i>11-3071</i>	<i>Transportation, Storage, and Distribution Managers</i>	<i>18,540</i>		<i>High school diploma or equivalent</i>	<i>19,260</i>	<i>20,450</i>	<i>1,190</i>	<i>6.2%</i>
<b>United States</b>	<b>13-2031</b>	<b>Budget Analysts</b>	<b>57,120</b>	<b>\$35.55</b>	<b>Bachelor's degree</b>	<b>61,700</b>	<b>65,500</b>	<b>3,800</b>	<b>6.2%</b>
Connecticut	13-2031	Budget Analysts	1,060	\$37.75	Bachelor's degree	1,010	1,090	80	7.9%
Delaware	13-2031	Budget Analysts	130	\$33.99	Bachelor's degree	160	180	20	12.5%
District of Columbia	13-2031	Budget Analysts	1,910	\$44.19	Bachelor's degree	2,620	2,680	60	2.3%
Maine	13-2031	Budget Analysts	180	\$29.41	Bachelor's degree	170	180	10	5.9%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Maryland	13-2031	Budget Analysts	2,310	\$40.28	Bachelor's degree	2,230	2,430	200	9.0%
Massachusetts	13-2031	Budget Analysts	1,790	\$35.47	Bachelor's degree	1,900	2,020	120	6.3%
New Hampshire	13-2031	Budget Analysts	130	\$36.76	Bachelor's degree	200	210	10	5.0%
New Jersey	13-2031	Budget Analysts	1,950	\$37.80	Bachelor's degree	1,520	1,630	110	7.2%
New York	13-2031	Budget Analysts	2,900	\$36.42	Bachelor's degree	2,870	3,100	230	8.0%
Pennsylvania	13-2031	Budget Analysts	1,980	\$33.09	Bachelor's degree	2,190	2,350	160	7.3%
Rhode Island	13-2031	Budget Analysts	430	\$32.43	Bachelor's degree	380	450	70	18.4%
Vermont	13-2031	Budget Analysts	80	\$29.48	Bachelor's degree	100	120	20	20.0%
<i>NE Region</i>	<i>13-2031</i>	<i>Budget Analysts</i>	<i>14,850</i>		<i>Bachelor's degree</i>	<i>15,350</i>	<i>16,440</i>	<i>1,090</i>	<i>7.1%</i>
<b>United States</b>	<b>13-2051</b>	<b>Financial Analysts</b>	<b>262,610</b>	<b>\$44.35</b>	<b>Bachelor's degree</b>	<b>253,000</b>	<b>292,400</b>	<b>39,400</b>	<b>15.6%</b>
Connecticut	13-2051	Financial Analysts	6,500	\$47.97	Bachelor's degree	6,390	7,510	1,120	17.5%
Delaware	13-2051	Financial Analysts	2,730	\$40.42	Bachelor's degree	2,370	2,700	330	13.9%
District of Columbia	13-2051	Financial Analysts	4,040	\$49.72	Bachelor's degree	2,750	3,300	550	20.0%
Maine	13-2051	Financial Analysts	340	\$35.38	Bachelor's degree	360	380	20	5.6%
Maryland	13-2051	Financial Analysts	5,940	\$42.25	Bachelor's degree	5,680	6,290	610	10.7%
Massachusetts	13-2051	Financial Analysts	16,640	\$48.98	Bachelor's degree	15,160	17,460	2,300	15.2%
New Hampshire	13-2051	Financial Analysts	**	\$38.51	Bachelor's degree	790	950	160	20.3%
New Jersey	13-2051	Financial Analysts	8,640	\$46.11	Bachelor's degree	8,450	8,930	480	5.7%
New York	13-2051	Financial Analysts	37,340	\$57.32	Bachelor's degree	34,120	37,790	3,670	10.8%
Pennsylvania	13-2051	Financial Analysts	11,590	\$37.46	Bachelor's degree	11,430	12,840	1,410	12.3%
Rhode Island	13-2051	Financial Analysts	1,310	\$35.61	Bachelor's degree	1,220	1,440	220	18.0%
Vermont	13-2051	Financial Analysts	230	\$46.97	Bachelor's degree	400	410	10	2.5%
<i>NE Region</i>	<i>13-2051</i>	<i>Financial Analysts</i>	<i>95,300</i>		<i>Bachelor's degree</i>	<i>89,120</i>	<i>100,000</i>	<i>10,880</i>	<i>12.2%</i>
<b>United States</b>	<b>17-1021</b>	<b>Cartographers and Photogrammetrists</b>	<b>11,610</b>	<b>\$31.04</b>	<b>Bachelor's degree</b>	<b>12,100</b>	<b>14,500</b>	<b>2,400</b>	<b>19.8%</b>
Connecticut	17-1021	Cartographers and Photogrammetrists	50	\$26.24	Bachelor's degree	50	50	0	0.0%
Maine	17-1021	Cartographers and Photogrammetrists	70	\$25.75	Bachelor's degree	50	50	0	0.0%
Maryland	17-1021	Cartographers and Photogrammetrists	430	\$34.89	Bachelor's degree	540	630	90	16.7%
Massachusetts	17-1021	Cartographers and Photogrammetrists	60	\$36.01	Bachelor's degree	60	70	10	16.7%
New Hampshire	17-1021	Cartographers and Photogrammetrists	90	\$23.22	Bachelor's degree	60	80	20	33.3%
New Jersey	17-1021	Cartographers and Photogrammetrists	210	\$36.50	Bachelor's degree	170	200	30	17.6%
New York	17-1021	Cartographers and Photogrammetrists	170	\$32.87	Bachelor's degree	310	360	50	16.1%
Pennsylvania	17-1021	Cartographers and Photogrammetrists	240	\$25.76	Bachelor's degree	250	290	40	16.0%
Vermont	17-1021	Cartographers and Photogrammetrists	30	\$24.51	Bachelor's degree	NA	NA	NA	NA
<i>NE Region</i>	<i>17-1021</i>	<i>Cartographers and Photogrammetrists</i>	<i>1,350</i>		<i>Bachelor's degree</i>	<i>1,490</i>	<i>1,730</i>	<i>240</i>	<i>16.1%</i>
<b>United States</b>	<b>17-1022</b>	<b>Surveyors</b>	<b>41,970</b>	<b>\$29.00</b>	<b>Bachelor's degree</b>	<b>42,400</b>	<b>46,800</b>	<b>4,400</b>	<b>10.4%</b>
Connecticut	17-1022	Surveyors	580	\$31.82	Bachelor's degree	450	490	40	8.9%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Delaware	17-1022	Surveyors	80	\$31.75	Bachelor's degree	120	120	0	0.0%
District of Columbia	17-1022	Surveyors	NA	NA	Bachelor's degree	450	420	-30	-6.7%
Maine	17-1022	Surveyors	240	\$24.03	Bachelor's degree	920	960	40	4.3%
Maryland	17-1022	Surveyors	660	\$31.35	Bachelor's degree	670	720	50	7.5%
Massachusetts	17-1022	Surveyors	680	\$30.40	Bachelor's degree	240	280	40	16.7%
New Hampshire	17-1022	Surveyors	250	\$28.20	Bachelor's degree	1,060	1,130	70	6.6%
New Jersey	17-1022	Surveyors	1,020	\$33.48	Bachelor's degree	1,710	1,830	120	7.0%
New York	17-1022	Surveyors	1,310	\$33.51	Bachelor's degree	1,570	1,680	110	7.0%
Pennsylvania	17-1022	Surveyors	1,610	\$28.44	Bachelor's degree	110	120	10	9.1%
Rhode Island	17-1022	Surveyors	90	\$34.21	Bachelor's degree	160	160	0	0.0%
Vermont	17-1022	Surveyors	70	\$23.10	Bachelor's degree	0	0	0	0.0%
<i>NE Region</i>	<i>17-1022</i>	<i>Surveyors</i>	<i>6,590</i>		<i>Bachelor's degree</i>	<i>7,460</i>	<i>7,910</i>	<i>450</i>	<i>6.0%</i>
<b>United States</b>	<b>17-2051</b>	<b>Civil Engineers</b>	<b>263,460</b>	<b>\$41.89</b>	<b>Bachelor's degree</b>	<b>272,900</b>	<b>326,600</b>	<b>53,700</b>	<b>19.7%</b>
Connecticut	17-2051	Civil Engineers	3,700	\$41.50	Bachelor's degree	3,170	3,780	610	19.2%
Delaware	17-2051	Civil Engineers	880	\$41.69	Bachelor's degree	NA	NA	NA	NA
District of Columbia	17-2051	Civil Engineers	1,050	\$47.82	Bachelor's degree	970	1,080	110	11.3%
Maine	17-2051	Civil Engineers	1,030	\$36.49	Bachelor's degree	940	970	30	3.2%
Maryland	17-2051	Civil Engineers	7,160	\$41.70	Bachelor's degree	7,160	8,280	1,120	15.6%
Massachusetts	17-2051	Civil Engineers	6,200	\$40.91	Bachelor's degree	6,550	7,740	1,190	18.2%
New Hampshire	17-2051	Civil Engineers	1,090	\$34.17	Bachelor's degree	1,000	1,250	250	25.0%
New Jersey	17-2051	Civil Engineers	6,840	\$45.37	Bachelor's degree	7,120	8,470	1,350	19.0%
New York	17-2051	Civil Engineers	13,620	\$43.92	Bachelor's degree	14,190	16,140	1,950	13.7%
Pennsylvania	17-2051	Civil Engineers	12,650	\$39.64	Bachelor's degree	13,600	16,180	2,580	19.0%
Rhode Island	17-2051	Civil Engineers	680	\$46.02	Bachelor's degree	620	730	110	17.7%
Vermont	17-2051	Civil Engineers	580	\$34.93	Bachelor's degree	470	540	70	14.9%
<i>NE Region</i>	<i>17-2051</i>	<i>Civil Engineers</i>	<i>55,480</i>		<i>Bachelor's degree</i>	<i>55,790</i>	<i>65,160</i>	<i>9,370</i>	<i>16.8%</i>
<b>United States</b>	<b>17-2071</b>	<b>Electrical Engineers</b>	<b>174,550</b>	<b>\$46.05</b>	<b>Bachelor's degree</b>	<b>166,100</b>	<b>174,000</b>	<b>7,900</b>	<b>4.8%</b>
Connecticut	17-2071	Electrical Engineers	1,990	\$43.46	Bachelor's degree	2,090	2,210	120	5.7%
Delaware	17-2071	Electrical Engineers	460	\$45.52	Bachelor's degree	0	0	0	0.0%
District of Columbia	17-2071	Electrical Engineers	380	\$49.64	Bachelor's degree	540	570	30	5.6%
Maine	17-2071	Electrical Engineers	500	\$38.42	Bachelor's degree	430	410	-20	-4.7%
Maryland	17-2071	Electrical Engineers	4,520	\$48.44	Bachelor's degree	4,220	4,400	180	4.3%
Massachusetts	17-2071	Electrical Engineers	7,630	\$49.84	Bachelor's degree	7,680	7,980	300	3.9%
New Hampshire	17-2071	Electrical Engineers	1,110	\$46.54	Bachelor's degree	1,180	1,190	10	0.8%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
New Jersey	17-2071	Electrical Engineers	4,410	\$48.58	Bachelor's degree	3,900	4,220	320	8.2%
New York	17-2071	Electrical Engineers	11,110	\$46.48	Bachelor's degree	9,210	9,980	770	8.4%
Pennsylvania	17-2071	Electrical Engineers	6,600	\$43.26	Bachelor's degree	5,900	6,370	470	8.0%
Rhode Island	17-2071	Electrical Engineers	350	\$45.81	Bachelor's degree	380	440	60	15.8%
Vermont	17-2071	Electrical Engineers	600	\$42.95	Bachelor's degree	500	490	-10	-2.0%
<i>NE Region</i>	<i>17-2071</i>	<i>Electrical Engineers</i>	<i>39,660</i>		<i>Bachelor's degree</i>	<i>36,030</i>	<i>38,260</i>	<i>2,230</i>	<i>6.2%</i>
<b>United States</b>	<b>17-2081</b>	<b>Environmental Engineers</b>	<b>53,240</b>	<b>\$41.51</b>	<b>Bachelor's degree</b>	<b>53,200</b>	<b>61,400</b>	<b>8,200</b>	<b>15.4%</b>
Connecticut	17-2081	Environmental Engineers	520	\$42.58	Bachelor's degree	470	540	70	14.9%
Delaware	17-2081	Environmental Engineers	170	\$38.86	Bachelor's degree	170	180	10	5.9%
District of Columbia	17-2081	Environmental Engineers	300	\$46.94	Bachelor's degree	540	550	10	1.9%
Maine	17-2081	Environmental Engineers	180	\$39.30	Bachelor's degree	340	340	0	0.0%
Maryland	17-2081	Environmental Engineers	1,040	\$42.90	Bachelor's degree	1,010	1,110	100	9.9%
Massachusetts	17-2081	Environmental Engineers	3,250	\$40.23	Bachelor's degree	2,960	3,320	360	12.2%
New Hampshire	17-2081	Environmental Engineers	160	\$40.57	Bachelor's degree	240	280	40	16.7%
New Jersey	17-2081	Environmental Engineers	1,810	\$43.00	Bachelor's degree	2,260	2,630	370	16.4%
New York	17-2081	Environmental Engineers	3,180	\$42.14	Bachelor's degree	3,130	3,480	350	11.2%
Pennsylvania	17-2081	Environmental Engineers	3,240	\$39.12	Bachelor's degree	2,960	3,290	330	11.1%
Rhode Island	17-2081	Environmental Engineers	290	\$43.72	Bachelor's degree	340	400	60	17.6%
Vermont	17-2081	Environmental Engineers	120	\$43.57	Bachelor's degree	230	270	40	17.4%
<i>NE Region</i>	<i>17-2081</i>	<i>Environmental Engineers</i>	<i>14,260</i>		<i>Bachelor's degree</i>	<i>14,650</i>	<i>16,390</i>	<i>1,740</i>	<i>11.9%</i>
<b>United States</b>	<b>17-3022</b>	<b>Civil Engineering Technicians</b>	<b>71,300</b>	<b>\$24.18</b>	<b>Associate's degree</b>	<b>73,100</b>	<b>73,600</b>	<b>500</b>	<b>0.7%</b>
Connecticut	17-3022	Civil Engineering Technicians	470	\$29.36	Associate's degree	420	420	0	0.0%
Delaware	17-3022	Civil Engineering Technicians	450	\$21.14	Associate's degree	360	340	-20	-5.6%
District of Columbia	17-3022	Civil Engineering Technicians	280	\$29.00	Associate's degree	380	350	-30	-7.9%
Maine	17-3022	Civil Engineering Technicians	400	\$25.21	Associate's degree	400	350	-50	-12.5%
Maryland	17-3022	Civil Engineering Technicians	990	\$24.22	Associate's degree	1,510	1,470	-40	-2.6%
Massachusetts	17-3022	Civil Engineering Technicians	790	*	Associate's degree	800	820	20	2.5%
New Hampshire	17-3022	Civil Engineering Technicians	150	\$21.97	Associate's degree	80	90	10	12.5%
New Jersey	17-3022	Civil Engineering Technicians	1,020	\$24.02	Associate's degree	1,140	1,180	40	3.5%
New York	17-3022	Civil Engineering Technicians	2,020	\$25.80	Associate's degree	2,020	2,040	20	1.0%
Pennsylvania	17-3022	Civil Engineering Technicians	2,370	\$23.77	Associate's degree	2,110	2,170	60	2.8%
Rhode Island	17-3022	Civil Engineering Technicians	300	\$23.96	Associate's degree	320	290	-30	-9.4%
Vermont	17-3022	Civil Engineering Technicians	310	\$24.11	Associate's degree	310	310	0	0.0%
<i>NE Region</i>	<i>17-3022</i>	<i>Civil Engineering Technicians</i>	<i>9,550</i>		<i>Associate's degree</i>	<i>9,850</i>	<i>9,830</i>	<i>-20</i>	<i>-0.2%</i>
<b>United States</b>	<b>17-3023</b>	<b>Electronics Engineering Technicians</b>	<b>137,040</b>	<b>\$29.01</b>	<b>Associate's degree</b>	<b>146,500</b>	<b>146,500</b>	<b>0</b>	<b>0.0%</b>
Connecticut	17-3023	Electronics Engineering Technicians	1,740	\$29.23	Associate's degree	1,730	1,760	30	1.7%



**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Delaware	17-3023	Electronics Engineering Technicians	160	\$26.64	Associate's degree	220	250	30	13.6%
District of Columbia	17-3023	Electronics Engineering Technicians	400	\$37.60	Associate's degree	500	560	60	12.0%
Maine	17-3023	Electronics Engineering Technicians	310	\$30.62	Associate's degree	270	250	-20	-7.4%
Maryland	17-3023	Electronics Engineering Technicians	3,840	\$33.31	Associate's degree	3,750	3,880	130	3.5%
Massachusetts	17-3023	Electronics Engineering Technicians	5,710	\$28.75	Associate's degree	6,060	5,770	-290	-4.8%
New Hampshire	17-3023	Electronics Engineering Technicians	1,070	\$26.62	Associate's degree	830	800	-30	-3.6%
New Jersey	17-3023	Electronics Engineering Technicians	2,830	\$28.73	Associate's degree	2,820	2,860	40	1.4%
New York	17-3023	Electronics Engineering Technicians	6,220	\$29.53	Associate's degree	8,100	8,320	220	2.7%
Pennsylvania	17-3023	Electronics Engineering Technicians	4,130	\$26.63	Associate's degree	5,140	5,260	120	2.3%
Rhode Island	17-3023	Electronics Engineering Technicians	550	\$32.77	Associate's degree	710	810	100	14.1%
<i>NE Region</i>	<i>17-3023</i>	<i>Electronics Engineering Technicians</i>	<i>26,960</i>		<i>Associate's degree</i>	<i>30,130</i>	<i>30,520</i>	<i>390</i>	<i>1.3%</i>
<b>United States</b>	<b>17-3025</b>	<b>Environmental Engineering Technicians</b>	<b>18,080</b>	<b>\$24.53</b>	<b>Associate's degree</b>	<b>19,000</b>	<b>22,500</b>	<b>3,500</b>	<b>18.4%</b>
Connecticut	17-3025	Environmental Engineering Technicians	150	\$25.46	Associate's degree	130	150	20	15.4%
Delaware	17-3025	Environmental Engineering Technicians	40	\$23.28	Associate's degree	40	40	0	0.0%
District of Columbia	17-3025	Environmental Engineering Technicians	NA	NA	Associate's degree	30	30	0	0.0%
Maine	17-3025	Environmental Engineering Technicians	80	\$21.72	Associate's degree	100	100	0	0.0%
Maryland	17-3025	Environmental Engineering Technicians	270	\$29.86	Associate's degree	360	410	50	13.9%
Massachusetts	17-3025	Environmental Engineering Technicians	780	\$22.89	Associate's degree	520	620	100	19.2%
New Hampshire	17-3025	Environmental Engineering Technicians	NA	NA	Associate's degree	30	30	0	0.0%
New Jersey	17-3025	Environmental Engineering Technicians	600	\$23.48	Associate's degree	560	660	100	17.9%
New York	17-3025	Environmental Engineering Technicians	1,280	\$23.38	Associate's degree	1,130	1,450	320	28.3%
Pennsylvania	17-3025	Environmental Engineering Technicians	1,230	\$23.18	Associate's degree	1,150	1,310	160	13.9%
Rhode Island	17-3025	Environmental Engineering Technicians	30	\$24.00	Associate's degree	20	20	0	0.0%
Vermont	17-3025	Environmental Engineering Technicians	80	\$21.74	Associate's degree	80	90	10	12.5%
<i>NE Region</i>	<i>17-3025</i>	<i>Environmental Engineering Technicians</i>	<i>4,540</i>		<i>Associate's degree</i>	<i>4,150</i>	<i>4,910</i>	<i>760</i>	<i>18.3%</i>
<b>United States</b>	<b>17-3029</b>	<b>Engineering Technicians, Except Drafters, All Other</b>	<b>67,640</b>	<b>\$30.35</b>	<b>Associate's degree</b>	<b>67,700</b>	<b>68,300</b>	<b>600</b>	<b>0.9%</b>
Connecticut	17-3029	Engineering Technicians, Except Drafters, All Other	520	\$33.53	Associate's degree	460	490	30	6.5%
Delaware	17-3029	Engineering Technicians, Except Drafters, All Other	30	*	Associate's degree	0	0	0	0.0%
District of Columbia	17-3029	Engineering Technicians, Except Drafters, All Other	290	\$42.07	Associate's degree	630	570	-60	-9.5%
Maine	17-3029	Engineering Technicians, Except Drafters, All Other	700	\$34.64	Associate's degree	670	650	-20	-3.0%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Maryland	17-3029	Engineering Technicians, Except Drafters, All Other	1,870	\$37.90	Associate's degree	3,220	3,280	60	1.9%
Massachusetts	17-3029	Engineering Technicians, Except Drafters, All Other	980	\$29.37	Associate's degree	1,220	1,160	-60	-4.9%
New Hampshire	17-3029	Engineering Technicians, Except Drafters, All Other	560	\$24.27	Associate's degree	680	680	0	0.0%
New Jersey	17-3029	Engineering Technicians, Except Drafters, All Other	1,100	\$34.72	Associate's degree	1,110	1,080	-30	-2.7%
New York	17-3029	Engineering Technicians, Except Drafters, All Other	2,140	\$27.58	Associate's degree	2,080	2,110	30	1.4%
Pennsylvania	17-3029	Engineering Technicians, Except Drafters, All Other	2,740	\$26.13	Associate's degree	1,690	1,740	50	3.0%
Rhode Island	17-3029	Engineering Technicians, Except Drafters, All Other	190	\$36.26	Associate's degree	270	280	10	3.7%
Vermont	17-3029	Engineering Technicians, Except Drafters, All Other	**	\$25.77	Associate's degree	50	50	0	0.0%
<i>NE Region</i>	<i>17-3029</i>	<i>Engineering Technicians, Except Drafters, All Other</i>	<i>11,120</i>		<i>Associate's degree</i>	<i>12,080</i>	<i>12,090</i>	<i>10</i>	<i>0.1%</i>
<b>United States</b>	<b>17-3031</b>	<b>Surveying and Mapping Technicians</b>	<b>50,750</b>	<b>\$21.09</b>	<b>High school diploma or equivalent</b>	<b>54,000</b>	<b>61,300</b>	<b>7,300</b>	<b>13.5%</b>
Connecticut	17-3031	Surveying and Mapping Technicians	270	\$25.05	High school diploma or equivalent	310	370	60	19.4%
Delaware	17-3031	Surveying and Mapping Technicians	120	\$19.12	High school diploma or equivalent	140	160	20	14.3%
Maine	17-3031	Surveying and Mapping Technicians	210	\$18.20	High school diploma or equivalent	170	170	0	0.0%
Maryland	17-3031	Surveying and Mapping Technicians	600	\$23.92	High school diploma or equivalent	790	860	70	8.9%
Massachusetts	17-3031	Surveying and Mapping Technicians	560	\$24.26	High school diploma or equivalent	610	710	100	16.4%
New Hampshire	17-3031	Surveying and Mapping Technicians	200	\$19.44	High school diploma or equivalent	210	240	30	14.3%
New Jersey	17-3031	Surveying and Mapping Technicians	490	\$21.47	High school diploma or equivalent	480	540	60	12.5%
New York	17-3031	Surveying and Mapping Technicians	1,870	\$21.34	High school diploma or equivalent	1,620	1,760	140	8.6%
Pennsylvania	17-3031	Surveying and Mapping Technicians	1,550	\$20.65	High school diploma or equivalent	1,500	1,630	130	8.7%
Rhode Island	17-3031	Surveying and Mapping Technicians	100	\$20.19	High school diploma or equivalent	0	0	0	0.0%
Vermont	17-3031	Surveying and Mapping Technicians	130	\$22.00	High school diploma or equivalent	130	130	0	0.0%
<i>NE Region</i>	<i>17-3031</i>	<i>Surveying and Mapping Technicians</i>	<i>6,100</i>		<i>High school diploma or equivalent</i>	<i>5,960</i>	<i>6,570</i>	<i>610</i>	<i>10.2%</i>
<b>United States</b>	<b>19-1031</b>	<b>Conservation Scientists</b>	<b>19,210</b>	<b>\$30.97</b>	<b>Bachelor's degree</b>	<b>22,100</b>	<b>22,300</b>	<b>200</b>	<b>0.9%</b>
Connecticut	19-1031	Conservation Scientists	70	\$41.81	Bachelor's degree	70	70	0	0.0%
Delaware	19-1031	Conservation Scientists	40	\$27.18	Bachelor's degree	60	70	10	16.7%
District of Columbia	19-1031	Conservation Scientists	200	\$38.75	Bachelor's degree	180	190	10	5.6%
Maine	19-1031	Conservation Scientists	110	\$27.67	Bachelor's degree	170	170	0	0.0%
Maryland	19-1031	Conservation Scientists	410	\$34.15	Bachelor's degree	460	470	10	2.2%
Massachusetts	19-1031	Conservation Scientists	510	\$29.43	Bachelor's degree	550	630	80	14.5%

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New Hampshire	19-1031	Conservation Scientists	50	\$36.26	Bachelor's degree	40	40	0	0.0%
New Jersey	19-1031	Conservation Scientists	250	\$38.23	Bachelor's degree	120	110	-10	-8.3%
New York	19-1031	Conservation Scientists	390	\$32.90	Bachelor's degree	820	900	80	9.8%
Pennsylvania	19-1031	Conservation Scientists	560	\$27.80	Bachelor's degree	630	640	10	1.6%
Rhode Island	19-1031	Conservation Scientists	50	\$38.94	Bachelor's degree	70	70	0	0.0%
Vermont	19-1031	Conservation Scientists	110	\$25.20	Bachelor's degree	60	70	10	16.7%
<i>NE Region</i>	<i>19-1031</i>	<i>Conservation Scientists</i>	<i>2,750</i>		<i>Bachelor's degree</i>	<i>3,230</i>	<i>3,430</i>	<i>200</i>	<i>6.2%</i>
<b>United States</b>	<b>19-3051</b>	<b>Urban and Regional Planners</b>	<b>35,820</b>	<b>\$33.18</b>	<b>Master's degree</b>	<b>38,700</b>	<b>42,700</b>	<b>4,000</b>	<b>10.3%</b>
Connecticut	19-3051	Urban and Regional Planners	320	\$39.33	Master's degree	310	330	20	6.5%
Delaware	19-3051	Urban and Regional Planners	210	\$32.35	Master's degree	200	210	10	5.0%
District of Columbia	19-3051	Urban and Regional Planners	130	*	Master's degree	230	250	20	8.7%
Maine	19-3051	Urban and Regional Planners	120	\$30.17	Master's degree	120	120	0	0.0%
Maryland	19-3051	Urban and Regional Planners	960	\$31.31	Master's degree	990	1,050	60	6.1%
Massachusetts	19-3051	Urban and Regional Planners	1,300	\$34.50	Master's degree	1,500	1,630	130	8.7%
New Hampshire	19-3051	Urban and Regional Planners	190	\$30.31	Master's degree	180	190	10	5.6%
New Jersey	19-3051	Urban and Regional Planners	440	\$35.73	Master's degree	280	280	0	0.0%
New York	19-3051	Urban and Regional Planners	1,410	\$33.20	Master's degree	1,740	1,860	120	6.9%
Pennsylvania	19-3051	Urban and Regional Planners	1,680	\$27.20	Master's degree	1,640	1,700	60	3.7%
Rhode Island	19-3051	Urban and Regional Planners	150	\$35.01	Master's degree	160	160	0	0.0%
Vermont	19-3051	Urban and Regional Planners	230	\$24.96	Master's degree	240	270	30	12.5%
<i>NE Region</i>	<i>19-3051</i>	<i>Urban and Regional Planners</i>	<i>7,140</i>		<i>Master's degree</i>	<i>7,590</i>	<i>8,050</i>	<i>460</i>	<i>6.1%</i>
<b>United States</b>	<b>33-3041</b>	<b>Parking Enforcement Workers</b>	<b>8,680</b>	<b>\$18.15</b>	<b>High school diploma or equivalent</b>	<b>9,700</b>	<b>9,700</b>	<b>0</b>	<b>0.0%</b>
Connecticut	33-3041	Parking Enforcement Workers	130	\$20.13	High school diploma or equivalent	120	110	-10	-8.3%
Maine	33-3041	Parking Enforcement Workers	80	\$14.35	High school diploma or equivalent	60	50	-10	-16.7%
Maryland	33-3041	Parking Enforcement Workers	290	\$15.83	High school diploma or equivalent	210	200	-10	-4.8%
Massachusetts	33-3041	Parking Enforcement Workers	640	\$20.61	High school diploma or equivalent	720	720	0	0.0%
New Hampshire	33-3041	Parking Enforcement Workers	50	\$16.99	High school diploma or equivalent	50	40	-10	-20.0%
New Jersey	33-3041	Parking Enforcement Workers	400	\$17.06	High school diploma or equivalent	440	390	-50	-11.4%
New York	33-3041	Parking Enforcement Workers	620	\$18.53	High school diploma or equivalent	750	690	-60	-8.0%
Pennsylvania	33-3041	Parking Enforcement Workers	450	\$13.53	High school diploma or equivalent	290	270	-20	-6.9%
Rhode Island	33-3041	Parking Enforcement Workers	70	\$15.96	High school diploma or equivalent	40	30	-10	-25.0%
Vermont	33-3041	Parking Enforcement Workers	**	\$18.10	High school diploma or equivalent	20	20	0	0.0%
<i>NE Region</i>	<i>33-3041</i>	<i>Parking Enforcement Workers</i>	<i>2,730</i>		<i>High school diploma or equivalent</i>	<i>2,700</i>	<i>2,520</i>	<i>-180</i>	<i>-6.7%</i>
<b>United States</b>	<b>33-3052</b>	<b>Transit and Railroad Police</b>	<b>3,380</b>	<b>\$25.56</b>	<b>High school diploma or equivalent</b>	<b>4,300</b>	<b>4,400</b>	<b>100</b>	<b>2.3%</b>
Maryland	33-3052	Transit and Railroad Police	220	\$24.64	High school diploma or equivalent	180	180	0	0.0%
Massachusetts	33-3052	Transit and Railroad Police	280	\$23.24	High school diploma or equivalent	100	110	10	10.0%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
New Jersey	33-3052	Transit and Railroad Police	80	\$40.86	High school diploma or equivalent	460	450	-10	-2.2%
New York	33-3052	Transit and Railroad Police	60	\$28.48	High school diploma or equivalent	NA	NA	NA	NA
Pennsylvania	33-3052	Transit and Railroad Police	80	\$32.23	High school diploma or equivalent	NA	NA	NA	NA
<i>NE Region</i>	<i>33-3052</i>	<i>Transit and Railroad Police</i>	<i>720</i>		<i>High school diploma or equivalent</i>	<i>7,070</i>	<i>7,380</i>	<i>310</i>	<i>4.4%</i>
<b>United States</b>	<b>43-3061</b>	<b>Procurement clerks</b>	<b>70,190</b>	<b>\$19.35</b>	<b>High school diploma or equivalent</b>	<b>72,200</b>	<b>73,600</b>	<b>1,400</b>	<b>1.9%</b>
Connecticut	43-3061	Procurement clerks	930	\$21.40	High school diploma or equivalent	920	960	40	4.3%
Delaware	43-3061	Procurement clerks	210	\$19.53	High school diploma or equivalent	160	170	10	6.3%
District of Columbia	43-3061	Procurement clerks	310	\$25.66	High school diploma or equivalent	390	330	-60	-15.4%
Maine	43-3061	Procurement clerks	350	\$17.04	High school diploma or equivalent	330	320	-10	-3.0%
Maryland	43-3061	Procurement clerks	1,540	\$22.73	High school diploma or equivalent	1,540	1,600	60	3.9%
Massachusetts	43-3061	Procurement clerks	1,530	\$21.76	High school diploma or equivalent	1,390	1,460	70	5.0%
New Hampshire	43-3061	Procurement clerks	470	\$17.31	High school diploma or equivalent	410	440	30	7.3%
New Jersey	43-3061	Procurement clerks	2,990	\$20.54	High school diploma or equivalent	3,230	3,410	180	5.6%
New York	43-3061	Procurement clerks	3,580	\$19.64	High school diploma or equivalent	4,090	4,350	260	6.4%
Pennsylvania	43-3061	Procurement clerks	2,610	\$19.13	High school diploma or equivalent	2,710	2,790	80	3.0%
Rhode Island	43-3061	Procurement clerks	350	\$20.29	High school diploma or equivalent	310	340	30	9.7%
Vermont	43-3061	Procurement clerks	160	\$19.27	High school diploma or equivalent	170	170	0	0.0%
<i>NE Region</i>	<i>43-3061</i>	<i>Procurement clerks</i>	<i>15,030</i>		<i>High school diploma or equivalent</i>	<i>15,650</i>	<i>16,340</i>	<i>690</i>	<i>4.4%</i>
<b>United States</b>	<b>43-5011</b>	<b>Cargo and Freight Agents</b>	<b>77,480</b>	<b>\$21.14</b>	<b>High school diploma or equivalent</b>	<b>79,500</b>	<b>91,000</b>	<b>11,500</b>	<b>14.5%</b>
Connecticut	43-5011	Cargo and Freight Agents	650	\$31.30	High school diploma or equivalent	590	650	60	10.2%
Delaware	43-5011	Cargo and Freight Agents	110	*	High school diploma or equivalent	30	30	0	0.0%
District of Columbia	43-5011	Cargo and Freight Agents	80	\$17.48	High school diploma or equivalent	NA	NA	NA	NA
Maine	43-5011	Cargo and Freight Agents	90	\$22.40	High school diploma or equivalent	150	160	10	6.7%
Maryland	43-5011	Cargo and Freight Agents	380	\$20.50	High school diploma or equivalent	770	820	50	6.5%
Massachusetts	43-5011	Cargo and Freight Agents	690	\$22.07	High school diploma or equivalent	1,110	1,160	50	4.5%
New Hampshire	43-5011	Cargo and Freight Agents	60	\$25.29	High school diploma or equivalent	80	90	10	12.5%
New Jersey	43-5011	Cargo and Freight Agents	2,140	\$21.20	High school diploma or equivalent	1,780	2,020	240	13.5%
New York	43-5011	Cargo and Freight Agents	5,520	\$21.14	High school diploma or equivalent	7,020	7,610	590	8.4%
Pennsylvania	43-5011	Cargo and Freight Agents	1,680	\$20.11	High school diploma or equivalent	3,110	3,540	430	13.8%
Rhode Island	43-5011	Cargo and Freight Agents	110	\$21.14	High school diploma or equivalent	NA	NA	NA	NA
Vermont	43-5011	Cargo and Freight Agents	110	\$20.06	High school diploma or equivalent	60	50	-10	-16.7%
<i>NE Region</i>	<i>43-5011</i>	<i>Cargo and Freight Agents</i>	<i>11,620</i>		<i>High school diploma or equivalent</i>	<i>14,700</i>	<i>16,130</i>	<i>1,430</i>	<i>9.7%</i>
<b>United States</b>	<b>47-2051</b>	<b>Cement masons and concrete finishers</b>	<b>152,570</b>	<b>\$19.70</b>	<b>Less than high school</b>	<b>140,800</b>	<b>181,800</b>	<b>41,000</b>	<b>29.1%</b>
Connecticut	47-2051	Cement masons and concrete finishers	870	\$23.64	Less than high school	610	710	100	16.4%
Delaware	47-2051	Cement masons and concrete finishers	410	\$20.80	Less than high school	410	520	110	26.8%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
District of Columbia	47-2051	Cement masons and concrete finishers	560	\$22.59	Less than high school	670	710	40	6.0%
Maine	47-2051	Cement masons and concrete finishers	470	\$15.94	Less than high school	450	460	10	2.2%
Maryland	47-2051	Cement masons and concrete finishers	2,270	\$19.84	Less than high school	2,590	2,830	240	9.3%
Massachusetts	47-2051	Cement masons and concrete finishers	1,260	\$23.80	Less than high school	1,230	1,530	300	24.4%
New Hampshire	47-2051	Cement masons and concrete finishers	190	\$19.00	Less than high school	190	230	40	21.1%
New Jersey	47-2051	Cement masons and concrete finishers	2,100	\$27.17	Less than high school	1,900	2,430	530	27.9%
New York	47-2051	Cement masons and concrete finishers	4,880	\$31.07	Less than high school	4,400	5,280	880	20.0%
Pennsylvania	47-2051	Cement masons and concrete finishers	5,430	\$22.10	Less than high school	5,760	6,780	1,020	17.7%
Rhode Island	47-2051	Cement masons and concrete finishers	290	\$25.05	Less than high school	190	240	50	26.3%
Vermont	47-2051	Cement masons and concrete finishers	190	\$17.60	Less than high school	190	220	30	15.8%
<i>NE Region</i>	<i>47-2051</i>	<i>Cement masons and concrete finishers</i>	<i>18,920</i>	<i>\$0.00</i>	<i>Less than high school</i>	<i>18,590</i>	<i>21,940</i>	<i>3,350</i>	<i>18.0%</i>
<b>United States</b>	<b>47-2061</b>	<b>Construction laborers</b>	<b>852,870</b>	<b>\$17.19</b>	<b>Less than high school</b>	<b>1,071,100</b>	<b>1,331,000</b>	<b>259,900</b>	<b>24.3%</b>
Connecticut	47-2061	Construction laborers	6,250	\$21.00	Less than high school	7,470	8,850	1,380	18.5%
Delaware	47-2061	Construction laborers	2,320	\$15.96	Less than high school	2,520	3,150	630	25.0%
District of Columbia	47-2061	Construction laborers	2,880	\$18.65	Less than high school	2,350	2,590	240	10.2%
Maine	47-2061	Construction laborers	2,940	\$14.35	Less than high school	3,790	3,930	140	3.7%
Maryland	47-2061	Construction laborers	17,700	\$14.96	Less than high school	21,330	23,210	1,880	8.8%
Massachusetts	47-2061	Construction laborers	17,210	\$23.59	Less than high school	20,620	24,920	4,300	20.9%
New Hampshire	47-2061	Construction laborers	2,840	\$15.97	Less than high school	3,300	3,820	520	15.8%
New Jersey	47-2061	Construction laborers	20,350	\$23.24	Less than high school	22,640	26,460	3,820	16.9%
New York	47-2061	Construction laborers	53,450	\$23.04	Less than high school	66,740	75,960	9,220	13.8%
Pennsylvania	47-2061	Construction laborers	33,590	\$17.88	Less than high school	39,220	46,290	7,070	18.0%
Rhode Island	47-2061	Construction laborers	2,250	\$18.62	Less than high school	2,320	2,820	500	21.6%
Vermont	47-2061	Construction laborers	1,410	\$15.59	Less than high school	2,200	2,490	290	13.2%
<i>NE Region</i>	<i>47-2061</i>	<i>Construction laborers</i>	<i>163,190</i>	<i>\$0.00</i>	<i>Less than high school</i>	<i>194,500</i>	<i>224,490</i>	<i>29,990</i>	<i>15.4%</i>
<b>United States</b>	<b>47-2071</b>	<b>Paving, Surfacing, and Tamping Equipment Operators</b>	<b>54,940</b>	<b>\$20.41</b>	<b>High school diploma or equivalent</b>	<b>54,700</b>	<b>65,500</b>	<b>10,800</b>	<b>19.7%</b>
Connecticut	47-2071	Paving, Surfacing, and Tamping Equipment Operators	740	\$19.69	High school diploma or equivalent	470	520	50	10.6%
Delaware	47-2071	Paving, Surfacing, and Tamping Equipment Operators	270	\$22.45	High school diploma or equivalent	330	400	70	21.2%
District of Columbia	47-2071	Paving, Surfacing, and Tamping Equipment Operators	140	\$28.17	High school diploma or equivalent	190	200	10	5.3%
Maine	47-2071	Paving, Surfacing, and Tamping Equipment Operators	300	\$16.77	High school diploma or equivalent	210	210	0	0.0%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Maryland	47-2071	Paving, Surfacing, and Tamping Equipment Operators	800	\$18.77	High school diploma or equivalent	1,460	1,590	130	8.9%
Massachusetts	47-2071	Paving, Surfacing, and Tamping Equipment Operators	1,040	\$25.76	High school diploma or equivalent	1,060	1,340	280	26.4%
New Hampshire	47-2071	Paving, Surfacing, and Tamping Equipment Operators	230	\$18.25	High school diploma or equivalent	220	240	20	9.1%
New Jersey	47-2071	Paving, Surfacing, and Tamping Equipment Operators	1,600	\$26.27	High school diploma or equivalent	1,390	1,530	140	10.1%
New York	47-2071	Paving, Surfacing, and Tamping Equipment Operators	2,460	\$27.00	High school diploma or equivalent	2,420	2,740	320	13.2%
Pennsylvania	47-2071	Paving, Surfacing, and Tamping Equipment Operators	2,360	\$22.33	High school diploma or equivalent	2,700	3,190	490	18.1%
Rhode Island	47-2071	Paving, Surfacing, and Tamping Equipment Operators	**	\$16.39	High school diploma or equivalent	40	40	0	0.0%
Vermont	47-2071	Paving, Surfacing, and Tamping Equipment Operators	100	\$16.75	High school diploma or equivalent	260	290	30	11.5%
<i>NE Region</i>	<i>47-2071</i>	<i>Paving, Surfacing, and Tamping Equipment Operators</i>	<i>10,040</i>		<i>High school diploma or equivalent</i>	<i>10,750</i>	<i>12,290</i>	<i>1,540</i>	<i>14.3%</i>
<b>United States</b>	<b>47-2073</b>	<b>Operating Engineers and Other Construction Equipment Operators</b>	<b>344,510</b>	<b>\$23.09</b>	<b>High school diploma or equivalent</b>	<b>351,200</b>	<b>417,600</b>	<b>66,400</b>	<b>18.9%</b>
Connecticut	47-2073	Operating Engineers and Other Construction Equipment Operators	2,840	\$30.02	High school diploma or equivalent	2,600	3,080	480	18.5%
Delaware	47-2073	Operating Engineers and Other Construction Equipment Operators	1,150	\$19.42	High school diploma or equivalent	1,110	1,260	150	13.5%
District of Columbia	47-2073	Operating Engineers and Other Construction Equipment Operators	470	\$25.82	High school diploma or equivalent	310	320	10	3.2%
Maine	47-2073	Operating Engineers and Other Construction Equipment Operators	1,500	\$18.20	High school diploma or equivalent	1,780	1,780	0	0.0%
Maryland	47-2073	Operating Engineers and Other Construction Equipment Operators	5,110	\$22.32	High school diploma or equivalent	4,950	5,350	400	8.1%
Massachusetts	47-2073	Operating Engineers and Other Construction Equipment Operators	5,550	\$30.90	High school diploma or equivalent	4,960	6,030	1,070	21.6%
New Hampshire	47-2073	Operating Engineers and Other Construction Equipment Operators	940	\$21.29	High school diploma or equivalent	950	1,080	130	13.7%
New Jersey	47-2073	Operating Engineers and Other Construction Equipment Operators	4,940	\$31.07	High school diploma or equivalent	4,620	5,210	590	12.8%
New York	47-2073	Operating Engineers and Other Construction Equipment Operators	12,990	\$34.36	High school diploma or equivalent	14,490	15,870	1,380	9.5%
Pennsylvania	47-2073	Operating Engineers and Other Construction Equipment Operators	19,520	\$22.81	High school diploma or equivalent	22,960	25,700	2,740	11.9%



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Rhode Island	47-2073	Operating Engineers and Other Construction Equipment Operators	880	\$23.68	High school diploma or equivalent	890	1,060	170	19.1%
Vermont	47-2073	Operating Engineers and Other Construction Equipment Operators	1,220	\$18.45	High school diploma or equivalent	1,250	1,430	180	14.4%
<i>NE Region</i>	<i>47-2073</i>	<i>Operating Engineers and Other Construction Equipment Operators</i>	<i>57,110</i>		<i>High school diploma or equivalent</i>	<i>60,870</i>	<i>68,170</i>	<i>7,300</i>	<i>12.0%</i>
<b>United States</b>	<b>47-2111</b>	<b>Electricians</b>	<b>566,930</b>	<b>\$26.21</b>	<b>High school diploma or equivalent</b>	<b>583,500</b>	<b>698,200</b>	<b>114,700</b>	<b>19.7%</b>
Connecticut	47-2111	Electricians	6,080	\$27.20	High school diploma or equivalent	6,000	7,280	1,280	21.3%
Delaware	47-2111	Electricians	2,080	\$25.46	High school diploma or equivalent	1,730	2,050	320	18.5%
District of Columbia	47-2111	Electricians	940	\$30.44	High school diploma or equivalent	1,510	1,590	80	5.3%
Maine	47-2111	Electricians	2,200	\$22.61	High school diploma or equivalent	3,710	3,710	0	0.0%
Maryland	47-2111	Electricians	11,970	\$26.73	High school diploma or equivalent	13,080	13,890	810	6.2%
Massachusetts	47-2111	Electricians	14,310	\$30.22	High school diploma or equivalent	13,660	16,620	2,960	21.7%
New Hampshire	47-2111	Electricians	2,170	\$23.10	High school diploma or equivalent	2,380	2,780	400	16.8%
New Jersey	47-2111	Electricians	12,530	\$32.49	High school diploma or equivalent	11,800	14,160	2,360	20.0%
New York	47-2111	Electricians	36,810	\$33.57	High school diploma or equivalent	36,960	43,240	6,280	17.0%
Pennsylvania	47-2111	Electricians	22,110	\$27.46	High school diploma or equivalent	21,910	24,610	2,700	12.3%
Rhode Island	47-2111	Electricians	2,010	\$24.32	High school diploma or equivalent	1,920	2,360	440	22.9%
Vermont	47-2111	Electricians	1,110	\$21.63	High school diploma or equivalent	1,150	1,280	130	11.3%
<i>NE Region</i>	<i>47-2111</i>	<i>Electricians</i>	<i>114,320</i>		<i>High school diploma or equivalent</i>	<i>115,810</i>	<i>133,570</i>	<i>17,760</i>	<i>15.3%</i>
<b>United States</b>	<b>47-2152</b>	<b>Plumbers, Pipefitters, and Steamfitters</b>	<b>372,570</b>	<b>\$26.26</b>	<b>High school diploma or equivalent</b>	<b>386,900</b>	<b>469,200</b>	<b>82,300</b>	<b>21.3%</b>
Connecticut	47-2152	Plumbers, Pipefitters, and Steamfitters	4,000	\$28.74	High school diploma or equivalent	3,900	4,910	1,010	25.9%
District of Columbia	47-2152	Plumbers, Pipefitters, and Steamfitters	560	\$29.23	High school diploma or equivalent	1,270	1,340	70	5.5%
Maine	47-2152	Plumbers, Pipefitters, and Steamfitters	1,730	\$22.88	High school diploma or equivalent	2,040	2,020	-20	-1.0%
Maryland	47-2152	Plumbers, Pipefitters, and Steamfitters	11,170	\$26.82	High school diploma or equivalent	12,300	12,800	500	4.1%
Massachusetts	47-2152	Plumbers, Pipefitters, and Steamfitters	9,650	\$34.26	High school diploma or equivalent	9,160	11,270	2,110	23.0%
New Hampshire	47-2152	Plumbers, Pipefitters, and Steamfitters	1,630	\$24.71	High school diploma or equivalent	1,700	1,990	290	17.1%
New Jersey	47-2152	Plumbers, Pipefitters, and Steamfitters	8,400	\$31.14	High school diploma or equivalent	8,890	10,930	2,040	22.9%
New York	47-2152	Plumbers, Pipefitters, and Steamfitters	24,980	\$34.19	High school diploma or equivalent	22,930	27,130	4,200	18.3%
Pennsylvania	47-2152	Plumbers, Pipefitters, and Steamfitters	15,280	\$26.47	High school diploma or equivalent	17,840	20,430	2,590	14.5%
Rhode Island	47-2152	Plumbers, Pipefitters, and Steamfitters	1,180	\$25.92	High school diploma or equivalent	1,990	2,470	480	24.1%
Vermont	47-2152	Plumbers, Pipefitters, and Steamfitters	880	\$22.50	High school diploma or equivalent	1,140	1,300	160	14.0%
<i>NE Region</i>	<i>47-2152</i>	<i>Plumbers, Pipefitters, and Steamfitters</i>	<i>80,400</i>		<i>High school diploma or equivalent</i>	<i>83,160</i>	<i>96,590</i>	<i>13,430</i>	<i>16.1%</i>
<b>United States</b>	<b>47-4051</b>	<b>Highway Maintenance Workers</b>	<b>140,650</b>	<b>\$18.22</b>	<b>High school diploma or equivalent</b>	<b>147,600</b>	<b>155,900</b>	<b>8,300</b>	<b>5.6%</b>
Connecticut	47-4051	Highway Maintenance Workers	2,730	\$23.48	High school diploma or equivalent	2,460	2,570	110	4.5%
Delaware	47-4051	Highway Maintenance Workers	80	\$17.93	High school diploma or equivalent	60	70	10	16.7%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Maine	47-4051	Highway Maintenance Workers	1,890	\$15.96	High school diploma or equivalent	2,020	1,960	-60	-3.0%
Maryland	47-4051	Highway Maintenance Workers	850	\$17.69	High school diploma or equivalent	720	760	40	5.6%
Massachusetts	47-4051	Highway Maintenance Workers	2,150	\$22.50	High school diploma or equivalent	2,310	2,520	210	9.1%
New Hampshire	47-4051	Highway Maintenance Workers	1,750	\$16.19	High school diploma or equivalent	1,840	1,950	110	6.0%
New Jersey	47-4051	Highway Maintenance Workers	1,860	\$24.91	High school diploma or equivalent	1,780	1,750	-30	-1.7%
New York	47-4051	Highway Maintenance Workers	14,230	\$20.10	High school diploma or equivalent	17,190	17,380	190	1.1%
Pennsylvania	47-4051	Highway Maintenance Workers	11,180	\$18.47	High school diploma or equivalent	11,430	11,800	370	3.2%
Rhode Island	47-4051	Highway Maintenance Workers	710	\$20.03	High school diploma or equivalent	690	670	-20	-2.9%
Vermont	47-4051	Highway Maintenance Workers	1,250	\$18.04	High school diploma or equivalent	1,410	1,590	180	12.8%
<i>NE Region</i>	<i>47-4051</i>	<i>Highway Maintenance Workers</i>	<i>38,680</i>		<i>High school diploma or equivalent</i>	<i>41,910</i>	<i>43,020</i>	<i>1,110</i>	<i>2.6%</i>
<b>United States</b>	<b>47-4061</b>	<b>Rail-Track Laying and Maintenance Equipment Operators</b>	<b>14,820</b>	<b>\$24.39</b>	<b>High school diploma or equivalent</b>	<b>17,300</b>	<b>18,200</b>	<b>900</b>	<b>5.2%</b>
Connecticut	47-4061	Rail-Track Laying and Maintenance Equipment Operators	NA	NA	High school diploma or equivalent	320	350	30	9.4%
Delaware	47-4061	Rail-Track Laying and Maintenance Equipment Operators	50	\$27.67	High school diploma or equivalent	90	100	10	11.1%
Maine	47-4061	Rail-Track Laying and Maintenance Equipment Operators	150	\$20.66	High school diploma or equivalent	80	80	0	0.0%
Maryland	47-4061	Rail-Track Laying and Maintenance Equipment Operators	500	\$25.38	High school diploma or equivalent	380	400	20	5.3%
Massachusetts	47-4061	Rail-Track Laying and Maintenance Equipment Operators	490	\$32.21	High school diploma or equivalent	330	360	30	9.1%
New Hampshire	47-4061	Rail-Track Laying and Maintenance Equipment Operators	40	\$20.26	High school diploma or equivalent	90	90	0	0.0%
New Jersey	47-4061	Rail-Track Laying and Maintenance Equipment Operators	**	\$26.09	High school diploma or equivalent	600	640	40	6.7%
New York	47-4061	Rail-Track Laying and Maintenance Equipment Operators	2,240	\$27.62	High school diploma or equivalent	3,090	3,340	250	8.1%
Pennsylvania	47-4061	Rail-Track Laying and Maintenance Equipment Operators	440	\$23.33	High school diploma or equivalent	NA	NA	NA	NA
Vermont	47-4061	Rail-Track Laying and Maintenance Equipment Operators	NA	NA	High school diploma or equivalent	20	20	0	0.0%
<i>NE Region</i>	<i>47-4061</i>	<i>Rail-Track Laying and Maintenance Equipment Operators</i>	<i>3,910</i>		<i>High school diploma or equivalent</i>	<i>5,000</i>	<i>5,380</i>	<i>380</i>	<i>7.6%</i>
<b>United States</b>	<b>49-2093</b>	<b>Electrical and Electronics Installers and Repairers, Transportation Equipment</b>	<b>14,160</b>	<b>\$26.65</b>	<b>Postsecondary non-degree award</b>	<b>15,900</b>	<b>16,200</b>	<b>300</b>	<b>1.9%</b>
Connecticut	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	60	*	Postsecondary non-degree award	100	100	0	0.0%
Maine	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	140	\$20.01	Postsecondary non-degree award	120	110	-10	-8.3%

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State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Maryland	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	250	\$29.04	Postsecondary non-degree award	80	70	-10	-12.5%
Massachusetts	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	90	\$25.82	Postsecondary non-degree award	110	120	10	9.1%
New Hampshire	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	40	\$25.37	Postsecondary non-degree award	0	0	0	0.0%
New Jersey	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	**	\$24.81	Postsecondary non-degree award	110	110	0	0.0%
New York	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	900	\$30.62	Postsecondary non-degree award	1,040	1,090	50	4.8%
Pennsylvania	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	180	\$27.47	Postsecondary non-degree award	0	0	0	0.0%
<i>NE Region</i>	<i>49-2093</i>	<i>Electrical and Electronics Installers and Repairers, Transportation Equipment</i>	<i>1,660</i>		<i>Postsecondary non-degree award</i>	<i>1,560</i>	<i>1,600</i>	<i>40</i>	<i>2.6%</i>
<b>United States</b>	<b>49-3031</b>	<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	<b>243,080</b>	<b>\$21.71</b>	<b>High school diploma or equivalent</b>	<b>250,800</b>	<b>272,500</b>	<b>21,700</b>	<b>8.7%</b>
Connecticut	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	2,230	\$26.14	High school diploma or equivalent	2,460	2,650	190	7.7%
Delaware	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	480	\$23.37	High school diploma or equivalent	430	460	30	7.0%
District of Columbia	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	120	\$23.36	High school diploma or equivalent	60	70	10	16.7%
Maine	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	1,760	\$19.21	High school diploma or equivalent	1,780	1,760	-20	-1.1%
Maryland	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	4,050	\$23.74	High school diploma or equivalent	3,420	3,530	110	3.2%
Massachusetts	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	3,210	\$24.41	High school diploma or equivalent	3,310	3,560	250	7.6%
New Hampshire	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	810	\$21.79	High school diploma or equivalent	850	930	80	9.4%
New Jersey	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	6,860	\$25.45	High school diploma or equivalent	7,330	7,720	390	5.3%
New York	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	12,360	\$25.14	High school diploma or equivalent	12,050	12,980	930	7.7%
Pennsylvania	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	11,950	\$20.56	High school diploma or equivalent	10,930	12,010	1,080	9.9%
Rhode Island	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	360	\$22.77	High school diploma or equivalent	540	590	50	9.3%
Vermont	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	600	\$21.07	High school diploma or equivalent	620	710	90	14.5%

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<i>NE Region</i>	49-3031	<i>Bus and Truck Mechanics and Diesel Engine Specialists</i>	44,790		<i>High school diploma or equivalent</i>	43,780	46,970	3,190	7.3%
<b>United States</b>	<b>49-3043</b>	<b>Rail Car Repairers</b>	<b>20,080</b>	<b>\$25.27</b>	<b>High school diploma or equivalent</b>	<b>21,200</b>	<b>21,700</b>	<b>500</b>	<b>2.4%</b>
Connecticut	49-3043	Rail Car Repairers	NA	NA	High school diploma or equivalent	40	30	-10	-25.0%
Maine	49-3043	Rail Car Repairers	**	\$23.70	High school diploma or equivalent	50	40	-10	-20.0%
Maryland	49-3043	Rail Car Repairers	650	\$27.10	High school diploma or equivalent	240	260	20	8.3%
Massachusetts	49-3043	Rail Car Repairers	100	\$25.61	High school diploma or equivalent	NA	NA	NA	NA
New Jersey	49-3043	Rail Car Repairers	410	\$24.24	High school diploma or equivalent	270	280	10	3.7%
New York	49-3043	Rail Car Repairers	1,530	\$27.98	High school diploma or equivalent	1,490	1,510	20	1.3%
Pennsylvania	49-3043	Rail Car Repairers	670	\$25.36	High school diploma or equivalent	1,020	1,050	30	2.9%
<i>NE Region</i>	49-3043	<i>Rail Car Repairers</i>	3,360		<i>High school diploma or equivalent</i>	3,110	3,170	60	1.9%
<b>United States</b>	<b>49-3051</b>	<b>Motorboat Mechanics and Service Technicians</b>	<b>20,210</b>	<b>\$18.56</b>	<b>High school diploma or equivalent</b>	<b>20,800</b>	<b>22,000</b>	<b>1,200</b>	<b>5.8%</b>
Connecticut	49-3051	Motorboat Mechanics and Service Technicians	440	\$24.46	High school diploma or equivalent	450	470	20	4.4%
Maine	49-3051	Motorboat Mechanics and Service Technicians	350	\$18.00	High school diploma or equivalent	640	640	0	0.0%
Maryland	49-3051	Motorboat Mechanics and Service Technicians	940	\$22.42	High school diploma or equivalent	990	1,030	40	4.0%
Massachusetts	49-3051	Motorboat Mechanics and Service Technicians	770	\$21.37	High school diploma or equivalent	480	530	50	10.4%
New Hampshire	49-3051	Motorboat Mechanics and Service Technicians	170	\$18.20	High school diploma or equivalent	250	270	20	8.0%
New Jersey	49-3051	Motorboat Mechanics and Service Technicians	400	\$22.97	High school diploma or equivalent	240	250	10	4.2%
New York	49-3051	Motorboat Mechanics and Service Technicians	900	\$18.36	High school diploma or equivalent	1,170	1,230	60	5.1%
Pennsylvania	49-3051	Motorboat Mechanics and Service Technicians	230	\$17.11	High school diploma or equivalent	270	290	20	7.4%
Rhode Island	49-3051	Motorboat Mechanics and Service Technicians	**	\$20.89	High school diploma or equivalent	360	400	40	11.1%
Vermont	49-3051	Motorboat Mechanics and Service Technicians	60	\$18.73	High school diploma or equivalent	130	130	0	0.0%
<i>NE Region</i>	49-3051	<i>Motorboat Mechanics and Service Technicians</i>	4,260		<i>High school diploma or equivalent</i>	4,980	5,240	260	5.2%
<b>United States</b>	<b>49-3052</b>	<b>Motorcycle Mechanics</b>	<b>15,420</b>	<b>\$17.21</b>	<b>High school diploma or equivalent</b>	<b>16,800</b>	<b>17,800</b>	<b>1,000</b>	<b>6.0%</b>
Connecticut	49-3052	Motorcycle Mechanics	90	\$17.54	High school diploma or equivalent	120	110	-10	-8.3%
Delaware	49-3052	Motorcycle Mechanics	NA	NA	High school diploma or equivalent	50	60	10	20.0%
Maine	49-3052	Motorcycle Mechanics	120	\$15.40	High school diploma or equivalent	70	80	10	14.3%
Maryland	49-3052	Motorcycle Mechanics	160	\$20.31	High school diploma or equivalent	210	220	10	4.8%
Massachusetts	49-3052	Motorcycle Mechanics	140	\$18.50	High school diploma or equivalent	150	150	0	0.0%
New Hampshire	49-3052	Motorcycle Mechanics	200	\$17.96	High school diploma or equivalent	160	170	10	6.3%
New Jersey	49-3052	Motorcycle Mechanics	330	\$19.29	High school diploma or equivalent	180	190	10	5.6%
New York	49-3052	Motorcycle Mechanics	740	\$17.81	High school diploma or equivalent	680	720	40	5.9%
Pennsylvania	49-3052	Motorcycle Mechanics	900	\$16.08	High school diploma or equivalent	690	730	40	5.8%
Rhode Island	49-3052	Motorcycle Mechanics	40	\$19.13	High school diploma or equivalent	NA	NA	NA	NA
Vermont	49-3052	Motorcycle Mechanics	60	\$16.14	High school diploma or equivalent	80	80	0	0.0%
<i>NE Region</i>	49-3052	<i>Motorcycle Mechanics</i>	2,780		<i>High school diploma or equivalent</i>	2,390	2,510	120	5.0%
<b>United States</b>	<b>49-3091</b>	<b>Bicycle Repairers</b>	<b>10,520</b>	<b>\$12.96</b>	<b>High school diploma or equivalent</b>	<b>10,600</b>	<b>13,300</b>	<b>2,700</b>	<b>25.5%</b>
Connecticut	49-3091	Bicycle Repairers	200	\$13.01	High school diploma or equivalent	70	100	30	42.9%

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Delaware	49-3091	Bicycle Repairers	NA	NA	High school diploma or equivalent	10	10	0	0.0%
District of Columbia	49-3091	Bicycle Repairers	120	\$13.22	High school diploma or equivalent	NA	NA	NA	NA
Maryland	49-3091	Bicycle Repairers	60	\$12.02	High school diploma or equivalent	70	70	0	0.0%
Massachusetts	49-3091	Bicycle Repairers	**	\$14.79	High school diploma or equivalent	310	370	60	19.4%
New Hampshire	49-3091	Bicycle Repairers	130	\$13.08	High school diploma or equivalent	90	110	20	22.2%
New Jersey	49-3091	Bicycle Repairers	**	\$14.75	High school diploma or equivalent	290	340	50	17.2%
New York	49-3091	Bicycle Repairers	530	\$14.52	High school diploma or equivalent	450	540	90	20.0%
Pennsylvania	49-3091	Bicycle Repairers	410	\$12.16	High school diploma or equivalent	580	650	70	12.1%
Vermont	49-3091	Bicycle Repairers	80	\$13.34	High school diploma or equivalent	120	150	30	25.0%
<i>NE Region</i>	<i>49-3091</i>	<i>Bicycle Repairers</i>	<i>1,530</i>		<i>High school diploma or equivalent</i>	<i>1,990</i>	<i>2,340</i>	<i>350</i>	<i>17.6%</i>
<b>United States</b>	<b>49-3092</b>	<b>Recreational Vehicle Service Technicians</b>	<b>10,990</b>	<b>\$17.80</b>	<b>High school diploma or equivalent</b>	<b>11,100</b>	<b>12,100</b>	<b>1,000</b>	<b>9.0%</b>
Connecticut	49-3092	Recreational Vehicle Service Technicians	80	\$19.11	High school diploma or equivalent	140	140	0	0.0%
Delaware	49-3092	Recreational Vehicle Service Technicians	40	\$16.35	High school diploma or equivalent	NA	NA	NA	NA
Maine	49-3092	Recreational Vehicle Service Technicians	80	\$15.94	High school diploma or equivalent	50	60	10	20.0%
Maryland	49-3092	Recreational Vehicle Service Technicians	100	\$16.24	High school diploma or equivalent	160	170	10	6.3%
New Hampshire	49-3092	Recreational Vehicle Service Technicians	100	\$16.97	High school diploma or equivalent	100	110	10	10.0%
New Jersey	49-3092	Recreational Vehicle Service Technicians	160	\$21.01	High school diploma or equivalent	270	290	20	7.4%
New York	49-3092	Recreational Vehicle Service Technicians	240	\$15.35	High school diploma or equivalent	400	450	50	12.5%
Pennsylvania	49-3092	Recreational Vehicle Service Technicians	310	\$16.88	High school diploma or equivalent	360	390	30	8.3%
<i>NE Region</i>	<i>49-3092</i>	<i>Recreational Vehicle Service Technicians</i>	<i>1,110</i>		<i>High school diploma or equivalent</i>	<i>1,480</i>	<i>1,610</i>	<i>130</i>	<i>8.8%</i>
<b>United States</b>	<b>49-3093</b>	<b>Tire Repairers and Changers</b>	<b>100,510</b>	<b>\$12.31</b>	<b>High school diploma or equivalent</b>	<b>98,400</b>	<b>107,000</b>	<b>8,600</b>	<b>8.7%</b>
Connecticut	49-3093	Tire Repairers and Changers	770	\$13.14	High school diploma or equivalent	570	600	30	5.3%
Delaware	49-3093	Tire Repairers and Changers	**	\$12.77	High school diploma or equivalent	100	110	10	10.0%
District of Columbia	49-3093	Tire Repairers and Changers	30	\$12.80	High school diploma or equivalent	40	40	0	0.0%
Maine	49-3093	Tire Repairers and Changers	400	\$12.20	High school diploma or equivalent	400	400	0	0.0%
Maryland	49-3093	Tire Repairers and Changers	1,490	\$11.61	High school diploma or equivalent	1,880	1,940	60	3.2%
Massachusetts	49-3093	Tire Repairers and Changers	1,320	\$12.36	High school diploma or equivalent	1,250	1,410	160	12.8%
New Hampshire	49-3093	Tire Repairers and Changers	600	\$11.12	High school diploma or equivalent	580	630	50	8.6%
New Jersey	49-3093	Tire Repairers and Changers	2,600	\$12.63	High school diploma or equivalent	1,830	2,010	180	9.8%
New York	49-3093	Tire Repairers and Changers	2,320	\$14.37	High school diploma or equivalent	3,060	3,370	310	10.1%
Pennsylvania	49-3093	Tire Repairers and Changers	2,590	\$11.78	High school diploma or equivalent	3,040	3,180	140	4.6%
Vermont	49-3093	Tire Repairers and Changers	**	\$14.55	High school diploma or equivalent	100	110	10	10.0%
<i>NE Region</i>	<i>49-3093</i>	<i>Tire Repairers and Changers</i>	<i>12,120</i>		<i>High school diploma or equivalent</i>	<i>12,850</i>	<i>13,800</i>	<i>950</i>	<i>7.4%</i>
<b>United States</b>	<b>49-9092</b>	<b>Commercial Divers</b>	<b>3,620</b>	<b>\$24.55</b>	<b>Postsecondary non-degree award</b>	<b>3,600</b>	<b>4,700</b>	<b>1,100</b>	<b>30.6%</b>
Connecticut	49-9092	Commercial Divers	NA	NA	Postsecondary non-degree award	90	110	20	22.2%



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New Hampshire	49-9092	Commercial Divers	30	*	Postsecondary non-degree award	NA	NA	NA	NA
New Jersey	49-9092	Commercial Divers	160	\$35.77	Postsecondary non-degree award	140	170	30	21.4%
New York	49-9092	Commercial Divers	70	*	Postsecondary non-degree award	NA	NA	NA	NA
<i>NE Region</i>	<i>49-9092</i>	<i>Commercial Divers</i>	<i>260</i>		<i>Postsecondary non-degree award</i>	<i>230</i>	<i>280</i>	<i>50</i>	<i>21.7%</i>
<b>United States</b>	<b>49-9097</b>	<b>Signal and Track Switch Repairers</b>	<b>7,880</b>	<b>\$28.81</b>	<b>High school diploma or equivalent</b>	<b>8,800</b>	<b>8,700</b>	<b>-100</b>	<b>-1.1%</b>
Connecticut	49-9097	Signal and Track Switch Repairers	NA	NA	High school diploma or equivalent	150	160	10	6.7%
Maine	49-9097	Signal and Track Switch Repairers	NA	NA	High school diploma or equivalent	10	10	0	0.0%
Maryland	49-9097	Signal and Track Switch Repairers	NA	NA	High school diploma or equivalent	30	30	0	0.0%
Massachusetts	49-9097	Signal and Track Switch Repairers	60	\$26.82	High school diploma or equivalent	100	110	10	10.0%
New Jersey	49-9097	Signal and Track Switch Repairers	NA	NA	High school diploma or equivalent	270	270	0	0.0%
Pennsylvania	49-9097	Signal and Track Switch Repairers	120	\$25.17	High school diploma or equivalent	340	350	10	2.9%
<i>NE Region</i>	<i>49-9097</i>	<i>Signal and Track Switch Repairers</i>	<i>180</i>		<i>High school diploma or equivalent</i>	<i>900</i>	<i>930</i>	<i>30</i>	<i>3.3%</i>
<b>United States</b>	<b>51-4121</b>	<b>Welders, Cutters, Solderers, and Brazers</b>	<b>369,610</b>	<b>\$19.25</b>	<b>High school diploma or equivalent</b>	<b>357,400</b>	<b>378,200</b>	<b>20,800</b>	<b>5.8%</b>
Connecticut	51-4121	Welders, Cutters, Solderers, and Brazers	1,930	\$20.82	High school diploma or equivalent	2,210	2,290	80	3.6%
Delaware	51-4121	Welders, Cutters, Solderers, and Brazers	490	\$22.99	High school diploma or equivalent	490	550	60	12.2%
District of Columbia	51-4121	Welders, Cutters, Solderers, and Brazers	60	\$27.59	High school diploma or equivalent	150	150	0	0.0%
Maine	51-4121	Welders, Cutters, Solderers, and Brazers	1,810	\$22.16	High school diploma or equivalent	2,000	1,890	-110	-5.5%
Maryland	51-4121	Welders, Cutters, Solderers, and Brazers	2,500	\$22.18	High school diploma or equivalent	2,580	2,630	50	1.9%
Massachusetts	51-4121	Welders, Cutters, Solderers, and Brazers	3,190	\$22.00	High school diploma or equivalent	2,990	2,950	-40	-1.3%
New Hampshire	51-4121	Welders, Cutters, Solderers, and Brazers	1,070	\$20.19	High school diploma or equivalent	970	1,020	50	5.2%
New Jersey	51-4121	Welders, Cutters, Solderers, and Brazers	3,600	\$21.97	High school diploma or equivalent	3,080	3,320	240	7.8%
New York	51-4121	Welders, Cutters, Solderers, and Brazers	8,440	\$19.98	High school diploma or equivalent	8,090	8,570	480	5.9%
Pennsylvania	51-4121	Welders, Cutters, Solderers, and Brazers	17,400	\$18.93	High school diploma or equivalent	15,910	16,780	870	5.5%
Rhode Island	51-4121	Welders, Cutters, Solderers, and Brazers	1,210	\$20.46	High school diploma or equivalent	800	1,070	270	33.8%
Vermont	51-4121	Welders, Cutters, Solderers, and Brazers	390	\$17.25	High school diploma or equivalent	390	400	10	2.6%
<i>NE Region</i>	<i>51-4121</i>	<i>Welders, Cutters, Solderers, and Brazers</i>	<i>42,090</i>		<i>High school diploma or equivalent</i>	<i>39,660</i>	<i>41,620</i>	<i>1,960</i>	<i>4.9%</i>
<b>United States</b>	<b>51-8092</b>	<b>Gas Plant Operators</b>	<b>16,320</b>	<b>\$30.48</b>	<b>High school diploma or equivalent</b>	<b>12,500</b>	<b>11,400</b>	<b>-1,100</b>	<b>-8.8%</b>
Massachusetts	51-8092	Gas Plant Operators	350	\$33.67	High school diploma or equivalent	260	260	0	0.0%
New Hampshire	51-8092	Gas Plant Operators	NA	NA	High school diploma or equivalent	30	30	0	0.0%
New Jersey	51-8092	Gas Plant Operators	190	\$33.83	High school diploma or equivalent	50	50	0	0.0%
New York	51-8092	Gas Plant Operators	350	\$33.83	High school diploma or equivalent	380	350	-30	-7.9%
Pennsylvania	51-8092	Gas Plant Operators	1,240	\$24.29	High school diploma or equivalent	1,210	1,360	150	12.4%
<i>NE Region</i>	<i>51-8092</i>	<i>Gas Plant Operators</i>	<i>2,310</i>		<i>High school diploma or equivalent</i>	<i>1,930</i>	<i>2,050</i>	<i>120</i>	<i>6.2%</i>
<b>United States</b>	<b>51-8093</b>	<b>Petroleum Pump System Operators, Refinery Operators, and Gaugers</b>	<b>41,700</b>	<b>\$30.37</b>	<b>High school diploma or equivalent</b>	<b>41,900</b>	<b>39,800</b>	<b>-2,100</b>	<b>-5.0%</b>



**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Maine	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	NA	NA	High school diploma or equivalent	80	70	-10	-12.5%
Maryland	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	140	\$29.09	High school diploma or equivalent	130	130	0	0.0%
New Jersey	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	450	\$28.84	High school diploma or equivalent	500	520	20	4.0%
Pennsylvania	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	1,460	\$30.09	High school diploma or equivalent	1,090	1,060	-30	-2.8%
<i>NE Region</i>	<i>51-8093</i>	<i>Petroleum Pump System Operators, Refinery Operators, and Gaugers</i>	<i>2,320</i>		<i>High school diploma or equivalent</i>	<i>1,800</i>	<i>1,780</i>	<i>-20</i>	<i>-1.1%</i>
<b>United States</b>	<b>51-9197</b>	<b>Tire Builders</b>	<b>17,680</b>	<b>\$20.17</b>	<b>High school diploma or equivalent</b>	<b>17,400</b>	<b>15,800</b>	<b>-1,600</b>	<b>-9.2%</b>
Maine	51-9197	Tire Builders	100	\$13.34	High school diploma or equivalent	NA	NA	NA	NA
New Jersey	51-9197	Tire Builders	**	\$11.05	High school diploma or equivalent	180	130	-50	-27.8%
New York	51-9197	Tire Builders	390	*	High school diploma or equivalent	320	320	0	0.0%
Pennsylvania	51-9197	Tire Builders	440	\$14.76	High school diploma or equivalent	370	370	0	0.0%
<i>NE Region</i>	<i>51-9197</i>	<i>Tire Builders</i>	<i>930</i>		<i>High school diploma or equivalent</i>	<i>870</i>	<i>820</i>	<i>-50</i>	<i>-5.7%</i>
<b>United States</b>	<b>53-1021</b>	<b>First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand</b>	<b>171,720</b>	<b>\$23.55</b>	<b>High school diploma or equivalent</b>	<b>171,600</b>	<b>186,300</b>	<b>14,700</b>	<b>8.6%</b>
Connecticut	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	2,130	\$25.86	High school diploma or equivalent	2,110	2,230	120	5.7%
District of Columbia	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	190	\$25.94	High school diploma or equivalent	270	310	40	14.8%
Maine	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	540	\$24.59	High school diploma or equivalent	450	460	10	2.2%
Maryland	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	3,280	\$23.75	High school diploma or equivalent	3,230	3,490	260	8.0%
Massachusetts	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	3,250	\$23.28	High school diploma or equivalent	2,980	3,280	300	10.1%
New Hampshire	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	460	\$23.11	High school diploma or equivalent	470	520	50	10.6%
New Jersey	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	6,770	\$25.50	High school diploma or equivalent	7,520	8,290	770	10.2%
New York	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	6,900	\$25.72	High school diploma or equivalent	6,610	7,140	530	8.0%
Vermont	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	410	*	High school diploma or equivalent	260	280	20	7.7%
<i>NE Region</i>	<i>53-1021</i>	<i>First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand</i>	<i>31,900</i>		<i>High school diploma or equivalent</i>	<i>23,900</i>	<i>26,000</i>	<i>2,100</i>	<i>8.8%</i>
<b>United States</b>	<b>53-1031</b>	<b>First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators</b>	<b>197,000</b>	<b>\$27.66</b>	<b>High school diploma or equivalent</b>	<b>201,000</b>	<b>218,300</b>	<b>17,300</b>	<b>8.6%</b>

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Connecticut	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	1,980	\$30.49	High school diploma or equivalent	2,070	2,250	180	8.7%
Delaware	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	710	\$28.23	High school diploma or equivalent	590	640	50	8.5%
District of Columbia	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	360	\$34.61	High school diploma or equivalent	630	690	60	9.5%
Maine	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	910	\$23.71	High school diploma or equivalent	900	910	10	1.1%
Maryland	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	3,730	\$28.45	High school diploma or equivalent	3,600	3,850	250	6.9%
Massachusetts	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	3,410	\$28.37	High school diploma or equivalent	3,550	3,850	300	8.5%
New Hampshire	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	700	\$27.62	High school diploma or equivalent	720	790	70	9.7%
New Jersey	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	7,040	\$27.85	High school diploma or equivalent	7,190	7,790	600	8.3%
New York	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	11,700	\$31.11	High school diploma or equivalent	12,250	13,030	780	6.4%
Pennsylvania	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	8,030	\$28.87	High school diploma or equivalent	7,670	8,360	690	9.0%
Rhode Island	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	490	\$27.82	High school diploma or equivalent	560	610	50	8.9%
Vermont	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	710	\$28.54	High school diploma or equivalent	560	590	30	5.4%
<i>NE Region</i>	<i>53-1031</i>	<i>First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators</i>	<i>39,770</i>		<i>High school diploma or equivalent</i>	<i>40,290</i>	<i>43,360</i>	<i>3,070</i>	<i>7.6%</i>
<b>United States</b>	<b>53-3021</b>	<b>Bus Drivers, Transit and Intercity</b>	<b>158,050</b>	<b>\$18.95</b>	<b>High school diploma or equivalent</b>	<b>170,600</b>	<b>187,400</b>	<b>16,800</b>	<b>9.8%</b>
Connecticut	53-3021	Bus Drivers, Transit and Intercity	1,630	\$19.50	High school diploma or equivalent	1,520	1,720	200	13.2%
Delaware	53-3021	Bus Drivers, Transit and Intercity	410	\$18.50	High school diploma or equivalent	380	400	20	5.3%
District of Columbia	53-3021	Bus Drivers, Transit and Intercity	240	\$15.55	High school diploma or equivalent	820	970	150	18.3%
Maine	53-3021	Bus Drivers, Transit and Intercity	300	\$15.47	High school diploma or equivalent	350	350	0	0.0%
Maryland	53-3021	Bus Drivers, Transit and Intercity	3,760	\$18.70	High school diploma or equivalent	3,270	3,590	320	9.8%
Massachusetts	53-3021	Bus Drivers, Transit and Intercity	4,470	\$23.17	High school diploma or equivalent	2,690	2,890	200	7.4%
New Hampshire	53-3021	Bus Drivers, Transit and Intercity	340	\$18.68	High school diploma or equivalent	140	150	10	7.1%
New Jersey	53-3021	Bus Drivers, Transit and Intercity	**	\$18.52	High school diploma or equivalent	8,640	8,590	-50	-0.6%
New York	53-3021	Bus Drivers, Transit and Intercity	18,900	\$23.90	High school diploma or equivalent	20,550	22,050	1,500	7.3%
Pennsylvania	53-3021	Bus Drivers, Transit and Intercity	5,130	\$17.60	High school diploma or equivalent	6,640	7,050	410	6.2%
Rhode Island	53-3021	Bus Drivers, Transit and Intercity	170	\$15.91	High school diploma or equivalent	260	270	10	3.8%
Vermont	53-3021	Bus Drivers, Transit and Intercity	550	\$19.09	High school diploma or equivalent	680	720	40	5.9%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
<i>NE Region</i>	<i>53-3021</i>	<i>Bus Drivers, Transit and Intercity</i>	<i>35,900</i>		<i>High school diploma or equivalent</i>	<i>45,940</i>	<i>48,750</i>	<i>2,810</i>	<i>6.1%</i>
<b>United States</b>	<b>53-3022</b>	<b>Bus Drivers, School or Special Client</b>	<b>499,440</b>	<b>\$14.38</b>	<b>High school diploma or equivalent</b>	<b>483,600</b>	<b>524,800</b>	<b>41,200</b>	<b>8.5%</b>
Connecticut	53-3022	Bus Drivers, School or Special Client	10,020	\$16.29	High school diploma or equivalent	8,800	9,790	990	11.3%
Delaware	53-3022	Bus Drivers, School or Special Client	2,150	\$15.15	High school diploma or equivalent	2,050	2,220	170	8.3%
District of Columbia	53-3022	Bus Drivers, School or Special Client	1,110	\$18.51	High school diploma or equivalent	740	930	190	25.7%
Maine	53-3022	Bus Drivers, School or Special Client	1,920	\$15.55	High school diploma or equivalent	1,720	1,570	-150	-8.7%
Maryland	53-3022	Bus Drivers, School or Special Client	10,560	\$16.70	High school diploma or equivalent	13,740	15,770	2,030	14.8%
Massachusetts	53-3022	Bus Drivers, School or Special Client	12,560	\$15.48	High school diploma or equivalent	11,530	13,060	1,530	13.3%
New Hampshire	53-3022	Bus Drivers, School or Special Client	2,620	\$14.41	High school diploma or equivalent	2,590	2,820	230	8.9%
New Jersey	53-3022	Bus Drivers, School or Special Client	19,450	\$16.28	High school diploma or equivalent	20,360	21,210	850	4.2%
New York	53-3022	Bus Drivers, School or Special Client	49,680	\$18.23	High school diploma or equivalent	49,920	55,280	5,360	10.7%
Pennsylvania	53-3022	Bus Drivers, School or Special Client	30,180	\$13.86	High school diploma or equivalent	25,800	27,500	1,700	6.6%
Rhode Island	53-3022	Bus Drivers, School or Special Client	1,570	\$17.60	High school diploma or equivalent	1,760	1,950	190	10.8%
Vermont	53-3022	Bus Drivers, School or Special Client	1,470	\$16.46	High school diploma or equivalent	1,250	1,280	30	2.4%
<i>NE Region</i>	<i>53-3022</i>	<i>Bus Drivers, School or Special Client</i>	<i>143,290</i>		<i>High school diploma or equivalent</i>	<i>140,260</i>	<i>153,380</i>	<i>13,120</i>	<i>9.4%</i>
<b>United States</b>	<b>53-3031</b>	<b>Driver/Sales Workers</b>	<b>405,810</b>	<b>\$13.33</b>	<b>High school diploma or equivalent</b>	<b>432,000</b>	<b>468,800</b>	<b>36,800</b>	<b>8.5%</b>
Connecticut	53-3031	Driver/Sales Workers	3,580	\$14.69	High school diploma or equivalent	3,960	4,330	370	9.3%
Delaware	53-3031	Driver/Sales Workers	1,520	\$10.34	High school diploma or equivalent	1,180	1,280	100	8.5%
District of Columbia	53-3031	Driver/Sales Workers	220	\$13.06	High school diploma or equivalent	NA	NA	NA	NA
Maine	53-3031	Driver/Sales Workers	1,700	\$15.67	High school diploma or equivalent	1,450	1,460	10	0.7%
Maryland	53-3031	Driver/Sales Workers	8,920	\$15.30	High school diploma or equivalent	10,030	10,770	740	7.4%
Massachusetts	53-3031	Driver/Sales Workers	7,390	\$15.47	High school diploma or equivalent	8,430	9,510	1,080	12.8%
New Hampshire	53-3031	Driver/Sales Workers	2,310	\$13.19	High school diploma or equivalent	2,630	2,930	300	11.4%
New Jersey	53-3031	Driver/Sales Workers	7,720	\$16.33	High school diploma or equivalent	10,770	12,180	1,410	13.1%
New York	53-3031	Driver/Sales Workers	20,920	\$13.68	High school diploma or equivalent	23,890	26,380	2,490	10.4%
Pennsylvania	53-3031	Driver/Sales Workers	18,060	\$12.63	High school diploma or equivalent	19,390	20,510	1,120	5.8%
Rhode Island	53-3031	Driver/Sales Workers	1,530	*	High school diploma or equivalent	2,140	2,380	240	11.2%
Vermont	53-3031	Driver/Sales Workers	1,010	\$15.41	High school diploma or equivalent	1,660	1,760	100	6.0%
<i>NE Region</i>	<i>53-3031</i>	<i>Driver/Sales Workers</i>	<i>74,880</i>		<i>High school diploma or equivalent</i>	<i>85,530</i>	<i>93,490</i>	<i>7,960</i>	<i>9.3%</i>
<b>United States</b>	<b>53-3032</b>	<b>Heavy and Tractor-Trailer Truck Drivers</b>	<b>1,625,290</b>	<b>\$20.16</b>	<b>Postsecondary non-degree award</b>	<b>1,701,500</b>	<b>1,894,100</b>	<b>192,600</b>	<b>11.3%</b>
Connecticut	53-3032	Heavy and Tractor-Trailer Truck Drivers	12,580	\$22.31	Postsecondary non-degree award	13,030	14,370	1,340	10.3%
Delaware	53-3032	Heavy and Tractor-Trailer Truck Drivers	3,760	\$20.52	Postsecondary non-degree award	3,340	3,740	400	12.0%
District of Columbia	53-3032	Heavy and Tractor-Trailer Truck Drivers	430	\$23.40	Postsecondary non-degree award	750	830	80	10.7%
Maine	53-3032	Heavy and Tractor-Trailer Truck Drivers	9,170	\$18.14	Postsecondary non-degree award	9,580	9,530	-50	-0.5%
Maryland	53-3032	Heavy and Tractor-Trailer Truck Drivers	19,630	\$20.38	Postsecondary non-degree award	21,270	22,170	900	4.2%

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Massachusetts	53-3032	Heavy and Tractor-Trailer Truck Drivers	22,760	\$23.06	Postsecondary non-degree award	22,430	24,800	2,370	10.6%
New Hampshire	53-3032	Heavy and Tractor-Trailer Truck Drivers	6,690	\$19.53	Postsecondary non-degree award	6,580	7,310	730	11.1%
New Jersey	53-3032	Heavy and Tractor-Trailer Truck Drivers	40,950	\$22.66	Postsecondary non-degree award	41,560	47,020	5,460	13.1%
New York	53-3032	Heavy and Tractor-Trailer Truck Drivers	54,190	\$22.41	Postsecondary non-degree award	56,400	61,620	5,220	9.3%
Pennsylvania	53-3032	Heavy and Tractor-Trailer Truck Drivers	72,590	\$20.80	Postsecondary non-degree award	75,960	87,820	11,860	15.6%
Rhode Island	53-3032	Heavy and Tractor-Trailer Truck Drivers	2,770	\$19.77	Postsecondary non-degree award	2,950	3,260	310	10.5%
Vermont	53-3032	Heavy and Tractor-Trailer Truck Drivers	3,880	\$20.21	Postsecondary non-degree award	4,780	4,980	200	4.2%
<i>NE Region</i>	<i>53-3032</i>	<i>Heavy and Tractor-Trailer Truck Drivers</i>	<i>249,400</i>		<i>Postsecondary non-degree award</i>	<i>258,630</i>	<i>287,450</i>	<i>28,820</i>	<i>11.1%</i>
<b>United States</b>	<b>53-3033</b>	<b>Light Truck or Delivery Services Drivers</b>	<b>797,010</b>	<b>\$16.28</b>	<b>High school diploma or equivalent</b>	<b>841,600</b>	<b>873,600</b>	<b>32,000</b>	<b>3.8%</b>
Connecticut	53-3033	Light Truck or Delivery Services Drivers	10,770	\$17.45	High school diploma or equivalent	11,480	11,730	250	2.2%
Delaware	53-3033	Light Truck or Delivery Services Drivers	2,570	\$14.93	High school diploma or equivalent	2,600	2,760	160	6.2%
District of Columbia	53-3033	Light Truck or Delivery Services Drivers	1,050	\$16.83	High school diploma or equivalent	1,250	1,300	50	4.0%
Maine	53-3033	Light Truck or Delivery Services Drivers	3,770	\$15.99	High school diploma or equivalent	4,110	4,150	40	1.0%
Maryland	53-3033	Light Truck or Delivery Services Drivers	18,830	\$17.82	High school diploma or equivalent	17,650	18,260	610	3.5%
Massachusetts	53-3033	Light Truck or Delivery Services Drivers	21,720	\$17.50	High school diploma or equivalent	24,300	25,950	1,650	6.8%
New Hampshire	53-3033	Light Truck or Delivery Services Drivers	4,050	\$15.46	High school diploma or equivalent	4,460	4,800	340	7.6%
New Jersey	53-3033	Light Truck or Delivery Services Drivers	24,980	\$17.53	High school diploma or equivalent	23,070	24,810	1,740	7.5%
New York	53-3033	Light Truck or Delivery Services Drivers	43,620	\$17.53	High school diploma or equivalent	41,450	43,720	2,270	5.5%
Pennsylvania	53-3033	Light Truck or Delivery Services Drivers	35,430	\$16.00	High school diploma or equivalent	40,830	41,880	1,050	2.6%
Rhode Island	53-3033	Light Truck or Delivery Services Drivers	2,810	\$18.71	High school diploma or equivalent	3,060	3,300	240	7.8%
Vermont	53-3033	Light Truck or Delivery Services Drivers	1,660	\$16.63	High school diploma or equivalent	2,050	2,090	40	2.0%
<i>NE Region</i>	<i>53-3033</i>	<i>Light Truck or Delivery Services Drivers</i>	<i>171,260</i>		<i>High school diploma or equivalent</i>	<i>176,310</i>	<i>184,750</i>	<i>8,440</i>	<i>4.8%</i>
<b>United States</b>	<b>53-3041</b>	<b>Taxi Drivers and Chauffeurs</b>	<b>178,260</b>	<b>\$12.35</b>	<b>Less than high school</b>	<b>233,000</b>	<b>269,100</b>	<b>36,100</b>	<b>15.5%</b>
Connecticut	53-3041	Taxi Drivers and Chauffeurs	3,810	\$14.51	Less than high school	4,900	5,840	940	19.2%
Delaware	53-3041	Taxi Drivers and Chauffeurs	470	\$12.95	Less than high school	680	740	60	8.8%
District of Columbia	53-3041	Taxi Drivers and Chauffeurs	380	\$15.99	Less than high school	2,510	2,920	410	16.3%
Maine	53-3041	Taxi Drivers and Chauffeurs	740	\$10.46	Less than high school	1,390	1,440	50	3.6%
Maryland	53-3041	Taxi Drivers and Chauffeurs	5,140	\$12.66	Less than high school	7,560	8,330	770	10.2%
Massachusetts	53-3041	Taxi Drivers and Chauffeurs	7,940	\$13.11	Less than high school	8,950	9,990	1,040	11.6%
New Hampshire	53-3041	Taxi Drivers and Chauffeurs	960	\$12.71	Less than high school	1,290	1,380	90	7.0%
New Jersey	53-3041	Taxi Drivers and Chauffeurs	8,090	\$13.81	Less than high school	10,440	11,300	860	8.2%
New York	53-3041	Taxi Drivers and Chauffeurs	14,290	\$15.22	Less than high school	35,260	40,090	4,830	13.7%
Pennsylvania	53-3041	Taxi Drivers and Chauffeurs	7,940	\$11.69	Less than high school	11,300	12,790	1,490	13.2%
Rhode Island	53-3041	Taxi Drivers and Chauffeurs	600	\$12.88	Less than high school	1,080	1,180	100	9.3%
Vermont	53-3041	Taxi Drivers and Chauffeurs	480	\$11.42	Less than high school	890	920	30	3.4%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
<i>NE Region</i>	<i>53-3041</i>	<i>Taxi Drivers and Chauffeurs</i>	<i>50,840</i>		<i>Less than high school</i>	<i>86,250</i>	<i>96,920</i>	<i>10,670</i>	<i>12.4%</i>
<b>United States</b>	<b>53-3099</b>	<b>Motor Vehicle Operators, All Other</b>	<b>58,210</b>	<b>\$16.02</b>	<b>High school diploma or equivalent</b>	<b>64,100</b>	<b>71,500</b>	<b>7,400</b>	<b>11.5%</b>
Connecticut	53-3099	Motor Vehicle Operators, All Other	330	\$17.81	High school diploma or equivalent	NA	NA	NA	NA
Delaware	53-3099	Motor Vehicle Operators, All Other	**	\$12.72	High school diploma or equivalent	360	400	40	11.1%
District of Columbia	53-3099	Motor Vehicle Operators, All Other	NA	NA	High school diploma or equivalent	1,410	1,380	-30	-2.1%
Maine	53-3099	Motor Vehicle Operators, All Other	320	\$11.33	High school diploma or equivalent	260	270	10	3.8%
Maryland	53-3099	Motor Vehicle Operators, All Other	1,320	\$20.36	High school diploma or equivalent	NA	NA	NA	NA
Massachusetts	53-3099	Motor Vehicle Operators, All Other	520	\$17.19	High school diploma or equivalent	410	450	40	9.8%
New Hampshire	53-3099	Motor Vehicle Operators, All Other	330	\$12.81	High school diploma or equivalent	310	350	40	12.9%
New Jersey	53-3099	Motor Vehicle Operators, All Other	**	\$20.23	High school diploma or equivalent	3,790	3,960	170	4.5%
New York	53-3099	Motor Vehicle Operators, All Other	3,920	\$16.53	High school diploma or equivalent	2,920	3,050	130	4.5%
Pennsylvania	53-3099	Motor Vehicle Operators, All Other	990	\$15.24	High school diploma or equivalent	680	700	20	2.9%
<i>NE Region</i>	<i>53-3099</i>	<i>Motor Vehicle Operators, All Other</i>	<i>7,730</i>		<i>High school diploma or equivalent</i>	<i>10,140</i>	<i>10,560</i>	<i>420</i>	<i>4.1%</i>
<b>United States</b>	<b>53-4011</b>	<b>Locomotive Engineers</b>	<b>38,470</b>	<b>\$27.41</b>	<b>High school diploma or equivalent</b>	<b>38,000</b>	<b>36,500</b>	<b>-1,500</b>	<b>-3.9%</b>
Connecticut	53-4011	Locomotive Engineers	NA	NA	High school diploma or equivalent	620	650	30	4.8%
Delaware	53-4011	Locomotive Engineers	50	\$30.65	High school diploma or equivalent	30	40	10	33.3%
Maine	53-4011	Locomotive Engineers	90	\$27.37	High school diploma or equivalent	50	40	-10	-20.0%
Massachusetts	53-4011	Locomotive Engineers	420	\$28.38	High school diploma or equivalent	880	930	50	5.7%
New Hampshire	53-4011	Locomotive Engineers	70	\$27.44	High school diploma or equivalent	50	50	0	0.0%
New Jersey	53-4011	Locomotive Engineers	**	\$27.32	High school diploma or equivalent	310	330	20	6.5%
New York	53-4011	Locomotive Engineers	1,430	\$29.95	High school diploma or equivalent	1,500	1,500	0	0.0%
Pennsylvania	53-4011	Locomotive Engineers	1,750	\$27.47	High school diploma or equivalent	2,230	2,190	-40	-1.8%
Vermont	53-4011	Locomotive Engineers	30	\$22.61	High school diploma or equivalent	NA	NA	NA	NA
<i>NE Region</i>	<i>53-4011</i>	<i>Locomotive Engineers</i>	<i>3,840</i>		<i>High school diploma or equivalent</i>	<i>5,670</i>	<i>5,730</i>	<i>60</i>	<i>1.1%</i>
<b>United States</b>	<b>53-4012</b>	<b>Locomotive Firers</b>	<b>1,610</b>	<b>\$25.81</b>	<b>High school diploma or equivalent</b>	<b>1,600</b>	<b>900</b>	<b>-700</b>	<b>-43.8%</b>
New York	53-4012	Locomotive Firers	110	*	High school diploma or equivalent	NA	NA	NA	NA
Pennsylvania	53-4012	Locomotive Firers	200	*	High school diploma or equivalent	NA	NA	NA	NA
<i>NE Region</i>	<i>53-4012</i>	<i>Locomotive Firers</i>	<i>310</i>		<i>High school diploma or equivalent</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0.0%</i>
<b>United States</b>	<b>53-4013</b>	<b>Rail Yard Engineers, Dinkey Operators, and Hostlers</b>	<b>3,900</b>	<b>\$21.54</b>	<b>High school diploma or equivalent</b>	<b>5,300</b>	<b>5,400</b>	<b>100</b>	<b>1.9%</b>
Connecticut	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	NA	NA	High school diploma or equivalent	10	0	-10	-100.0%
New Jersey	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	NA	NA	High school diploma or equivalent	270	290	20	7.4%
New York	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	30	\$24.11	High school diploma or equivalent	NA	NA	NA	NA



**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Pennsylvania	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	250	\$21.57	High school diploma or equivalent	480	510	30	6.3%
<i>NE Region</i>	<i>53-4013</i>	<i>Rail Yard Engineers, Dinkey Operators, and Hostlers</i>	280		<i>High school diploma or equivalent</i>	760	800	40	5.3%
<b>United States</b>	<b>53-4021</b>	<b>Railroad Brake, Signal, and Switch Operators</b>	<b>21,060</b>	<b>\$25.14</b>	<b>High school diploma or equivalent</b>	<b>25,000</b>	<b>24,400</b>	<b>-600</b>	<b>-2.4%</b>
Connecticut	53-4021	Railroad Brake, Signal, and Switch Operators	NA	NA	High school diploma or equivalent	50	50	0	0.0%
Massachusetts	53-4021	Railroad Brake, Signal, and Switch Operators	310	\$24.69	High school diploma or equivalent	560	600	40	7.1%
New Jersey	53-4021	Railroad Brake, Signal, and Switch Operators	**	\$29.36	High school diploma or equivalent	180	190	10	5.6%
New York	53-4021	Railroad Brake, Signal, and Switch Operators	580	\$32.85	High school diploma or equivalent	670	710	40	6.0%
Pennsylvania	53-4021	Railroad Brake, Signal, and Switch Operators	1,030	\$23.79	High school diploma or equivalent	1,400	1,370	-30	-2.1%
<i>NE Region</i>	<i>53-4021</i>	<i>Railroad Brake, Signal, and Switch Operators</i>	<i>1,920</i>		<i>High school diploma or equivalent</i>	<i>2,860</i>	<i>2,920</i>	<i>60</i>	<i>2.1%</i>
<b>United States</b>	<b>53-4031</b>	<b>Railroad Conductors and Yardmasters</b>	<b>42,900</b>	<b>\$26.84</b>	<b>High school diploma or equivalent</b>	<b>43,800</b>	<b>42,500</b>	<b>-1,300</b>	<b>-3.0%</b>
Connecticut	53-4031	Railroad Conductors and Yardmasters	NA	NA	High school diploma or equivalent	900	940	40	4.4%
Delaware	53-4031	Railroad Conductors and Yardmasters	NA	NA	High school diploma or equivalent	30	30	0	0.0%
Maine	53-4031	Railroad Conductors and Yardmasters	**	\$25.07	High school diploma or equivalent	50	40	-10	-20.0%
Massachusetts	53-4031	Railroad Conductors and Yardmasters	410	\$26.56	High school diploma or equivalent	690	740	50	7.2%
New Hampshire	53-4031	Railroad Conductors and Yardmasters	40	\$17.95	High school diploma or equivalent	NA	NA	NA	NA
New Jersey	53-4031	Railroad Conductors and Yardmasters	620	\$28.44	High school diploma or equivalent	680	690	10	1.5%
New York	53-4031	Railroad Conductors and Yardmasters	5,650	\$29.46	High school diploma or equivalent	6,130	6,120	-10	-0.2%
Pennsylvania	53-4031	Railroad Conductors and Yardmasters	2,410	\$26.21	High school diploma or equivalent	2,390	2,340	-50	-2.1%
<i>NE Region</i>	<i>53-4031</i>	<i>Railroad Conductors and Yardmasters</i>	<i>9,130</i>		<i>High school diploma or equivalent</i>	<i>10,870</i>	<i>10,900</i>	<i>30</i>	<i>0.3%</i>
<b>United States</b>	<b>53-4099</b>	<b>Rail Transportation Workers, All Other</b>	<b>NA</b>	<b>NA</b>	<b>High school diploma or equivalent</b>	<b>3,100</b>	<b>3,200</b>	<b>100</b>	<b>3.2%</b>
Connecticut	53-4099	Rail Transportation Workers, All Other	NA	NA	High school diploma or equivalent	50	50	0	0.0%
New Hampshire	53-4099	Rail Transportation Workers, All Other	NA	NA	High school diploma or equivalent	90	110	20	22.2%
New Jersey	53-4099	Rail Transportation Workers, All Other	NA	NA	High school diploma or equivalent	100	100	0	0.0%
<i>NE Region</i>	<i>53-4099</i>	<i>Rail Transportation Workers, All Other</i>	<i>NA</i>		<i>High school diploma or equivalent</i>	<i>240</i>	<i>260</i>	<i>20</i>	<i>8.3%</i>
<b>United States</b>	<b>53-5021</b>	<b>Captains, Mates, and Pilots of Water Vessels</b>	<b>30,690</b>	<b>\$38.07</b>	<b>Bachelor's degree</b>	<b>35,400</b>	<b>40,200</b>	<b>4,800</b>	<b>13.6%</b>
Connecticut	53-5021	Captains, Mates, and Pilots of Water Vessels	320	\$32.62	Bachelor's degree	320	330	10	3.1%
Delaware	53-5021	Captains, Mates, and Pilots of Water Vessels	50	\$35.94	Bachelor's degree	40	30	-10	-25.0%
District of Columbia	53-5021	Captains, Mates, and Pilots of Water Vessels	50	*	Bachelor's degree	NA	NA	NA	NA
Maine	53-5021	Captains, Mates, and Pilots of Water Vessels	210	\$27.22	Bachelor's degree	240	250	10	4.2%
Maryland	53-5021	Captains, Mates, and Pilots of Water Vessels	640	\$37.07	Bachelor's degree	870	950	80	9.2%
Massachusetts	53-5021	Captains, Mates, and Pilots of Water Vessels	480	\$27.49	Bachelor's degree	510	540	30	5.9%
New Hampshire	53-5021	Captains, Mates, and Pilots of Water Vessels	80	\$22.90	Bachelor's degree	70	70	0	0.0%
New Jersey	53-5021	Captains, Mates, and Pilots of Water Vessels	420	\$30.76	Bachelor's degree	440	430	-10	-2.3%
New York	53-5021	Captains, Mates, and Pilots of Water Vessels	1,670	\$33.27	Bachelor's degree	1,890	2,030	140	7.4%



**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
Pennsylvania	53-5021	Captains, Mates, and Pilots of Water Vessels	350	\$31.88	Bachelor's degree	530	540	10	1.9%
Rhode Island	53-5021	Captains, Mates, and Pilots of Water Vessels	150	\$24.86	Bachelor's degree	NA	NA	NA	NA
<i>NE Region</i>	<i>53-5021</i>	<i>Captains, Mates, and Pilots of Water Vessels</i>	<i>4,420</i>		<i>Bachelor's degree</i>	<i>4,910</i>	<i>5,170</i>	<i>260</i>	<i>5.3%</i>
<b>United States</b>	<b>53-5022</b>	<b>Motorboat Operators</b>	<b>4,060</b>	<b>\$19.78</b>	<b>High school diploma or equivalent</b>	<b>3,400</b>	<b>3,600</b>	<b>200</b>	<b>5.9%</b>
Maryland	53-5022	Motorboat Operators	70	\$26.49	High school diploma or equivalent	NA	NA	NA	NA
Massachusetts	53-5022	Motorboat Operators	230	\$19.14	High school diploma or equivalent	160	190	30	18.8%
New Hampshire	53-5022	Motorboat Operators	NA	NA	High school diploma or equivalent	40	40	0	0.0%
New Jersey	53-5022	Motorboat Operators	NA	NA	High school diploma or equivalent	30	30	0	0.0%
New York	53-5022	Motorboat Operators	70	\$19.56	High school diploma or equivalent	NA	NA	NA	NA
<i>NE Region</i>	<i>53-5022</i>	<i>Motorboat Operators</i>	<i>370</i>		<i>High school diploma or equivalent</i>	<i>230</i>	<i>260</i>	<i>30</i>	<i>13.0%</i>
<b>United States</b>	<b>53-5031</b>	<b>Ship Engineers</b>	<b>10,060</b>	<b>\$35.87</b>	<b>Bachelor's degree</b>	<b>10,800</b>	<b>11,700</b>	<b>900</b>	<b>8.3%</b>
Maine	53-5031	Ship Engineers	40	\$33.15	Bachelor's degree	30	30	0	0.0%
Massachusetts	53-5031	Ship Engineers	110	\$35.74	Bachelor's degree	180	200	20	11.1%
New Jersey	53-5031	Ship Engineers	60	\$33.15	Bachelor's degree	90	80	-10	-11.1%
New York	53-5031	Ship Engineers	640	\$41.39	Bachelor's degree	890	910	20	2.2%
Rhode Island	53-5031	Ship Engineers	NA	NA	Bachelor's degree	30	30	0	0.0%
<i>NE Region</i>	<i>53-5031</i>	<i>Ship Engineers</i>	<i>850</i>		<i>Bachelor's degree</i>	<i>1,220</i>	<i>1,250</i>	<i>30</i>	<i>2.5%</i>
<b>United States</b>	<b>53-6011</b>	<b>Bridge and Lock Tenders</b>	<b>3,280</b>	<b>\$22.22</b>	<b>High school diploma or equivalent</b>	<b>3,600</b>	<b>3,600</b>	<b>0</b>	<b>0.0%</b>
New Jersey	53-6011	Bridge and Lock Tenders	270	\$24.12	High school diploma or equivalent	190	190	0	0.0%
New York	53-6011	Bridge and Lock Tenders	320	\$19.97	High school diploma or equivalent	0	0	0	0.0%
Pennsylvania	53-6011	Bridge and Lock Tenders	120	\$24.48	High school diploma or equivalent	140	130	-10	-7.1%
<i>NE Region</i>	<i>53-6011</i>	<i>Bridge and Lock Tenders</i>	<i>710</i>		<i>High school diploma or equivalent</i>	<i>330</i>	<i>320</i>	<i>-10</i>	<i>-3.0%</i>
<b>United States</b>	<b>53-6021</b>	<b>Parking Lot Attendants</b>	<b>136,440</b>	<b>\$10.39</b>	<b>Less than high school</b>	<b>128,300</b>	<b>137,600</b>	<b>9,300</b>	<b>7.2%</b>
Connecticut	53-6021	Parking Lot Attendants	1,480	\$11.47	Less than high school	1,410	1,370	-40	-2.8%
Delaware	53-6021	Parking Lot Attendants	470	\$10.25	Less than high school	440	480	40	9.1%
District of Columbia	53-6021	Parking Lot Attendants	2,550	\$9.87	Less than high school	2,440	2,680	240	9.8%
Maine	53-6021	Parking Lot Attendants	190	\$12.82	Less than high school	70	70	0	0.0%
Maryland	53-6021	Parking Lot Attendants	2,220	\$9.59	Less than high school	1,760	1,820	60	3.4%
Massachusetts	53-6021	Parking Lot Attendants	2,980	\$11.69	Less than high school	4,030	4,650	620	15.4%
New Hampshire	53-6021	Parking Lot Attendants	300	\$11.20	Less than high school	150	170	20	13.3%
New Jersey	53-6021	Parking Lot Attendants	4,370	\$10.82	Less than high school	4,160	4,410	250	6.0%
New York	53-6021	Parking Lot Attendants	15,350	\$10.99	Less than high school	14,430	15,740	1,310	9.1%
Pennsylvania	53-6021	Parking Lot Attendants	5,870	\$10.26	Less than high school	4,610	4,950	340	7.4%
Rhode Island	53-6021	Parking Lot Attendants	630	\$11.51	Less than high school	430	450	20	4.7%
Vermont	53-6021	Parking Lot Attendants	110	\$10.64	Less than high school	120	130	10	8.3%
<i>NE Region</i>	<i>53-6021</i>	<i>Parking Lot Attendants</i>	<i>36,520</i>		<i>Less than high school</i>	<i>34,050</i>	<i>36,920</i>	<i>2,870</i>	<i>8.4%</i>
<b>United States</b>	<b>53-6041</b>	<b>Traffic Technicians</b>	<b>6,490</b>	<b>\$22.38</b>	<b>High school diploma or equivalent</b>	<b>6,600</b>	<b>7,300</b>	<b>700</b>	<b>10.6%</b>

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
District of Columbia	53-6041	Traffic Technicians	100	\$23.52	High school diploma or equivalent	30	30	0	0.0%
Maryland	53-6041	Traffic Technicians	180	\$20.39	High school diploma or equivalent	NA	NA	NA	NA
Massachusetts	53-6041	Traffic Technicians	50	\$23.38	High school diploma or equivalent	50	60	10	20.0%
New Jersey	53-6041	Traffic Technicians	120	\$21.98	High school diploma or equivalent	270	330	60	22.2%
New York	53-6041	Traffic Technicians	1,280	\$26.47	High school diploma or equivalent	1,630	1,770	140	8.6%
Pennsylvania	53-6041	Traffic Technicians	60	\$24.51	High school diploma or equivalent	50	50	0	0.0%
<i>NE Region</i>	<i>53-6041</i>	<i>Traffic Technicians</i>	<i>1,790</i>		<i>High school diploma or equivalent</i>	<i>2,030</i>	<i>2,240</i>	<i>210</i>	<i>10.3%</i>
<b>United States</b>	<b>53-6051</b>	<b>Transportation Inspectors</b>	<b>24,350</b>	<b>\$34.05</b>	<b>High school diploma or equivalent</b>	<b>26,200</b>	<b>29,100</b>	<b>2,900</b>	<b>11.1%</b>
Connecticut	53-6051	Transportation Inspectors	160	\$36.93	High school diploma or equivalent	140	150	10	7.1%
Delaware	53-6051	Transportation Inspectors	270	\$18.74	High school diploma or equivalent	220	250	30	13.6%
District of Columbia	53-6051	Transportation Inspectors	290	\$47.41	High school diploma or equivalent	340	350	10	2.9%
Maine	53-6051	Transportation Inspectors	60	\$45.90	High school diploma or equivalent	50	50	0	0.0%
Maryland	53-6051	Transportation Inspectors	250	\$28.37	High school diploma or equivalent	220	250	30	13.6%
Massachusetts	53-6051	Transportation Inspectors	610	\$40.42	High school diploma or equivalent	NA	NA	NA	NA
New Hampshire	53-6051	Transportation Inspectors	40	\$29.93	High school diploma or equivalent	NA	NA	NA	NA
New Jersey	53-6051	Transportation Inspectors	450	\$30.61	High school diploma or equivalent	680	770	90	13.2%
New York	53-6051	Transportation Inspectors	NA	NA	High school diploma or equivalent	4,260	4,430	170	4.0%
Pennsylvania	53-6051	Transportation Inspectors	470	\$36.29	High school diploma or equivalent	700	770	70	10.0%
Rhode Island	53-6051	Transportation Inspectors	NA	NA	High school diploma or equivalent	20	20	0	0.0%
Vermont	53-6051	Transportation Inspectors	NA	NA	High school diploma or equivalent	30	40	10	33.3%
<i>NE Region</i>	<i>53-6051</i>	<i>Transportation Inspectors</i>	<i>2,600</i>		<i>High school diploma or equivalent</i>	<i>6,660</i>	<i>7,080</i>	<i>420</i>	<i>6.3%</i>
<b>United States</b>	<b>53-6061</b>	<b>Transportation Attendants, Except Flight Attendants</b>	<b>16,380</b>	<b>\$13.01</b>	<b>High school diploma or equivalent</b>	<b>23,300</b>	<b>25,900</b>	<b>2,600</b>	<b>11.2%</b>
Connecticut	53-6061	Transportation Attendants, Except Flight Attendants	70	\$10.33	High school diploma or equivalent	70	80	10	14.3%
District of Columbia	53-6061	Transportation Attendants, Except Flight Attendants	140	\$21.42	High school diploma or equivalent	20	20	0	0.0%
Maine	53-6061	Transportation Attendants, Except Flight Attendants	NA	NA	High school diploma or equivalent	50	50	0	0.0%
Maryland	53-6061	Transportation Attendants, Except Flight Attendants	350	\$14.30	High school diploma or equivalent	390	420	30	7.7%
Massachusetts	53-6061	Transportation Attendants, Except Flight Attendants	320	\$13.49	High school diploma or equivalent	640	690	50	7.8%
New Hampshire	53-6061	Transportation Attendants, Except Flight Attendants	NA	NA	High school diploma or equivalent	110	120	10	9.1%
New Jersey	53-6061	Transportation Attendants, Except Flight Attendants	860	\$11.80	High school diploma or equivalent	1,940	2,090	150	7.7%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
New York	53-6061	Transportation Attendants, Except Flight Attendants	NA	NA	High school diploma or equivalent	1,940	2,130	190	9.8%
Pennsylvania	53-6061	Transportation Attendants, Except Flight Attendants	1,120	\$9.14	High school diploma or equivalent	1,240	1,260	20	1.6%
Vermont	53-6061	Transportation Attendants, Except Flight Attendants	NA	NA	High school diploma or equivalent	40	30	-10	-25.0%
<i>NE Region</i>	<i>53-6061</i>	<i>Transportation Attendants, Except Flight Attendants</i>	<i>2,860</i>		<i>High school diploma or equivalent</i>	<i>6,440</i>	<i>6,890</i>	<i>450</i>	<i>7.0%</i>
<b>United States</b>	<b>53-6099</b>	<b>Transportation Workers, All Other</b>	<b>39,890</b>	<b>\$17.28</b>	<b>High school diploma or equivalent</b>	<b>37,100</b>	<b>39,000</b>	<b>1,900</b>	<b>5.1%</b>
Connecticut	53-6099	Transportation Workers, All Other	230	\$15.71	High school diploma or equivalent	130	140	10	7.7%
Delaware	53-6099	Transportation Workers, All Other	NA	NA	High school diploma or equivalent	40	50	10	25.0%
District of Columbia	53-6099	Transportation Workers, All Other	410	\$19.45	High school diploma or equivalent	1,220	1,180	-40	-3.3%
Maine	53-6099	Transportation Workers, All Other	140	\$13.82	High school diploma or equivalent	140	140	0	0.0%
Maryland	53-6099	Transportation Workers, All Other	560	\$18.63	High school diploma or equivalent	580	630	50	8.6%
Massachusetts	53-6099	Transportation Workers, All Other	910	\$20.07	High school diploma or equivalent	620	610	-10	-1.6%
New Hampshire	53-6099	Transportation Workers, All Other	80	\$15.04	High school diploma or equivalent	110	110	0	0.0%
New Jersey	53-6099	Transportation Workers, All Other	**	\$18.93	High school diploma or equivalent	1,070	1,160	90	8.4%
New York	53-6099	Transportation Workers, All Other	780	\$18.15	High school diploma or equivalent	NA	NA	NA	NA
Pennsylvania	53-6099	Transportation Workers, All Other	270	\$20.74	High school diploma or equivalent	290	310	20	6.9%
Rhode Island	53-6099	Transportation Workers, All Other	60	\$12.52	High school diploma or equivalent	40	50	10	25.0%
<i>NE Region</i>	<i>53-6099</i>	<i>Transportation Workers, All Other</i>	<i>3,440</i>		<i>High school diploma or equivalent</i>	<i>4,240</i>	<i>4,380</i>	<i>140</i>	<i>3.3%</i>
<b>United States</b>	<b>53-7011</b>	<b>Conveyor Operators and Tenders</b>	<b>38,830</b>	<b>\$16.35</b>	<b>Less than high school</b>	<b>39,100</b>	<b>40,500</b>	<b>1,400</b>	<b>3.6%</b>
Connecticut	53-7011	Conveyor Operators and Tenders	200	*	Less than high school	190	190	0	0.0%
District of Columbia	53-7011	Conveyor Operators and Tenders	NA	NA	Less than high school	60	60	0	0.0%
Maine	53-7011	Conveyor Operators and Tenders	310	\$15.69	Less than high school	230	220	-10	-4.3%
Maryland	53-7011	Conveyor Operators and Tenders	280	\$14.13	Less than high school	210	230	20	9.5%
Massachusetts	53-7011	Conveyor Operators and Tenders	230	\$17.26	Less than high school	210	220	10	4.8%
New Jersey	53-7011	Conveyor Operators and Tenders	720	\$17.28	Less than high school	710	740	30	4.2%
New York	53-7011	Conveyor Operators and Tenders	650	\$17.30	Less than high school	610	630	20	3.3%
Pennsylvania	53-7011	Conveyor Operators and Tenders	1,200	\$20.05	Less than high school	1,480	1,530	50	3.4%
Vermont	53-7011	Conveyor Operators and Tenders	NA	NA	Less than high school	30	30	0	0.0%
<i>NE Region</i>	<i>53-7011</i>	<i>Conveyor Operators and Tenders</i>	<i>3,630</i>		<i>Less than high school</i>	<i>3,730</i>	<i>3,850</i>	<i>120</i>	<i>3.2%</i>
<b>United States</b>	<b>53-7021</b>	<b>Crane and Tower Operators</b>	<b>44,540</b>	<b>\$25.75</b>	<b>High school diploma or equivalent</b>	<b>43,800</b>	<b>51,200</b>	<b>7,400</b>	<b>16.9%</b>
Connecticut	53-7021	Crane and Tower Operators	90	\$23.38	High school diploma or equivalent	310	340	30	9.7%
Delaware	53-7021	Crane and Tower Operators	110	\$20.70	High school diploma or equivalent	160	140	-20	-12.5%
Maine	53-7021	Crane and Tower Operators	260	\$23.42	High school diploma or equivalent	220	220	0	0.0%
Maryland	53-7021	Crane and Tower Operators	480	\$29.79	High school diploma or equivalent	470	480	10	2.1%

**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

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Massachusetts	53-7021	Crane and Tower Operators	440	\$26.27	High school diploma or equivalent	350	430	80	22.9%
New Hampshire	53-7021	Crane and Tower Operators	**	\$22.01	High school diploma or equivalent	150	190	40	26.7%
New Jersey	53-7021	Crane and Tower Operators	560	\$30.12	High school diploma or equivalent	500	550	50	10.0%
New York	53-7021	Crane and Tower Operators	1,410	\$34.22	High school diploma or equivalent	930	1,050	120	12.9%
Pennsylvania	53-7021	Crane and Tower Operators	2,010	\$24.46	High school diploma or equivalent	1,920	2,230	310	16.1%
Rhode Island	53-7021	Crane and Tower Operators	30	\$28.12	High school diploma or equivalent	100	120	20	20.0%
Vermont	53-7021	Crane and Tower Operators	70	\$21.33	High school diploma or equivalent	80	90	10	12.5%
<i>NE Region</i>	<i>53-7021</i>	<i>Crane and Tower Operators</i>	<i>5,530</i>		<i>High school diploma or equivalent</i>	<i>5,190</i>	<i>5,840</i>	<i>650</i>	<i>12.5%</i>
<b>United States</b>	<b>53-7031</b>	<b>Dredge Operators</b>	<b>1,900</b>	\$21.94	<b>Less than high school</b>	<b>2,000</b>	<b>2,200</b>	<b>200</b>	<b>10.0%</b>
Connecticut	53-7031	Dredge Operators	NA	NA	Less than high school	10	10	0	0.0%
Maryland	53-7031	Dredge Operators	30	\$19.75	Less than high school	20	20	0	0.0%
New Jersey	53-7031	Dredge Operators	130	\$22.77	Less than high school	90	80	-10	-11.1%
<i>NE Region</i>	<i>53-7031</i>	<i>Dredge Operators</i>	<i>160</i>		<i>Less than high school</i>	<i>120</i>	<i>110</i>	<i>-10</i>	<i>-8.3%</i>
<b>United States</b>	<b>53-7032</b>	<b>Excavating and Loading Machine and Dragline Operators</b>	<b>47,470</b>	\$21.23	<b>High school diploma or equivalent</b>	<b>50,700</b>	<b>58,900</b>	<b>8,200</b>	<b>16.2%</b>
Connecticut	53-7032	Excavating and Loading Machine and Dragline Operators	260	\$20.39	High school diploma or equivalent	270	330	60	22.2%
Delaware	53-7032	Excavating and Loading Machine and Dragline Operators	130	\$22.78	High school diploma or equivalent	150	190	40	26.7%
District of Columbia	53-7032	Excavating and Loading Machine and Dragline Operators	NA	NA	High school diploma or equivalent	130	130	0	0.0%
Maine	53-7032	Excavating and Loading Machine and Dragline Operators	750	\$18.27	High school diploma or equivalent	770	770	0	0.0%
Maryland	53-7032	Excavating and Loading Machine and Dragline Operators	1,380	\$22.21	High school diploma or equivalent	1,050	1,130	80	7.6%
Massachusetts	53-7032	Excavating and Loading Machine and Dragline Operators	1,020	\$33.05	High school diploma or equivalent	1,280	1,590	310	24.2%
New Hampshire	53-7032	Excavating and Loading Machine and Dragline Operators	420	\$20.45	High school diploma or equivalent	400	450	50	12.5%
New Jersey	53-7032	Excavating and Loading Machine and Dragline Operators	780	\$26.64	High school diploma or equivalent	860	1,000	140	16.3%
New York	53-7032	Excavating and Loading Machine and Dragline Operators	1,680	\$27.93	High school diploma or equivalent	1,430	1,580	150	10.5%
Pennsylvania	53-7032	Excavating and Loading Machine and Dragline Operators	1,780	\$20.88	High school diploma or equivalent	1,840	1,950	110	6.0%
Rhode Island	53-7032	Excavating and Loading Machine and Dragline Operators	100	\$24.97	High school diploma or equivalent	130	150	20	15.4%
Vermont	53-7032	Excavating and Loading Machine and Dragline Operators	120	\$17.68	High school diploma or equivalent	110	120	10	9.1%

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State or Area	SOC Code	Occupation Title	# of employees in the NE, May 2014 <sup>a</sup>	National Average Hourly Wage <sup>a</sup>	Typical Education Needed For Entry <sup>a</sup>	# of Employees, 2012 <sup>b</sup>	Projected # of Employees, 2022 <sup>b</sup>	Change in # of Employees <sup>b</sup>	Percent Change <sup>b</sup>
<i>NE Region</i>	53-7032	<i>Excavating and Loading Machine and Dragline Operators</i>	8,420		<i>High school diploma or equivalent</i>	8,420	9,390	970	11.5%
<b>United States</b>	<b>53-7063</b>	<b>Machine Feeders and Offbearers</b>	<b>104,340</b>	\$14.73	<b>Less than high school</b>	<b>106,100</b>	<b>108,200</b>	<b>2,100</b>	<b>2.0%</b>
Connecticut	53-7063	Machine Feeders and Offbearers	850	\$12.87	Less than high school	910	860	-50	-5.5%
Maine	53-7063	Machine Feeders and Offbearers	800	\$14.95	Less than high school	360	330	-30	-8.3%
Maryland	53-7063	Machine Feeders and Offbearers	1,080	\$13.21	Less than high school	1,020	1,020	0	0.0%
Massachusetts	53-7063	Machine Feeders and Offbearers	1,730	\$15.08	Less than high school	1,190	1,120	-70	-5.9%
New Hampshire	53-7063	Machine Feeders and Offbearers	550	\$18.14	Less than high school	560	570	10	1.8%
New Jersey	53-7063	Machine Feeders and Offbearers	3,780	\$12.30	Less than high school	2,440	2,420	-20	-0.8%
New York	53-7063	Machine Feeders and Offbearers	3,710	\$13.89	Less than high school	3,440	3,390	-50	-1.5%
Pennsylvania	53-7063	Machine Feeders and Offbearers	4,820	\$15.68	Less than high school	5,290	5,340	50	0.9%
Rhode Island	53-7063	Machine Feeders and Offbearers	250	\$15.20	Less than high school	240	230	-10	-4.2%
Vermont	53-7063	Machine Feeders and Offbearers	70	\$13.00	Less than high school	120	120	0	0.0%
<i>NE Region</i>	53-7063	<i>Machine Feeders and Offbearers</i>	17,920		<i>Less than high school</i>	15,570	15,400	-170	-1.1%
<b>United States</b>	<b>53-7064</b>	<b>Packers and Packagers, Hand</b>	<b>693,170</b>	\$11.08	<b>Less than high school</b>	<b>666,900</b>	<b>707,000</b>	<b>40,100</b>	<b>6.0%</b>
Connecticut	53-7064	Packers and Packagers, Hand	6,910	\$13.40	Less than high school	7,410	8,120	710	9.6%
Delaware	53-7064	Packers and Packagers, Hand	1,460	\$10.86	Less than high school	1,020	1,060	40	3.9%
District of Columbia	53-7064	Packers and Packagers, Hand	180	\$12.41	Less than high school	440	440	0	0.0%
Maine	53-7064	Packers and Packagers, Hand	1,990	\$10.71	Less than high school	2,550	2,480	-70	-2.7%
Maryland	53-7064	Packers and Packagers, Hand	6,240	\$10.64	Less than high school	7,280	7,580	300	4.1%
Massachusetts	53-7064	Packers and Packagers, Hand	13,610	\$11.25	Less than high school	13,880	14,340	460	3.3%
New Hampshire	53-7064	Packers and Packagers, Hand	1,990	\$11.35	Less than high school	1,920	2,010	90	4.7%
New Jersey	53-7064	Packers and Packagers, Hand	30,370	\$10.84	Less than high school	30,840	33,300	2,460	8.0%
New York	53-7064	Packers and Packagers, Hand	28,360	\$11.68	Less than high school	34,270	36,790	2,520	7.4%
Pennsylvania	53-7064	Packers and Packagers, Hand	33,820	\$12.19	Less than high school	33,510	36,910	3,400	10.1%
Rhode Island	53-7064	Packers and Packagers, Hand	2,320	\$10.26	Less than high school	2,210	2,550	340	15.4%
Vermont	53-7064	Packers and Packagers, Hand	970	\$11.67	Less than high school	820	910	90	11.0%
<i>NE Region</i>	53-7064	<i>Packers and Packagers, Hand</i>	128,220		<i>Less than high school</i>	136,150	146,490	10,340	7.6%
<b>United States</b>	<b>53-7071</b>	<b>Gas Compressor and Gas Pumping Station Operators</b>	<b>4,700</b>	\$26.65	<b>Less than high school</b>	<b>4,800</b>	<b>4,700</b>	<b>-100</b>	<b>-2.1%</b>
Connecticut	53-7071	Gas Compressor and Gas Pumping Station Operators	NA	NA	Less than high school	20	20	0	0.0%
Maryland	53-7071	Gas Compressor and Gas Pumping Station Operators	NA	NA	Less than high school	30	30	0	0.0%
New Jersey	53-7071	Gas Compressor and Gas Pumping Station Operators	NA	NA	Less than high school	20	20	0	0.0%



**Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Northeast Region, by State**

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Pennsylvania	53-7071	Gas Compressor and Gas Pumping Station Operators	840	\$24.54	Less than high school	920	990	70	7.6%
<i>NE Region</i>	<i>53-7071</i>	<i>Gas Compressor and Gas Pumping Station Operators</i>	<i>960</i>		<i>Less than high school</i>	<i>990</i>	<i>1,060</i>	<i>70</i>	<i>7.1%</i>
<b>United States</b>	<b>53-7072</b>	<b>Pump Operators, Except Wellhead Pumpers</b>	<b>12,170</b>	\$22.45	<b>Less than high school</b>	<b>13,200</b>	<b>14,700</b>	<b>1,500</b>	<b>11.4%</b>
Connecticut	53-7072	Pump Operators, Except Wellhead Pumpers	NA	NA	Less than high school	20	30	10	50.0%
Maryland	53-7072	Pump Operators, Except Wellhead Pumpers	NA	NA	Less than high school	60	60	0	0.0%
Massachusetts	53-7072	Pump Operators, Except Wellhead Pumpers	150	\$16.74	Less than high school	80	80	0	0.0%
New Jersey	53-7072	Pump Operators, Except Wellhead Pumpers	340	\$20.15	Less than high school	360	390	30	8.3%
Pennsylvania	53-7072	Pump Operators, Except Wellhead Pumpers	1,190	\$22.48	Less than high school	1,220	1,290	70	5.7%
Vermont	53-7072	Pump Operators, Except Wellhead Pumpers	NA	NA	Less than high school	0	0	0	#DIV/0!
<i>NE Region</i>	<i>53-7072</i>	<i>Pump Operators, Except Wellhead Pumpers</i>	<i>1,860</i>		<i>Less than high school</i>	<i>1,740</i>	<i>1,850</i>	<i>110</i>	<i>6.3%</i>
<b>United States</b>	<b>53-7073</b>	<b>Wellhead Pumpers</b>	<b>12,720</b>	\$23.36	<b>Less than high school</b>	<b>16,200</b>	<b>18,600</b>	<b>2,400</b>	<b>14.8%</b>
Maryland	53-7073	Wellhead Pumpers	NA	NA	Less than high school	0	0	0	0.0%
New Jersey	53-7073	Wellhead Pumpers	NA	NA	Less than high school	20	10	-10	-50.0%
Pennsylvania	53-7073	Wellhead Pumpers	900	\$20.77	Less than high school	1,080	1,250	170	15.7%
<i>NE Region</i>	<i>53-7073</i>	<i>Wellhead Pumpers</i>	<i>940</i>		<i>Less than high school</i>	<i>1,100</i>	<i>1,260</i>	<i>160</i>	<i>14.5%</i>
<b>United States</b>	<b>53-7081</b>	<b>Refuse and Recyclable Material Collectors</b>	<b>115,170</b>	\$17.32	<b>Less than high school</b>	<b>133,200</b>	<b>154,900</b>	<b>21,700</b>	<b>16.3%</b>
Connecticut	53-7081	Refuse and Recyclable Material Collectors	970	\$19.30	Less than high school	1,020	1,230	210	20.6%
Delaware	53-7081	Refuse and Recyclable Material Collectors	420	\$18.38	Less than high school	480	550	70	14.6%
District of Columbia	53-7081	Refuse and Recyclable Material Collectors	520	\$19.32	Less than high school	820	910	90	11.0%
Maine	53-7081	Refuse and Recyclable Material Collectors	890	\$13.17	Less than high school	1,060	1,000	-60	-5.7%
Maryland	53-7081	Refuse and Recyclable Material Collectors	2,070	\$16.01	Less than high school	2,740	3,050	310	11.3%
Massachusetts	53-7081	Refuse and Recyclable Material Collectors	2,020	\$19.20	Less than high school	1,630	1,850	220	13.5%
New Hampshire	53-7081	Refuse and Recyclable Material Collectors	710	\$14.78	Less than high school	790	840	50	6.3%
New Jersey	53-7081	Refuse and Recyclable Material Collectors	3,110	\$19.43	Less than high school	3,690	3,660	-30	-0.8%
New York	53-7081	Refuse and Recyclable Material Collectors	11,510	\$25.28	Less than high school	14,170	15,820	1,650	11.6%
Pennsylvania	53-7081	Refuse and Recyclable Material Collectors	5,150	\$15.71	Less than high school	6,070	6,850	780	12.9%
Rhode Island	53-7081	Refuse and Recyclable Material Collectors	420	\$21.55	Less than high school	420	490	70	16.7%
Vermont	53-7081	Refuse and Recyclable Material Collectors	530	\$16.47	Less than high school	820	840	20	2.4%
<i>NE Region</i>	<i>53-7081</i>	<i>Refuse and Recyclable Material Collectors</i>	<i>28,320</i>		<i>Less than high school</i>	<i>33,710</i>	<i>37,090</i>	<i>3,380</i>	<i>10.0%</i>
<b>United States</b>	<b>53-7111</b>	<b>Mine Shuttle Car Operators</b>	<b>2,630</b>	\$26.36	<b>Less than high school</b>	<b>3,000</b>	<b>2,900</b>	<b>-100</b>	<b>-3.3%</b>
<i>Pennsylvania</i>	<i>53-7111</i>	<i>Mine Shuttle Car Operators</i>	<i>300</i>	\$26.71	<i>Less than high school</i>	<i>250</i>	<i>220</i>	<i>-30</i>	<i>-12.0%</i>
<i>NE Region</i>	<i>53-7111</i>	<i>Mine Shuttle Car Operators</i>	<i>300</i>		<i>Less than high school</i>	<i>250</i>	<i>220</i>	<i>-30</i>	<i>-12.0%</i>
<b>United States</b>	<b>53-7121</b>	<b>Tank Car, Truck, and Ship Loaders</b>	<b>12,490</b>	<b>\$21.41</b>	<b>Less than high school</b>	<b>12,500</b>	<b>12,800</b>	<b>300</b>	<b>2.40%</b>
Connecticut	53-7121	Tank Car, Truck, and Ship Loaders	NA	NA	Less than high school	10	10	0	0.00%
Massachusetts	53-7121	Tank Car, Truck, and Ship Loaders	160	\$20.15	Less than high school	120	130	10	8.30%



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New Hampshire	53-7121	Tank Car, Truck, and Ship Loaders	NA	NA	Less than high school	30	40	10	33.30%
New Jersey	53-7121	Tank Car, Truck, and Ship Loaders	1,290	\$30.13	Less than high school	1,320	1,260	-60	-4.50%
New York	53-7121	Tank Car, Truck, and Ship Loaders	400	*	Less than high school	NA	NA	NA	NA
Pennsylvania	53-7121	Tank Car, Truck, and Ship Loaders	530	\$21.38	Less than high school	700	740	40	5.70%
<i>NE Region</i>	<i>53-7121</i>	<i>Tank Car, Truck, and Ship Loaders</i>	<i>2,380</i>		<i>Less than high school</i>	<i>2,180</i>	<i>2,180</i>	<i>0</i>	<i>0.00%</i>

## **Appendix B: Occupation Prioritization Criteria Interview Protocol**

# Occupation Prioritization Criteria Interview Protocol

## Introduction and Overview

Welcome and thank you for participating in this interview. My name is [facilitator name] and I'll be leading our interview today. We also have [recorder name] on the line who will be taking notes on our conversation so that we are able to best provide all your opinions and experiences back to the others in the Northeast Transportation Workforce Center.

The goal of the Northeast Transportation Workforce Center is to enhance transportation workforce development activities in the region, which includes the District of Columbia and eleven states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The center is part of a network of five regional centers that cover the entire U.S. In the Northeast Transportation Workforce Center, we are currently working to identify priority occupations that are important in the region and therefore would benefit from additional focus in our center activities.

Our team's initial research resulted in a listing over 70 jobs that comprise the NE transportation workforce. We then used labor market data to identify those jobs within the list that are projected to be in the highest demand over the next 5-7 years, including those occupations with a projected demand increase of 7% or more by 2022 and those jobs with more than 150 annual openings in the NE Region. This analysis reduced the overall listing to 26 'In-Demand' jobs (see attached Excel sheet).

Now our team is further assessing and narrowing the In-Demand jobs list to identify the 10-12 'priority' occupations in the NE region. These priority jobs will be the focus of future NE Center workforce development efforts. We have developed a set of criteria to facilitate this process. The purpose of this interview is to gather your input regarding the jobs already identified and the related assessment criteria.

## Interview Questions

### Background

1. Can you provide a brief overview of your organization and its mission in the transportation industry?
2. Could you tell us about your role within your organization as well as your work in transportation workforce development?

### Assessment of Northeast Transportation Workforce Supply and Demand

3. In reviewing the jobs list, which transportation-related occupations have you experienced the most difficulties in recruiting and hiring employees?
  - a. For these occupations, what are the specific challenges experienced? For example, is the difficulty that there are not enough applicants available, there is a lack of awareness of the industry, or that the applicants do not have appropriate skill sets?
  - b. Are there jobs not on the list that you have had challenges in recruiting and hiring staff?
4. Within your organization or area, which occupations have the highest turnover rates? That is, are there specific occupations on the list for which it is a challenge to retain employees and the positions need to be frequently refilled?

- a. For occupations with the highest turnover rates, why do you believe that turnover is a problem (e.g., low wages, lack of understanding of work requirements before beginning employment)?
  - b. Are there jobs not on the list that you have had challenges in retaining staff?
5. Is there something unique about your city, state, or the Northeast region in general that makes workforce development for these jobs particularly challenging?

### **Assessment of Northeast Occupation Skill needs**

6. Thinking across all of the transportation occupations that you are aware of or interact with, which occupations have the most unique critical job functions? That is, which jobs on the list are unlike any others in the region?
- a. Which occupations have the most unique personnel requirements in terms of needed knowledge, skills, and abilities to effectively complete the job?
  - b. Are there jobs not on the list that should be noted?
7. Thinking about the use of technology in transportation occupations, which occupations on the list have the greatest reliance on or use of technology?
- a. Of these occupations, which utilize new technology or do you expect will have evolving technology needs?
  - b. What types of technology are most prevalent? How do these impact the skills need on the job?
  - c. Are there jobs not on this list that should be noted?
8. Are there any transportation occupations on the list that you believe are unique to or more important in the Northeast than in other regions of the U.S.? What are these occupations?
- a. What about occupations that exist in transportation in the Northeast Region but are not needed in other regions?
  - b. Are there jobs not on this list that should be noted?

### **Assessment of the Northeast Transportation Workforce Center's Strategic Focus Areas**

Our final questions focus on identifying any occupations that specifically align with the Northeast Center's strategic focus areas.

9. What occupations best contribute to a better quality of life for the citizens of the NE?
10. What jobs do you think are the most 'green' and important for maintaining and completing work related to areas such as climate change and alternative fuels?

11. In reviewing the list, which jobs would the NE best be able to support and engage disadvantaged youth?
12. How do you typically partner with Community Colleges to find the applicants you need and which jobs are you trying to fill through these efforts?
13. For what occupations is portability of skills important so that incumbents can quickly move up career ladders or into other related jobs? For example, are there specific occupations that have wide skill sets that would benefit other occupations?

**Summary**

14. Do you have any final thoughts, comments, or questions?

**Thank you for your time and participation in today's meeting.**