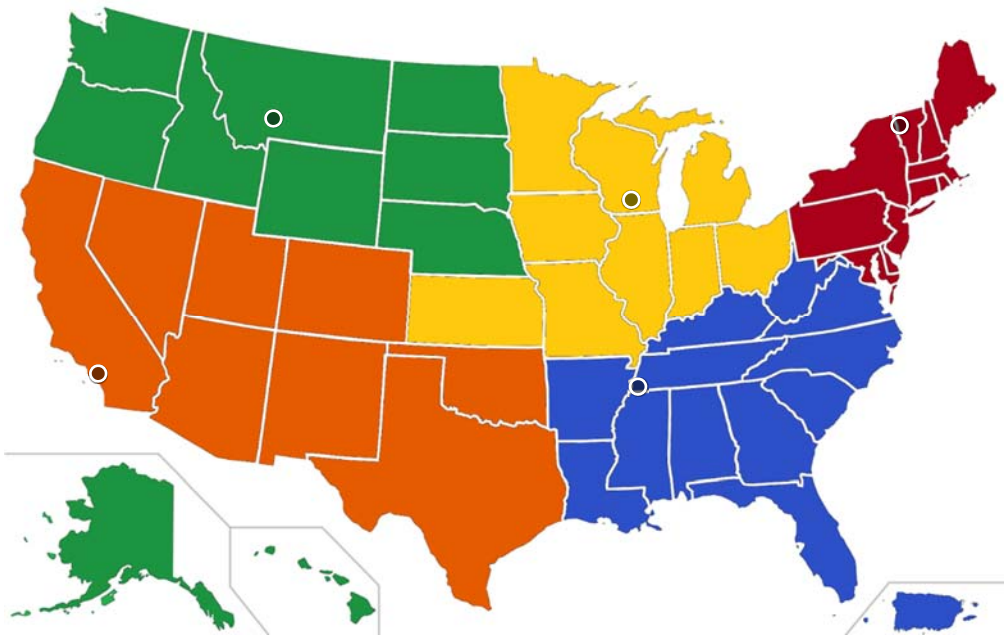
Executive Summary & National Overview

US Transportation Job Needs and Priorities



National Network for the Transportation Workforce – January 2016

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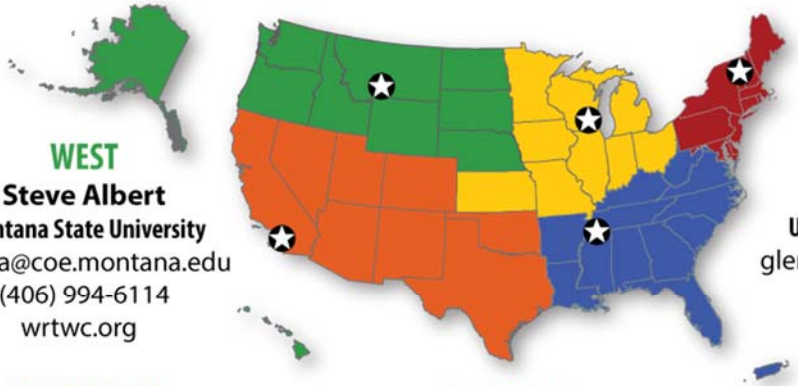

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Introduction to FHWA's Regional Workforce Centers

In 2014, the U.S. Federal Highway Administration (FHWA) announced five newly-established Centers designated to lead and coordinate transportation workforce development efforts in and across each of the country's five major geographic regions (i.e, the Northeast, Southeast, Midwest, West, and Southwest regions). This was the latest—and perhaps most monumental—move by the FHWA as part of a historic push to enrich and vitalize the U.S. transportation workforce. The Regional Surface Transportation Workforce Development Centers will be one-stop-shops for transportation workforce development in their respective regions, with each Center supplying the people, planning, resources, and coordination necessary to address priorities unique to its region; together, the Centers will work as a coordinated, national network to achieve workforce-related objectives that impact the country as a whole.

Overview of the Regional Job Needs and Priorities Reports

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 these reports is to identify areas in which skill development is most important for employees, as well as key transportation careers in each 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, the transportation workforce is older than the national average, with more than half its workers over 45 years old, and a correspondingly high expected loss of staff to retirement over the next decade (U.S. Department of Education, 2015). Baby Boomers (born between 1946 and 1964) are retiring and leaving vacancies, particularly those at senior and management levels, which need to be filled. At the same time, technology is changing workforce dynamics. The traditional mandate of transportation agencies to design, build, and maintain road infrastructure has shifted to a focus on extending the capacity and efficiency of existing infrastructure, primarily through technological means. These changes require different skill sets and new ways of doing business from transportation organizations and staff (Martin and Glenn, 2002). New and emerging technologies, new safety requirements, and changing legislation place additional responsibilities on transportation staff and organizations. The industry faces further challenges in attracting a diverse workforce that reflects demographic changes in the national workforce as a whole.

The above described workforce challenges exist across the nation, and are experienced by all regions when working to develop a high-quality transportation workforce. These reports focus on issues related to each region in terms of the workforce. Each regional report provides an overview of the transportation industry and specific workforce needs within that region. The reports also detail information on key transportation occupations available currently as well as job projections for the next 10 years within the

region of focus. Based on these findings, skills required for key occupations are identified, including noting skills that need additional training/development based on experiences of transportation stakeholders within each region.

METHODOLOGY

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

Background Review. Each research team identified and analyzed information from Federal, State, and private sector research, technical reports, conference presentations, case studies, strategic plans, and human resources documents. The objective was to characterize and assess transportation industry and employment trends in each region. The results served to increase each research team's overall understanding of the region's transportation workforce and related issues.

Engage Stakeholders. Next, each team engaged industry stakeholders throughout the region of focus – both public and private partners – who are specifically knowledgeable about transportation occupations. Stakeholders include contacts within state DOLs, DOTs, industry associations, universities, community colleges, technical schools, and labor unions among others. Interviews with stakeholders were conducted to gather information to identify critical job functions, workforce development activities, and anticipated workforce trends, as well as common recruitment, retention, and training challenges and innovative strategies underway to address these challenges. Results of this phase served to define the workforce at the regional level and create a list of critical workforce occupations for each region.

Estimating regional workforce demand for occupations. Using data collected in the earlier phases, each team generated and analyzed historic, current, and future occupational estimates for all priority occupations identified. Supplementing occupational demand information available from existing datasets, including the Bureau of Labor Statistics (BLS), with input from regional stakeholders provided each team with a more accurate regional picture of job needs and priorities.

Description of Industry in Each Region and Major Drivers of Transportation Needs

Transportation systems across the nation are multi-model, with many different types of occupations that individuals can fulfill. The major transportation modes considered in these reports include ports of entry, highways, transit, rail, motor, marine, non-motorized, pipeline, and air. The extensiveness of these modes varies across each region, as displayed in Exhibit 1 below.

Ports of Entry

A port of entry (POE) is a designated area where a customs officer is authorized to accept entries of merchandise, collect duties, and enforce customs and navigation laws (19 C.F.R. § 101.1). Both the Midwest and Southwest Regions have several ports of entry, due to sharing borders with Canada and Mexico respectively. Both regions have border and inland ports of entry. Inland ports of entry are typically international airports, whereas border ports of entry are land or rail crossings. The Midwest also has fresh water ports on the Great Lakes and the Ohio and Mississippi Rivers that support both domestic and international shipping. In Southwest Region each state has at least one port of entry, California has 21, and Texas has 29. Given the long border with Mexico and the several modes in which an individual or cargo can cross a border of entry, staffing for the transportation workforce is a challenge.

Highways

The national highway system is a network of highways within the United States, including the Interstate Highways 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 4.09 million miles (Census, 2012). Given the extensiveness of the national highway system, this mode of transportation is discussed in each regional report. As displayed in Exhibit 1 below, the Midwest Region encompasses the greatest amount of total road miles in the U.S., at approximately 27 percent, while the Northeast encompasses the least, at approximately 10.7 percent. The mileage of highway in each region, along with the amount of urban vs. rural roads, has implications in terms of workforce planning and staffing.

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 also 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 of 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. Because public transit is present in all regions, it is discussed in each regional report. As displayed in Exhibit 1 below, it is used predominantly in the Northeast Region and least frequently in the Southeast Region.

Rail

Freight rail transportation is used to transport cargo. The U.S. is connected by an extensive, unified standard gauge rail network that also connects to 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 fright railroad: Class I, regional, local line hail, and switching & terminal. As of 2000, rail moved more than 25% of the United States' freight. As displayed in Exhibit 1, freight rail transportation is most extensive in the Midwest Region and least extensive in the Northeast Region. Rail can also be used to transport passengers. Amtrak provides long distance or corridor service in all regions, aside from the Southeast Region. Commuter rail, which is different from rapid transit systems, is also available in the Northeast and Southwest Regions.

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 includes 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, but is a particularly large focus in the Southeast Region.

Non-Motorized

Non-motorized transportation includes both pedestrian and bicycles. While the majority of short trips are still conducted using motorized vehicles (American Public Transportation Association 2014), trends illustrate that non-motorized transportation is increasing, and is likely to continue increasing over time (Davis, Dutzik and Baxandall 2012). The introduction of programs like bike sharing, where a fleet of public-accessible short-term bike rentals are located at multiple stations are increasing this, particularly in the Southeast and Northeast regions (Ting, Chao and Erdoğan 2015).

Marine

Maritime transportation is used for moving both passengers (ferry) and cargo (freight), though maritime transportation for passengers has decreased due to an increase in timely and economic alternatives. 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, which are in the Southwest, Midwest, West, Northeast, and Southeast Regions. 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.

Air

Air transportation is crucial in terms of moving both passengers and cargo. In terms of all movements, the Southwest Region comprises five of the top 10 busiest airports, and the Midwest Region comprises of 10 of the top 50 airports in the nation. Air transportation is also a crucial transportation mode in the West Region. Some transportation positions, like aircraft handlers and maintenance, runway maintenance, airport planners, and air traffic controllers, are necessary for both passengers and cargo. Other positions, like baggage handlers, are more specific to the contents of the plane. While the airports in the region tend to have heavier usage in terms of passengers, a fair amount of cargo moves through them as well, which will have to be taken into account for workforce planning.

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. 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. Pipeline transportation is also an important mode of transportation in the West and Southeast Regions. The energy sector is a key economic development driver for a number of states. Because many of the occupations and skillsets overlap between the transportation and energy sectors, the boom and bust cycles the energy sector has been experiencing in recent years has a direct impact on the ability of transportation organizations in these states to hire and retain a skilled workforce.

Exhibit 1: Overview of Population and Transportation Information by Region (Census, 2014; US DOT Bureau of Transportation Statistics, 2012)

	Population	Area	Public Road Miles	Commuters using Public Transit	Freight Railroad Miles	Inland Waterway Miles
Midwest	64,270,948	528,888	1,127,864	2.95%	40,772	4,020

Northeast	63,723,247	181,261	431,586	13.64%	14,002	1,980
Southeast	84,911,000	570,432	1,062,911	1.59%	35,042	14,600
Southwest	89,592,432	1,016,090	908,157	3.31%	27,707	1,270
West	19,909,418	1,286,423	575,465	2.25%	21,042	7750

As illustrated in this section, transportation systems across the nation are multimodal, with many different types of occupations that individuals can fill. Due to variation in the extensiveness of transportation modes across the regions, each region faces unique workforce challenges related to transportation modes that are most relevant within the region. As a result, there are many differing needs for the transportation industry workforce. Types of occupations include various STEM occupations (i.e., Civil engineer), Career and Technical occupations (i.e., Heavy and tractor-trailer drivers), Supply Chain and Logistics occupations (i.e., Logisticians), Professional occupations (i.e., Procurement Clerk), and Skilled Labor occupations (i.e., Construction laborers). Although these occupations critical to the transportation industry, it is important to note that they are not necessarily all transportation-specific. Additionally, while the specific requirements for numerous jobs will differ, key skills that require training and development overlap across different occupations.

Transportation Workforce within Each Region

Given the wide range of transportation modes important across the five regions 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 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 each region.

The transportation industry employees over five million people in the U.S. The industry in the Southwest Region employs the greatest number of people of the five regions, at 1,448,786.). The majority of these employees (85%) work in private organizations, with the remaining in Federal, State, or local government positions. Of all transportation and warehousing employees in the nation, approximately one quarter (27%) are employed in one of the eight states that comprise the Southwest region. Further, three quarters (74%) of the transportation and warehousing employees in the Southwest region are employed in one of two states: California and Texas. However, all of the states do have both private and public employees working in occupations related to transportation.

The industry in the Southeast Region employs 1,391,919 people. There are a larger number of employees in private organizations than federal, state, or local government. Private organizations account for 82.9% of transportation employees within the US and 86.6% of transportation employees within the Southeast. Every state within the region employees more people within private organizations with only West Virginia and Puerto Rico maintaining more than 20% of their transportation workforce through federal, state, and local government jobs with 28.8% and 20.7%, respectively. Tennessee is the smallest percentage of government employment at only 8.4%.

Transportation and warehousing occupations in the Midwest employ 1,217,502 people. The majority of these employees (more than 84%) work in private organizations and the remainder in federal, state, or local government. More than 41% of these individuals are employed in just two states: Illinois and Ohio.

The transportation industry in the Northeast employs 1,090,696 people. Over three quarters (78%) of these employees work in private organizations, with the remaining employed by Federal, State, or local

government. Delaware and the District of Columbia reverse the trend, having larger numbers of employees in Federal, State, or local organizations rather than private organizations.

The industry in the West Region employs the fewest number of people throughout the five regions. In total, 354,406 individuals are employed by the transportation industry in the West. Over four fifths (83%) of these employees work in private organizations, with the remaining one fifth (17%) employed by Federal, State, or local government.

Each regional report contains further details regarding specific occupations and projected changes for each of these occupations within the region. By examining projected changes in the transportation workforce, one can identify similarities and differences across the region. Additionally, identifying high demand occupations could indicate where greater intention is needed in training and recruitment efforts. Finally, 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 Regions as Identified through Stakeholders and Archival Information

The transportation industry, like all industries, is in a constant state of flux. As demands grow and technologies change, the industry must have the forethought to find potential key occupations within the sector and provide adequate funding to the educational and skills pipelines that make preparation of a right-sized workforce for these key occupations possible. Without proper planning, funding, and execution the development of these pipelines will suffer and with it the industry as a whole will face challenges. By looking at the data through a wide variety of lenses, including stakeholder information, archival information, occupation specific growth, and current occupation demand, a well-rounded forecast of current and future needs, gaps, and priorities can be established. Once established, plans can be laid which provide increased preparedness for current and future transportation occupations at all levels.

In order to establish key occupations, evaluation criteria were developed for each region. In all regions, the evaluation criteria includes two phases: the first involved evaluation occupations using quantitative criteria that must be met for the occupation to be considered. This screen is based on a review of industry documents and BLS data. The second phase involves applying qualitative criteria based on results from participant interviews and/or stakeholder workshops as well as alignment with each regional workforce center's focus areas. Additionally, the workforce center in the West Region also identified the importance of the transportation sector and occupations as key economic drivers in each state within the region.

Because the evaluation criteria was developed in accordance with each workforce center's focus areas, criteria differs for each region. For example, criteria for the Northeast Region includes the focus areas of disadvantaged youth, climate change, and alternative fuels among others. Criteria for the Southeast Region includes the focus areas of women in transportation, freight, and military/veteran transition to the transportation workforce. The Midwest Region used high demand, high-wage, and high-skill as criteria for identifying priority occupations. The Midwest Region also focused on workforce demand for an emerging Marine Highway systems, and traditional highway design and construction industry. Finally, criteria for the Southwest includes gateways/corridors, non-native English speakers, and traffic management/ITS. Criteria common to all regions includes increasing employee demand/high growth occupations, future demand for employees, and challenges in recruiting or retaining employees among others.

To identify key occupations, research teams in each region first used labor market data to identify jobs that are projected to be in the highest demand over the next 5-7 years, including those occupations with a

projected demand increase of 10-15% or more by 2022 and those jobs with more than 500 annual openings in the region of focus. This analysis reduced the overall listing to 20-30 'In-Demand' occupations.

A second evaluation was then conducted with the list of '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. Thus, questions asked during the interviews varied by region. Stakeholders were identified with the goal of collecting input from representative employers and workforce agencies across the industry regarding priority job needs, workforce challenges, and key skills development needs.

Through the review of 'In-Demand' occupations and the input received from stakeholders, occupations were identified as priority occupations in the transportation industry across the region. These occupations were organized into 5 categories, which are:

- STEM Occupations
- Career and Technical Education (CTE)/Vocational or Technical Occupations
- Skilled Labor Occupations
- Professional Occupations
- Supply Chain and Logistics Occupations

These occupations were further analyzed, to determine the supply, demand, and skills gaps for each. See Exhibit 2 below for key occupations identified in each region.

Exhibit 2: Priority Transportation Occupations Identified Across Five U.S. Regional Centers					
	Midwest	Northeast	Southeast	Southwest	West
1. STEM Occupations		Computer and Information Systems Managers (11-3021)	Computer and Information Systems Managers (11-3021)	Computer and Information Systems Managers (11-3021)	
					Construction Managers (11-9021)
	Software Developers, applications (15-1132)				
			Network and Computer Systems Administrators (15-1142)		
	Civil Engineers (17-2051)	Civil Engineers (17-2051)	Civil Engineers (17-2051)	Civil Engineers (17-2051)	Civil Engineers (17-2051)
		Surveyors (17-1022)		Surveyors (17-1022)	
		Urban and Regional Planners (19-3051)		Urban and Regional Planners (19-3051)	
	Ship Engineers (53-5031)				
2. CTE/ Vocational or Technical Occupations		Surveying and Mapping Technicians (17-3031)		Surveying and Mapping Technicians (17-3031)	
					First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)
		Operating Engineers and Other Construction Equipment Operators (47-2073)	Operating Engineers and Other Construction Equipment Operators (47-2073)	Operating Engineers and Other Construction Equipment Operators (47-2073)	Operating Engineers and Other Construction Equipment Operators (47-2073)

Exhibit 2: Priority Transportation Occupations Identified Across Five U.S. Regional Centers					
	Midwest	**Northeast**	**Southeast**	**Southwest**	**West**
2. CTE/ Vocational or Technical Occupations *(Continued)*		**Plumbers, Pipefitters, and Steamfitters (47-2152)**			
	Bus and Truck Mechanics, Diesel Engine Specialist (49-3031)	**Bus and Truck Mechanics, Diesel Engine Specialist (49-3031)**	**Bus and Truck Mechanics, Diesel Engine Specialist (49-3031)**	**Bus and Truck Mechanics, Diesel Engine Specialist (49-3031)**	**Bus and Truck Mechanics, Diesel Engine Specialist (49-3031)**
					Maintenance and Repair Workers, General (49-9071)
			Aircraft Structure, Surfaces, Rigging, and Systems Assemblers (51-2011)		
					First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators (53-1031)*
			Bus Drivers, Transit and Intercity (53-3021)	**Bus Drivers, Transit and Intercity (53-3021)**	**Bus Drivers, Transit and Intercity (53-3021)**
	Heavy and Tractor-trailer Drivers (53-3032)	**Heavy and Tractor-trailer Drivers (53-3032)**	**Heavy and Tractor-trailer Drivers (53-3032)**	**Heavy and Tractor-trailer Drivers (53-3032)**	**Heavy and Tractor-trailer Drivers (53-3032)**
	Light Truck or Delivery Drivers (53-3033)				
	Mates-ship, Boat, and Barge (53-5021.02)				
				Traffic Technicians (53-6041)	

Exhibit 2: Priority Transportation Occupations Identified Across Five U.S. Regional Centers					
	Midwest	Northeast	Southeast	Southwest	West
3. Skilled Laborer Occupations		Cement Masons and Concrete Finishers (47-2051)			
	Construction Laborers (47-2061)	Construction Laborers (47-2061)			
		Welders, Cutters, Solderers, and Brazers (51-4121)			
		First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators* (53-1031)	First-line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators* (53-1031)		
4. Professional Occupations		Procurement Clerk (43-3061)			
5. Supply Chain and Logistics Occupations	General and Operations Managers (11-1021)				
				Transportation, Storage, and Distribution Managers (11-3071)	
	Logisticians (13-1081)		Logisticians (13-1081)	Logisticians (13-1081)	
			Operations Research Analysts (15-2031)		
	Customs Brokers (13-1199.03)				
	Laborers and Freight, Stock, and Materials Movers, Hand (53-7062)		Laborers and Freight, Stock, and Materials Movers, Hand (53-7062)	Laborers and Freight, Stock, and Materials Movers, Hand (53-7062)	Laborers and Freight, Stock, and Materials Movers, Hand (53-7062)

Analysis of Occupations using Labor Market Databases

This section provides information about key occupations identified across the five regions. In each regional report, for each key occupation the demand across the region, types of employers, and educational requirements for employees are described.

STEM Occupations

STEM occupations typically require an advanced degree that comes with technical expertise. As the transportation industry shifts towards a greater reliance and focus on complex technology, there is increasing demand for individuals in STEM occupations. STEM professionals are in high demand and significant shortage nationally. This presents a challenge for the transportation industry, as many STEM professionals work in private sector organizations due to higher pay. Additionally, the concentration of individuals in STEM occupations varies across states and regions, creating unique challenges with regards to demand for each region. Skills for STEM occupations vary widely depending on the specific occupation. The most popular industry for STEM professional nationwide is professional, scientific, and technical services.

In all regions, Civil Engineers were identified as critical to the transportation industry, given that they can fulfill many different roles with their skillset. Civil Engineers supervise and perform the design, construction, and operation of transportation systems (i.e., roads, tunnels, bridges). According to BLS data, this occupation is expected to grow by 16.8% nationwide from 2012 to 2022. Skills needed include complex problem-solving, critical thinking, mathematics, and systems analysis. Though employers vary by state and region, they include organizations such as Boeing, HNTB, and Lockheed Martin.

CTE/Vocational or Technical Occupations

CTE/Vocational or Technical occupations in transportation typically require some type of additional education, training, or certification beyond high school for their employees. 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. Skills for CTE/Vocational or Technical occupations typically include repair, inspection, operation control, and monitoring. Supply and demand for individuals in these occupations varies greatly depending on the specific occupation and state. The most popular industry for CTE/Vocational or Technical occupations varies based on the specific occupation as well, but some examples include public administration, professional, scientific, and technical services, construction, and manufacturing.

Each region faces unique challenges with regards to CTE/Vocational or Technical Occupations, which are discussed in each regional report. However, all regional reports include Bus and Truck Mechanics and Diesel Engine Specialists as a key occupation. 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. According to BLS data, this occupation is expected to grow by 7.3% from 2012 to 2022. Skills needed included repairing, operation and control, operation monitoring, equipment maintenance, and quality control analysis. Though employers vary by state and region, they include organizations such as Walmart, UPS, and Penske.

Skilled Laborer Occupations

Skilled laborer occupations do not usually require education beyond high school to enter the field. These occupations are critical for building and repairing transportation infrastructure. They often have Apprenticeships and On-the-job training as transitional steps in entering full employment. The most popular industry for Skilled Laborer Occupations varies according to the specific occupation, but examples include construction, finance and insurance, and manufacturing. Skills needed for these occupations typically include machinery, repairs, coordination, and critical thinking. Supply and demand for Skilled Laborer occupations also varies across the nation. The Southwest and West reports do not identify any Skilled Laborer positions within key occupations for the transportation industry in those regions. In contrast, the Northeast report identifies four Skilled Laborer occupations as key occupations. Furthermore, the Northeast Region has the added challenge of Skilled Laborer occupations being largely seasonal, making it problematic for workers to find steady employment.

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 are not in transportation-specific fields. For example, these include occupations that focus on finance or budgets. While Professional occupations are important to transportation organizations across the nation, only the Northeast Region identifies a Professional occupation, Procurement Clerk, as a key occupation.

Supply Chain and Logistics Occupations

Occupations that fall within the Supply Chain and Logistics category have varying requirements in terms of skills and education. However, all employees in these occupations contribute to the effective functioning of warehouses and other organizations that focus on the movement of goods. All regions but the Northeast identify at least one Supply Chain and Logistics occupation as a key occupation. Specific occupations vary by region, but include General and Operations Managers, Logisticians, and Customs Brokers among others. Supply and demand for individuals in these occupations varies across the nation, depending on the specific occupation and location. Additionally, popular industries for Supply Chain and Logistics occupations varies, but examples include retail trade, manufacturing, and professional, scientific, and technical services. Skills needed for Supply Chain and Logistics occupations typically include scheduling, logistics, critical thinking, and complex problem-solving.

Conclusion

By identifying key occupations in each region, the findings of the five regional reports provide for a coordinated, strategic, and structured approach to transportation workforce development at the region, state and local levels. Additionally, looking at the five regional reports together allows for a national overview of the transportation industry, including common trends and challenges across regions. Centers can then collaborate to overcome these challenges in their respective regions. These results will also help to focus the work of the Centers going forward, and guide their interactions with the Centers' public and private sector stakeholders. Through partnerships, the Centers can work with the transportation, education, workforce investment, and labor/union communities throughout their respective regions to address pressing workforce challenges related to key occupations. This collaborative approach will be important to the success of transportation workforce development and to the efficiency and effectiveness of the nation's transportation system. This focus will also ensure workforce development efforts,

particularly around the key occupations, are meeting the needs of the industry as these careers continue to become more complex and technologically advanced.

The Phase 2 Job Needs and Priorities Reports will further build upon the findings included in the five initial reports. In Phase 2, each region's research team will identify and discuss potential workforce development programs to address the skills needs identified. The Phase 2 Reports will also include detailed action plans and recommendations to address workforce needs regarding the key occupations in the regions. These initiatives will allow for the Centers and partners to better support the rapidly progressing transportation industry.

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