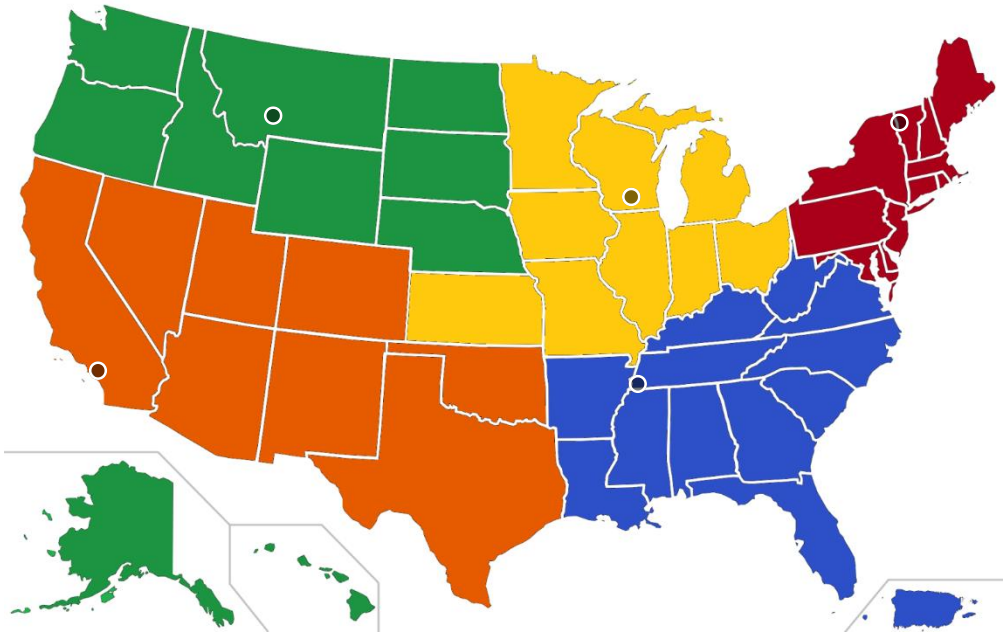
U.S. Department of Transportation
Federal Highway Administration

Southwest Transportation Workforce Center

Job Priorities and Needs Report, Phase 1: Southwest Region



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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 Southwest 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 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 work with the new technology are needed. Further, technology changes, new safety requirements, and changing legislation place additional burden on transportation organizations in that they need to be able to meet changing requirements to be successful.

The above described transportation workforce challenges exist across the nation as a whole, and experiences in the Southwest 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 workforce in the Southwest Region. It will provide an overview of the transportation industry in the Southwest and specific workforce needs within the region. It will also detail

information on the key types of transportation occupations available in the region currently as well as job projections for the next 10 years. Based on these findings, skills required for key occupations will be identified, including noting skills that need additional training/development based on the experiences of transportation stakeholders within the region.

METHODOLOGY

The methodology for developing this report will include several key phases, which are described below.

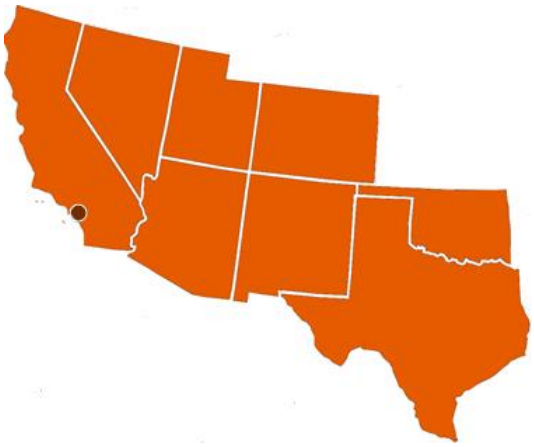
Background Review. Our team will identify and analyze information from Federal, State, and private sector research, technical reports, conference presentations, case studies and HR documents (e.g., position descriptions, job advertisements, career ladders, trainings, strategic plans). The goal will be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

Engage Stakeholders. Next, we will engage industry stakeholders throughout the region-- both public and private partners-- who are specifically knowledgeable about transportation occupations. To do so, we will first develop an evaluation system for the occupations identified in the background review, based on criteria important to the Southwest Transportation Workforce Center as well as stakeholders and workforce in the region. We will then use these criteria to conduct an initial screening, in order to narrow down the list of occupations to 'In-Demand' occupations. These 'In-Demand' occupations will be the subject of our discussions with stakeholders, which will be framed around the evaluation criteria. We will leverage 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 recruitment and retention challenges they have faced within their agency, and the solutions they have used to successfully address their workforce challenges. This information will allow us to further narrow down the list of 'In-Demand' occupations. Results of this subtask will 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 partner, we will generate and analyze historic, current, and future occupational estimates for all priority transportation occupations identified. This longitudinal approach will allow our team to accurately assess workforce trends across disciplines. In developing numerical occupational estimates, our team will create 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 a preliminary overview of our research to data as well as areas where we are requesting additional input from stakeholders.

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



The Southwest Transportation Center includes eight states: Arizona, California, Colorado, Nevada, New Mexico, Oklahoma, Texas, and Utah. This includes 1,016,090 square miles, approximately 29% of the United States. The region contains approximately 28% of the US population (Census, 2014). Seven of the ten cities with populations over 1 million residents are contained within the region: Los Angeles, CA; Houston, TX; Phoenix, AZ; San Antonio, TX; San Diego, CA; Dallas, TX; and San Jose, CA. Further, of cities with populations over 1 million, these are the cities experiencing the highest levels of growth, with an average of 1.46% each year (Census, 2014). The region contains five of the seven largest states in terms of area: Texas, California, New Mexico, Arizona, and Nevada. While the states in the region have fairly low population densities overall (e.g., California and Texas, at 12 and 29 respectively, are the only ones that fall in the top 35), California in particular contains highly population dense areas within and surrounding Los Angeles and San Francisco (Census, 2010). This reflects that while many of the states are fairly large, they still show a variance within the region that will be important to take into account when thinking about the workforce composition within the transportation industry. Exhibit 1 provides an overview of the states included in the Southwest Region, with an overview of population, land area, and transportation infrastructure information.

Exhibit 1: Overview of Population and Transportation Information by State for the Southwest 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
Arizona	6,731,484	113,594.08	65,262	2.00%	1,645	0
California	38,802,500	155,779.22	175,499	5.17%	5,327	290
Colorado	5,355,866	103,641.89	88,524	3.22%	2,667	0
Nevada	2,839,099	109,781.18	38,567	3.62%	1,192	0
New Mexico	2,085,572	121,298.15	68,384	1.13%	1,835	0
Oklahoma	3,878,051	68,594.92	112,821	0.43%	3,273	150
Texas	26,956,958	261,231.71	313,210	1.63%	10,425	830
Utah	2,942,902	82,169.62	45,890	2.50%	1,343	0

The total transportation expenditures by state and local governments in the Southwest 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 Southwest Region contributes 24.44% of funds in the United States for highways, 27.42% of total funds for transit, 33.07% of funds for air, and approximately 33% of total funds for water transportation. Considering that only three of the eight states in the region have inland waterways and report their water related expenditures, it is quite notable that it comprises one third of total expenditures. Major employers in the area include state and local DOTs, Amtrak, the Union Pacific Railroad, the BNSF Railroad, transit systems (including the Bay Area Rapid Transit system and Los Angeles Metro Rail), and motor freight companies (e.g., Swift Transportation, Schneider National).

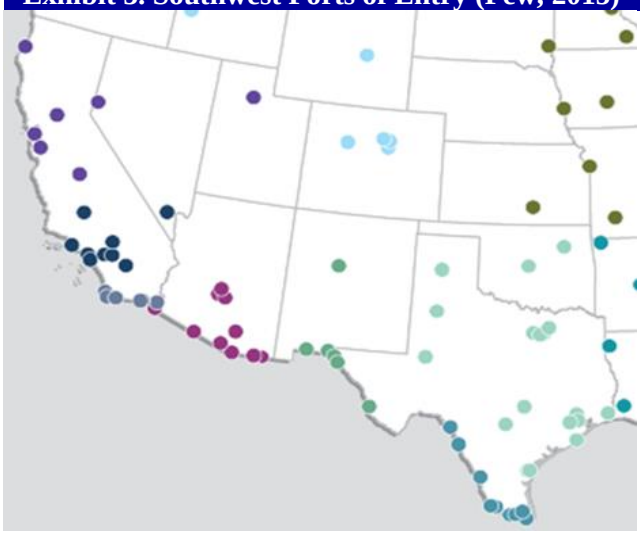
Exhibit 2: Budget by State and Mode (in Millions of Dollars) (Census, 2011; Department of Commerce, 2011)					
	Total	**Highway**	**Transit**	**Air**	**Water**
Arizona	$3,742	$2,504	$665	$583	--
California	$30,102	$15,054	$10,320	$3,456	$1,272
Colorado	$3,860	$2,413	$783	$664	--
Nevada	$2,705	$1,408	$359	$938	--
New Mexico	$1,421	$1,194	$141	$86	--
Oklahoma	$2,636	$2,416	$79	$135	$6
Texas	$15,873	$10,971	$2,998	$1,457	$447
Utah	$2,799	$1,837	$767	$194	--
Total	$63,138	$37,797	$16,112	$7,513	$1,725

Transportation systems across the Southwest Region are multi-modal, with many different types of occupations that individuals can fulfill. For example, transportation employers in Arizona need employees to maintain 65,262 miles of roads, including six interstate highways (with one more, I-11, in progress) and 10 U.S. Routes, 7 airports with regularly scheduled commercial flights, and operate transportation systems including busses and lightrail, and man over ten ports of entry (Arizona Department of Transportation, 2015; US DOT BTS. 2012; US Customs and Border Patrol, n.d.). Similarly, California is connected through an extensive system of freeways, expressways and highways, which with the rest of the roads, total over 175,000 miles. These include 6 major interstate highways, 18 auxiliary interstate highways, and 7 state routes. It has 12 different local and regional passenger rail systems, intercity rail travel via Amtrak, over 25 commercial airports, and 8 significant seaports, in addition to bus and ferry systems (California Department of Transportation, 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.

Ports of Entry

There are more than 70 ports of entry in the Southwest Region (US Customs and Border Patrol, n.d.). Each state has at least one, California has 21, and Texas has 29. U.S. Customs and Border Patrol (CBP) is responsible for screening all foreign visitors, returning American Citizens, and imported cargo that comes through the more than 314 land, air and sea ports in the United States (Pew, 2015).

Exhibit 3. Southwest Ports of Entry (Pew, 2015)



The Southwest Region has both border and inland ports of entry. Inland ports of entry are typically international airports, whereas border ports of entry are land or rail crossings. Seaports can be used as a port of entry inly if there is a dedicated customs presence posted there. When looking at international passenger traffic, the Southwest contains three of the busiest airports in the US: Los Angeles International Airport (LAX) with 18.5 million international passengers per year, San Francisco International Airport (SFO) with 9.15 million international passengers per year, George Bush Intercontinental Airport (IAH) with 8.51 million international passengers per year, and Dallas/Fort Worth International Airport (DFW) with 5.81 million

international passengers per year (USDOT, 2012). These represent the third, seventh eighth and tenth rankings, respectively, with an average growth of 5.28% between 2011 and 2012.

Due to the long border with Mexico, the Southwest Region contains a number of border ports of entry. Exhibit 4 below describes a select number of these border port of entries, showing mode by mode variance. The number of modes in which an individual or cargo can cross a border of entry (e.g., trucks, trains, busses, car, or on foot) poses a challenge in terms of staffing, particularly when considering the variance of modes across different ports of entry.

Exhibit 4: Select Border Ports of Entry (Bureau of Transportation Statistics, 2014)

	Trucks	Trains	Train Pass.	Buses	Bus Pass.	Personal Vehicles	Personal Vehicle Pass.
AZ: Douglas	33,104	0	0	2,267	13,442	1,571,929	2,821,853
AZ: Lukeville	68	0	0	498	2,679	316,429	653,483
AZ: Naco	3,601	0	0	12	451	298,368	525,988
AZ: Nogales	312,010	795	3,180	9,423	168,768	3,286,532	6,798,080
AZ: San Luis	31,968	0	0	36	36	3,028,042	5,536,747
CA: Calexico	0	0	0	0	0	4,071,666	7,221,528
CA: Calexico East	325,243	252	1,162	2,785	111,400	3,399,697	6,437,937
CA: Otay Mesa	810,193	205	410	41,222	186,898	6,910,219	12,040,318
CA: San Ysidro	0	0	0	57,171	491,058	11,946,060	21,116,089
CA: Tecate	52,239	0	0	237	5,456	812,540	1,598,672
NM: Columbus	13,923	0	0	1,495	17,297	357,691	617,090
NM: Santa Teresa	87,597	0	0	129	1,760	463,799	1,095,123
TX: Brownsville	209,989	685	0	7,625	53,493	4,325,554	8,527,359
TX: Del Rio	69,048	0	0	0	0	1,347,713	2,839,645
TX: Eagle Pass	136,506	2,728	0	1,027	26,682	2,466,385	5,082,478
TX: El Paso	759,125	1,990	6,903	21,554	313,684	11,595,319	19,134,740
TX: Hidalgo	530,093	0	0	26,087	349,417	4,565,037	9,252,030

There is a fair amount of variance amongst border ports of entry. San Ysidro, CA, often called the busiest port of entry in the country, sees a large amount of bus and vehicle traffic, but no trucks or trains. Eagle Pass, TX, sees the largest amount of train traffic in the region, but a relatively lower amount of busses and bus passengers. Other ports of entry, including El Paso, TX, and Nogales, AZ, have large numbers across a variety of modes.

Exhibit 5: Ports by Cargo Volume in Short Tons (Army Corps of Engineers, 2012)			
	Total Foreign Trade	**Exports**	**Imports**
Houston, TX	162,443,322	78,627,053	83,816,269
Long Beach, CA	65,799,985	24,584,469	41,215,516
Los Angeles, CA	54,869,484	21,974,579	32,894,905
Beaumont, TX	49,684,048	9,069,011	40,615,037
Corpus Christi, TX	45,701,018	14,822,051	30,878,967
Texas City, TX	35,959,857	8,299,666	27,660,191
Port Arthur, TX	19,872,314	9,177,582	10,694,732
Freeport, TX	16,476,676	2,102,430	14,374,246
Oakland, CA	16,395,958	10,120,672	6,275,286
Richmond, CA	12,652,871	2,847,780	9,805,091

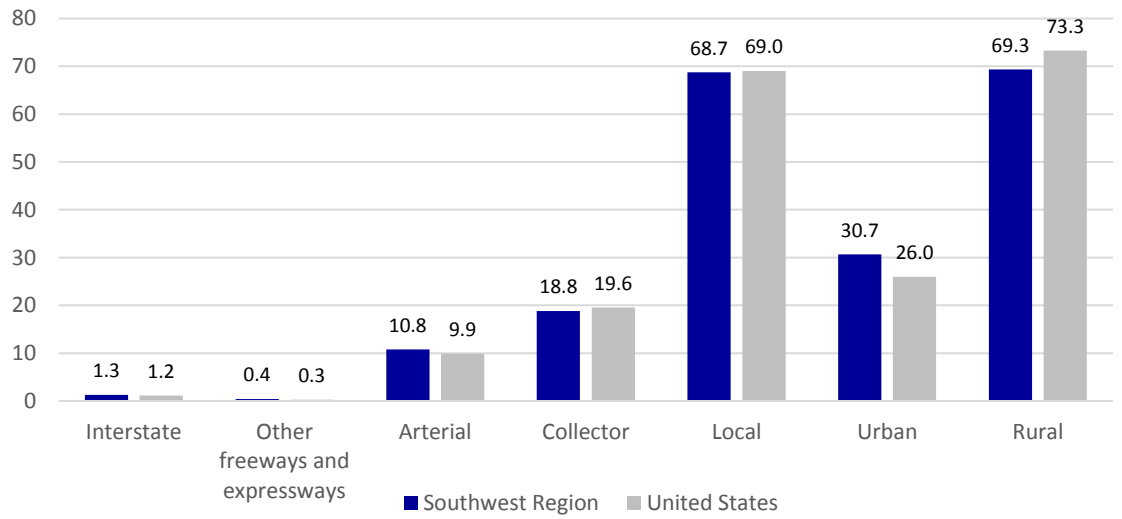
Seaports are also an important component of ports of entry. In terms of foreign total trade, Houston is the biggest U.S. port (Army Corps of Engineers, 2012). Long Beach, CA, Los Angeles, CA, Beaumont, TX, and Corpus Christi, TX are also in the top ten US seaports in total foreign trade.

Houston's total foreign trade comprises approximately one third of the total foreign trade of the region. Of the 18 total ports reported by Army Corps of Engineers, the region sees approximate 495 million short tons of foreign trade each year. Ports of Entry are a large part of the transportation industry within the Southwest region, and the variety of modes and positions associated with each mode poses a unique challenge when it comes to workforce planning.

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).

Exhibit 6. Percentage of Highway Type, Southwest Region and Entire US, (APTA, 2014)



The Southwest Region encompasses 895,398 miles of highway, approximately 22% of the highways in the US. This includes 11,253 miles of interstate highway, which is 24.1% of the interstate highway mileage in the country. Almost 275 million miles of the roads in this region are urban, comprising 25.4% of the urban roads in the country. Over 30% of the roads in the Southwest Region are urban, compared to less than 27% being urban across the country (Census, 2009). This poses a unique situation when it comes

to workforce planning and staffing, particularly because the region contains a variety of climates in which the highway system must be maintained.

There are a total of 125,664 bridges contained within the Southwest Region. This represents 20.8% of the 605,471 bridges in the United States (APTA, 2014). Of the bridges in the region, 9,504 are structurally deficient, and 17,011 are functionally obsolete. This comprises 15.0% of structurally deficient bridges and 20.4% of functionally obsolete bridges nationwide (APTA, 2014). While the average percentage of structurally deficient (6.8% v 10.4%) and functionally obsolete (11.4% v 13.8%) is lower than the average percentages nationwide, the states with the three largest amounts of bridges in the region (California, Oklahoma, and Texas) are all noticeably above the nationwide benchmarks on at least one of the two metrics. This, paired with a fairly large number of bridges, indicate that the Southwest Region will still likely encounter a higher demand for bridge work, requiring workers who are familiar with traditional, as well as newer forms of bridge construction and maintenance. There is, however, a great deal of variance within the region in terms of total bridges by state, which will require additional attention.

Exhibit 7: Bridge Totals and Condition in the SW Region (APTA, 2014)

	All Bridges	Structurally Deficient	Functionally Obsolete
Arizona	7,862	238 (3.0%)	716 (9.1%)
California	24,955	2,769 (11.1%)	4,184 (16.8%)
Colorado	8,612	536 (6.2%)	902 (10.5%)
Nevada	1,853	36 (1.9%)	217 (11.7%)
New Mexico	3,935	298 (7.6%)	356 (9.0%)
Oklahoma	22,912	4,227 (18.4%)	1,601 (7.0%)
Texas	52,561	1,283 (2.4%)	8,715 (16.6%)
Utah	2,974	117 (3.9%)	320 (10.8%)

Air

Air transportation is crucial in terms of moving both passengers and cargo. In terms of total movements, which references the takeoff and landing of an aircraft (passengers and cargo), Los Angeles International Airport (LAX) is the third busiest in the US and the world, with 696,443 in 2013 (Airports Council International (ACI), 2014). The exhibit below describes the airport usage of the busiest airports in the region by all movements, passengers, and cargo in short tons (as converted from metric tonnes, as provided in the data), and rank within North America.

Exhibit 8: Airport Usage Statistics 2013 (AIC, 2014)

	All Movements (Rank)	Passengers (Rank)	Cargo (in short tons)
Los Angeles International Airport (LAX)	696,443 (3)	66,667,619 (3)	1,926,050 (5)
Dallas/Ft Worth International Airport (DFW)	678,059 (4)	60,470,507 (4)	652,170 (11)
Denver International Airport (DIA)	582,653 (5)	52,556,359 (5)	249,426 (25)
McCarran International Airport (LAS)	520,992 (7)	40,933,037 (9)	102,486 (38)
George Bush Intercontinental Airport (IAH)	496,908 (8)	39,799,414 (12)	470,471 (14)
Sky Harbor International Airport (PHX)	459,434 (9)	40,341,614 (11)	304,286 (21)
San Francisco International Airport (SFO)	421,400 (14)	44,945,760 (7)	401,013 (19)
Oakland International Airport (OAK)	201,231 (42)	9,742,887 (40)	533,620 (13)

In terms of all movements, the Southwest Region comprises five of the top 10 busiest airports in the United States. 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.

Transit

Public transit encompasses city busses, trolleys, trams or light rail, rapid transit, passenger trains, and ferries. Because bus systems operate on normal roads, they require less infrastructure. Busses 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 on 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 Light Rail systems include parts of the Los Angeles Metro Rail system, the San Diego Trolley, the Dallas Area Rapid Transit (DART) Light Rail, and the Phoenix Metro. Over half of the states in the region have at least one light rail system.

Exhibit 9: Public Transit Commuters, by Mode, in the Southwest Region (US DOT Bureau of Transportation Statistics, 2012)

	Bus	Heavy Rail	Light Rail	Commuter Rail
Arizona	82.84%	0.00%	14.25%	0.00%
California	67.32%	11.79%	11.63%	2.02%
Colorado	78.83%	0.00%	19.30%	0.00%
Nevada	92.15%	0.00%	0.00%	0.00%
New Mexico	90.42%	0.00%	0.00%	7.35%
Oklahoma	96.23%	0.00%	0.00%	0.00%
Texas	81.21%	0.00%	13.53%	0.90%
Utah	52.82%	0.00%	38.72%	4.24%

There is a fair amount of variance in the usage of public transit for commuting by the residents in the states in the Southwest Region; only 0.43% of the population use it in Oklahoma, whereas 5.18% use it in California. There is a general dependence in the region on busses, a noticeable amount of commuters use light rail (USDOT BTS, 2012). Despite a seemingly low percentage of transit use, the large population of California means that in terms of annual unlinked passenger trips, it is the second highest in the country at 1.4 billion. Both the Bay Area Rapid Transit system (BART) and Los Angeles Metro Rail are in the top 10 busiest rapid transit systems in the country, at 5 and 9 respectively (APTA, 2014). Thus, the low percentages of ridership are likely influenced by the high variety of population density within the region.

Indeed, breaking down public transit use into metro areas shows that mode usage can differ quite substantially. For example, only 39% of San Francisco's 440 million yearly passengers utilize the bus system, 28% use heavy rail, and 18% use "other" modes. In this case, other refers to "automated guide way, cable car, demand response, ferry boat, inclined plane, monorail, trolley bus, and van pool" (APTA, 2014). For San Francisco, this number is probably largely Ferry commuting. For example, the Golden Gate Ferry, one of multiple ferry systems serving the Bay Area, served 2.47 million passengers in FY 2014 (GoldenGateFerry.Org), and in FY 2011-2012 the San Francisco Bay Area Water Emergency Transportation Authority (WETA) served 2.2 million passengers (California DOT, 2012). Public transit in the Southwest is varied in terms of specific modes, which must be taken into account when engaging in workforce planning and staffing.

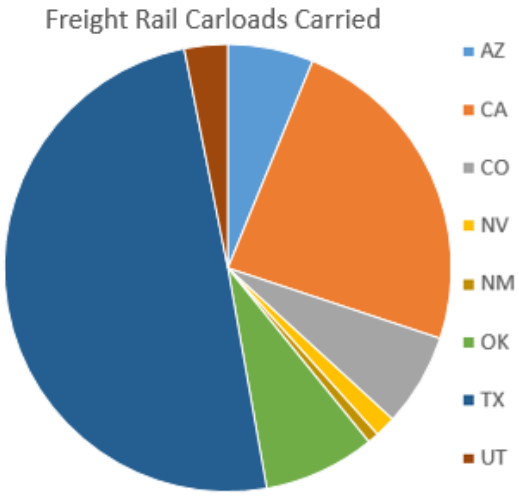
Exhibit 10: Public Transit Commuters, by Mode, in Southwest Cities (US DOT Bureau of Transportation Statistics, 2012; APTA, 2014)						
	Annual Trips (thousands)	Bus	Heavy Rail	Light Rail	Commuter Rail	Other
Los Angeles, CA	679,932	80.1%	7.2%	8.9%	2.1%	1.8%
San Francisco-Oakland, CA	440,217	39.0%	28.0%	11.8%	3.1%	18.1%
San Diego, CA	102,031	62.6%	0.0%	33.0%	1.6%	2.8%
Denver-Aurora, CA	98,716	77.7%	0.0%	20.9%	0.0%	1.4%
Houston, TX	82,223	80.9%	0.0%	13.8%	0.0%	5.2%
Dallas-Fort Worth, TX	80,607	57.6%	0.0%	35.4%	2.7%	4.2%
Phoenix-Mesa, AZ	75,431	78.6%	0.0%	18.6%	0.0%	2.8%
Las Vegas-Henderson, NV	65,867	91.7%	0.0%	0.0%	0.0%	8.3%
San Antonio, TX	47,508	96.9%	0.0%	0.0%	0.0%	3.1%
San Jose, CA	43,741	74.3%	0.0%	24.0%	0.0%	1.7%
Salt Lake City-West Valley City, UT	42,347	49.7%	0.0%	41.4%	4.4%	4.4%
Austin, TX	36,275	96.1%	0.0%	1.4%	0.0%	2.3%

Increasingly new services are emerging to offer more "just-in-time" and flexible transport operations, such as Uber, Lyft and Sidecar. 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 transit operations, especially in urban areas and the workforce needed to be successful.

Rail

Freight rail transportation is used to transport cargo. The United States 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. All of the states within the STWC include freight rail, and over 22% of the freight rail in the country terminates in this region. While Utah's 12.75 million short tons of rail freight only comprises 3.13% of the current freight rail in the region, the state is actively working towards understanding the needs and opportunities for rail service in the State (Utah State Rail Plan, 2014). Potential gaps identified in terms of freight include closer rail freight to Utah's largest coal mine, the Sufco mine, and also reintroducing freight rail service to southwest Utah County for agriculture, mining and agriculture.

Exhibit 11: Freight Rail Carloads Carried



Rail can also be used to transport passengers. Amtrak provides long distance or corridor service in every state within the Southwest Region. Three of the corridors within the region have over a million passengers per year: the Pacific Surfliner (San Diego-Los Angeles-San Luis Obispo: 2,705,823); Capital Corridor Service (San Jose-Oakland-Sacramento-Auburn, 1,701,185; and San Joaquin Service (Oakland/Sacramento-Bakersfield: 1,219,818; Amtrak, 2013). In fiscal year 2013, these three service lines provided revenue in excess of $129 million.

Exhibit 12: Busiest Passenger Rail Stations located in the Southwest (Amtrak, 2013)	
	Total Ridership
Los Angeles, CA	1,643,706
Sacramento, CA	1,132,750
San Diego, CA	686,953
Emeryville, CA	598,859
Bakersfield, CA	546,439
Martinez, CA	473,836

California provides funding to Amtrak for all three of these routes; Oklahoma and Texas also provide state funding to Amtrak in support of the Heartland Flyer route. The Southwest Region contains 6 of the 25 busiest Amtrak stations in the United States, serving over 5.08 million passengers per year.

Amtrak also operates the commuter service for the Metrolink commuter service in California, which services the Los Angeles and San Bernadino area. Commuter rail is different from rapid transit systems as it is larger, providing more seating (and less standing room) due to the long distances covered, and having scheduled, and typically less frequent services. They rent to serve lower density suburban areas. The Southwest Region has 8 of the 20 largest commuter rail service, representing California, Utah, Texas and New Mexico (APTA, 2014). The strong presence of rail, both freight and passenger, in the Southwest 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 overland, typically from manufacturing plans 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 also influences motor transportation: FedEx Freight is the top less than truckload carrier, and UPS Freight is fourth LTL in the country (Logistics Management, 2012). 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).

Exhibit 13: Southwest Freight Routes (FHWA, 2013)

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, across lakes and oceans. The US Department of Transportation Maritime Administration maintains 21 Marine Highway routes, multiple of which are adjacent to the areas covered by STWC. 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 U.S. ports on those waterways, described in terms of the specific landside transportation routes (road or rail line) that they supplement or connect. Even though only three of the eight states in the region have marine transport (California: 220,836 short tons; Oklahoma, 6,116 short tons, and Texas, 485,884),

they make up approximately 25% of the marine freight in the United States. The amount of cargo transported via marine channels means that while only a small part of the region has marine transportation, the workers associated will likely represent an important part of the workforce.

As illustrated above, transportation systems across the Southwest Region are multimodal, with many different types of occupations that individuals can fill. Further, the Southwest 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 Region

Across within the transportation industry, there are a wide range of occupations that have diverse job functions. Even within the Southwest region, there are various occupations that need to be filled by qualified employees to ensure that transportation organizations run smoothly and provide needed services. Transportation occupations span the modes described previously. To begin exploring the transportation workforce in the Southwest, occupations that are important within the industry were identified using occupational codes and pulling employment data from existing Department of Labor (DOL) and BLS (Bureau of Labor Statistics) databases. This information is used to provide a broad overview of the transportation workforce in the Southwest.

Transportation and warehousing occupations in the Southwest employ almost one and a half million, as reported by the BLS (see Exhibit 14). The majority of these employees (85%) work in private organizations, with the remaining in Federal, State, or local government positions. 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 jobs and careers in the region due to the prevalence of these types of positions in the region.

Exhibit 14: Number of Employees in Transportation and Warehousing Occupations (NAICS Codes 48-49) by State, December 2014

	Employees in Private Organizations	Employees in Federal, State, and Local Government	Total Number of Employees
United States Total	**4,432,813**	**934,547**	**5,367,360**
Arizona	75,963	10,986	86,949
California	469,800	115,324	585,124
Colorado	69,147	13,510	82,657
Nevada	54,160	4,238	58,398
New Mexico	18,765	4,953	23,718
Oklahoma	46,522	7,912	54,434
Texas	435,080	62,854	497,934
Utah	48,692	10,880	59,572
Total in Southwest Region	***1,218,129***	***230,657***	***1,448,786***

Source. BLS Quarterly Census of Employment and Wages.
http://www.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables

Of transportation and warehousing employees in the entire 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.

To gather a more in depth look at the transportation workforce in the Southwest, it is necessary to move from looking at employees within the industry to those employed in specified occupations. Further, to plan for the future of the transportation workforce in the region, it is also necessary to examine projections about changes in the number of employees for each of the occupations being examined. The BLS and individual date DOLs develop 10-year predictions to help with long term planning, specifically with regard to career choice. As such, typical required education is provided for each occupation. The projections are based on how fast employment is expected to grow or decline for each occupation. The projections are updated every two years. As such, the data in this report include both the number of employees in the Southwest 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).

There are a variety of transportation occupations that are important in the Southwest region. When describing and analyzing occupations, federal and state agencies that collect, analyze, and share information about occupations organize the data using a Standard Occupational Classification (SOC) system. In this system, each occupation has its own code, and the codes are grouped into categories of similar occupations. 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 15 provides data for occupations within this major group that were identified as relevant for the Southwest region. For each occupation, the table includes the SOC code (used to identify occupations by the BLS), occupation title, number of employees in the Southwest in May 2014, national 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 each occupation in all of the states in the Southwest Region, is provided in Appendix A.

Exhibit 15: Occupational Data and Projections for Relevant Occupations in the Southwest Region within the SOC Major Group of "Transportation and Material Moving Occupations"								
SOC Code	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
53-1011	Aircraft cargo handling supervisors	1,750	$24.41	High school diploma or equivalent	1,100	1,310	210	19.1%
53-1021	First-line supervisors of helpers, laborers, and material movers, hand	46,330	$23.55	High school diploma or equivalent	45,050	53,390	8,340	18.5%
53-1031	First-line supervisors of transportation and material-moving machine and vehicle operators	51,280	$27.66	High school diploma or equivalent	49,840	58,070	8,230	16.5%
53-2011	Airline pilots, copilots, and flight engineers	18,290	*	Bachelor's degree	13,750	16,590	2,840	20.7%
53-2012	Commercial pilots	10,960	*	High school diploma or equivalent	13,380	16,090	2,710	20.3%
53-2021	Air traffic controllers	3,850	$57.11	Associate's degree	6,040	6,620	580	9.6%
53-2022	Airfield operations specialists	1,830	$24.61	High school diploma or equivalent	1,210	1,440	230	19.0%
53-2031	Flight attendants	21,760	*	High school diploma or equivalent	21,170	25,590	4,420	20.9%
53-3021	Bus drivers, transit and intercity	47,000	$18.95	High school diploma or equivalent	46,500	53,320	6,820	14.7%
53-3022	Bus drivers, school or special client	86,610	$14.38	High school diploma or equivalent	84,670	93,040	8,370	9.9%
53-3031	Driver/sales workers	113,820	$13.33	High school diploma or equivalent	109,460	130,560	21,100	19.3%
53-3032	Heavy and tractor-trailer truck drivers	405,090	$20.16	Postsecondary non-degree award	415,400	496,580	81,180	19.5%
53-3033	Light truck or delivery services drivers	202,610	$16.28	High school diploma or equivalent	204,150	231,850	27,700	13.6%
53-3041	Taxi drivers and chauffeurs	48,820	$12.35	Less than high school	59,130	70,980	11,850	20.0%
53-3099	Motor vehicle operators, all other	17,760	$16.02	High school diploma or equivalent	22,380	26,180	3,800	17.0%
53-4011	Locomotive engineers	7,860	$27.41	High school diploma or equivalent	4,670	5,160	490	10.5%
53-4012	Locomotive firers	190	$25.81	High school diploma or equivalent	170	110	-60	-35.3%
53-4013	Rail yard engineers, dinkey operators, and hostlers	830	$21.54	High school diploma or equivalent	800	970	170	21.3%
53-4021	Railroad brake, signal, and switch operators	4,740	$25.14	High school diploma or equivalent	4,080	4,520	440	10.8%
53-4031	Railroad conductors and yardmasters	7,690	$26.84	High school diploma or equivalent	5,890	6,420	530	9.0%
53-4041	Subway and streetcar operators	2,400	$28.48	High school diploma or equivalent	1,500	1,600	100	6.7%
53-4099	Rail transportation workers, all other	690	$28.82	High school diploma or equivalent	NA	NA	NA	NA
53-5011	Sailors and marine oilers	4,240	$19.70	Less than high school	4,660	5,540	880	18.9%

Exhibit 15: Occupational Data and Projections for Relevant Occupations in the Southwest Region within the SOC Major Group of "Transportation and Material Moving Occupations"								
SOC Code	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
53-5021	Captains, mates, and pilots of water vessels	4,530	$38.07	Bachelor's degree	5,560	6,580	1,020	18.3%
53-5022	Motorboat operators	200	$19.78	High school diploma or equivalent	170	210	40	23.5%
53-5031	Ship engineers	1,450	$35.87	Bachelor's degree	1,260	1,400	140	11.1%
53-6011	Bridge and lock tenders	190	$22.22	High school diploma or equivalent	NA	NA	NA	NA
53-6021	Parking lot attendants	44,680	$10.39	Less than high school	40,810	46,300	5,490	13.5%
53-6031	Automotive and watercraft service attendants	24,740	$10.90	Less than high school	26,610	32,990	6,380	24.0%
53-6041	Traffic technicians	1,190	$22.38	High school diploma or equivalent	1,150	1,280	130	11.3%
53-6051	Transportation inspectors	7,160	$34.05	High school diploma or equivalent	6,610	7,980	1,370	20.7%
53-6061	Transportation attendants, except flight attendants	5,150	$13.01	High school diploma or equivalent	6,000	7,030	1,030	17.2%
53-6099	Transportation workers, all other	10,810	$17.28	High school diploma or equivalent	8,390	9,950	1,560	18.6%
53-7011	Conveyor operators and tenders	7,450	$16.35	Less than high school	7,700	8,650	950	12.3%
53-7021	Crane and tower operators	12,520	$25.75	High school diploma or equivalent	10,200	12,930	2,730	26.8%
53-7031	Dredge operators	390	$21.94	Less than high school	NA	NA	NA	NA
53-7032	Excavating and loading machine and dragline operators	5,070	$21.23	High school diploma or equivalent	11,090	13,210	2,120	19.1%
53-7033	Loading machine operators, underground mining	200	$22.84	Less than high school	140	140	0	0.0%
53-7041	Hoist and winch operators	250	$23.47	Less than high school	230	280	50	21.7%
53-7051	Industrial truck and tractor operators	125,490	$16.02	Less than high school	116,260	125,470	9,210	7.9%
53-7061	Cleaners of vehicles and equipment	102,780	$11.22	Less than high school	103,970	121,030	17,060	16.4%
53-7062	Laborers and freight, stock, and material movers, hand	617,690	$13.07	Less than high school	586,480	704,130	117,650	20.1%
53-7063	Machine feeders and offbearers	17,920	$14.73	Less than high school	22,060	24,740	2,680	12.1%
53-7064	Packers and packagers, hand	161,960	$11.08	Less than high school	162,510	183,070	20,560	12.7%
53-7071	Gas compressor and gas pumping station operators	1,380	$26.65	Less than high school	1,300	1,430	130	10.0%
53-7072	Pump operators, except wellhead pumpers	6,260	$22.45	Less than high school	6,280	7,940	1,660	26.4%

Exhibit 15: Occupational Data and Projections for Relevant Occupations in the Southwest Region within the SOC Major Group of "Transportation and Material Moving Occupations"								
SOC Code	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
53-7073	Wellhead pumpers	6,210	$23.36	Less than high school	7,610	9,460	1,850	24.3%
53-7081	Refuse and recyclable material collectors	27,630	$17.32	Less than high school	30,370	34,800	4,430	14.6%
53-7111	Mine shuttle car operators	210	$26.36	Less than high school	30	30	0	0.0%
53-7121	Tank car, truck, and ship loaders	3,690	$21.41	Less than high school	2,570	3,110	540	21.0%
53-7199	Material moving workers, all other	7,900	$18.19	Less than high school	7,800	9,520	1,720	22.1%

Sources. [a] BLS Employment Data (http://www.bls.gov/oes/current/oes_nat.htm) and [b] BLS Long Term Projections (http://www.projectionscentral.com/Projections/LongTerm). NA indicates that data were not available from the identified source. *Hourly wages are not available for these positions. Annual salaries are as follows: 53-2011, Airline Pilots, Copilots, and Flight Engineers - $131,760; 53-2012, Commercial Pilots - $82,430; 53-2031, Flight Attendants - $46,300.

In terms of numerical increase in employees within specific occupations, the greatest increases in the Southwest region in the long term (i.e., 2012 to 2022) are expected in *Laborers and Freight, Tock, and Material Movers, Hand; Heavy and Tractor Trailer Truck Drivers; and Light Truck or Delivery Services Drivers*, meaning that there will likely be many new jobs created within these occupations. This makes sense as they are some of the largest occupations in terms of number of employees in the Southwest region. It is also important to look at the employment changes in terms of percent change, as this can show occupations that are expected to grow quickly, without the focus on large occupations. When looking at the expected percent increase from 2012 to 2022, the great percentage increases are expected for *Crane and Tower Operators* (26.8% increase); *Pump Operators, Except Wellhead Plumbers* (26.4% increase)*; and Wellhead Pumpers* (24.3% increase). When examining the occupations shown in Exhibit 15, it can be seen that each mode described for the Southwest region is represented in these occupations.

Interestingly, for each of these transportation occupations included here, the projected percentage growth in the Southwest region is greater than or equal that for the nation as a whole. This points to the importance of focusing on the transportation workforce in the Southwest as opportunities for a variety of transportation jobs in the region will likely be increasing over the next ten years.

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 employ engineers, which are not included in the list of occupations in Exhibit 15. 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. When these employees are hired to work in transportation organizations, it is necessary that they are skilled in their occupation, but they do not necessarily need a background in transportation. The nuances of the transportation industry or their specific organization can be learned on the job, while they are providing expertise in their specific occupational area.

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 the individuals who work in construction and maintenance/repair of roads, tracks, or other structures used in transportation. To provide information on these types of occupations, Exhibit 16 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 by nature 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 in the next 10 years.

Exhibit 16: Occupational Data and Projections for Relevant Occupations in the Southwest Region within Engineering, Science, Construction, and Maintenance/Repair SOC Codes								
SOC Code	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
17-1021	Cartographers and photogrammetrists	4,150	$31.04	Bachelor's degree	4,050	5,230	1,180	29.1%
17-1022	Surveyors	13,490	$29.00	Bachelor's degree	13,200	15,060	1,860	14.1%
17-2011	Aerospace engineers	28,050	$51.78	Bachelor's degree	30,670	35,640	4,970	16.2%
17-2051	Civil engineers	82,840	$41.89	Bachelor's degree	83,630	103,600	19,970	23.9%
17-2071	Electrical engineers	50,250	$46.05	Bachelor's degree	50,660	56,700	6,040	11.9%
17-2081	Environmental engineers	14,720	$41.51	Bachelor's degree	14,510	18,020	3,510	24.2%
17-3021	Aerospace engineering and operations technicians	3,910	$30.92	Associate's degree	3,340	3,360	20	0.6%
17-3022	Civil engineering technicians	23,550	$24.18	Associate's degree	22,050	23,000	950	4.3%
17-3023	Electrical and electronics engineering technicians	49,090	$29.01	Associate's degree	47,060	51,120	4,060	8.6%
17-3025	Environmental engineering technicians	5,040	$24.53	Associate's degree	4,640	5,800	1,160	25.0%
17-3029	Engineering technicians, except drafters, all other	24,850	$30.35	Associate's degree	23,110	25,990	2,880	12.5%
17-3031	Surveying and mapping technicians	14,760	$21.09	High school diploma or equivalent	16,750	20,270	3,520	21.0%
19-1031	Conservation scientists	5,390	$30.97	Bachelor's degree	6,490	7,060	570	8.8%
19-3051	Urban and regional planners	12,070	$33.18	Master's degree	11,590	13,540	1,950	16.8%
47-2071	Paving, surfacing, and tamping equipment operators	16,780	$20.41	High school diploma or equivalent	15,890	18,230	2,340	14.7%
47-2073	Operating engineers and other construction equipment operators	92,750	$23.09	High school diploma or equivalent	91,940	112,720	20,780	22.6%
47-2111	Electricians	148,000	$26.21	High school diploma or equivalent	144,800	181,230	36,430	25.2%
47-4051	Highway maintenance workers	20,210	$18.22	High school diploma or equivalent	19,970	22,430	2,460	12.3%
47-4061	Rail-track laying and maintenance equipment operators	1,980	$24.39	High school diploma or equivalent	2,290	2,600	310	13.5%
49-2091	Avionics technicians	5,260	$28.11	Associate's degree	5,220	5,540	320	6.1%
49-2093	Electrical and electronics installers and repairers, transportation equipment	3,590	$26.65	Postsecondary non-degree award	3,750	4,210	460	12.3%
49-3011	Aircraft mechanics and service technicians	38,400	$28.29	Postsecondary non-degree award	39,230	43,490	4,260	10.9%

Exhibit 16: Occupational Data and Projections for Relevant Occupations in the Southwest Region within Engineering, Science, Construction, and Maintenance/Repair SOC Codes								
SOC Code	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
49-3031	Bus and truck mechanics and diesel engine specialists	62,390	$21.71	High school diploma or equivalent	64,290	75,060	10,770	16.8%
49-3043	Rail car repairers	3,920	$25.27	High school diploma or equivalent	3,890	4,350	460	11.8%
49-3051	Motorboat mechanics and service technicians	3,070	$18.56	High school diploma or equivalent	2,460	2,840	380	15.4%
49-3052	Motorcycle mechanics	3,540	$17.21	High school diploma or equivalent	3,690	4,460	770	20.9%
49-3092	Recreational vehicle service technicians	3,200	$17.80	High school diploma or equivalent	2,800	3,370	570	20.4%
49-3093	Tire repairers and changers	30,990	$12.31	High school diploma or equivalent	29,140	34,660	5,520	18.9%
49-9092	Commercial divers	390	$24.55	Postsecondary non-degree award	310	430	120	38.7%
49-9097	Signal and track switch repairers	1,450	$28.81	High school diploma or equivalent	840	920	80	9.5%
51-2011	Aircraft structure, surfaces, rigging, and systems assemblers	8,990	$24.43	High school diploma or equivalent	9,270	10,860	1,590	17.2%
51-9197	Tire builders	550	$20.17	High school diploma or equivalent	1,400	1,370	-30	-2.1%

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

Many of the occupations including in the grouping shown in Exhibit 16, and specifically the engineering occupations, require a college degree (i.e., either Bachelor's or Associate's degree). Each of these occupations is projected to increase in size by 2022, many with projected increases of over 20%. This shows the importance of making sure that engineering students are aware of transportation as a career option and showing them the value or benefits they can gain from working within the transportation industry. There are also a large number of occupations in this grouping that require a high school diploma or equivalent. As such, it is important to make sure that any required technical training programs are available to train high school students to be successful in transportation careers.

Beyond the engineering and technical employees that support transportation organizations, there are also employees in the areas of management, finance, and support. Exhibit 17 provides occupational data and projects 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 tables, Exhibit 17 provides the SOC code, occupation title, number of employees in the Southwest 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 17: Occupational Data and Projections for Relevant Occupations in the Southwest Region within Management, Service, and Support Occupations								
SOC Code	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
11-3021	Computer and information systems managers	89,850	$65.52	Bachelor's degree	83,630	102,330	18,700	22.4%
11-3071	Transportation, storage, and distribution managers	30,490	$44.80	High school diploma or equivalent	29,610	34,200	4,590	15.5%
13-1081	Logisticians	35,710	$36.94	Bachelor's degree	35,330	47,230	11,900	33.7%
13-2031	Budget analysts	16,690	$35.55	Bachelor's degree	17,330	19,320	1,990	11.5%
13-2051	Financial analysts	61,450	$44.35	Bachelor's degree	64,900	79,350	14,450	22.3%
33-3041	Parking enforcement workers	2,400	$18.15	High school diploma or equivalent	2,220	2,280	60	2.7%
33-3052	Transit and railroad police	840	$25.56	High school diploma or equivalent	610	710	100	16.4%
33-9093	Transportation security screeners	12,640	$18.56	High school diploma or equivalent	12,900	14,830	1,930	15.0%
43-5011	Cargo and freight agents	24,010	$21.14	High school diploma or equivalent	18,420	22,640	4,220	22.9%

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

Examining Exhibit 17 shows how important is for educators and transportation organizations in the southwest to be preparing students for careers as *Computer and Information Systems Managers, Logisticians,* and *Financial Analysts.* Each of these occupations are expected to see increases of over 20% in terms of employees, which equates to over 15,000 additional positions across the region for each occupation by 2022. While students in these fields are likely not in transportation specific training and education programs, it will be key for transportation organizations to learn how to best recruit them as the increasing number of positions in the occupation will likely lead to increased competition to hire high-quality graduates into open positions.

Finally, occupational data and projections were analyzed at the state level to begin identifying differences in the workforce, and potential workforce needs, across the Southwest Region. Exhibit 18 provides a first look at this state-level information. Specifically, for each state the occupations with the largest expected increases and decreases in terms of number of employees from 2012 to 2022 are identified. Complete data for all identified occupations by state is provided in Appendix A.

Exhibit 18: Transportation Occupations with Greatest Expected Increases and Decreases in Employment, by State in the Southwest Region

State	SOC Code	Occupation Title	# of Employees, 2012	Projected # of Employees, 2022	Change	Percent Change
Arizona	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	35,480	44,010	8,530	24.0%
	47-2111	Electricians	11,720	17,020	5,300	45.2%
	53-3032	Heavy and Tractor-Trailer Truck Drivers	26,040	31,050	5,010	19.2%
	53-7033	Loading Machine Operators, Underground Mining	70	80	10	14.3%
	17-3021	Aerospace Engineering and Operations Technicians	340	330	-10	-2.9%
	49-2091	Avionics Technicians	260	250	-10	-3.8%
California	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	270,500	322,300	51,800	19.1%
	53-3032	Heavy and Tractor-Trailer Truck Drivers	136,100	158,400	22,300	16.4%
	47-2111	Electricians	48,700	59,500	10,800	22.2%
	33-3041	Parking Enforcement Workers	1,600	1,600	0	0.0%
	53-2021	Air Traffic Controllers	2,500	2,500	0	0.0%
	17-3021	Aerospace Engineering and Operations Technicians	1,800	1,700	-100	-5.6%
Colorado	53-3032	Heavy and Tractor-Trailer Truck Drivers	24,180	30,170	5,990	24.8%
	47-2111	Electricians	13,270	18,130	4,860	36.6%
	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	23,280	28,080	4,800	20.6%
	53-4011	Locomotive Engineers	410	370	-40	-9.8%
	53-4021	Railroad Brake, Signal, and Switch Operators	400	360	-40	-10.0%
	53-7081	Refuse and Recyclable Material Collectors	2,200	2,150	-50	-2.3%
Nevada	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	18,250	21,670	3,420	18.7%
	53-3041	Taxi Drivers and Chauffeurs	13,910	16,130	2,220	16.0%
	47-2111	Electricians	4,450	6,190	1,740	39.1%
	53-6041	Traffic Technicians	40	40	0	0.0%

Exhibit 18: Transportation Occupations with Greatest Expected Increases and Decreases in Employment, by State in the Southwest Region						
State	**SOC Code**	**Occupation Title**	**# of Employees, 2012**	**Projected # of Employees, 2022**	**Change**	**Percent Change**
	17-3022	Civil Engineering Technicians	760	750	-10	-1.3%
	53-3022	Bus Drivers, School or Special Client	2,180	2,160	-20	-0.9%
New Mexico	53-3032	Heavy and Tractor-Trailer Truck Drivers	10,270	11,230	960	9.3%
	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	8,140	9,070	930	11.4%
	47-2073	Operating Engineers and Other Construction Equipment Operators	4,530	4,910	380	8.4%
	53-2011	Airline Pilots, Copilots, and Flight Engineers	40	30	-10	-25.0%
	17-3029	Engineering Technicians, Except Drafters, All Other	800	780	-20	-2.5%
	17-3022	Civil Engineering Technicians	710	670	-40	-5.6%
Oklahoma	53-3032	Heavy and Tractor-Trailer Truck Drivers	26,540	29,640	3,100	11.7%
	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	27,360	29,830	2,470	9.0%
	47-2073	Operating Engineers and Other Construction Equipment Operators	5,920	6,960	1,040	17.6%
	53-7051	Industrial Truck and Tractor Operators	4,920	4,810	-110	-2.2%
	53-3022	Bus Drivers, School or Special Client	4,460	4,320	-140	-3.1%
	49-3011	Aircraft Mechanics and Service Technicians	5,870	5,600	-270	-4.6%
Texas	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	185,770	226,470	40,700	21.9%
	53-3032	Heavy and Tractor-Trailer Truck Drivers	161,730	198,760	37,030	22.9%
	47-2111	Electricians	50,220	60,920	10,700	21.3%
	53-5031	Ship Engineers	260	300	40	15.4%
	53-5022	Motorboat Operators	110	130	20	18.2%
	53-4012	Locomotive Firers	170	110	-60	-35.3%
Utah	53-3032	Heavy and Tractor-Trailer Truck Drivers	21,170	26,300	5,130	24.2%
	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	17,700	22,700	5,000	28.2%
	47-2111	Electricians	6,050	7,790	1,740	28.8%
	53-7011	Conveyor Operators and Tenders	70	70	0	0.0%
	49-2091	Avionics Technicians	230	220	-10	-4.3%
	53-7033	Loading Machine Operators, Underground Mining	70	60	-10	-14.3%

Examining projected changes in the transportation workforce in the Southwest in this way allows for beginning to see similarities and differences across the region. For example, all of the states in the Southwest expect Nevada are expected to see a large increase in the number of 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 region. There are also differences between the states when starting to examine expected changes in the workforce. For example, some states are expecting higher growth across occupations that other states. Further examples of these differences include that Colorado will likely see a decrease in occupations related to the rail mode (i.e., largest expected decreases *in Railroad Brake, Signal, and Switch Operators* and *Locomotive Engineers*) whereas New Mexico is likely to see the decreases positions available in some types of 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 occupations in the region, to show the breadth of the transportation workforce. With over 90 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 can then be explored in greater depth. Focusing in on the key occupations involved considering criteria that are the most important to the Southwest Transportation Workforce Center as well as the stakeholders and workforce in the region in terms of identifying key occupations.

The evaluation criteria includes two phases: the first phase involves evaluating 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 alignment with SWTW focus areas. See Exhibit 19 below for the full criteria.

Exhibit 19: Criteria for the Prioritization of Transportation Occupations in the Southwest Region

Criteria	Potential Qualification(s) for Inclusion
Phase 1 Screening Criteria: Based on Industry Assessment and BLS Data	
Increasing demand for employees/ High growth of occupation	▪ Examine gross "percentage" of increasing demand change to identify those occupations with the greatest percentage of expected growth ▪ 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
Established high demand for employees	▪ Examine historic, current, and future "number" of employees in the occupation ▪ 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
Limited supply of new graduates	▪ Use data from training programs to identify areas where there may not be enough graduates to fill needed positions ▪ 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

Exhibit 19: Criteria for the Prioritization of Transportation Occupations in the Southwest Region	
Criteria	**Potential Qualification(s) for Inclusion**
Phase 2 Screening Criteria: Based on Stakeholder Interviews and Alignment with SW \Focus Areas	
Experienced challenges in recruiting or retaining employees	▪ Gather input from stakeholders regarding occupations in the region that there have traditionally been challenges in filling or keeping filled ▪ Selected occupations that have traditionally had these problems because these occupations may benefit from additional attention
Occupation has requirements for or relies upon new or up-and-coming technology	▪ 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 ▪ 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
Uniqueness of critical job functions	▪ Based on job requirements, identify unique occupations that do not share job functions with other occupations ▪ Select these occupations because they have the most individualized needs and would benefit from specialized attention.
Occupations that are unique to the Southwest or have a higher demand in the region than in other regions	▪ Use existing job data to identify occupations that are unique to the region or in higher demand in the Southwest states (e.g., specialized job functions, reliance on specific technology, certain seasonal work) ▪ 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
Aligned with focus areas of the SWTW	▪ Determine if the occupation or the potential workforce align with any of the region's areas of focus: o Gateways/Corridors o Non-native English speakers o Portability of skills o Traffic management/ITS

Phase 1 involved using labor market data to identify those jobs within the list of over 90 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 15% or more by 2022 and those jobs with more than 500 annual openings in the Southwest Region. This analysis reduced the overall listing to 26 'In-Demand' jobs.

Phase 2 of the evaluation was conducted with the list of 26 'In-Demand' jobs. Because the criteria included in Phase 2 of the evaluation system was developed with stakeholders in mind, the questions included in the interview protocol were framed around the criteria (e.g., 'In reviewing the jobs list, which transportation-related occupations have you experienced 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' agencies. Stakeholders were provided with the list of 26 'In-Demand' jobs, so that information gathered in the interview could be used to further narrow down the list. See Exhibit 20 below for a full list of stakeholders interviewed.

Exhibit 20: Southwest Region Stakeholders Interviewed

Name	Agency	Position Title
Joseph Kane	Brookings Institute	Senior Policy/Research Assistant
Dan Pearsall	Conference of Minority Transportation Officials	Colorado Chapter President
Rick Blasgen	Council of Supply Chain Management Professionals	President and CEO
Terry Bills	Esri	Transportation Industry Manager
Jennifer Cleary	Heldrich Center for Workforce Development	Senior Researcher
Kristen Decas	Port of Hueneme Oxnard Harbor District	CEO and Port Director
Jan Vogel	South Bay Workforce Investment Board	CEO
Dave Stumpo	Southern California Regional Transit Training Consortium	CEO at APTREX and Program Administrator
Karla Sisco	Southern Plains TTAP Center	Program Manager
Louie Rodriguez	University of Texas El Paso	Assistant Vice President of Student Affairs

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 year, 5 years, and 10 years throughout the region. These occupations were organized into three categories, which are:

- STEM Occupations
- Career and Technical Education (CTE) Occupations
- Supply Chain and Logistics 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. Specifically, critical STEM occupations for the Southwest Region include: Computer and Information Systems Managers, Civil Engineers, Surveyors, and Urban and Regional Planners. These occupation are presented in Exhibit 21. 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 the industry, particularly with regards to the increasing use of GIS and ITS.

Exhibit 21: Southwest STEM Priority Occupations		
Occupation	**SOC Code**	**Rationale**
Computer and Information Systems Managers	11-3021	• Growing need for employees with ITS knowledge • Growing defense community • Industry currently lacks a solid pipeline or recruitment methodology
Civil Engineers	17-2051	• One civil engineer can take on multiple entities but many of them are approaching retirement in the NE, which will lead to a large gap in the workforce • Many start at state agencies but switch to private agencies upon receiving P.E. certification • Difficult to attract civil engineers due to the unconventional trajectory in the transportation industry • Growing need for employees ITS and GIS knowledge
Surveyors	17-1022	• Growing need for employees with GIS knowledge • The small job market for surveyors makes them difficult to find • Current hiring process makes it difficult to hire surveyors
Urban and Regional Planners	19-3051	• Growing need for employees with GIS knowledge • The small job market for urban and regional planners makes them difficult to find • 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

As new software is 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, demand for Computer and Information Systems Managers is constantly growing. With regard to Civil Engineers, their ability to fulfill multiple roles given their broad range of skills makes them valuable and in high demand in transportation agencies across the region. Additionally, there is a rapidly growing need for employees who are familiar with ITS, in order to manage traffic flow operations and ports of entry. However, for all four STEM occupations identified, it is difficult for agencies in the industry to compete with private sector organizations, which tend to offer better pay than public sector organizations. As a result, it is difficult to hire and retain these STEM employees in the transportation industry in the region.

Career and Technical Education (CTE) Occupations

CTE 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. Exhibit 22 displays the key CTE Occupations that were identified for the Southwest Region. These occupations include Survey and Mapping Technicians; Operating Engineers and Other

Construction Equipment Operators; Bus and Truck Mechanics and Diesel Engine Specialists; Bus Drivers, Transit and Intercity; Heavy and Tractor-Trailer Driver; and Traffic Technicians. 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.

Exhibit 22: Southwest CTE Key Occupations

Occupation	SOC Code	Rationale
Surveying and Mapping Technicians	17-3031	• Growing need for employees with GIS knowledge • Mapping is related to GIS, with a focus on new technologies that may require training or additional information
Operating Engineers and Other Construction Equipment Operators	47-2073	• Growing need for heavy equipment operators • Increasingly wide variety of projects requires broader training
Bus and Truck Mechanics and Diesel Engine Specialists	49-3031	• New technologies in terms of hybrids and alternative fuels • DOT needs diesel engine specialists for heavy equipment • This was identified as one of the most difficult positions to fill overall
Bus Drivers, Transit and Intercity	53-3021	• Difficult to retain and industry currently lacks recruitment methodology • Bus drivers are required for the effective operation of transit in the Southwest Region
Heavy and Tractor-Trailer Drivers	53-3032	• 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 • Background checks and drug checks present a barrier • 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
Traffic Technicians	53-6041	• Growing need for employees familiar with ITS • Vital to the use and maintenance of new technology within the transportation industry

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, employees in each of these occupations contribute to the effective functioning of warehouses and other organizations that focus on the movement of goods. These occupations are critical for ensuring accurate and efficient movement of goods and materials. As displayed in Exhibit 23, key Supply Chain and Logistics occupations in the Southwest Region are

Transportation, Storage, and Distribution Managers; Logisticians; and Laborers and Freight, Stock, and Material Movers, Hand.

Exhibit 23: Southwest Supply Chain and Logistics Key Occupations		
Occupation	**SOC Code**	**Rationale**
Transportation, Storage, and Distribution Managers	11-3071	• Growing need for employees for warehouse operations • Experienced employees are needed who have transportation specific-knowledge but can also manage other employees
Logisticians	13-1081	• Growing need for employees for warehouse operations • Important occupation when organizations need to reduce operating costs and streamline organizational operations
Laborers and Freight, Stock, and Material Movers, Hand	53-7062	• Growing need for employees for warehouse operations • Relatively low-skilled job, but can help to meet the priority in the Southwest for focusing on employees with limited English proficiency or for whom English is a second language

Analysis of Occupations using Labor Market Databases

This section provides information about each of the key occupations that have been 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 Southwest 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. Additionally, they are increasingly using ITS to track traffic flow and ports of entry more effectively. Within the Southwest Region, Computer and Information Systems Managers typically fulfill positions such as Information Technology Project Manager, Technical Project Manager, and Information Technology Manager. As shown in Exhibit 24, employment of Computer and Information Systems Managers is projected to increase 22.4% by 2022, leading to an increase of 18,700 employees within this occupation across the 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. Civil Engineers are increasingly using ITS and GIS to design and develop infrastructure more efficiently. A majority of Civil

Engineers within the region fulfill Civil Engineering positions, but other frequently filled positions include Structural Engineer, Transportation Engineer, and Roadway Engineer. As shown in Exhibit 24, employment of Civil Engineers is projected to increase 23.9% from 2012 by 2022. 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 fulfill positions such as Land Surveyor, Site Surveyor, and Project Surveyor. As shown in Exhibit 24, employment of Surveyors is expected to increase 14.1% by 2022, resulting in 1,860 more employees within the occupation in the Southwest.

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 (i.e., population density). In the Southwest, they typically fulfill the positions of 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 24, employment of Urban and Regional Planners is projected to increase 16.8%% 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. It is also important to be aware of GIS-related jobs within the Surveyors and Urban and Regional Planners occupations, as these jobs are in high-demand in the Southwest Region, and will likely continue to grow in importance and number of employees in the near future. While Surveyors and Urban and Regional Planners use GIS regularly, GIS-related jobs have a greater reliance on the technology, utilizing it to make business decisions and complete projects effectively. According to ESRI, a GIS company in the Southwest, GIS professionals are responsible for cartographic design, database administration, data analysis, project management, and computer modeling. Unlike Surveyors and Urban and Regional Planners, GIS professionals tend to also have a role in business development. In the Southwest Region, they typically fulfill the positions of GIS Analyst, GIS Technician, and GIS Manager.

Exhibit 24: Occupational Projections for STEM Occupations in the Southwest

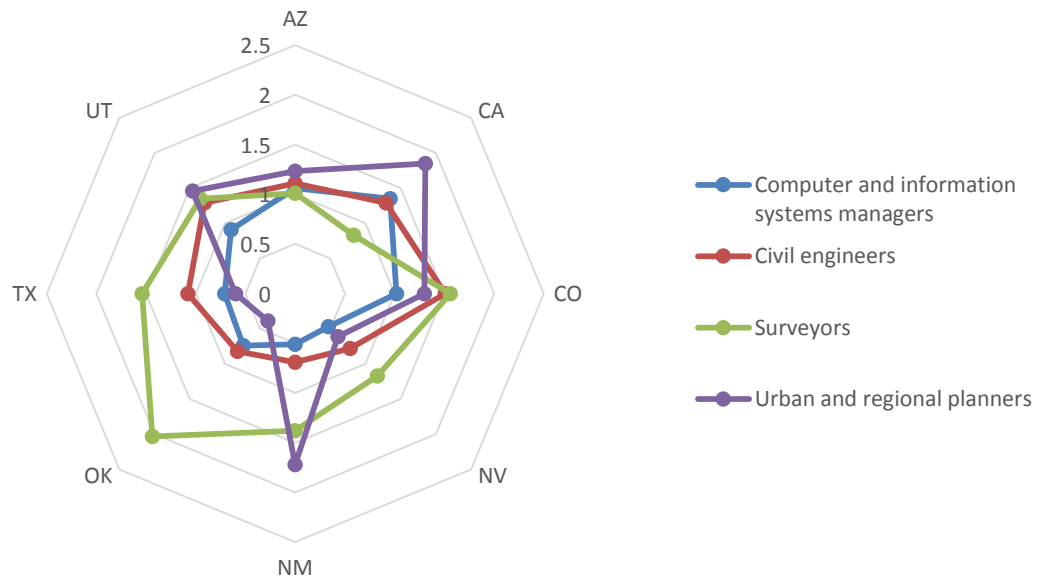
SOC Code	Occupation Title	# of Employees, 2012[b]	Projected # of Employees, 2022 [b]	Change in # of Employees [b]	Percent Change [b]
11-3021	Computer and Information Systems Managers	83,630	102,330	18,700	22.4%
17-2051	Civil Engineers	83,630	103,600	19,970	23.9%
17-1022	Surveyors	13,200	15,060	1,860	14.1%
19-3051	Urban and Regional Planners	11,590	13,540	1,950	16.8%

Demand for Key STEM Occupations across the Southwest Region

Although demand for the four STEM occupations identified is generally high across the Southwest Region, there are varying degrees of demand when focusing on different areas of the region. This is important to consider when determining which occupations different areas within the region need to focus

on in terms of recruiting, hiring, retaining, and training. Exhibit 25 shows the concentration of the four STEM occupations across the Southwest region, based on BLS data. Specifically, this exhibit displays the location quotient (LQ) for each STEM occupation in all of the Southwest 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) while an LQ above 1.0 means that there is a greater concentration of that occupation in the state than in the nation. California and Colorado both have a concentration of Computer and Information Systems Managers that is above the average level for the U.S. Colorado also has a fairly high concentration of Civil Engineers. Additionally, Civil Engineers are most highly concentrated in Utah and Colorado. Surveyors are highly concentrated in Oklahoma, Colorado, and Texas. Finally, Urban and Regional Planners are highly concentrated in California, New Mexico, and Utah.

Exhibit 25: Concentration of STEM Occupations Across the Southwest



Based on the amount of job postings across the Southwest Region, demand for Computer and Information Systems Managers is highest in the largest metropolitan areas, such as the San Francisco, Los Angeles, and Dallas-Fort Worth metropolitan areas. For Civil Engineers, demand is highest in the Los Angeles, Dallas-Fort Worth, and Houston metropolitan areas. Demand is highest for Surveyors in the Los Angeles, Houston, and San Francisco metropolitan areas. Lastly, for Urban and Regional Planners demand is highest in the Los Angeles and San Francisco metropolitan areas. High-demand areas for Surveyors and Urban and Regional Planners also align with high-demand areas GIS-related occupations. While some areas with a high-demand of employees in these occupations fall within areas of a high concentration of these employees, others do not. Transportation agencies that have a high demand for these employees in states such as California and Colorado will face less difficulties in attracting and recruiting new employees, due to the higher concentration of these employees already within those areas. On the other hand, transportation agencies in states such as Utah may face more difficulties, due to a lower concentration of these employees in the area.

Employers of Key STEM Occupations across the Southwest Region

Although the key STEM occupations are in high demand in the transportation industry, they are in demand in other industries in the Southwest Region as well. This makes for a more competitive market for employers, while providing a variety of opportunities for employees. As shown in Exhibit 26, although the four occupations are in high demand in the industry, there is a fairly small percentage of job listings examined through Burning Glass' analysis of 30 days of job listings in the transportation industry as compared to other industries. This makes it difficult for transportation agencies 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. For Civil Engineers, Computer and Information Systems Managers, and Surveyors the transportation industry faces the greatest amount of competition with the Professional, Scientific, and Technical Services industry. For Urban and Regional Planners, the greatest amount of competition is with Finance and Insurance organizations. However, Urban and Region Planning is the only occupation for which Transportation and Warehousing falls into the top five major industries employing the occupation. Similarly, for GIS-related positions, Transportation and Warehousing is within the top five major industries, though transportation industry faces greatest competition with professional, scientific, and technical services. Because other industries are employing more individuals from these key STEM occupations, it may make it difficult for the agencies in the transportation industry to hire and retain employees, particularly for Computer and Information Systems Managers who have the greatest amount of opportunities available in other industries.

Exhibit 26: Industries Employing STEM Occupations

	Percentage of Job Listings in Transportation Industry	Other Major Industries Employing this Occupation
Computer and Information Systems Managers	1.5%	▪ Professional, Scientific, and Technical Services ▪ Information ▪ Finance and Insurance ▪ Manufacturing ▪ Health Care and Social Assistance
Civil Engineers	8.1%	▪ Professional, Scientific, and Technical Services ▪ Public Administration ▪ Finance and Insurance ▪ Construction ▪ Transportation and Warehousing
Surveyors	6.7%	▪ Professional, Scientific, and Technical Services ▪ Finance and Insurance ▪ Construction ▪ Public Administration ▪ Manufacturing
Urban and Regional Planners	10%	▪ Finance and Insurance ▪ Professional, Scientific, and Technical Services ▪ Manufacturing ▪ Public Administration

The top employers for the key STEM Occupations largely fall within the private sector, further increasing competition for transportation agencies, which tend to offer lower salaries compared to other private sector organizations. In the examined job listings, the top employers for Civil Engineers in the region are

Michael Baker International, Carollo Engineers, and Bureau of Reclamation, while the top employers for Surveyors are Solar City, Army National Guard, and Intertek. Lastly, the top employers for Urban and Regional Planners are The Bank of New York Mellon, Global Leader in Investment Management, and Gensler. Within Surveyors and Urban and Regional Planners, the top employers for GIS professionals include Apple, Texas Municipal League, and Risk Management Solutions Incorporated. Because many employees in these occupations are finding opportunities in the private sector, it will be difficult for public transportation agencies or private organizations that over lower salaries to attract these employees. This is especially true for Computer and Information Systems Managers, given the large amount of opportunities available at private sector organizations in the tech industry in the Southwest Region.

Educational Requirements for STEM Occupations in the Southwest Region

For all four STEM occupations, a higher education degree is required. For Computer and Information Systems Managers, as shown in Exhibit 27 below, BLS data indicates at least a Bachelor's degree is required. According to job listings for this occupation in the Southwest Region at least 3 years of experience is required in addition to a Bachelor's degree. Few jobs require only a high school diploma or vocational training along with at least 3 years of experience. Similarly, for Civil Engineers, although BLS data indicates that a Bachelor's degree is required, job listings in the region indicate that at least 3 years of experience is also required. This is similar for Urban and Regional Planners. In contrast, BLS data indicates that a Bachelor's degree is required for Surveyors, while a majority of job listings in the region indicate that a high school diploma or vocational training is sufficient. Additionally, a majority of Surveyor job listings in the region require little to no experience.

Exhibit 27: Educational and Salary Data for STEM Occupations in the Southwest

SOC Code	Occupation Title	National Average Hourly Wage [a]	Typical Education Needed For Entry [a]
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. Civil Engineers have an average hourly wage of $41.89. This is in-line with what is included in job postings for this occupation within the Southwest Region, according to Burning Glass data; a majority of job postings in the region indicate an annual salary over $75,000. According to the BLS data, Surveyors have an average hourly wage of $29.00. Urban and Regional Planners have an average hourly wage of $33.18. The BLS data for both Surveyors and Urban and Regional Planners indicate salaries lower than the annual salary typically included in job postings, which is over $75,000. However, GIS professionals within Surveying and Urban and Regional Planning typically have slightly lower annual salaries, between $50,000 and $74,999.

Career and Technical Education (CTE) Occupations

While six 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 Southwest Region, employees within this occupation can have job titles such as Survey Technician, Survey CAD Technician, Engineering Technician, or Survey Field Technician. As can be seen in Exhibit 28, Surveying and

Mapping Technicians in the Southwest Region are expected to increase in number by 21.0 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 Southwest include Operating Engineer, Heavy Equipment Operator, and Facilities Engineer. Regional projections show that this occupation is expected to increase by 20,780 employees (22.6%) in the Southwest Region by 2022. Like with Surveying and Mapping Technicians, not all of the employees within this occupation are in transportation agencies, 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.

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 Truck Mechanic, Diesel Truck Mechanic, Mechanic, Fleet Mechanic, and Trailer Mechanic. Exhibit 28 shows that the number of Bus and Truck Mechanics and Diesel Engine Specialists is expected to increase by 16.8 percent from 2012 to 2022.

Bus Drivers, Transit and Intercity are responsible for driving bus or motor coaches, including both regular route operations and charter/private operations. These employees may be required to help passengers with baggage and provide high quality customer service, while also driving and parking vehicles, inspecting vehicles, and making minor repairs to vehicles such as changing tires. In the Southwest Region, example job titles for this occupation include Bus Driver and CDL Driver. When examining the occupational projections for Bus Drivers, Transit and InterCity, it can be seen that this occupation is expected to grow by 14.7% between 2012 and 2022.

Another occupation within 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 Southwest Region, estimates predict that an additional 81,180 employees (19.5%) will be needed from 2012 to 2022. Most 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.

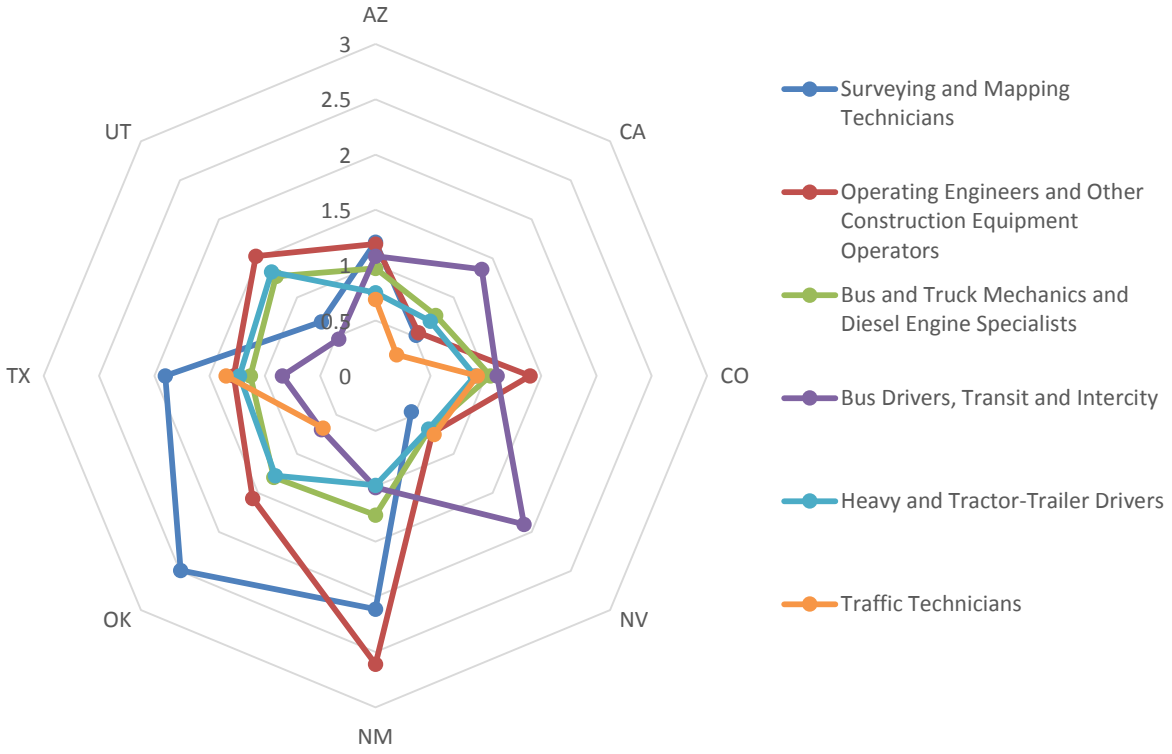
The final occupation in this category is Traffic Technicians. Traffic Technicians conduct field studies to determine traffic speed, volume, adequacy of lighting and signals, and other factors that impact traffic conditions. They often work under the guidance of a Traffic Engineer. Example job titles in the Southwest for this occupation include Traffic Systems Technician, Traffic Signal Technician, Traffic Technician, and Traffic Control Technician. While Traffic Technicians are a relatively small occupations in terms of overall numbers across the region, the number of Traffic Technicians needed in the Southwest Region is expected to increase by 11.3%.

Exhibit 28: Occupational Projections for CTE Occupations in the Southwest					
SOC Code	**Occupation Title**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
17-3031	Surveying and Mapping Technicians	16,750	20,270	3,520	21.0%
47-2073	Operating Engineers and Other Construction Equipment Operators	91,940	112,720	20,780	22.6%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	64,290	75,060	10,770	16.8%
53-3021	Bus Drivers, Transit and Intercity	46,500	53,320	6,820	14.7%
53-3032	Heavy and Tractor-Trailer Drivers	415,400	496,580	81,180	19.5%
53-6041	Traffic Technicians	1,150	1,280	130	11.3%

Demand for Key CTE Occupations across the Southwest Region

Demand for the six CTE occupations varies across the Southwest Region, with different occupations being more concentrated in different states. While all of the CTE occupations identified by data and stakeholders are important across the region, there are some areas in which there is a greater concentration of these workers. 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 29 displays the LQ for each of the CTE Occupations in each of the Southwest Region states. As can be seen in this chart, Surveying and Mapping Technicians experience the highest concentrations in New Mexico, Oklahoma, and Texas. New Mexico and Oklahoma, plus Utah and Colorado, also have a higher concentration of Operating Engineers and Other Construction Equipment Operators than the national average. California and Nevada have the highest concentrations of Bus Drivers, Transit and Intercity. Finally, the concentration of Bus and Truck Mechanics and Diesel Engine Specialists; Heavy and Tractor-Trailer Drivers; and Traffic Technicians in each of the Southwest states is fairly stable, and similar to the level of this occupation within the U.S. as a whole.

Exhibit 29: Concentration of CTE Occupations Across the Southwest



Job postings in the region for these occupations provide addition insight into where demand for each of the occupation is highest. Of the available job postings for Surveying and Mapping Technician positions, there was the highest demand in the Dallas/Fort Worth, TX; Denver, CO; and Houston, TX metropolitan areas. The Texas locations align with the high concentration of this occupation in Texas. For Operating Engineers and Other Construction Equipment Operators, metropolitan areas that had the greatest number of jobs openings were Dallas/Fort Worth, TX; Phoenix/Mesa, AZ; San Jose, CA; and Los Angeles/Long Beach, CA. While these do not align with the BLS information regarding concentration of occupations, they do provide insight into some areas where this occupation may be in high demand. According to the Burning Glass data, the highest demand for Bus and Truck mechanics and Diesel Engine Specialists is in the metropolitan areas of Dallas/Fort Worth, TX and Los Angeles/Long Beach, CA. Job listings suggest that currently, Heavy and Tractor-Trailer Drivers are most in demand in the Denver, CO; Dallas/Fort Worth, TX; San Francisco, CA; Los Angeles/Long Beach, CA; and Houston, TX metropolitan areas. Finally, the greatest number of job listings for Traffic Technicians in the job listings examined were in the area of Dallas/Fort Worth, TX. It is of note that demand for many of these occupations is high in similar areas (e.g., Dallas/Fort Worth, TX and Los Angeles/Long Beach, CA). It could be the case that economic conditions in these locations are such that hiring is occurring at a greater rate than other locations.

Employers of Key CTE Occupations across the Southwest Region

As previously described, while transportation agencies 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 30, the transportation industry is the main employer identified in job listings for Bus and Truck Mechanics and Diesel Engine Specialists; Bus Drivers, Transit and Intercity; and Heavy and Tractor-Trailer Drivers.

Approximately 4 percent of the job listings for Operating Engineers and Other Construction Equipment Operators were for organizations within the transportation industry. However, it could be that these employees are working for companies that contract with transportation build roads and bridges or complete other transportation projects. Finally, 12 percent of the job listings for Surveying and Mapping Technicians were in the transportation industry, with the greatest competition for these employees in Professional, Scientific, and Technical Services as well as Public Administration. Finally, almost 20 percent (18.8%) of the Traffic Technician job postings were in the transportation industry. The other listings were all in Public Administration. However, it is likely that these employees are working on transportation-related projects and tasks even if the employer is not technically within the transportation industry.

Exhibit 30: Industries Employing CTE Occupations in the Southwest

	Percentage of Job Listings in Transportation Industry	Other Major Industries Employing this Occupation
Surveying and Mapping Technicians	12.0%	▪ Professional, Scientific, and Technical Services ▪ Public Administration ▪ Manufacturing ▪ Finance and Insurance
Operating Engineers and Other Construction Equipment Operators	4.3%	▪ Professional, Scientific, and Technical Services ▪ Finance and Insurance ▪ Public Administration ▪ Construction
Bus and Truck Mechanics and Diesel Engine Specialists	37.1%	▪ Administrative and Support and Waste Management and Remediation Services ▪ Educational Services ▪ Manufacturing
Bus Drivers, Transit and Intercity	66.7%	▪ Finance and Insurance
Heavy and Tractor-Trailer Drivers	77.8%	▪ Health Care and Social Assistance ▪ Real Estate and Rental and Leasing ▪ Manufacturing ▪ Retail Trade ▪ Construction
Traffic Technicians	18.8%	▪ Public Administration

The top employers for these occupations, according to Burning Glass analysis of job postings, many listings fall within the private sector. For example, Cobb Fendley & Associates Incorporated, Sam Incorporated, and Michael Baker International had the greatest number of job postings for Surveying and Mapping Technical job openings. Waste Management and MV Transportation, Inc. had the most job postings for Bus and Truck Mechanics and Diesel Engine Specialists, while Forward Air, Central Refrigerated, and United Parcel Service had the great number of job listings for Heavy and Tractor-Trailer Drivers. Alternatively, some state and government organizations had listings posted, such as the University of California and the City of Garland for Operating Engineers and Other Construction Equipment Operators, or Texas A&M University for Bus Drivers, Transit and Intercity. Most of the organizations posting job listings for Traffic Technicians were cities or other municipal governments.

Educational Requirements for CTE Occupations in the Southwest Region

While each of the CTE Occupations discussed in the Southwest 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. Over half (52.4%) of the Surveying and Mapping Technical job listings that provide required education levels require an Associate's or Bachelor's degree; further, 60 percent of the jobs within this occupation that only require high school or vocation training necessitate that employees have at least 3 years of experience in addition to their education. 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 Bus and Truck Mechanics and Diesel Engine Specialists, 67 percent of the listings require at least an Associate's degree; of the jobs that require only high school or vocational training, 60 percent do not require any work experience. The BLS education data for Bus Drivers, Transit and Intercity aligns perfectly with the data gathered through Burning Glass in that all job listings for this occupation require only high school or vocational training, with no additional experience requirements. While the BLS data states that Traffic Technicians require only a high school diploma or equivalent, of the job listings examined in the Southwest Region that provided education information, 67 percent require an Associate's degree. Education and salary information for the key CTE Occupations in the Southwest is provide in Exhibit 31.

Exhibit 31: Educational and Salary Data for CTE Occupations in the Southwest

SOC Code	Occupation Title	National Average Hourly Wage [a]	Typical Education Needed For Entry [a]
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
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	$21.71	High school diploma or equivalent
53-3021	Bus Drivers, Transit and Intercity	$18.95	High school diploma or equivalent
53-3032	Heavy and Tractor-Trailer Drivers	$20.16	Postsecondary non-degree award
53-6041	Traffic Technicians	$22.38	High school diploma or equivalent

In looking at salary data, many of the job listings analyzed in Burning Glass provided detail for these CTE Occupations in the Southwest. Most of the Surveying and Mapping Technician job listings indicated a salary between $35,000 and $49,999, which aligns the BLS listed hourly pay of $21.09 (equaling a salary of just over $44,000 for a year with no overtime pay). For the Operating Engineers, few job listings provided salary information, but the majority of these listings indicated a salary of $50,000 to $74,999. This is slightly higher than the BLS average hourly wage, which equates to about $48,000 per year. However, it could be that only the jobs with the most favorable salaries had this information listed. The Bus and Truck Mechanics and Diesel Engine Specialist job listings varied more in terms of salary, with 11 percent of the available listings showing a salary of less than $35,000, 50 percent showing a salary of $35,000 to $49,999, 33 percent showing a salary of $50,000 to $74,999, and 6 percent showing a salary of more than $75,000 annually. Of these listings, however, the average salary was $48,811. It should be noted that less than 20 percent of the Bus and Truck Mechanics and Diesel Engine Specialist job listings provided salary information, so these results should be interpreted with

caution. Job listings for Heavy and Tractor Trailer Drivers that show a salary indicate an average annual salary of $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. Finally, for Traffic Technicians, the majority of the job listings that provided salary information said that the average annual salary is less than $35,000 per year. This is lower than the average hourly wage information from BLS, which lists $22.38 per hour for this occupation; this hourly wage would equate to a salary of about $47,000.

Supply Chain and Logistics Occupations

Transportation, Storage, and Distribution Managers are responsible for planning, directing, and coordinating the transportation, storage, or distribution of goods in line with applicable governmental regulations as well as organizational policies. This can involve resolving problems concerning transportations, logistics, or customer issues as well as supervising the work of others in the organization. Example job titles for this occupation in the Southwest Region include Distribution Manger, Transportation Manager, and Center Storage Manager. Exhibit 32 provides information on the occupational projections for the Supply Chain and Logistics Occupations. This shows that the number of Transportation, Storage, and Distribution Managers in the Southwest Region is expected to increase by 15.5 percent from 2012 to 2022.

Another occupation important to Supply Chain and Logistics work is Logisticians. These individuals analyze and coordinate logistic functions for their organization, and are responsible for many aspects of work such as the acquisition, distribution, delivery, and disposal of goods and materials. Logisticians are also responsible for understanding customer needs, developing positive relationships with customers, and understanding the availability and allocations of goods, materials, and products. Of the job listings examined in the Southwest, all jobs within this occupation had the job title of Logistician. Logisticians have a bright outlook, with an expected increase of 33.7 percent, or an added 11,900 employees, from 2012 to 2022.

Finally, employees in the Laborers and Freight, Stock, and Material Movers, Hand occupation manually move freight or other materials and perform general labor. The most common job title related to this occupation as Material Handing Laborer. Other example job titles could include Dock Worker, Loader, Material Hander, Warehouse Worker, or Receiving Associate. Looking to the near future, this occupation is expected to see a large increase in the number of employees in the Southwest Region, with an additional 117,650 employees expected to be needed from 2012 to 2022.

Exhibit 32: Occupational Projections for Supply Chain and Logistics Occupations in the Southwest

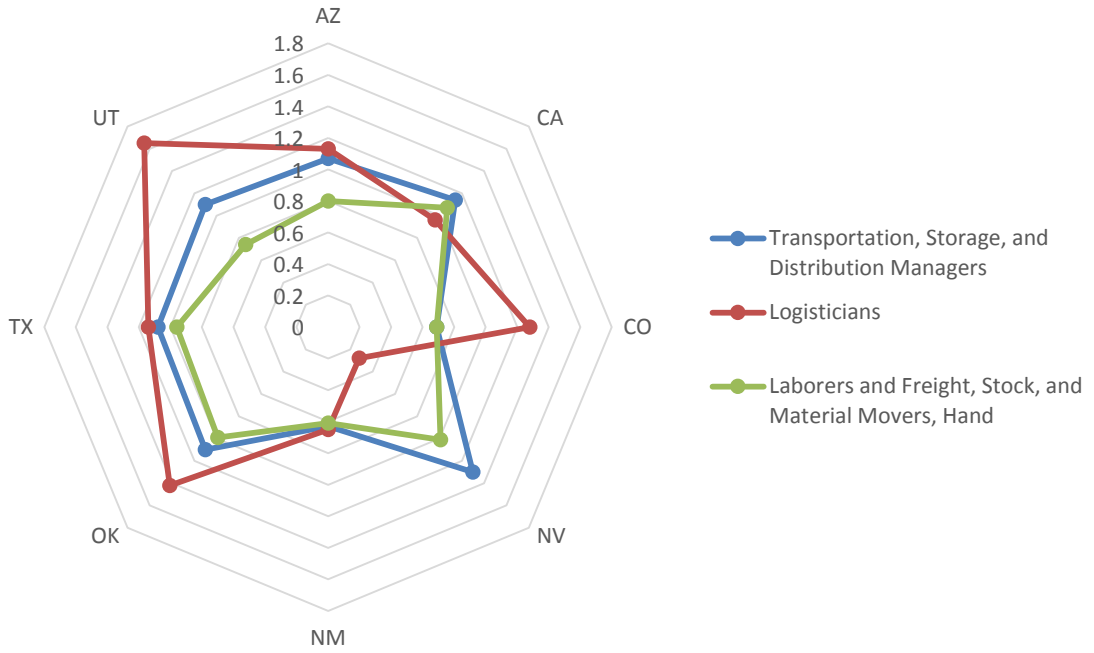
SOC Code	Occupation Title	# of Employees, 2012[b]	Projected # of Employees, 2022[b]	Change in # of Employees[b]	Percent Change[b]
11-3071	Transportation, Storage, and Distribution Managers	29,610	34,200	4,590	15.5%
13-1081	Logisticians	35,330	47,230	11,900	33.7%
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	586,480	704,130	117,650	20.1%

Demand for Key Supply Chain and Logistics Occupations across the Southwest Region

Exhibit 33 provides the LQ data from the BLS for occupations within the Supply Chain and Logistics category. The concentration of Transportation, Storage, and Distribution Managers is highest in Nevada

and California, with both of these states having a higher concentration of employees in this occupation than the national average. Regarding Logisticians, the concentration of workers is highest in Utah, Oklahoma, and then Colorado, suggesting that individuals looking for Logistician positions may be well suited to find jobs in these areas. Finally, Laborers and Freight, Stock, and Material Movers, Hand are fairly evenly concentrated across the region, with a slightly higher concentration in Nevada.

Exhibit 33: Concentration of Supply Chain and Logistics Occupations Across the Southwest



According to Burning Glass data, job listings for these occupations in the region indicate that demand for Transportation, Storage, and Distribution Managers is highest in the Dallas/Fort Worth, TX; Los Angeles/Long Beach, CA; and Denver, CO metropolitan areas. While the BLS data identified California as having a higher concentration of employees in this occupation, Texas and Colorado were not identified for a high concentration of employees. For Logisticians, demand with regard to the examined 30 day period is highest in the California metropolitan areas of Santa Barbara and San Diego. Lastly, demand for Laborers and Freight, Stock, and Material Movers, Hand is highest in the Sand Diego, CA metropolitan area. Because demand for these occupations does not always align with where there are a high concentration of employees, it may be challenging for transportation agencies to attract and recruit employees to fill the demand.

Employers of Key Supply Chain and Logistics Occupations across the Southwest Region

Employees within these Supply Chain and Logistics occupations work across a variety of industries, with transportation being just one industry employing them. This poses a challenge for transportation agencies across the region, as they must compete with other industries for these high-demand critical occupations. As shown in Exhibit 34, the percentage of job listings in the transportation industry for these occupations varies. When examining the available job listings for the Southwest Region, the transportation and warehousing industry had the largest number of job listings for Transportation, Storage, and Distribution Managers in the Burning Glass data. While there is some competition from industries such as retail trade and manufacturing, transportation agencies are well represented in hiring for this occupation. Twenty percent of the job listings for Logisticians were in the transportation industry. Finally, in the job listing

analyzed through Burning Glass, none of the postings for Laborers and Freight, Stock, and Material Movers, hand were within the transportation industry. However, it is known that these jobs are important to supply chain and logistics organizations, which can be within the transportation industry, so it may be that these transportation organizations were just not looking for employees in this type of occupation during the examined 30 day period.

Exhibit 34: Industries Employing Supply Chain and Logistics Occupations in the Southwest

	Percentage of Job Listings in Transportation Industry	Other Major Industries Employing this Occupation
Transportation, Storage, and Distribution Managers	25.3%	▪ Retail Trade ▪ Manufacturing ▪ Professional, Scientific, and Technical Services.
Logisticians	20.0%	▪ Professional, Scientific, and Technical Services ▪ Wholesale Trade
Laborers and Freight, Stock, and Material Movers, Hand	<0.1%	▪ Professional, Scientific, and Technical Services ▪ Manufacturing

Based on the available job listings, the employers with the highest number of available jobs for Transportation, Storage, and Distribution Managers across the Southwest Region were Hewlett-Packard and U-Haul. For Logistician job listings, a variety of private organizations each had one listing to hire a logistician into their organization. Similarly, a variety of private organizations, such as Lockheed Martin and Rust Constructors Incorporated, each had listings for open jobs within the Laborers and Freight, Stock, and Material Movers, Hand occupation.

Educational Requirements for Supply Chain and Logistics Occupations in the Southwest Region

According to the data available from BLS, the three occupations included in the Supply Chain and Logistics category have varying educational requirements, while Laborers and Freight, Stock, and Material Movers, Hand require less than a high school education, Transportation, Storage, and Distribution Managers need a high school diploma or equivalent, and Logisticians require a Bachelor's degree (see Exhibit 35). In examining job listings in the Southwest Region, the education required for Logisticians aligned exactly. For Laborers and Freight, Stock, and Material Movers, Hand, only three job listings provided required education information, but these three listings all required high school or vocational training with no previous experience needed. The biggest difference was seen for Transportation, Storage, and Distribution Managers in that while BLS indicated only a high school diploma is needed to work in this occupations, the vast majority of these job listings required a Bachelor's degree, with most of these also requiring some previous work experience.

Exhibit 35: Educational and Salary Data for Supply Chain and Logistics Occupations in the Southwest

SOC Code	Occupation Title	National Average Hourly Wage [a]	Typical Education Needed For Entry [a]
11-3071	Transportation, Storage, and Distribution Managers	$44.80	High school diploma or equivalent
13-1081	Logisticians	$36.94	Bachelor's degree
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	$13.07	Less than high school

Salary for the three Supply Chain and Logistics occupations varies widely. Salary is highest for Transportation, Storage, and Distribution Managers, with an average annual salary of $90,680 reported across job listings. This is similar to the hourly wage of $44.80 provided in the BLS data. Logisticians have an average hourly wage of $36.94. According to the BLS data, Laborers and Freight, Stock, and Material Movers, Hand have an average hourly wage of $13.07. This is in-line with what is included in job postings for this occupation within the Southwest Region, according to Burning Glass data; all job listings that included salary information indicated an annual salary of less than $35,000.

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 36 displays skills needs for key occupations in the Southwest Region. Burning Glass data provided top skills highlighted in job postings. In other words, these are skills that are in currently 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.

Exhibit 36: Skill Requirements for Southwest Region Key Occupations		
Occupation	**Top Skills Highlighted in Job Postings**	**Additional Required Skills**
STEM Occupations		
Computer and Information Systems Managers	▪ Oracle ▪ Business Process ▪ Scrum ▪ SQL ▪ Business Development	▪ Reading Comprehension ▪ Active Listening ▪ Critical Thinking ▪ Complex Problem Solving ▪ Monitoring
Civil Engineers	▪ Civil Engineering ▪ AutoCAD ▪ Professional Engineer ▪ Civil 3D ▪ Hydraulics	▪ Critical Thinking ▪ Reading Comprehension ▪ Active Listening ▪ Complex Problem Solving ▪ Mathematics
Surveyors	▪ Land Survey ▪ Surveys ▪ GPS ▪ AutoCAD ▪ Estimating	▪ Reading Comprehension ▪ Mathematics ▪ Critical Thinking ▪ Speaking ▪ Writing
Urban and Regional Planners	▪ Urban Design ▪ Adobe Acrobat ▪ AutoCAD ▪ Event Planning ▪ Market Planning	▪ Active Listening ▪ Reading Comprehension ▪ Critical Thinking ▪ Judgment and Decision Making ▪ Speaking
Career and Technical Education (CTE) Occupations		
Surveying and Mapping Technicians	▪ AutoCAD ▪ Computer Aided Drafting/Design (CAD) ▪ Civil 3D ▪ Surveys ▪ GPS	▪ Critical Thinking ▪ Active Listening ▪ Complex Problem Solving ▪ Mathematics ▪ Speaking ▪ Coordination

Exhibit 36: Skill Requirements for Southwest Region Key Occupations		
Occupation	**Top Skills Highlighted in Job Postings**	**Additional Required Skills**
Operating Engineers and Other Construction Equipment Operators	▪ Operating Engineering ▪ Repair ▪ HVAC ▪ Equipment Operation ▪ Boilers	▪ Operation and Control (of equipment) ▪ Operation Monitoring ▪ Coordination ▪ Equipment Maintenance
Bus and Truck Mechanics and Diesel Engine Specialists	▪ Repair ▪ Truck Repair ▪ Inspection ▪ Physical Demand ▪ Welding	▪ Repairing ▪ Troubleshooting ▪ Operation and Control (of equipment) ▪ Critical Thinking ▪ Equipment Maintenance ▪ Quality Control Analysis
Bus Drivers, Transit and Intercity	▪ Bus Driving ▪ Decision Making ▪ Vehicle Maintenance ▪ Vehicle Inspection	▪ Operation and Control ▪ Operation Monitoring ▪ Active Listening ▪ Time Management ▪ Critical Thinking
Heavy and Tractor-Trailer Drivers	▪ Electrical Design ▪ Repair ▪ Equipment Operation ▪ Information Security ▪ Inspection	▪ Operation and Control (of equipment) ▪ Time Management ▪ Critical Thinking ▪ Monitoring (oneself and others) ▪ Troubleshooting
Traffic Technicians	▪ Repair ▪ Physical Demand ▪ Inspection ▪ Electrical Wiring ▪ Electrical Construction ▪ Blueprints	▪ Active Listening ▪ Critical Thinking ▪ Speaking ▪ Complex Problem Solving ▪ Coordination
Supply Chain and Logistics Occupations		
Transportation, Storage, and Distribution Managers	▪ Logistics ▪ Scheduling ▪ Operations Management ▪ Supply Chain Management ▪ Business Development	▪ Time Management ▪ Active Listening ▪ Complex Problem Solving ▪ Critical Thinking ▪ Coordination

Exhibit 36: Skill Requirements for Southwest Region Key Occupations		
Occupation	**Top Skills Highlighted in Job Postings**	**Additional Required Skills**
Logisticians	▪ Scheduling ▪ Logistics ▪ Inspection ▪ Order and Invoice Processing ▪ Procurement	▪ Critical Thinking ▪ Active Listening ▪ Complex Problem Solving ▪ Monitoring ▪ Reading Comprehension
Laborers and Freight, Stock, and Material Movers, Hand	▪ Inspection ▪ Forklift Operation ▪ Procurement ▪ Logistics ▪ Repair	▪ Use of tools (e.g., Hammers, hoists, truck cranes)

It is important to note that for GIS professionals within Surveying and Urban and Regional Planning occupations, the skills that are typically included in job postings in the region differ slightly from those of Surveyors and Urban and Regional Planners. Due to GIS professionals' greater reliance and focus on GIS technology, top skills required included GIS, ArcGIS, Python, and GPS. 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. Specifically, they discussed a need for GIS and ITS skills in a variety of occupational contexts.

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 Southwest 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 Southwest Region, by State

Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Southwest Region, by State									
State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
United States	**11-3021**	**Computer and Information Systems Managers**	**330,360**	**$65.52**	**Bachelor's degree**	**332,700**	**383,600**	**50,900**	**15.3%**
Arizona	11-3021	Computer and Information Systems Managers	6,570	$62.66	Bachelor's degree	5,610	6,790	1,180	21.0%
California	11-3021	Computer and Information Systems Managers	49,760	$76.28	Bachelor's degree	46,800	57,200	10,400	22.2%
Colorado	11-3021	Computer and Information Systems Managers	5,910	$71.24	Bachelor's degree	5,780	7,340	1,560	27.0%
Nevada	11-3021	Computer and Information Systems Managers	1,360	$56.33	Bachelor's degree	1,350	1,520	170	12.6%
New Mexico	11-3021	Computer and Information Systems Managers	980	$53.24	Bachelor's degree	840	940	100	11.9%
Oklahoma	11-3021	Computer and Information Systems Managers	2,850	$47.35	Bachelor's degree	2,730	2,930	200	7.3%
Texas	11-3021	Computer and Information Systems Managers	19,570	$66.69	Bachelor's degree	17,840	22,100	4,260	23.9%
Utah	11-3021	Computer and Information Systems Managers	2,850	$56.37	Bachelor's degree	2,680	3,510	830	31.0%
Southwest Region	*11-3021*	*Computer and Information Systems Managers*	*89,850*		*Bachelor's degree*	*83,630*	*102,330*	*18,700*	*22.4%*
United States	**11-3071**	**Transportation, Storage, and Distribution Managers**	**106,000**	**$44.80**	**High school diploma or equivalent**	**105,200**	**110,300**	**5,100**	**4.8%**
Arizona	11-3071	Transportation, Storage, and Distribution Managers	2,130	$40.63	High school diploma or equivalent	2,160	2,510	350	16.2%
California	11-3071	Transportation, Storage, and Distribution Managers	13,500	$46.02	High school diploma or equivalent	12,700	14,300	1,600	12.6%
Colorado	11-3071	Transportation, Storage, and Distribution Managers	1,290	$49.96	High school diploma or equivalent	1,230	1,420	190	15.4%
Nevada	11-3071	Transportation, Storage, and Distribution Managers	1,210	$37.91	High school diploma or equivalent	1,030	1,210	180	17.5%
New Mexico	11-3071	Transportation, Storage, and Distribution Managers	390	$39.84	High school diploma or equivalent	410	420	10	2.4%
Oklahoma	11-3071	Transportation, Storage, and Distribution Managers	1,370	$36.12	High school diploma or equivalent	1,330	1,400	70	5.3%
Texas	11-3071	Transportation, Storage, and Distribution Managers	9,500	$46.10	High school diploma or equivalent	9,750	11,760	2,010	20.6%
Utah	11-3071	Transportation, Storage, and Distribution Managers	1,100	$42.22	High school diploma or equivalent	1,000	1,180	180	18.0%
Southwest Region	*11-3071*	*Transportation, Storage, and Distribution Managers*	*30,490*		*High school diploma or equivalent*	*29,610*	*34,200*	*4,590*	*15.5%*

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United States	**13-2031**	**Budget Analysts**	**57,120**	**$35.55**	**Bachelor's degree**	**61,700**	**65,500**	**3,800**	**6.2%**
Arizona	13-2031	Budget Analysts	970	$33.08	Bachelor's degree	980	1,090	110	11.2%
California	13-2031	Budget Analysts	8,210	$38.53	Bachelor's degree	8,900	9,700	800	9.0%
Colorado	13-2031	Budget Analysts	970	$35.93	Bachelor's degree	1,170	1,370	200	17.1%
Nevada	13-2031	Budget Analysts	300	$34.49	Bachelor's degree	300	330	30	10.0%
New Mexico	13-2031	Budget Analysts	650	$32.74	Bachelor's degree	640	680	40	6.3%
Oklahoma	13-2031	Budget Analysts	860	$29.68	Bachelor's degree	750	780	30	4.0%
Texas	13-2031	Budget Analysts	4,340	$35.53	Bachelor's degree	4,210	4,930	720	17.1%
Utah	13-2031	Budget Analysts	390	$34.40	Bachelor's degree	380	440	60	15.8%
Southwest Region	*13-2031*	*Budget Analysts*	*16,690*		*Bachelor's degree*	*17,330*	*19,320*	*1,990*	*11.5%*
United States	**13-1081**	**Logisticians**	**35,710**	**$36.94**	**Bachelor's degree**	**125,900**	**153,600**	**27,700**	**22.0%**
Arizona	13-1081	Logisticians	2,660	$36.13	Bachelor's degree	2,890	3,730	840	29.1%
California	13-1081	Logisticians	13,520	$40.35	Bachelor's degree	13,700	18,100	4,400	32.1%
Colorado	13-1081	Logisticians	2,830	$37.86	Bachelor's degree	2,590	3,790	1,200	46.3%
Nevada	13-1081	Logisticians	310	$30.65	Bachelor's degree	310	420	110	35.5%
New Mexico	13-1081	Logisticians	480	$35.45	Bachelor's degree	430	530	100	23.3%
Oklahoma	13-1081	Logisticians	2,080	$34.36	Bachelor's degree	2,150	2,410	260	12.1%
Texas	13-1081	Logisticians	11,870	$40.42	Bachelor's degree	11,460	16,020	4,560	39.8%
Utah	13-1081	Logisticians	1,960	$34.55	Bachelor's degree	1,800	2,230	430	23.9%
Southwest Region	*13-1081*	*Logisticians*	*35,710*		*Bachelor's degree*	*35,330*	*47,230*	*11,900*	*33.7%*
United States	**13-2051**	**Financial Analysts**	**262,610**	**$44.35**	**Bachelor's degree**	**253,000**	**292,400**	**39,400**	**15.6%**
Arizona	13-2051	Financial Analysts	**	$34.90	Bachelor's degree	4,680	5,510	830	17.7%
California	13-2051	Financial Analysts	31,840	$49.50	Bachelor's degree	32,100	39,500	7,400	23.1%
Colorado	13-2051	Financial Analysts	3,520	$48.59	Bachelor's degree	3,710	4,760	1,050	28.3%
Nevada	13-2051	Financial Analysts	940	$33.75	Bachelor's degree	720	830	110	15.3%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
New Mexico	13-2051	Financial Analysts	500	$35.18	Bachelor's degree	380	420	40	10.5%
Oklahoma	13-2051	Financial Analysts	1,190	$32.68	Bachelor's degree	1,410	1,580	170	12.1%
Texas	13-2051	Financial Analysts	21,790	$43.64	Bachelor's degree	20,130	24,560	4,430	22.0%
Utah	13-2051	Financial Analysts	1,670	$36.61	Bachelor's degree	1,770	2,190	420	23.7%
Southwest Region	*13-2051*	*Financial Analysts*	*61,450*		*Bachelor's degree*	*64,900*	*79,350*	*14,450*	*22.3%*
United States	**17-1021**	**Cartographers and Photogrammetrists**	**11,610**	**$31.04**	**Bachelor's degree**	**12,100**	**14,500**	**2,400**	**19.8%**
Arizona	17-1021	Cartographers and Photogrammetrists	280	$29.64	Bachelor's degree	320	370	50	15.6%
California	17-1021	Cartographers and Photogrammetrists	1,710	$32.77	Bachelor's degree	1,400	1,900	500	35.7%
Colorado	17-1021	Cartographers and Photogrammetrists	660	$33.89	Bachelor's degree	770	960	190	24.7%
Nevada	17-1021	Cartographers and Photogrammetrists	160	$36.91	Bachelor's degree	160	180	20	12.5%
New Mexico	17-1021	Cartographers and Photogrammetrists	150	$26.13	Bachelor's degree	270	310	40	14.8%
Oklahoma	17-1021	Cartographers and Photogrammetrists	110	$26.41	Bachelor's degree	150	180	30	20.0%
Texas	17-1021	Cartographers and Photogrammetrists	880	$28.19	Bachelor's degree	790	1,080	290	36.7%
Utah	17-1021	Cartographers and Photogrammetrists	200	$27.28	Bachelor's degree	190	250	60	31.6%
Southwest Region	*17-1021*	*Cartographers and Photogrammetrists*	*4,150*		*Bachelor's degree*	*4,050*	*5,230*	*1,180*	*29.1%*
United States	**17-1022**	**Surveyors**	**41,970**	**$29.00**	**Bachelor's degree**	**42,400**	**46,800**	**4,400**	**10.4%**
Arizona	17-1022	Surveyors	790	$26.12	Bachelor's degree	960	1,080	120	12.5%
California	17-1022	Surveyors	3,880	$39.08	Bachelor's degree	4,000	4,300	300	7.5%
Colorado	17-1022	Surveyors	1,150	$27.37	Bachelor's degree	1,070	1,310	240	22.4%
Nevada	17-1022	Surveyors	430	$32.49	Bachelor's degree	360	390	30	8.3%
New Mexico	17-1022	Surveyors	340	$28.37	Bachelor's degree	420	420	0	0.0%
Oklahoma	17-1022	Surveyors	1,000	$26.37	Bachelor's degree	1,060	1,240	180	17.0%
Texas	17-1022	Surveyors	5,360	$27.94	Bachelor's degree	4,930	5,830	900	18.3%
Utah	17-1022	Surveyors	540	$31.35	Bachelor's degree	400	490	90	22.5%
Southwest Region	*17-1022*	*Surveyors*	*13,490*		*Bachelor's degree*	*13,200*	*15,060*	*1,860*	*14.1%*

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United States	**17-2011**	**Aerospace Engineers**	**69,080**	**$51.78**	**Bachelor's degree**	**83,000**	**89,100**	**6,100**	**7.3%**
Arizona	17-2011	Aerospace Engineers	1,200	$41.13	Bachelor's degree	2,350	2,460	110	4.7%
California	17-2011	Aerospace Engineers	15,140	$54.24	Bachelor's degree	15,700	18,600	2,900	18.5%
Colorado	17-2011	Aerospace Engineers	2,360	$59.14	Bachelor's degree	2,450	3,000	550	22.4%
Nevada	17-2011	Aerospace Engineers	30	$40.38	Bachelor's degree	30	30	0	0.0%
New Mexico	17-2011	Aerospace Engineers	690	$45.61	Bachelor's degree	860	930	70	8.1%
Oklahoma	17-2011	Aerospace Engineers	730	$44.18	Bachelor's degree	1,030	1,130	100	9.7%
Texas	17-2011	Aerospace Engineers	6,990	$52.49	Bachelor's degree	7,710	8,790	1,080	14.0%
Utah	17-2011	Aerospace Engineers	910	$36.65	Bachelor's degree	540	700	160	29.6%
Southwest Region	*17-2011*	*Aerospace Engineers*	*28,050*		*Bachelor's degree*	*30,670*	*35,640*	*4,970*	*16.2%*
United States	**17-2051**	**Civil Engineers**	**263,460**	**$41.89**	**Bachelor's degree**	**272,900**	**326,600**	**53,700**	**19.7%**
Arizona	17-2051	Civil Engineers	5,470	$39.69	Bachelor's degree	4,890	6,220	1,330	27.2%
California	17-2051	Civil Engineers	38,060	$47.87	Bachelor's degree	39,300	46,500	7,200	18.3%
Colorado	17-2051	Civil Engineers	6,960	$41.10	Bachelor's degree	7,240	9,360	2,120	29.3%
Nevada	17-2051	Civil Engineers	1,810	$41.33	Bachelor's degree	1,810	2,300	490	27.1%
New Mexico	17-2051	Civil Engineers	1,070	$40.44	Bachelor's degree	1,430	1,570	140	9.8%
Oklahoma	17-2051	Civil Engineers	2,520	$37.56	Bachelor's degree	2,580	3,070	490	19.0%
Texas	17-2051	Civil Engineers	23,730	$48.23	Bachelor's degree	23,410	30,540	7,130	30.5%
Utah	17-2051	Civil Engineers	3,220	$37.89	Bachelor's degree	2,970	4,040	1,070	36.0%
Southwest Region	*17-2051*	*Civil Engineers*	*82,840*		*Bachelor's degree*	*83,630*	*103,600*	*19,970*	*23.9%*
United States	**17-2071**	**Electrical Engineers**	**174,550**	**$46.05**	**Bachelor's degree**	**166,100**	**174,000**	**7,900**	**4.8%**
Arizona	17-2071	Electrical Engineers	3,660	$48.18	Bachelor's degree	4,810	5,240	430	8.9%
California	17-2071	Electrical Engineers	23,600	$55.16	Bachelor's degree	23,800	24,900	1,100	4.6%
Colorado	17-2071	Electrical Engineers	3,690	$46.80	Bachelor's degree	4,170	5,240	1,070	25.7%
Nevada	17-2071	Electrical Engineers	440	$42.02	Bachelor's degree	570	640	70	12.3%

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New Mexico	17-2071	Electrical Engineers	1,260	$48.67	Bachelor's degree	800	850	50	6.3%
Oklahoma	17-2071	Electrical Engineers	1,250	$39.71	Bachelor's degree	990	1,120	130	13.1%
Texas	17-2071	Electrical Engineers	14,740	$48.62	Bachelor's degree	13,620	16,450	2,830	20.8%
Utah	17-2071	Electrical Engineers	1,610	$42.72	Bachelor's degree	1,900	2,260	360	18.9%
Southwest Region	*17-2071*	*Electrical Engineers*	*50,250*		*Bachelor's degree*	*50,660*	*56,700*	*6,040*	*11.9%*
United States	**17-2081**	**Environmental Engineers**	**53,240**	**$41.51**	**Bachelor's degree**	**53,200**	**61,400**	**8,200**	**15.4%**
Arizona	17-2081	Environmental Engineers	670	$38.65	Bachelor's degree	750	880	130	17.3%
California	17-2081	Environmental Engineers	7,200	$47.79	Bachelor's degree	7,300	9,100	1,800	24.7%
Colorado	17-2081	Environmental Engineers	2,040	$41.65	Bachelor's degree	1,750	2,390	640	36.6%
Nevada	17-2081	Environmental Engineers	350	$41.67	Bachelor's degree	330	360	30	9.1%
New Mexico	17-2081	Environmental Engineers	620	$51.77	Bachelor's degree	690	770	80	11.6%
Oklahoma	17-2081	Environmental Engineers	460	$40.70	Bachelor's degree	350	380	30	8.6%
Texas	17-2081	Environmental Engineers	2,900	$44.59	Bachelor's degree	2,880	3,570	690	24.0%
Utah	17-2081	Environmental Engineers	480	$38.87	Bachelor's degree	460	570	110	23.9%
Southwest Region	*17-2081*	*Environmental Engineers*	*14,720*		*Bachelor's degree*	*14,510*	*18,020*	*3,510*	*24.2%*
United States	**17-3021**	**Aerospace Engineering and Operations Technicians**	**11,230**	**$30.92**	**Associate's degree**	**9,900**	**9,900**	**0**	**0.0%**
Arizona	17-3021	Aerospace Engineering and Operations Technicians	660	$24.31	Associate's degree	340	330	-10	-2.9%
California	17-3021	Aerospace Engineering and Operations Technicians	1,920	$34.32	Associate's degree	1,800	1,700	-100	-5.6%
Colorado	17-3021	Aerospace Engineering and Operations Technicians	310	$35.65	Associate's degree	280	340	60	21.4%
Oklahoma	17-3021	Aerospace Engineering and Operations Technicians	NA	NA	Associate's degree	80	70	-10	-12.5%
Texas	17-3021	Aerospace Engineering and Operations Technicians	810	$29.45	Associate's degree	760	830	70	9.2%
Utah	17-3021	Aerospace Engineering and Operations Technicians	100	$32.02	Associate's degree	80	90	10	12.5%

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Southwest Region	*17-3021*	*Aerospace Engineering and Operations Technicians*	*3,910*		*Associate's degree*	*3,340*	*3,360*	*20*	*0.6%*
United States	**17-3022**	**Civil Engineering Technicians**	**71,300**	**$24.18**	**Associate's degree**	**73,100**	**73,600**	**500**	**0.7%**
Arizona	17-3022	Civil Engineering Technicians	1,320	$24.23	Associate's degree	1,050	1,090	40	3.8%
California	17-3022	Civil Engineering Technicians	7,380	$30.98	Associate's degree	6,300	6,500	200	3.2%
Colorado	17-3022	Civil Engineering Technicians	1,070	$24.51	Associate's degree	970	1,080	110	11.3%
Nevada	17-3022	Civil Engineering Technicians	820	$26.26	Associate's degree	760	750	-10	-1.3%
New Mexico	17-3022	Civil Engineering Technicians	550	$19.76	Associate's degree	710	670	-40	-5.6%
Oklahoma	17-3022	Civil Engineering Technicians	510	$25.13	Associate's degree	690	750	60	8.7%
Texas	17-3022	Civil Engineering Technicians	11,240	$21.68	Associate's degree	11,030	11,530	500	4.5%
Utah	17-3022	Civil Engineering Technicians	660	$22.57	Associate's degree	540	630	90	16.7%
Southwest Region	*17-3022*	*Civil Engineering Technicians*	*23,550*		*Associate's degree*	*22,050*	*23,000*	*950*	*4.3%*
United States	**17-3023**	**Electrical and Electronics Engineering Technicians**	**137,040**	**$29.01**	**Associate's degree**	**146,500**	**146,500**	**0**	**0.0%**
Arizona	17-3023	Electrical and Electronics Engineering Technicians	3,940	$27.39	Associate's degree	4,380	4,930	550	12.6%
California	17-3023	Electrical and Electronics Engineering Technicians	21,280	$31.34	Associate's degree	20,700	21,100	400	1.9%
Colorado	17-3023	Electrical and Electronics Engineering Technicians	2,040	$30.22	Associate's degree	2,090	2,350	260	12.4%
Nevada	17-3023	Electrical and Electronics Engineering Technicians	1,100	$33.09	Associate's degree	930	990	60	6.5%
New Mexico	17-3023	Electrical and Electronics Engineering Technicians	1,460	$30.59	Associate's degree	1,230	1,260	30	2.4%
Oklahoma	17-3023	Electrical and Electronics Engineering Technicians	1,640	$30.04	Associate's degree	1,390	1,380	-10	-0.7%
Texas	17-3023	Electrical and Electronics Engineering Technicians	16,120	$30.07	Associate's degree	14,570	17,130	2,560	17.6%
Utah	17-3023	Electrical and Electronics Engineering Technicians	1,510	$27.63	Associate's degree	1,770	1,980	210	11.9%
Southwest Region	*17-3023*	*Electrical and Electronics Engineering Technicians*	*49,090*		*Associate's degree*	*47,060*	*51,120*	*4,060*	*8.6%*

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United States	**17-3025**	**Environmental Engineering Technicians**	**18,080**	**$24.53**	**Associate's degree**	**19,000**	**22,500**	**3,500**	**18.4%**
Arizona	17-3025	Environmental Engineering Technicians	220	$22.18	Associate's degree	210	240	30	14.3%
California	17-3025	Environmental Engineering Technicians	2,210	$29.27	Associate's degree	1,800	2,300	500	27.8%
Colorado	17-3025	Environmental Engineering Technicians	580	$26.01	Associate's degree	400	540	140	35.0%
Nevada	17-3025	Environmental Engineering Technicians	230	$30.12	Associate's degree	260	300	40	15.4%
New Mexico	17-3025	Environmental Engineering Technicians	290	$23.66	Associate's degree	370	420	50	13.5%
Oklahoma	17-3025	Environmental Engineering Technicians	180	$20.71	Associate's degree	230	270	40	17.4%
Texas	17-3025	Environmental Engineering Technicians	1,060	$27.83	Associate's degree	1,070	1,360	290	27.1%
Utah	17-3025	Environmental Engineering Technicians	270	$21.58	Associate's degree	300	370	70	23.3%
Southwest Region	*17-3025*	*Environmental Engineering Technicians*	*5,040*		*Associate's degree*	*4,640*	*5,800*	*1,160*	*25.0%*
United States	**17-3029**	**Engineering Technicians, Except Drafters, All Other**	**67,640**	**$30.35**	**Associate's degree**	**67,700**	**68,300**	**600**	**0.9%**
Arizona	17-3029	Engineering Technicians, Except Drafters, All Other	1,900	$28.08	Associate's degree	1,060	1,210	150	14.2%
California	17-3029	Engineering Technicians, Except Drafters, All Other	8,910	$32.57	Associate's degree	8,700	9,300	600	6.9%
Colorado	17-3029	Engineering Technicians, Except Drafters, All Other	1,640	$33.68	Associate's degree	1,600	1,870	270	16.9%
Nevada	17-3029	Engineering Technicians, Except Drafters, All Other	360	$32.40	Associate's degree	360	390	30	8.3%
New Mexico	17-3029	Engineering Technicians, Except Drafters, All Other	1,570	*	Associate's degree	800	780	-20	-2.5%
Oklahoma	17-3029	Engineering Technicians, Except Drafters, All Other	740	$29.78	Associate's degree	1,110	1,140	30	2.7%
Texas	17-3029	Engineering Technicians, Except Drafters, All Other	9,030	$31.11	Associate's degree	9,100	10,920	1,820	20.0%
Utah	17-3029	Engineering Technicians, Except Drafters, All Other	700	$24.16	Associate's degree	380	380	0	0.0%
Southwest Region	*17-3029*	*Engineering Technicians, Except Drafters, All Other*	*24,850*		*Associate's degree*	*23,110*	*25,990*	*2,880*	*12.5%*
United States	**17-3031**	**Surveying and Mapping Technicians**	**50,750**	**$21.09**	**High school diploma or equivalent**	**54,000**	**61,300**	**7,300**	**13.5%**

Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Southwest Region, by State									
State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
Arizona	17-3031	Surveying and Mapping Technicians	1,150	$24.10	High school diploma or equivalent	1,620	1,910	290	17.9%
California	17-3031	Surveying and Mapping Technicians	2,970	$30.78	High school diploma or equivalent	3,200	3,700	500	15.6%
Colorado	17-3031	Surveying and Mapping Technicians	**	$22.12	High school diploma or equivalent	1,830	2,350	520	28.4%
Nevada	17-3031	Surveying and Mapping Technicians	200	$27.44	High school diploma or equivalent	210	220	10	4.8%
New Mexico	17-3031	Surveying and Mapping Technicians	630	$18.85	High school diploma or equivalent	560	580	20	3.6%
Oklahoma	17-3031	Surveying and Mapping Technicians	1,480	$26.15	High school diploma or equivalent	970	1,140	170	17.5%
Texas	17-3031	Surveying and Mapping Technicians	8,000	$19.58	High school diploma or equivalent	8,020	9,940	1,920	23.9%
Utah	17-3031	Surveying and Mapping Technicians	330	$21.22	High school diploma or equivalent	340	430	90	26.5%
Southwest Region	*17-3031*	*Surveying and Mapping Technicians*	*14,760*		*High school diploma or equivalent*	*16,750*	*20,270*	*3,520*	*21.0%*
United States	**19-1031**	**Conservation Scientists**	**19,210**	**$30.97**	**Bachelor's degree**	**22,100**	**22,300**	**200**	**0.9%**
Arizona	19-1031	Conservation Scientists	340	$32.71	Bachelor's degree	640	650	10	1.6%
California	19-1031	Conservation Scientists	1,400	$36.61	Bachelor's degree	1,500	1,700	200	13.3%
Colorado	19-1031	Conservation Scientists	1,070	$33.03	Bachelor's degree	1,460	1,620	160	11.0%
Nevada	19-1031	Conservation Scientists	180	$29.39	Bachelor's degree	120	130	10	8.3%
New Mexico	19-1031	Conservation Scientists	210	$35.26	Bachelor's degree	270	260	-10	-3.7%
Oklahoma	19-1031	Conservation Scientists	240	$29.51	Bachelor's degree	370	360	-10	-2.7%
Texas	19-1031	Conservation Scientists	1,690	$26.69	Bachelor's degree	1,850	2,050	200	10.8%
Utah	19-1031	Conservation Scientists	260	$28.15	Bachelor's degree	280	290	10	3.6%
Southwest Region	*19-1031*	*Conservation Scientists*	*5,390*		*Bachelor's degree*	*6,490*	*7,060*	*570*	*8.8%*
United States	**19-3051**	**Urban and Regional Planners**	**35,820**	**$33.18**	**Master's degree**	**38,700**	**42,700**	**4,000**	**10.3%**
Arizona	19-3051	Urban and Regional Planners	830	$32.23	Master's degree	800	870	70	8.8%
California	19-3051	Urban and Regional Planners	7,430	$38.69	Master's degree	7,100	8,400	1,300	18.3%
Colorado	19-3051	Urban and Regional Planners	810	$36.36	Master's degree	800	900	100	12.5%
Nevada	19-3051	Urban and Regional Planners	190	$39.95	Master's degree	180	190	10	5.6%
New Mexico	19-3051	Urban and Regional Planners	360	$27.78	Master's degree	300	310	10	3.3%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
Oklahoma	19-3051	Urban and Regional Planners	160	$34.38	Master's degree	160	190	30	18.8%
Texas	19-3051	Urban and Regional Planners	1,790	$30.59	Master's degree	1,760	2,080	320	18.2%
Utah	19-3051	Urban and Regional Planners	500	$27.66	Master's degree	490	600	110	22.4%
Southwest Region	*19-3051*	*Urban and Regional Planners*	*12,070*		*Master's degree*	*11,590*	*13,540*	*1,950*	*16.8%*
United States	**33-3041**	**Parking Enforcement Workers**	**8,680**	**$18.15**	**High school diploma or equivalent**	**9,700**	**9,700**	**0**	**0.0%**
Arizona	33-3041	Parking Enforcement Workers	110	$15.59	High school diploma or equivalent	NA	NA	NA	NA
California	33-3041	Parking Enforcement Workers	1,660	$22.91	High school diploma or equivalent	1,600	1,600	0	0.0%
Colorado	33-3041	Parking Enforcement Workers	110	$18.78	High school diploma or equivalent	110	110	0	0.0%
Nevada	33-3041	Parking Enforcement Workers	50	$21.42	High school diploma or equivalent	50	50	0	0.0%
New Mexico	33-3041	Parking Enforcement Workers	NA	NA	High school diploma or equivalent	40	50	10	25.0%
Texas	33-3041	Parking Enforcement Workers	360	$13.91	High school diploma or equivalent	360	400	40	11.1%
Utah	33-3041	Parking Enforcement Workers	70	$15.37	High school diploma or equivalent	60	70	10	16.7%
Southwest Region	*33-3041*	*Parking Enforcement Workers*	*2,400*		*High school diploma or equivalent*	*2,220*	*2,280*	*60*	*2.7%*
United States	**33-3052**	**Transit and Railroad Police**	**3,380**	**$25.56**	**High school diploma or equivalent**	**4,300**	**4,400**	**100**	**2.3%**
Arizona	33-3052	Transit and Railroad Police	40	$32.26	High school diploma or equivalent	NA	NA	NA	NA
California	33-3052	Transit and Railroad Police	190	$23.77	High school diploma or equivalent	NA	NA	NA	NA
Texas	33-3052	Transit and Railroad Police	610	$23.57	High school diploma or equivalent	610	710	100	16.4%
Southwest Region	*33-3052*	*Transit and Railroad Police*	*840*		*High school diploma or equivalent*	*610*	*710*	*100*	*16.4%*
United States	**33-9093**	**Transportation Security Screeners**	**43,220**	**$18.56**	**High school diploma or equivalent**	**50,800**	**53,800**	**3,000**	**5.9%**
Arizona	33-9093	Transportation Security Screeners	1,120	$18.34	High school diploma or equivalent	1,150	1,330	180	15.7%
California	33-9093	Transportation Security Screeners	4,890	$19.30	High school diploma or equivalent	5,600	6,000	400	7.1%
Colorado	33-9093	Transportation Security Screeners	1,010	$19.00	High school diploma or equivalent	1,140	1,250	110	9.6%
Nevada	33-9093	Transportation Security Screeners	1,120	$17.66	High school diploma or equivalent	NA	NA	NA	NA
New Mexico	33-9093	Transportation Security Screeners	170	$17.63	High school diploma or equivalent	180	190	10	5.6%

Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Southwest Region, by State									
State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
Oklahoma	33-9093	Transportation Security Screeners	360	$17.07	High school diploma or equivalent	370	390	20	5.4%
Texas	33-9093	Transportation Security Screeners	3,510	$18.83	High school diploma or equivalent	4,050	5,210	1,160	28.6%
Utah	33-9093	Transportation Security Screeners	460	$17.84	High school diploma or equivalent	410	460	50	12.2%
Southwest Region	*33-9093*	*Transportation Security Screeners*	*12,640*		*High school diploma or equivalent*	*12,900*	*14,830*	*1,930*	*15.0%*
United States	**43-5011**	**Cargo and Freight Agents**	**77,480**	**$21.14**	**High school diploma or equivalent**	**79,500**	**91,000**	**11,500**	**14.5%**
Arizona	43-5011	Cargo and Freight Agents	400	$20.04	High school diploma or equivalent	440	560	120	27.3%
California	43-5011	Cargo and Freight Agents	11,430	$22.57	High school diploma or equivalent	10,100	11,900	1,800	17.8%
Colorado	43-5011	Cargo and Freight Agents	630	$21.87	High school diploma or equivalent	500	640	140	28.0%
Nevada	43-5011	Cargo and Freight Agents	1,000	$17.42	High school diploma or equivalent	660	770	110	16.7%
New Mexico	43-5011	Cargo and Freight Agents	110	$16.14	High school diploma or equivalent	190	190	0	0.0%
Oklahoma	43-5011	Cargo and Freight Agents	150	$19.18	High school diploma or equivalent	460	470	10	2.2%
Texas	43-5011	Cargo and Freight Agents	9,810	$20.25	High school diploma or equivalent	5,820	7,760	1,940	33.3%
Utah	43-5011	Cargo and Freight Agents	480	$18.08	High school diploma or equivalent	250	350	100	40.0%
Southwest Region	*43-5011*	*Cargo and Freight Agents*	*24,010*		*High school diploma or equivalent*	*18,420*	*22,640*	*4,220*	*22.9%*
United States	**47-2071**	**Paving, Surfacing, and Tamping Equipment Operators**	**54,940**	**$20.41**	**High school diploma or equivalent**	**54,700**	**65,500**	**10,800**	**19.7%**
Arizona	47-2071	Paving, Surfacing, and Tamping Equipment Operators	830	$19.92	High school diploma or equivalent	670	960	290	43.3%
California	47-2071	Paving, Surfacing, and Tamping Equipment Operators	7,200	$24.95	High school diploma or equivalent	6,700	7,200	500	7.5%
Colorado	47-2071	Paving, Surfacing, and Tamping Equipment Operators	1,600	$19.36	High school diploma or equivalent	1,340	1,650	310	23.1%
Nevada	47-2071	Paving, Surfacing, and Tamping Equipment Operators	750	$30.12	High school diploma or equivalent	770	1,070	300	39.0%
New Mexico	47-2071	Paving, Surfacing, and Tamping Equipment Operators	580	$15.96	High school diploma or equivalent	450	480	30	6.7%
Oklahoma	47-2071	Paving, Surfacing, and Tamping Equipment Operators	1,420	$17.44	High school diploma or equivalent	1,910	1,930	20	1.0%
Texas	47-2071	Paving, Surfacing, and Tamping Equipment Operators	4,180	$16.00	High school diploma or equivalent	3,810	4,650	840	22.0%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
Utah	47-2071	Paving, Surfacing, and Tamping Equipment Operators	220	$19.87	High school diploma or equivalent	240	290	50	20.8%
Southwest Region	*47-2071*	*Paving, Surfacing, and Tamping Equipment Operators*	*16,780*		*High school diploma or equivalent*	*15,890*	*18,230*	*2,340*	*14.7%*
United States	**47-2073**	**Operating Engineers and Other Construction Equipment Operators**	**344,510**	**$23.09**	**High school diploma or equivalent**	**351,200**	**417,600**	**66,400**	**18.9%**
Arizona	47-2073	Operating Engineers and Other Construction Equipment Operators	7,640	$20.45	High school diploma or equivalent	7,870	10,130	2,260	28.7%
California	47-2073	Operating Engineers and Other Construction Equipment Operators	21,310	$31.78	High school diploma or equivalent	22,100	27,000	4,900	22.2%
Colorado	47-2073	Operating Engineers and Other Construction Equipment Operators	8,440	$21.09	High school diploma or equivalent	6,970	8,620	1,650	23.7%
Nevada	47-2073	Operating Engineers and Other Construction Equipment Operators	2,230	$27.29	High school diploma or equivalent	2,090	2,810	720	34.4%
New Mexico	47-2073	Operating Engineers and Other Construction Equipment Operators	5,240	$21.13	High school diploma or equivalent	4,530	4,910	380	8.4%
Oklahoma	47-2073	Operating Engineers and Other Construction Equipment Operators	6,300	$18.13	High school diploma or equivalent	5,920	6,960	1,040	17.6%
Texas	47-2073	Operating Engineers and Other Construction Equipment Operators	36,600	$18.62	High school diploma or equivalent	36,250	44,750	8,500	23.4%
Utah	47-2073	Operating Engineers and Other Construction Equipment Operators	4,990	$20.61	High school diploma or equivalent	6,210	7,540	1,330	21.4%
Southwest Region	*47-2073*	*Operating Engineers and Other Construction Equipment Operators*	*92,750*		*High school diploma or equivalent*	*91,940*	*112,720*	*20,780*	*22.6%*
United States	**47-2111**	**Electricians**	**566,930**	**$26.21**	**High school diploma or equivalent**	**583,500**	**698,200**	**114,700**	**19.7%**
Arizona	47-2111	Electricians	13,070	$22.09	High school diploma or equivalent	11,720	17,020	5,300	45.2%
California	47-2111	Electricians	49,850	$30.95	High school diploma or equivalent	48,700	59,500	10,800	22.2%
Colorado	47-2111	Electricians	13,880	$23.19	High school diploma or equivalent	13,270	18,130	4,860	36.6%
Nevada	47-2111	Electricians	4,670	$27.44	High school diploma or equivalent	4,450	6,190	1,740	39.1%
New Mexico	47-2111	Electricians	3,480	$23.03	High school diploma or equivalent	3,440	3,710	270	7.8%
Oklahoma	47-2111	Electricians	6,000	$22.84	High school diploma or equivalent	6,950	7,970	1,020	14.7%
Texas	47-2111	Electricians	50,440	$21.70	High school diploma or equivalent	50,220	60,920	10,700	21.3%
Utah	47-2111	Electricians	6,610	$22.84	High school diploma or equivalent	6,050	7,790	1,740	28.8%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
Southwest Region	*47-2111*	*Electricians*	*148,000*		*High school diploma or equivalent*	*144,800*	*181,230*	*36,430*	*25.2%*
United States	**47-4051**	**Highway Maintenance Workers**	**140,650**	**$18.22**	**High school diploma or equivalent**	**147,600**	**155,900**	**8,300**	**5.6%**
Arizona	47-4051	Highway Maintenance Workers	1,680	$18.49	High school diploma or equivalent	1,640	1,810	170	10.4%
California	47-4051	Highway Maintenance Workers	5,320	$24.28	High school diploma or equivalent	5,100	5,500	400	7.8%
Colorado	47-4051	Highway Maintenance Workers	2,850	$19.89	High school diploma or equivalent	2,600	2,870	270	10.4%
Nevada	47-4051	Highway Maintenance Workers	720	$21.00	High school diploma or equivalent	710	750	40	5.6%
New Mexico	47-4051	Highway Maintenance Workers	1,050	$14.97	High school diploma or equivalent	1,090	1,110	20	1.8%
Oklahoma	47-4051	Highway Maintenance Workers	2,120	$15.13	High school diploma or equivalent	2,490	2,970	480	19.3%
Texas	47-4051	Highway Maintenance Workers	5,390	$16.00	High school diploma or equivalent	5,220	6,150	930	17.8%
Utah	47-4051	Highway Maintenance Workers	1,080	$17.98	High school diploma or equivalent	1,120	1,270	150	13.4%
Southwest Region	*47-4051*	*Highway Maintenance Workers*	*20,210*		*High school diploma or equivalent*	*19,970*	*22,430*	*2,460*	*12.3%*
United States	**47-4061**	**Rail-Track Laying and Maintenance Equipment Operators**	**14,820**	**$24.39**	**High school diploma or equivalent**	**17,300**	**18,200**	**900**	**5.2%**
Arizona	47-4061	Rail-Track Laying and Maintenance Equipment Operators	**	$20.43	High school diploma or equivalent	180	240	60	33.3%
Colorado	47-4061	Rail-Track Laying and Maintenance Equipment Operators	160	$23.27	High school diploma or equivalent	140	140	0	0.0%
Nevada	47-4061	Rail-Track Laying and Maintenance Equipment Operators	50	$24.08	High school diploma or equivalent	40	40	0	0.0%
New Mexico	47-4061	Rail-Track Laying and Maintenance Equipment Operators	120	$23.63	High school diploma or equivalent	NA	NA	NA	NA
Oklahoma	47-4061	Rail-Track Laying and Maintenance Equipment Operators	**	$16.69	High school diploma or equivalent	660	670	10	1.5%
Texas	47-4061	Rail-Track Laying and Maintenance Equipment Operators	1,520	$22.94	High school diploma or equivalent	1,140	1,360	220	19.3%
Utah	47-4061	Rail-Track Laying and Maintenance Equipment Operators	130	$24.30	High school diploma or equivalent	130	150	20	15.4%
Southwest Region	*47-4061*	*Rail-Track Laying and Maintenance Equipment Operators*	*1,980*		*High school diploma or equivalent*	*2,290*	*2,600*	*310*	*13.5%*
United States	**49-2091**	**Avionics Technicians**	**17,150**	**$28.11**	**Associate's degree**	**17,100**	**17,600**	**500**	**2.9%**

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Arizona	49-2091	Avionics Technicians	560	$24.53	Associate's degree	260	250	-10	-3.8%
California	49-2091	Avionics Technicians	1,870	$32.76	Associate's degree	1,700	1,800	100	5.9%
Colorado	49-2091	Avionics Technicians	180	$31.45	Associate's degree	290	330	40	13.8%
Nevada	49-2091	Avionics Technicians	220	$25.09	Associate's degree	180	210	30	16.7%
New Mexico	49-2091	Avionics Technicians	50	$27.08	Associate's degree	140	150	10	7.1%
Oklahoma	49-2091	Avionics Technicians	510	$24.70	Associate's degree	930	860	-70	-7.5%
Texas	49-2091	Avionics Technicians	1,660	$24.54	Associate's degree	1,490	1,720	230	15.4%
Utah	49-2091	Avionics Technicians	210	$26.10	Associate's degree	230	220	-10	-4.3%
Southwest Region	*49-2091*	*Avionics Technicians*	*5,260*		*Associate's degree*	*5,220*	*5,540*	*320*	*6.1%*
United States	**49-2093**	**Electrical and Electronics Installers and Repairers, Transportation Equipment**	**14,160**	**$26.65**	**Postsecondary non-degree award**	**15,900**	**16,200**	**300**	**1.9%**
Arizona	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	60	$23.28	Postsecondary non-degree award	60	80	20	33.3%
California	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	1,170	$29.17	Postsecondary non-degree award	1,200	1,300	100	8.3%
Colorado	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	250	$28.17	Postsecondary non-degree award	390	400	10	2.6%
Nevada	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	100	*	Postsecondary non-degree award	NA	NA	NA	NA
New Mexico	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	30	$21.76	Postsecondary non-degree award	NA	NA	NA	NA
Oklahoma	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	**	$24.98	Postsecondary non-degree award	90	100	10	11.1%
Texas	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	1,980	$26.57	Postsecondary non-degree award	2,010	2,330	320	15.9%
Southwest Region	*49-2093*	*Electrical and Electronics Installers and Repairers, Transportation Equipment*	*3,590*		*Postsecondary non-degree award*	*3,750*	*4,210*	*460*	*12.3%*
United States	**49-3011**	**Aircraft Mechanics and Service Technicians**	**116,830**	**$28.29**	**Postsecondary non-degree award**	**121,700**	**124,700**	**3,000**	**2.5%**
Arizona	49-3011	Aircraft Mechanics and Service Technicians	3,820	$27.01	Postsecondary non-degree award	2,880	3,220	340	11.8%
California	49-3011	Aircraft Mechanics and Service Technicians	12,210	$30.74	Postsecondary non-degree award	12,000	13,300	1,300	10.8%
Colorado	49-3011	Aircraft Mechanics and Service Technicians	1,640	$32.87	Postsecondary non-degree award	1,860	2,170	310	16.7%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
Nevada	49-3011	Aircraft Mechanics and Service Technicians	1,570	$30.50	Postsecondary non-degree award	1,130	1,360	230	20.4%
New Mexico	49-3011	Aircraft Mechanics and Service Technicians	530	$24.47	Postsecondary non-degree award	870	990	120	13.8%
Oklahoma	49-3011	Aircraft Mechanics and Service Technicians	3,540	$23.64	Postsecondary non-degree award	5,870	5,600	-270	-4.6%
Texas	49-3011	Aircraft Mechanics and Service Technicians	13,440	$27.11	Postsecondary non-degree award	13,020	15,190	2,170	16.7%
Utah	49-3011	Aircraft Mechanics and Service Technicians	1,650	$25.95	Postsecondary non-degree award	1,600	1,660	60	3.8%
Southwest Region	*49-3011*	*Aircraft Mechanics and Service Technicians*	*38,400*		*Postsecondary non-degree award*	*39,230*	*43,490*	*4,260*	*10.9%*
United States	**49-3031**	**Bus and Truck Mechanics and Diesel Engine Specialists**	**243,080**	**$21.71**	**High school diploma or equivalent**	**250,800**	**272,500**	**21,700**	**8.7%**
Arizona	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	4,420	$21.41	High school diploma or equivalent	4,290	5,170	880	20.5%
California	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	20,910	$24.31	High school diploma or equivalent	21,700	24,600	2,900	13.4%
Colorado	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	4,410	$22.13	High school diploma or equivalent	4,960	5,740	780	15.7%
Nevada	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	1,470	$25.94	High school diploma or equivalent	1,410	1,650	240	17.0%
New Mexico	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	1,790	$20.24	High school diploma or equivalent	2,190	2,350	160	7.3%
Oklahoma	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	3,680	$19.49	High school diploma or equivalent	4,200	4,610	410	9.8%
Texas	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	22,780	$21.02	High school diploma or equivalent	22,180	26,890	4,710	21.2%
Utah	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	2,930	$21.20	High school diploma or equivalent	3,360	4,050	690	20.5%
Southwest Region	*49-3031*	*Bus and Truck Mechanics and Diesel Engine Specialists*	*62,390*		*High school diploma or equivalent*	*64,290*	*75,060*	*10,770*	*16.8%*
United States	**49-3043**	**Rail Car Repairers**	**20,080**	**$25.27**	**High school diploma or equivalent**	**21,200**	**21,700**	**500**	**2.4%**
Arizona	49-3043	Rail Car Repairers	230	$22.41	High school diploma or equivalent	130	150	20	15.4%
California	49-3043	Rail Car Repairers	1,030	$24.73	High school diploma or equivalent	1,100	1,200	100	9.1%
Colorado	49-3043	Rail Car Repairers	420	$23.47	High school diploma or equivalent	440	460	20	4.5%
Nevada	49-3043	Rail Car Repairers	160	$30.12	High school diploma or equivalent	170	180	10	5.9%

Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Southwest Region, by State									
State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
New Mexico	49-3043	Rail Car Repairers	180	*	High school diploma or equivalent	NA	NA	NA	NA
Oklahoma	49-3043	Rail Car Repairers	70	$25.52	High school diploma or equivalent	200	200	0	0.0%
Texas	49-3043	Rail Car Repairers	1,720	$24.18	High school diploma or equivalent	1,770	2,070	300	16.9%
Utah	49-3043	Rail Car Repairers	110	$27.62	High school diploma or equivalent	80	90	10	12.5%
Southwest Region	*49-3043*	*Rail Car Repairers*	*3,920*		*High school diploma or equivalent*	*3,890*	*4,350*	*460*	*11.8%*
United States	**49-3051**	**Motorboat Mechanics and Service Technicians**	**20,210**	**$18.56**	**High school diploma or equivalent**	**20,800**	**22,000**	**1,200**	**5.8%**
Arizona	49-3051	Motorboat Mechanics and Service Technicians	240	$19.59	High school diploma or equivalent	400	450	50	12.5%
California	49-3051	Motorboat Mechanics and Service Technicians	1,020	$18.81	High school diploma or equivalent	NA	NA	NA	NA
Colorado	49-3051	Motorboat Mechanics and Service Technicians	130	$17.35	High school diploma or equivalent	260	290	30	11.5%
Nevada	49-3051	Motorboat Mechanics and Service Technicians	**	$20.51	High school diploma or equivalent	60	70	10	16.7%
Oklahoma	49-3051	Motorboat Mechanics and Service Technicians	140	$18.44	High school diploma or equivalent	200	220	20	10.0%
Texas	49-3051	Motorboat Mechanics and Service Technicians	1,330	$20.06	High school diploma or equivalent	1,390	1,640	250	18.0%
Utah	49-3051	Motorboat Mechanics and Service Technicians	210	$18.82	High school diploma or equivalent	150	170	20	13.3%
Southwest Region	*49-3051*	*Motorboat Mechanics and Service Technicians*	*3,070*		*High school diploma or equivalent*	*2,460*	*2,840*	*380*	*15.4%*
United States	**49-3052**	**Motorcycle Mechanics**	**15,420**	**$17.21**	**High school diploma or equivalent**	**16,800**	**17,800**	**1,000**	**6.0%**
Arizona	49-3052	Motorcycle Mechanics	310	$17.75	High school diploma or equivalent	370	430	60	16.2%
California	49-3052	Motorcycle Mechanics	1,340	$20.60	High school diploma or equivalent	1,500	1,900	400	26.7%
Colorado	49-3052	Motorcycle Mechanics	300	$19.85	High school diploma or equivalent	380	460	80	21.1%
Nevada	49-3052	Motorcycle Mechanics	90	$23.38	High school diploma or equivalent	NA	NA	NA	NA
New Mexico	49-3052	Motorcycle Mechanics	110	$14.08	High school diploma or equivalent	140	150	10	7.1%
Oklahoma	49-3052	Motorcycle Mechanics	150	$16.58	High school diploma or equivalent	180	190	10	5.6%
Texas	49-3052	Motorcycle Mechanics	1,020	$18.88	High school diploma or equivalent	970	1,150	180	18.6%
Utah	49-3052	Motorcycle Mechanics	220	$16.97	High school diploma or equivalent	150	180	30	20.0%
Southwest Region	*49-3052*	*Motorcycle Mechanics*	*3,540*		*High school diploma or equivalent*	*3,690*	*4,460*	*770*	*20.9%*

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
United States	**49-3092**	**Recreational Vehicle Service Technicians**	**10,990**	**$17.80**	**High school diploma or equivalent**	**11,100**	**12,100**	**1,000**	**9.0%**
Arizona	49-3092	Recreational Vehicle Service Technicians	170	$14.81	High school diploma or equivalent	310	350	40	12.9%
California	49-3092	Recreational Vehicle Service Technicians	1,010	$20.28	High school diploma or equivalent	1,200	1,500	300	25.0%
Colorado	49-3092	Recreational Vehicle Service Technicians	380	$21.42	High school diploma or equivalent	NA	NA	NA	NA
Nevada	49-3092	Recreational Vehicle Service Technicians	130	$17.74	High school diploma or equivalent	150	160	10	6.7%
New Mexico	49-3092	Recreational Vehicle Service Technicians	170	$20.28	High school diploma or equivalent	80	90	10	12.5%
Oklahoma	49-3092	Recreational Vehicle Service Technicians	190	$15.51	High school diploma or equivalent	120	130	10	8.3%
Texas	49-3092	Recreational Vehicle Service Technicians	1,020	$18.84	High school diploma or equivalent	830	1,000	170	20.5%
Utah	49-3092	Recreational Vehicle Service Technicians	130	$19.19	High school diploma or equivalent	110	140	30	27.3%
Southwest Region	*49-3092*	*Recreational Vehicle Service Technicians*	*3,200*		*High school diploma or equivalent*	*2,800*	*3,370*	*570*	*20.4%*
United States	**49-3093**	**Tire Repairers and Changers**	**100,510**	**$12.31**	**High school diploma or equivalent**	**98,400**	**107,000**	**8,600**	**8.7%**
Arizona	49-3093	Tire Repairers and Changers	2,810	$11.66	High school diploma or equivalent	2,880	3,410	530	18.4%
California	49-3093	Tire Repairers and Changers	10,570	$13.45	High school diploma or equivalent	10,200	12,200	2,000	19.6%
Colorado	49-3093	Tire Repairers and Changers	1,910	$13.01	High school diploma or equivalent	2,490	3,120	630	25.3%
Nevada	49-3093	Tire Repairers and Changers	860	$15.80	High school diploma or equivalent	950	1,030	80	8.4%
New Mexico	49-3093	Tire Repairers and Changers	760	$11.48	High school diploma or equivalent	830	950	120	14.5%
Oklahoma	49-3093	Tire Repairers and Changers	1,950	$10.90	High school diploma or equivalent	1,720	1,850	130	7.6%
Texas	49-3093	Tire Repairers and Changers	10,790	$11.93	High school diploma or equivalent	8,750	10,480	1,730	19.8%
Utah	49-3093	Tire Repairers and Changers	1,340	$12.51	High school diploma or equivalent	1,320	1,620	300	22.7%
Southwest Region	*49-3093*	*Tire Repairers and Changers*	*30,990*		*High school diploma or equivalent*	*29,140*	*34,660*	*5,520*	*18.9%*
United States	**49-9092**	**Commercial Divers**	**3,620**	**$24.55**	**Postsecondary non-degree award**	**3,600**	**4,700**	**1,100**	**30.6%**
California	49-9092	Commercial Divers	90	*	Postsecondary non-degree award	NA	NA	NA	NA
Texas	49-9092	Commercial Divers	300	$22.74	Postsecondary non-degree award	310	430	120	38.7%
Southwest Region	*49-9092*	*Commercial Divers*	*390*		*Postsecondary non-degree award*	*310*	*430*	*120*	*38.7%*

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
United States	**49-9097**	**Signal and Track Switch Repairers**	**7,880**	**$28.81**	**High school diploma or equivalent**	**8,800**	**8,700**	**-100**	**-1.1%**
Arizona	49-9097	Signal and Track Switch Repairers	120	$29.71	High school diploma or equivalent	120	150	30	25.0%
California	49-9097	Signal and Track Switch Repairers	420	$32.41	High school diploma or equivalent	NA	NA	NA	NA
Colorado	49-9097	Signal and Track Switch Repairers	120	$25.35	High school diploma or equivalent	100	90	-10	-10.0%
Oklahoma	49-9097	Signal and Track Switch Repairers	70	$24.35	High school diploma or equivalent	130	130	0	0.0%
Texas	49-9097	Signal and Track Switch Repairers	720	$25.53	High school diploma or equivalent	490	550	60	12.2%
Southwest Region	*49-9097*	*Signal and Track Switch Repairers*	*1,450*		*High school diploma or equivalent*	*840*	*920*	*80*	*9.5%*
United States	**51-2011**	**Aircraft Structure, Surfaces, Rigging, and Systems Assemblers**	**40,630**	**$24.43**	**High school diploma or equivalent**	**41,500**	**44,000**	**2,500**	**6.0%**
Arizona	51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	620	$24.67	High school diploma or equivalent	600	710	110	18.3%
California	51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	3,410	$26.05	High school diploma or equivalent	3,000	3,300	300	10.0%
Colorado	51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	230	$24.72	High school diploma or equivalent	NA	NA	NA	NA
Oklahoma	51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	1,410	$19.99	High school diploma or equivalent	1,050	1,180	130	12.4%
Texas	51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	3,100	$22.38	High school diploma or equivalent	4,280	5,000	720	16.8%
Utah	51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	220	$16.48	High school diploma or equivalent	340	670	330	97.1%
Southwest Region	*51-2011*	*Aircraft Structure, Surfaces, Rigging, and Systems Assemblers*	*8,990*		*High school diploma or equivalent*	*9,270*	*10,860*	*1,590*	*17.2%*
United States	**51-9197**	**Tire Builders**	**17,680**	**$20.17**	**High school diploma or equivalent**	**17,400**	**15,800**	**-1,600**	**-9.2%**
Arizona	51-9197	Tire Builders	50	$16.71	High school diploma or equivalent	NA	NA	NA	NA
California	51-9197	Tire Builders	190	$15.55	High school diploma or equivalent	NA	NA	NA	NA
Oklahoma	51-9197	Tire Builders	**	$20.56	High school diploma or equivalent	1,150	1,080	-70	-6.1%
Texas	51-9197	Tire Builders	310	$12.99	High school diploma or equivalent	250	290	40	16.0%
Southwest Region	*51-9197*	*Tire Builders*	*550*		*High school diploma or equivalent*	*1,400*	*1,370*	*-30*	*-2.1%*

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
United States	**53-1011**	**Aircraft Cargo Handling Supervisors**	**5,750**	**$24.41**	**High school diploma or equivalent**	**6,800**	**6,900**	**100**	**1.5%**
Arizona	53-1011	Aircraft Cargo Handling Supervisors	120	$23.89	High school diploma or equivalent	180	220	40	22.2%
California	53-1011	Aircraft Cargo Handling Supervisors	710	$24.63	High school diploma or equivalent	NA	NA	NA	NA
Colorado	53-1011	Aircraft Cargo Handling Supervisors	150	$18.73	High school diploma or equivalent	90	120	30	33.3%
Nevada	53-1011	Aircraft Cargo Handling Supervisors	80	$25.74	High school diploma or equivalent	90	100	10	11.1%
Oklahoma	53-1011	Aircraft Cargo Handling Supervisors	150	$28.17	High school diploma or equivalent	200	220	20	10.0%
Texas	53-1011	Aircraft Cargo Handling Supervisors	460	$23.53	High school diploma or equivalent	470	560	90	19.1%
Utah	53-1011	Aircraft Cargo Handling Supervisors	80	$20.61	High school diploma or equivalent	70	90	20	28.6%
Southwest Region	*53-1011*	*Aircraft Cargo Handling Supervisors*	*1,750*		*High school diploma or equivalent*	*1,100*	*1,310*	*210*	*19.1%*
United States	**53-1021**	**First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand**	**171,720**	**$23.55**	**High school diploma or equivalent**	**171,600**	**186,300**	**14,700**	**8.6%**
Arizona	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	3,030	$22.94	High school diploma or equivalent	3,120	3,860	740	23.7%
California	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	20,750	$23.82	High school diploma or equivalent	20,300	23,400	3,100	15.3%
Colorado	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	1,500	$22.75	High school diploma or equivalent	1,850	2,210	360	19.5%
Nevada	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	1,430	$22.53	High school diploma or equivalent	1,300	1,520	220	16.9%
Oklahoma	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	2,580	$24.10	High school diploma or equivalent	1,990	2,180	190	9.5%
Texas	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	14,250	$23.05	High school diploma or equivalent	14,520	17,670	3,150	21.7%
Utah	53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	1,790	$22.23	High school diploma or equivalent	1,970	2,550	580	29.4%
Southwest Region	*53-1021*	*First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand*	*46,330*		*High school diploma or equivalent*	*45,050*	*53,390*	*8,340*	*18.5%*
United States	**53-1031**	**First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators**	**197,000**	**$27.66**	**High school diploma or equivalent**	**201,000**	**218,300**	**17,300**	**8.6%**
Arizona	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	2,680	$25.48	High school diploma or equivalent	2,920	3,470	550	18.8%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
California	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	19,350	$28.79	High school diploma or equivalent	19,300	22,000	2,700	14.0%
Colorado	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	3,220	$29.32	High school diploma or equivalent	2,910	3,450	540	18.6%
Nevada	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	1,560	$25.67	High school diploma or equivalent	1,570	1,790	220	14.0%
New Mexico	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	1,350	$27.39	High school diploma or equivalent	1,210	1,320	110	9.1%
Oklahoma	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	2,780	$26.55	High school diploma or equivalent	3,570	3,750	180	5.0%
Texas	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	19,000	$28.26	High school diploma or equivalent	16,990	20,620	3,630	21.4%
Utah	53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	1,340	$28.41	High school diploma or equivalent	1,370	1,670	300	21.9%
Southwest Region	*53-1031*	*First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators*	*51,280*		*High school diploma or equivalent*	*49,840*	*58,070*	*8,230*	*16.5%*
United States	**53-2011**	**Airline Pilots, Copilots, and Flight Engineers**	**75,760**	*****	**Bachelor's degree**	**66,400**	**62,100**	**-4,300**	**-6.5%**
Arizona	53-2011	Airline Pilots, Copilots, and Flight Engineers	3,280	*	Bachelor's degree	NA	NA	NA	NA
California	53-2011	Airline Pilots, Copilots, and Flight Engineers	6,760	*	Bachelor's degree	6,000	6,900	900	15.0%
Colorado	53-2011	Airline Pilots, Copilots, and Flight Engineers	3,220	*	Bachelor's degree	2,610	3,460	850	32.6%
New Mexico	53-2011	Airline Pilots, Copilots, and Flight Engineers	70	*	Bachelor's degree	40	30	-10	-25.0%
Oklahoma	53-2011	Airline Pilots, Copilots, and Flight Engineers	**	*	Bachelor's degree	240	220	-20	-8.3%
Texas	53-2011	Airline Pilots, Copilots, and Flight Engineers	4,960	*	Bachelor's degree	4,860	5,980	1,120	23.0%
Southwest Region	*53-2011*	*Airline Pilots, Copilots, and Flight Engineers*	*18,290*		*Bachelor's degree*	*13,750*	*16,590*	*2,840*	*20.7%*
United States	**53-2012**	**Commercial Pilots**	**38,170**	*****	**High school diploma or equivalent**	**37,600**	**41,200**	**3,600**	**9.6%**

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
Arizona	53-2012	Commercial Pilots	1,460	*	High school diploma or equivalent	2,560	3,100	540	21.1%
California	53-2012	Commercial Pilots	3,450	*	High school diploma or equivalent	3,100	3,500	400	12.9%
Colorado	53-2012	Commercial Pilots	550	*	High school diploma or equivalent	740	1,010	270	36.5%
Nevada	53-2012	Commercial Pilots	470	*	High school diploma or equivalent	590	670	80	13.6%
New Mexico	53-2012	Commercial Pilots	340	*	High school diploma or equivalent	190	210	20	10.5%
Oklahoma	53-2012	Commercial Pilots	260	*	High school diploma or equivalent	360	380	20	5.6%
Texas	53-2012	Commercial Pilots	4,200	*	High school diploma or equivalent	5,650	6,980	1,330	23.5%
Utah	53-2012	Commercial Pilots	230	*	High school diploma or equivalent	190	240	50	26.3%
Southwest Region	*53-2012*	*Commercial Pilots*	*10,960*		*High school diploma or equivalent*	*13,380*	*16,090*	*2,710*	*20.3%*
United States	**53-2021**	**Air Traffic Controllers**	**22,860**	**$57.11**	**Associate's degree**	**25,000**	**25,400**	**400**	**1.6%**
Arizona	53-2021	Air Traffic Controllers	610	$48.81	Associate's degree	350	380	30	8.6%
California	53-2021	Air Traffic Controllers	2,350	$60.61	Associate's degree	2,500	2,500	0	0.0%
Nevada	53-2021	Air Traffic Controllers	260	$54.64	Associate's degree	230	260	30	13.0%
New Mexico	53-2021	Air Traffic Controllers	350	$56.61	Associate's degree	350	360	10	2.9%
Oklahoma	53-2021	Air Traffic Controllers	280	$46.13	Associate's degree	330	340	10	3.0%
Texas	53-2021	Air Traffic Controllers	**	$61.62	Associate's degree	2,280	2,780	500	21.9%
Southwest Region	*53-2021*	*Air Traffic Controllers*	*3,850*		*Associate's degree*	*6,040*	*6,620*	*580*	*9.6%*
United States	**53-2022**	**Airfield Operations Specialists**	**7,050**	**$24.61**	**High school diploma or equivalent**	**7,100**	**7,500**	**400**	**5.6%**
Arizona	53-2022	Airfield Operations Specialists	110	$23.61	High school diploma or equivalent	60	80	20	33.3%
California	53-2022	Airfield Operations Specialists	490	$27.98	High school diploma or equivalent	NA	NA	NA	NA
Colorado	53-2022	Airfield Operations Specialists	100	$26.40	High school diploma or equivalent	NA	NA	NA	NA
Nevada	53-2022	Airfield Operations Specialists	60	$32.64	High school diploma or equivalent	30	30	0	0.0%
Oklahoma	53-2022	Airfield Operations Specialists	150	$20.47	High school diploma or equivalent	NA	NA	NA	NA
Texas	53-2022	Airfield Operations Specialists	800	$23.99	High school diploma or equivalent	1,010	1,210	200	19.8%
Utah	53-2022	Airfield Operations Specialists	120	$23.00	High school diploma or equivalent	110	120	10	9.1%

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Southwest Region	*53-2022*	*Airfield Operations Specialists*	*1,830*		*High school diploma or equivalent*	*1,210*	*1,440*	*230*	*19.0%*
United States	**53-2031**	**Flight Attendants**	**98,510**	*****	**High school diploma or equivalent**	**84,800**	**79,200**	**-5,600**	**-6.6%**
California	53-2031	Flight Attendants	11,130	*	High school diploma or equivalent	10,600	12,200	1,600	15.1%
Colorado	53-2031	Flight Attendants	3,000	*	High school diploma or equivalent	2,440	3,250	810	33.2%
Texas	53-2031	Flight Attendants	7,630	*	High school diploma or equivalent	8,130	10,140	2,010	24.7%
Southwest Region	*53-2031*	*Flight Attendants*	*21,760*		*High school diploma or equivalent*	*21,170*	*25,590*	*4,420*	*20.9%*
United States	**53-3021**	**Bus Drivers, Transit and Intercity**	**158,050**	**$18.95**	**High school diploma or equivalent**	**170,600**	**187,400**	**16,800**	**9.8%**
Arizona	53-3021	Bus Drivers, Transit and Intercity	3,200	$15.17	High school diploma or equivalent	3,240	4,000	760	23.5%
California	53-3021	Bus Drivers, Transit and Intercity	24,120	$20.16	High school diploma or equivalent	23,300	26,400	3,100	13.3%
Colorado	53-3021	Bus Drivers, Transit and Intercity	3,060	$16.29	High school diploma or equivalent	3,990	4,520	530	13.3%
Nevada	53-3021	Bus Drivers, Transit and Intercity	2,640	$12.97	High school diploma or equivalent	2,380	2,800	420	17.6%
New Mexico	53-3021	Bus Drivers, Transit and Intercity	930	$14.65	High school diploma or equivalent	1,010	1,070	60	5.9%
Oklahoma	53-3021	Bus Drivers, Transit and Intercity	1,270	$14.94	High school diploma or equivalent	1,060	1,240	180	17.0%
Texas	53-3021	Bus Drivers, Transit and Intercity	11,070	$16.74	High school diploma or equivalent	10,600	12,200	1,600	15.1%
Utah	53-3021	Bus Drivers, Transit and Intercity	710	$15.08	High school diploma or equivalent	920	1,090	170	18.5%
Southwest Region	*53-3021*	*Bus Drivers, Transit and Intercity*	*47,000*		*High school diploma or equivalent*	*46,500*	*53,320*	*6,820*	*14.7%*
United States	**53-3022**	**Bus Drivers, School or Special Client**	**499,440**	**$14.38**	**High school diploma or equivalent**	**483,600**	**524,800**	**41,200**	**8.5%**
Arizona	53-3022	Bus Drivers, School or Special Client	7,100	$13.38	High school diploma or equivalent	6,690	7,110	420	6.3%
California	53-3022	Bus Drivers, School or Special Client	29,100	$16.64	High school diploma or equivalent	28,500	31,800	3,300	11.6%
Colorado	53-3022	Bus Drivers, School or Special Client	5,350	$15.51	High school diploma or equivalent	5,240	5,650	410	7.8%
Nevada	53-3022	Bus Drivers, School or Special Client	2,200	$17.85	High school diploma or equivalent	2,180	2,160	-20	-0.9%
New Mexico	53-3022	Bus Drivers, School or Special Client	2,810	$10.95	High school diploma or equivalent	2,640	2,920	280	10.6%
Oklahoma	53-3022	Bus Drivers, School or Special Client	4,530	$10.45	High school diploma or equivalent	4,460	4,320	-140	-3.1%
Texas	53-3022	Bus Drivers, School or Special Client	33,400	$11.99	High school diploma or equivalent	32,740	36,480	3,740	11.4%

Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Southwest Region, by State									
State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
Utah	53-3022	Bus Drivers, School or Special Client	2,120	$15.21	High school diploma or equivalent	2,220	2,600	380	17.1%
Southwest Region	*53-3022*	*Bus Drivers, School or Special Client*	*86,610*		*High school diploma or equivalent*	*84,670*	*93,040*	*8,370*	*9.9%*
United States	**53-3031**	**Driver/Sales Workers**	**405,810**	**$13.33**	**High school diploma or equivalent**	**432,000**	**468,800**	**36,800**	**8.5%**
Arizona	53-3031	Driver/Sales Workers	7,540	$12.44	High school diploma or equivalent	7,930	9,980	2,050	25.9%
California	53-3031	Driver/Sales Workers	38,670	$15.07	High school diploma or equivalent	39,500	46,300	6,800	17.2%
Colorado	53-3031	Driver/Sales Workers	7,260	$13.02	High school diploma or equivalent	7,550	9,040	1,490	19.7%
Nevada	53-3031	Driver/Sales Workers	3,350	$15.09	High school diploma or equivalent	3,060	3,340	280	9.2%
New Mexico	53-3031	Driver/Sales Workers	2,120	$13.21	High school diploma or equivalent	2,370	2,620	250	10.5%
Oklahoma	53-3031	Driver/Sales Workers	5,160	$14.35	High school diploma or equivalent	6,430	7,100	670	10.4%
Texas	53-3031	Driver/Sales Workers	46,430	$12.68	High school diploma or equivalent	38,730	47,330	8,600	22.2%
Utah	53-3031	Driver/Sales Workers	3,290	$12.72	High school diploma or equivalent	3,890	4,850	960	24.7%
Southwest Region	*53-3031*	*Driver/Sales Workers*	*113,820*		*High school diploma or equivalent*	*109,460*	*130,560*	*21,100*	*19.3%*
United States	**53-3032**	**Heavy and Tractor-Trailer Truck Drivers**	**1,625,290**	**$20.16**	**Postsecondary non-degree award**	**1,701,500**	**1,894,100**	**192,600**	**11.3%**
Arizona	53-3032	Heavy and Tractor-Trailer Truck Drivers	22,780	$19.51	Postsecondary non-degree award	26,040	31,050	5,010	19.2%
California	53-3032	Heavy and Tractor-Trailer Truck Drivers	127,330	$20.86	Postsecondary non-degree award	136,100	158,400	22,300	16.4%
Colorado	53-3032	Heavy and Tractor-Trailer Truck Drivers	25,490	$21.44	Postsecondary non-degree award	24,180	30,170	5,990	24.8%
Nevada	53-3032	Heavy and Tractor-Trailer Truck Drivers	9,710	$22.55	Postsecondary non-degree award	9,370	11,030	1,660	17.7%
New Mexico	53-3032	Heavy and Tractor-Trailer Truck Drivers	9,370	$19.62	Postsecondary non-degree award	10,270	11,230	960	9.3%
Oklahoma	53-3032	Heavy and Tractor-Trailer Truck Drivers	24,340	$19.31	Postsecondary non-degree award	26,540	29,640	3,100	11.7%
Texas	53-3032	Heavy and Tractor-Trailer Truck Drivers	165,650	$20.02	Postsecondary non-degree award	161,730	198,760	37,030	22.9%
Utah	53-3032	Heavy and Tractor-Trailer Truck Drivers	20,420	$21.15	Postsecondary non-degree award	21,170	26,300	5,130	24.2%
Southwest Region	*53-3032*	*Heavy and Tractor-Trailer Truck Drivers*	*405,090*		*Postsecondary non-degree award*	*415,400*	*496,580*	*81,180*	*19.5%*
United States	**53-3033**	**Light Truck or Delivery Services Drivers**	**797,010**	**$16.28**	**High school diploma or equivalent**	**841,600**	**873,600**	**32,000**	**3.8%**
Arizona	53-3033	Light Truck or Delivery Services Drivers	13,800	$16.06	High school diploma or equivalent	14,400	17,390	2,990	20.8%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
California	53-3033	Light Truck or Delivery Services Drivers	86,070	$17.47	High school diploma or equivalent	87,600	96,300	8,700	9.9%
Colorado	53-3033	Light Truck or Delivery Services Drivers	14,670	$16.52	High school diploma or equivalent	16,260	18,850	2,590	15.9%
Nevada	53-3033	Light Truck or Delivery Services Drivers	7,020	$16.50	High school diploma or equivalent	7,150	8,010	860	12.0%
New Mexico	53-3033	Light Truck or Delivery Services Drivers	5,640	$14.19	High school diploma or equivalent	4,770	5,120	350	7.3%
Oklahoma	53-3033	Light Truck or Delivery Services Drivers	8,060	$15.26	High school diploma or equivalent	8,020	8,450	430	5.4%
Texas	53-3033	Light Truck or Delivery Services Drivers	59,860	$15.21	High school diploma or equivalent	58,430	68,490	10,060	17.2%
Utah	53-3033	Light Truck or Delivery Services Drivers	7,490	$14.96	High school diploma or equivalent	7,520	9,240	1,720	22.9%
Southwest Region	*53-3033*	*Light Truck or Delivery Services Drivers*	*202,610*		*High school diploma or equivalent*	*204,150*	*231,850*	*27,700*	*13.6%*
United States	**53-3041**	**Taxi Drivers and Chauffeurs**	**178,260**	**$12.35**	**Less than high school**	**233,000**	**269,100**	**36,100**	**15.5%**
Arizona	53-3041	Taxi Drivers and Chauffeurs	4,300	$11.42	Less than high school	4,420	5,410	990	22.4%
California	53-3041	Taxi Drivers and Chauffeurs	14,450	$13.56	Less than high school	17,700	21,400	3,700	20.9%
Colorado	53-3041	Taxi Drivers and Chauffeurs	2,350	$13.43	Less than high school	2,700	3,150	450	16.7%
Nevada	53-3041	Taxi Drivers and Chauffeurs	11,660	$13.96	Less than high school	13,910	16,130	2,220	16.0%
New Mexico	53-3041	Taxi Drivers and Chauffeurs	1,140	$10.44	Less than high school	1,390	1,540	150	10.8%
Oklahoma	53-3041	Taxi Drivers and Chauffeurs	1,180	$9.94	Less than high school	1,620	1,880	260	16.0%
Texas	53-3041	Taxi Drivers and Chauffeurs	12,490	$11.51	Less than high school	15,710	19,210	3,500	22.3%
Utah	53-3041	Taxi Drivers and Chauffeurs	1,250	$11.76	Less than high school	1,680	2,260	580	34.5%
Southwest Region	*53-3041*	*Taxi Drivers and Chauffeurs*	*48,820*		*Less than high school*	*59,130*	*70,980*	*11,850*	*20.0%*
United States	**53-3099**	**Motor Vehicle Operators, All Other**	**58,210**	**$16.02**	**High school diploma or equivalent**	**64,100**	**71,500**	**7,400**	**11.5%**
Arizona	53-3099	Motor Vehicle Operators, All Other	1,560	$15.51	High school diploma or equivalent	1,780	2,120	340	19.1%
California	53-3099	Motor Vehicle Operators, All Other	9,140	$20.95	High school diploma or equivalent	11,100	12,900	1,800	16.2%
Colorado	53-3099	Motor Vehicle Operators, All Other	1,930	$11.98	High school diploma or equivalent	1,620	1,980	360	22.2%
Nevada	53-3099	Motor Vehicle Operators, All Other	910	$12.36	High school diploma or equivalent	730	750	20	2.7%
New Mexico	53-3099	Motor Vehicle Operators, All Other	230	$19.00	High school diploma or equivalent	300	290	-10	-3.3%
Oklahoma	53-3099	Motor Vehicle Operators, All Other	**	$21.99	High school diploma or equivalent	570	560	-10	-1.8%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
Texas	53-3099	Motor Vehicle Operators, All Other	3,800	$16.77	High school diploma or equivalent	6,080	7,370	1,290	21.2%
Utah	53-3099	Motor Vehicle Operators, All Other	190	$19.15	High school diploma or equivalent	200	210	10	5.0%
Southwest Region	*53-3099*	*Motor Vehicle Operators, All Other*	*17,760*		*High school diploma or equivalent*	*22,380*	*26,180*	*3,800*	*17.0%*
United States	**53-4011**	**Locomotive Engineers**	**38,470**	**$27.41**	**High school diploma or equivalent**	**38,000**	**36,500**	**-1,500**	**-3.9%**
Arizona	53-4011	Locomotive Engineers	790	$30.18	High school diploma or equivalent	790	960	170	21.5%
California	53-4011	Locomotive Engineers	1,090	$25.62	High school diploma or equivalent	NA	NA	NA	NA
Colorado	53-4011	Locomotive Engineers	390	$19.74	High school diploma or equivalent	410	370	-40	-9.8%
Nevada	53-4011	Locomotive Engineers	200	$27.97	High school diploma or equivalent	NA	NA	NA	NA
New Mexico	53-4011	Locomotive Engineers	500	*	High school diploma or equivalent	NA	NA	NA	NA
Oklahoma	53-4011	Locomotive Engineers	480	$20.05	High school diploma or equivalent	320	320	0	0.0%
Texas	53-4011	Locomotive Engineers	4,410	$27.75	High school diploma or equivalent	3,150	3,510	360	11.4%
Southwest Region	*53-4011*	*Locomotive Engineers*	*7,860*		*High school diploma or equivalent*	*4,670*	*5,160*	*490*	*10.5%*
United States	**53-4012**	**Locomotive Firers**	**1,610**	**$25.81**	**High school diploma or equivalent**	**1,600**	**900**	**-700**	**-43.8%**
Texas	53-4012	Locomotive Firers	190	*	High school diploma or equivalent	170	110	-60	-35.3%
Southwest Region	*53-4012*	*Locomotive Firers*	*190*		*High school diploma or equivalent*	*170*	*110*	*-60*	*-35.3%*
United States	**53-4013**	**Rail Yard Engineers, Dinkey Operators, and Hostlers**	**3,900**	**$21.54**	**High school diploma or equivalent**	**5,300**	**5,400**	**100**	**1.9%**
Colorado	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	40	$24.13	High school diploma or equivalent	40	40	0	0.0%
Texas	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	790	$18.55	High school diploma or equivalent	760	930	170	22.4%
Southwest Region	*53-4013*	*Rail Yard Engineers, Dinkey Operators, and Hostlers*	*830*		*High school diploma or equivalent*	*6,440*	*6,590*	*150*	*2.3%*
United States	**53-4021**	**Railroad Brake, Signal, and Switch Operators**	**21,060**	**$25.14**	**High school diploma or equivalent**	**25,000**	**24,400**	**-600**	**-2.4%**
Arizona	53-4021	Railroad Brake, Signal, and Switch Operators	460	$26.04	High school diploma or equivalent	490	600	110	22.4%
Colorado	53-4021	Railroad Brake, Signal, and Switch Operators	410	$24.45	High school diploma or equivalent	400	360	-40	-10.0%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
Oklahoma	53-4021	Railroad Brake, Signal, and Switch Operators	300	$23.33	High school diploma or equivalent	230	220	-10	-4.3%
Texas	53-4021	Railroad Brake, Signal, and Switch Operators	3,340	$24.66	High school diploma or equivalent	2,960	3,340	380	12.8%
Utah	53-4021	Railroad Brake, Signal, and Switch Operators	230	$21.83	High school diploma or equivalent	NA	NA	NA	NA
Southwest Region	*53-4021*	*Railroad Brake, Signal, and Switch Operators*	*4,740*		*High school diploma or equivalent*	*4,080*	*4,520*	*440*	*10.8%*
United States	**53-4031**	**Railroad Conductors and Yardmasters**	**42,900**	**$26.84**	**High school diploma or equivalent**	**43,800**	**42,500**	**-1,300**	**-3.0%**
Arizona	53-4031	Railroad Conductors and Yardmasters	580	$28.41	High school diploma or equivalent	410	500	90	22.0%
California	53-4031	Railroad Conductors and Yardmasters	1,750	$25.71	High school diploma or equivalent	1,500	1,600	100	6.7%
Colorado	53-4031	Railroad Conductors and Yardmasters	410	$19.99	High school diploma or equivalent	390	370	-20	-5.1%
Oklahoma	53-4031	Railroad Conductors and Yardmasters	350	$24.86	High school diploma or equivalent	350	340	-10	-2.9%
Texas	53-4031	Railroad Conductors and Yardmasters	4,320	$25.68	High school diploma or equivalent	3,240	3,610	370	11.4%
Texas	53-4031	Railroad Conductors and Yardmasters	4,320	$25.68	High school diploma or equivalent	3,240	3,610	370	11.4%
Southwest Region	*53-4031*	*Railroad Conductors and Yardmasters*	*7,690*		*High school diploma or equivalent*	*5,890*	*6,420*	*530*	*9.0%*
United States	**53-4041**	**Subway and Streetcar Operators**	**11,300**	**$28.48**	**High school diploma or equivalent**	**9,000**	**9,600**	**600**	**6.7%**
California	53-4041	Subway and Streetcar Operators	2,030	$29.25	High school diploma or equivalent	1,500	1,600	100	6.7%
Southwest Region	*53-4041*	*Subway and Streetcar Operators*	*2,400*		*High school diploma or equivalent*	*1,500*	*1,600*	*100*	*6.7%*
United States	**53-4099**	**Rail Transportation Workers, All Other**	**3,640**	**$28.82**	**High school diploma or equivalent**	**3,100**	**3,200**	**100**	**3.2%**
United States	**53-5011**	**Sailors and Marine Oilers**	**27,640**	**$19.70**	**Less than high school**	**31,900**	**36,900**	**5,000**	**15.7%**
California	53-5011	Sailors and Marine Oilers	1,960	$17.00	Less than high school	2,400	2,800	400	16.7%
Texas	53-5011	Sailors and Marine Oilers	2,280	$21.00	Less than high school	2,260	2,740	480	21.2%
Southwest Region	*53-5011*	*Sailors and Marine Oilers*	*4,240*		*Less than high school*	*4,660*	*5,540*	*880*	*18.9%*
United States	**53-5021**	**Captains, Mates, and Pilots of Water Vessels**	**30,690**	**$38.07**	**Bachelor's degree**	**35,400**	**40,200**	**4,800**	**13.6%**
Arizona	53-5021	Captains, Mates, and Pilots of Water Vessels	**	$35.54	Bachelor's degree	370	460	90	24.3%
California	53-5021	Captains, Mates, and Pilots of Water Vessels	1,880	$32.47	Bachelor's degree	2,800	3,200	400	14.3%

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Texas	53-5021	Captains, Mates, and Pilots of Water Vessels	2,650	$46.28	Bachelor's degree	2,390	2,920	530	22.2%
Southwest Region	*53-5021*	*Captains, Mates, and Pilots of Water Vessels*	*4,530*		*Bachelor's degree*	*5,560*	*6,580*	*1,020*	*18.3%*
United States	**53-5022**	**Motorboat Operators**	**4,060**	**$19.78**	**High school diploma or equivalent**	**3,400**	**3,600**	**200**	**5.9%**
Arizona	53-5022	Motorboat Operators	50	$19.96	High school diploma or equivalent	60	80	20	33.3%
California	53-5022	Motorboat Operators	80	$24.12	High school diploma or equivalent	NA	NA	NA	NA
Texas	53-5022	Motorboat Operators	70	$17.96	High school diploma or equivalent	110	130	20	18.2%
Southwest Region	*53-5022*	*Motorboat Operators*	*200*		*High school diploma or equivalent*	*170*	*210*	*40*	*23.5%*
United States	**53-5031**	**Ship Engineers**	**10,060**	**$35.87**	**Bachelor's degree**	**10,800**	**11,700**	**900**	**8.3%**
California	53-5031	Ship Engineers	830	*	Bachelor's degree	1,000	1,100	100	10.0%
Texas	53-5031	Ship Engineers	620	$38.12	Bachelor's degree	260	300	40	15.4%
Southwest Region	*53-5031*	*Ship Engineers*	*1,450*		*Bachelor's degree*	*1,260*	*1,400*	*140*	*11.1%*
United States	**53-6011**	**Bridge and Lock Tenders**	**3,280**	**$22.22**	**High school diploma or equivalent**	**3,600**	**3,600**	**0**	**0.0%**
United States	**53-6021**	**Parking Lot Attendants**	**136,440**	**$10.39**	**Less than high school**	**128,300**	**137,600**	**9,300**	**7.2%**
Arizona	53-6021	Parking Lot Attendants	1,320	$9.64	Less than high school	1,730	1,940	210	12.1%
California	53-6021	Parking Lot Attendants	25,230	$11.09	Less than high school	22,700	25,400	2,700	11.9%
Colorado	53-6021	Parking Lot Attendants	1,870	$10.51	Less than high school	2,430	2,770	340	14.0%
Nevada	53-6021	Parking Lot Attendants	3,160	$10.86	Less than high school	3,000	3,250	250	8.3%
New Mexico	53-6021	Parking Lot Attendants	390	$10.77	Less than high school	310	350	40	12.9%
Oklahoma	53-6021	Parking Lot Attendants	630	$9.74	Less than high school	940	990	50	5.3%
Texas	53-6021	Parking Lot Attendants	11,700	$9.73	Less than high school	9,250	11,060	1,810	19.6%
Utah	53-6021	Parking Lot Attendants	380	$10.33	Less than high school	450	540	90	20.0%
Southwest Region	*53-6021*	*Parking Lot Attendants*	*44,680*		*Less than high school*	*40,810*	*46,300*	*5,490*	*13.5%*
United States	**53-6031**	**Automotive and Watercraft Service Attendants**	**104,750**	**$10.90**	**Less than high school**	**109,500**	**129,300**	**19,800**	**18.1%**

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
Arizona	53-6031	Automotive and Watercraft Service Attendants	1,750	$11.18	Less than high school	1,820	2,140	320	17.6%
California	53-6031	Automotive and Watercraft Service Attendants	7,230	$12.41	Less than high school	7,900	9,700	1,800	22.8%
Colorado	53-6031	Automotive and Watercraft Service Attendants	1,200	$11.48	Less than high school	2,060	2,630	570	27.7%
Nevada	53-6031	Automotive and Watercraft Service Attendants	1,130	$11.12	Less than high school	1,140	1,320	180	15.8%
New Mexico	53-6031	Automotive and Watercraft Service Attendants	850	$10.50	Less than high school	940	1,130	190	20.2%
Oklahoma	53-6031	Automotive and Watercraft Service Attendants	1,000	$11.00	Less than high school	1,230	1,470	240	19.5%
Texas	53-6031	Automotive and Watercraft Service Attendants	10,700	$11.18	Less than high school	10,620	13,400	2,780	26.2%
Utah	53-6031	Automotive and Watercraft Service Attendants	880	$11.90	Less than high school	900	1,200	300	33.3%
Southwest Region	*53-6031*	*Automotive and Watercraft Service Attendants*	*24,740*		*Less than high school*	*26,610*	*32,990*	*6,380*	*24.0%*
United States	**53-6041**	**Traffic Technicians**	**6,490**	**$22.38**	**High school diploma or equivalent**	**6,600**	**7,300**	**700**	**10.6%**
Arizona	53-6041	Traffic Technicians	80	$23.23	High school diploma or equivalent	90	100	10	11.1%
California	53-6041	Traffic Technicians	190	$30.89	High school diploma or equivalent	NA	NA	NA	NA
Colorado	53-6041	Traffic Technicians	100	$24.44	High school diploma or equivalent	90	100	10	11.1%
Nevada	53-6041	Traffic Technicians	40	$34.82	High school diploma or equivalent	40	40	0	0.0%
Oklahoma	53-6041	Traffic Technicians	50	$16.66	High school diploma or equivalent	250	250	0	0.0%
Texas	53-6041	Traffic Technicians	730	$19.15	High school diploma or equivalent	680	790	110	16.2%
Southwest Region	*53-6041*	*Traffic Technicians*	*1,190*		*High school diploma or equivalent*	*1,150*	*1,280*	*130*	*11.3%*
United States	**53-6051**	**Transportation Inspectors**	**24,350**	**$34.05**	**High school diploma or equivalent**	**26,200**	**29,100**	**2,900**	**11.1%**
Arizona	53-6051	Transportation Inspectors	670	$31.67	High school diploma or equivalent	800	970	170	21.3%
California	53-6051	Transportation Inspectors	2,310	$34.32	High school diploma or equivalent	2,100	2,400	300	14.3%
Colorado	53-6051	Transportation Inspectors	470	$33.48	High school diploma or equivalent	410	470	60	14.6%
Nevada	53-6051	Transportation Inspectors	190	$30.52	High school diploma or equivalent	140	170	30	21.4%
New Mexico	53-6051	Transportation Inspectors	140	$23.73	High school diploma or equivalent	180	200	20	11.1%
Oklahoma	53-6051	Transportation Inspectors	320	$35.14	High school diploma or equivalent	290	310	20	6.9%

Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Southwest Region, by State									
State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage[a]**	**Typical Education Needed For Entry[a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022[b]**	**Change in # of Employees[b]**	**Percent Change[b]**
Texas	53-6051	Transportation Inspectors	2,720	$34.22	High school diploma or equivalent	2,690	3,460	770	28.6%
Utah	53-6051	Transportation Inspectors	340	$34.66	High school diploma or equivalent	NA	NA	NA	NA
Southwest Region	*53-6051*	*Transportation Inspectors*	*7,160*		*High school diploma or equivalent*	*6,610*	*7,980*	*1,370*	*20.7%*
United States	**53-6061**	**Transportation Attendants, Except Flight Attendants**	**16,380**	**$13.01**	**High school diploma or equivalent**	**23,300**	**25,900**	**2,600**	**11.2%**
Arizona	53-6061	Transportation Attendants, Except Flight Attendants	330	$10.00	High school diploma or equivalent	720	810	90	12.5%
California	53-6061	Transportation Attendants, Except Flight Attendants	2,710	$17.09	High school diploma or equivalent	2,500	2,900	400	16.0%
Nevada	53-6061	Transportation Attendants, Except Flight Attendants	480	$14.71	High school diploma or equivalent	580	740	160	27.6%
New Mexico	53-6061	Transportation Attendants, Except Flight Attendants	60	$10.42	High school diploma or equivalent	180	210	30	16.7%
Oklahoma	53-6061	Transportation Attendants, Except Flight Attendants	180	$9.80	High school diploma or equivalent	230	250	20	8.7%
Texas	53-6061	Transportation Attendants, Except Flight Attendants	1,390	$12.25	High school diploma or equivalent	1,790	2,120	330	18.4%
Southwest Region	*53-6061*	*Transportation Attendants, Except Flight Attendants*	*5,150*		*High school diploma or equivalent*	*6,000*	*7,030*	*1,030*	*17.2%*
United States	**53-6099**	**Transportation Workers, All Other**	**39,890**	**$17.28**	**High school diploma or equivalent**	**37,100**	**39,000**	**1,900**	**5.1%**
Arizona	53-6099	Transportation Workers, All Other	**	$15.84	High school diploma or equivalent	770	900	130	16.9%
California	53-6099	Transportation Workers, All Other	5,810	$17.27	High school diploma or equivalent	6,300	7,500	1,200	19.0%
Nevada	53-6099	Transportation Workers, All Other	840	$21.93	High school diploma or equivalent	880	1,030	150	17.0%
New Mexico	53-6099	Transportation Workers, All Other	240	$17.84	High school diploma or equivalent	130	140	10	7.7%
Oklahoma	53-6099	Transportation Workers, All Other	70	$19.16	High school diploma or equivalent	50	50	0	0.0%
Texas	53-6099	Transportation Workers, All Other	3,660	$15.70	High school diploma or equivalent	NA	NA	NA	NA
Utah	53-6099	Transportation Workers, All Other	190	$21.63	High school diploma or equivalent	260	330	70	26.9%
Southwest Region	*53-6099*	*Transportation Workers, All Other*	*10,810*		*High school diploma or equivalent*	*8,390*	*9,950*	*1,560*	*18.6%*
United States	**53-7011**	**Conveyor Operators and Tenders**	**38,830**	**$16.35**	**Less than high school**	**39,100**	**40,500**	**1,400**	**3.6%**
Arizona	53-7011	Conveyor Operators and Tenders	440	$17.89	Less than high school	570	700	130	22.8%

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California	53-7011	Conveyor Operators and Tenders	2,630	$18.06	Less than high school	3,700	4,100	400	10.8%
Colorado	53-7011	Conveyor Operators and Tenders	610	$20.19	Less than high school	290	330	40	13.8%
Nevada	53-7011	Conveyor Operators and Tenders	220	$18.13	Less than high school	160	200	40	25.0%
New Mexico	53-7011	Conveyor Operators and Tenders	30	$18.39	Less than high school	110	120	10	9.1%
Oklahoma	53-7011	Conveyor Operators and Tenders	690	$15.53	Less than high school	490	490	0	0.0%
Texas	53-7011	Conveyor Operators and Tenders	2,780	$15.57	Less than high school	2,310	2,640	330	14.3%
Utah	53-7011	Conveyor Operators and Tenders	50	$26.25	Less than high school	70	70	0	0.0%
Southwest Region	*53-7011*	*Conveyor Operators and Tenders*	*7,450*		*Less than high school*	*7,700*	*8,650*	*950*	*12.3%*
United States	**53-7021**	**Crane and Tower Operators**	**44,540**	**$25.75**	**High school diploma or equivalent**	**43,800**	**51,200**	**7,400**	**16.9%**
Arizona	53-7021	Crane and Tower Operators	430	$20.41	High school diploma or equivalent	160	200	40	25.0%
California	53-7021	Crane and Tower Operators	3,660	$33.72	High school diploma or equivalent	3,300	4,000	700	21.2%
Colorado	53-7021	Crane and Tower Operators	540	$23.62	High school diploma or equivalent	710	1,060	350	49.3%
Nevada	53-7021	Crane and Tower Operators	320	$32.99	High school diploma or equivalent	280	470	190	67.9%
New Mexico	53-7021	Crane and Tower Operators	110	$26.38	High school diploma or equivalent	130	160	30	23.1%
Oklahoma	53-7021	Crane and Tower Operators	660	$22.89	High school diploma or equivalent	430	510	80	18.6%
Texas	53-7021	Crane and Tower Operators	6,340	$24.95	High school diploma or equivalent	4,890	6,190	1,300	26.6%
Utah	53-7021	Crane and Tower Operators	460	$23.11	High school diploma or equivalent	300	340	40	13.3%
Southwest Region	*53-7021*	*Crane and Tower Operators*	*12,520*		*High school diploma or equivalent*	*10,200*	*12,930*	*2,730*	*26.8%*
United States	**53-7031**	**Dredge Operators**	**1,900**	**$21.94**	**Less than high school**	**2,000**	**2,200**	**200**	**10.0%**
United States	**53-7032**	**Excavating and Loading Machine and Dragline Operators**	**47,470**	**$21.23**	**High school diploma or equivalent**	**50,700**	**58,900**	**8,200**	**16.2%**
Arizona	53-7032	Excavating and Loading Machine and Dragline Operators	610	$16.45	High school diploma or equivalent	580	740	160	27.6%
California	53-7032	Excavating and Loading Machine and Dragline Operators	1,620	$28.18	High school diploma or equivalent	1,600	1,800	200	12.5%
Colorado	53-7032	Excavating and Loading Machine and Dragline Operators	930	$20.71	High school diploma or equivalent	1,330	1,640	310	23.3%

Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Southwest Region, by State									
State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
Nevada	53-7032	Excavating and Loading Machine and Dragline Operators	330	$23.86	High school diploma or equivalent	340	430	90	26.5%
New Mexico	53-7032	Excavating and Loading Machine and Dragline Operators	300	$19.76	High school diploma or equivalent	260	290	30	11.5%
Oklahoma	53-7032	Excavating and Loading Machine and Dragline Operators	880	$19.35	High school diploma or equivalent	1,070	1,210	140	13.1%
Texas	53-7032	Excavating and Loading Machine and Dragline Operators	**	$16.93	High school diploma or equivalent	5,230	6,270	1,040	19.9%
Utah	53-7032	Excavating and Loading Machine and Dragline Operators	400	$18.44	High school diploma or equivalent	680	830	150	22.1%
Southwest Region	*53-7032*	*Excavating and Loading Machine and Dragline Operators*	*5,070*		*High school diploma or equivalent*	*11,090*	*13,210*	*2,120*	*19.1%*
United States	**53-7033**	**Loading Machine Operators, Underground Mining**	**4,220**	**$22.84**	**Less than high school**	**3,300**	**3,300**	**0**	**0.0%**
Arizona	53-7033	Loading Machine Operators, Underground Mining	80	$20.46	Less than high school	70	80	10	14.3%
Utah	53-7033	Loading Machine Operators, Underground Mining	30	$24.62	Less than high school	70	60	-10	-14.3%
Southwest Region	*53-7033*	*Loading Machine Operators, Underground Mining*	*200*		*Less than high school*	*140*	*140*	*0*	*0.0%*
United States	**53-7041**	**Hoist and Winch Operators**	**2,840**	**$23.47**	**Less than high school**	**3,100**	**3,200**	**100**	**3.2%**
New Mexico	53-7041	Hoist and Winch Operators	NA	NA	Less than high school	30	30	0	0.0%
Texas	53-7041	Hoist and Winch Operators	250	$19.17	Less than high school	200	250	50	25.0%
Southwest Region	*53-7041*	*Hoist and Winch Operators*	*250*		*Less than high school*	*230*	*280*	*50*	*21.7%*
United States	**53-7051**	**Industrial Truck and Tractor Operators**	**521,840**	**$16.02**	**Less than high school**	**508,600**	**495,000**	**-13,600**	**-2.7%**
Arizona	53-7051	Industrial Truck and Tractor Operators	6,220	$15.82	Less than high school	5,710	6,310	600	10.5%
California	53-7051	Industrial Truck and Tractor Operators	55,160	$18.39	Less than high school	55,300	59,500	4,200	7.6%
Colorado	53-7051	Industrial Truck and Tractor Operators	5,720	$16.18	Less than high school	5,270	5,580	310	5.9%
Nevada	53-7051	Industrial Truck and Tractor Operators	2,610	$16.69	Less than high school	3,310	3,690	380	11.5%
New Mexico	53-7051	Industrial Truck and Tractor Operators	930	$15.25	Less than high school	1,030	1,050	20	1.9%
Oklahoma	53-7051	Industrial Truck and Tractor Operators	6,220	$15.36	Less than high school	4,920	4,810	-110	-2.2%
Texas	53-7051	Industrial Truck and Tractor Operators	44,750	$14.09	Less than high school	37,150	40,630	3,480	9.4%

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State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
Utah	53-7051	Industrial Truck and Tractor Operators	3,880	$16.66	Less than high school	3,570	3,900	330	9.2%
Southwest Region	*53-7051*	*Industrial Truck and Tractor Operators*	*125,490*		*Less than high school*	*116,260*	*125,470*	*9,210*	*7.9%*
United States	**53-7061**	**Cleaners of Vehicles and Equipment**	**321,740**	**$11.22**	**Less than high school**	**325,200**	**361,200**	**36,000**	**11.1%**
Arizona	53-7061	Cleaners of Vehicles and Equipment	5,710	$10.38	Less than high school	6,940	8,140	1,200	17.3%
California	53-7061	Cleaners of Vehicles and Equipment	46,960	$11.36	Less than high school	46,700	53,400	6,700	14.3%
Colorado	53-7061	Cleaners of Vehicles and Equipment	4,750	$11.17	Less than high school	4,610	5,570	960	20.8%
Nevada	53-7061	Cleaners of Vehicles and Equipment	3,710	$9.90	Less than high school	3,400	3,660	260	7.6%
New Mexico	53-7061	Cleaners of Vehicles and Equipment	1,930	$10.38	Less than high school	1,840	2,040	200	10.9%
Oklahoma	53-7061	Cleaners of Vehicles and Equipment	3,920	$11.47	Less than high school	3,990	4,280	290	7.3%
Texas	53-7061	Cleaners of Vehicles and Equipment	32,060	$10.72	Less than high school	33,050	39,610	6,560	19.8%
Utah	53-7061	Cleaners of Vehicles and Equipment	3,740	$10.59	Less than high school	3,440	4,330	890	25.9%
Southwest Region	*53-7061*	*Cleaners of Vehicles and Equipment*	*102,780*		*Less than high school*	*103,970*	*121,030*	*17,060*	*16.4%*
United States	**53-7062**	**Laborers and Freight, Stock, and Material Movers, Hand**	**2,400,490**	**$13.07**	**Less than high school**	**2,197,300**	**2,439,200**	**241,900**	**11.0%**
Arizona	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	35,830	$12.73	Less than high school	35,480	44,010	8,530	24.0%
California	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	287,090	$13.42	Less than high school	270,500	322,300	51,800	19.1%
Colorado	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	28,830	$13.49	Less than high school	23,280	28,080	4,800	20.6%
Nevada	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	21,400	$14.37	Less than high school	18,250	21,670	3,420	18.7%
New Mexico	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	8,600	$12.50	Less than high school	8,140	9,070	930	11.4%
Oklahoma	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	27,660	$12.25	Less than high school	27,360	29,830	2,470	9.0%
Texas	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	191,500	$12.33	Less than high school	185,770	226,470	40,700	21.9%
Utah	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	16,780	$12.70	Less than high school	17,700	22,700	5,000	28.2%

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Southwest Region	*53-7062*	*Laborers and Freight, Stock, and Material Movers, Hand*	*617,690*		*Less than high school*	*586,480*	*704,130*	*117,650*	*20.1%*
United States	**53-7063**	**Machine Feeders and Offbearers**	**104,340**	**$14.73**	**Less than high school**	**106,100**	**108,200**	**2,100**	**2.0%**
Arizona	53-7063	Machine Feeders and Offbearers	560	*	Less than high school	420	450	30	7.1%
California	53-7063	Machine Feeders and Offbearers	9,030	$13.68	Less than high school	12,500	13,500	1,000	8.0%
Colorado	53-7063	Machine Feeders and Offbearers	680	$15.33	Less than high school	870	910	40	4.6%
Nevada	53-7063	Machine Feeders and Offbearers	780	$18.07	Less than high school	580	740	160	27.6%
New Mexico	53-7063	Machine Feeders and Offbearers	NA	NA	Less than high school	140	140	0	0.0%
Oklahoma	53-7063	Machine Feeders and Offbearers	**	$17.58	Less than high school	640	630	-10	-1.6%
Texas	53-7063	Machine Feeders and Offbearers	5,800	$15.48	Less than high school	5,930	7,100	1,170	19.7%
Utah	53-7063	Machine Feeders and Offbearers	1,070	$17.56	Less than high school	980	1,270	290	29.6%
Southwest Region	*53-7063*	*Machine Feeders and Offbearers*	*17,920*		*Less than high school*	*22,060*	*24,740*	*2,680*	*12.1%*
United States	**53-7064**	**Packers and Packagers, Hand**	**693,170**	**$11.08**	**Less than high school**	**666,900**	**707,000**	**40,100**	**6.0%**
Arizona	53-7064	Packers and Packagers, Hand	9,110	$11.02	Less than high school	10,760	11,930	1,170	10.9%
California	53-7064	Packers and Packagers, Hand	91,200	$11.03	Less than high school	93,000	103,400	10,400	11.2%
Colorado	53-7064	Packers and Packagers, Hand	5,220	$10.88	Less than high school	4,940	5,660	720	14.6%
Nevada	53-7064	Packers and Packagers, Hand	4,150	$10.84	Less than high school	3,850	4,430	580	15.1%
New Mexico	53-7064	Packers and Packagers, Hand	1,770	$9.54	Less than high school	2,170	2,270	100	4.6%
Oklahoma	53-7064	Packers and Packagers, Hand	3,790	$11.05	Less than high school	5,080	5,150	70	1.4%
Texas	53-7064	Packers and Packagers, Hand	40,770	$10.56	Less than high school	36,360	42,430	6,070	16.7%
Utah	53-7064	Packers and Packagers, Hand	5,950	$10.60	Less than high school	6,350	7,800	1,450	22.8%
Southwest Region	*53-7064*	*Packers and Packagers, Hand*	*161,960*		*Less than high school*	*162,510*	*183,070*	*20,560*	*12.7%*
United States	**53-7071**	**Gas Compressor and Gas Pumping Station Operators**	**4,700**	**$26.65**	**Less than high school**	**4,800**	**4,700**	**-100**	**-2.1%**
New Mexico	53-7071	Gas Compressor and Gas Pumping Station Operators	240	$28.69	Less than high school	530	560	30	5.7%
Oklahoma	53-7071	Gas Compressor and Gas Pumping Station Operators	440	$27.10	Less than high school	270	300	30	11.1%

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Texas	53-7071	Gas Compressor and Gas Pumping Station Operators	360	$27.13	Less than high school	440	500	60	13.6%
Utah	53-7071	Gas Compressor and Gas Pumping Station Operators	50	$23.64	Less than high school	60	70	10	16.7%
Southwest Region	*53-7071*	*Gas Compressor and Gas Pumping Station Operators*	*1,380*		*Less than high school*	*1,300*	*1,430*	*130*	*10.0%*
United States	**53-7072**	**Pump Operators, Except Wellhead Pumpers**	**12,170**	**$22.45**	**Less than high school**	**13,200**	**14,700**	**1,500**	**11.4%**
Colorado	53-7072	Pump Operators, Except Wellhead Pumpers	310	$27.41	Less than high school	700	1,160	460	65.7%
Nevada	53-7072	Pump Operators, Except Wellhead Pumpers	100	$24.68	Less than high school	100	120	20	20.0%
New Mexico	53-7072	Pump Operators, Except Wellhead Pumpers	100	$23.60	Less than high school	60	60	0	0.0%
Oklahoma	53-7072	Pump Operators, Except Wellhead Pumpers	680	$26.03	Less than high school	870	930	60	6.9%
Texas	53-7072	Pump Operators, Except Wellhead Pumpers	4,110	$20.87	Less than high school	4,550	5,670	1,120	24.6%
Southwest Region	*53-7072*	*Pump Operators, Except Wellhead Pumpers*	*6,260*		*Less than high school*	*6,280*	*7,940*	*1,660*	*26.4%*
United States	**53-7073**	**Wellhead Pumpers**	**12,720**	**$23.36**	**Less than high school**	**16,200**	**18,600**	**2,400**	**14.8%**
Colorado	53-7073	Wellhead Pumpers	770	$25.77	Less than high school	620	890	270	43.5%
New Mexico	53-7073	Wellhead Pumpers	780	$26.40	Less than high school	1,300	1,440	140	10.8%
Oklahoma	53-7073	Wellhead Pumpers	1,050	$22.23	Less than high school	1,530	1,730	200	13.1%
Texas	53-7073	Wellhead Pumpers	2,900	$23.55	Less than high school	3,870	5,030	1,160	30.0%
Utah	53-7073	Wellhead Pumpers	200	$25.64	Less than high school	290	370	80	27.6%
Southwest Region	*53-7073*	*Wellhead Pumpers*	*6,210*		*Less than high school*	*7,610*	*9,460*	*1,850*	*24.3%*
United States	**53-7081**	**Refuse and Recyclable Material Collectors**	**115,170**	**$17.32**	**Less than high school**	**133,200**	**154,900**	**21,700**	**16.3%**
Arizona	53-7081	Refuse and Recyclable Material Collectors	1,580	$18.63	Less than high school	1,630	1,770	140	8.6%
California	53-7081	Refuse and Recyclable Material Collectors	14,570	$20.37	Less than high school	15,400	18,000	2,600	16.9%
Colorado	53-7081	Refuse and Recyclable Material Collectors	1,760	$17.01	Less than high school	2,200	2,150	-50	-2.3%
Nevada	53-7081	Refuse and Recyclable Material Collectors	**	$18.63	Less than high school	1,370	1,620	250	18.2%
New Mexico	53-7081	Refuse and Recyclable Material Collectors	500	$14.37	Less than high school	680	750	70	10.3%
Oklahoma	53-7081	Refuse and Recyclable Material Collectors	1,230	$14.38	Less than high school	1,470	1,670	200	13.6%

Exhibit A-1: Occupational Data and Projections for Relevant Occupations in the Southwest Region, by State									
State or Area	**SOC Code**	**Occupation Title**	**# of employees in the SW, May 2014[a]**	**National Average Hourly Wage [a]**	**Typical Education Needed For Entry [a]**	**# of Employees, 2012[b]**	**Projected # of Employees, 2022 [b]**	**Change in # of Employees [b]**	**Percent Change [b]**
Texas	53-7081	Refuse and Recyclable Material Collectors	7,320	$14.09	Less than high school	6,940	8,000	1,060	15.3%
Utah	53-7081	Refuse and Recyclable Material Collectors	670	$14.80	Less than high school	680	840	160	23.5%
Southwest Region	*53-7081*	*Refuse and Recyclable Material Collectors*	*27,630*		*Less than high school*	*30,370*	*34,800*	*4,430*	*14.6%*
United States	**53-7111**	**Mine Shuttle Car Operators**	**2,630**	**$26.36**	**Less than high school**	**3,000**	**2,900**	**-100**	**-3.3%**
Colorado	53-7111	Mine Shuttle Car Operators	60	$26.63	Less than high school	30	30	0	0.0%
Southwest Region	*53-7111*	*Mine Shuttle Car Operators*	*210*		*Less than high school*	*30*	*30*	*0*	*0.0%*
United States	**53-7121**	**Tank Car, Truck, and Ship Loaders**	**12,490**	**$21.41**	**Less than high school**	**12,500**	**12,800**	**300**	**2.4%**
Arizona	53-7121	Tank Car, Truck, and Ship Loaders	70	$18.39	Less than high school	NA	NA	NA	NA
California	53-7121	Tank Car, Truck, and Ship Loaders	770	$25.22	Less than high school	NA	NA	NA	NA
Colorado	53-7121	Tank Car, Truck, and Ship Loaders	**	$17.93	Less than high school	80	90	10	12.5%
Oklahoma	53-7121	Tank Car, Truck, and Ship Loaders	170	$14.65	Less than high school	100	110	10	10.0%
Texas	53-7121	Tank Car, Truck, and Ship Loaders	2,680	$19.77	Less than high school	2,390	2,910	520	21.8%
Southwest Region	*53-7121*	*Tank Car, Truck, and Ship Loaders*	*3,690*		*Less than high school*	*2,570*	*3,110*	*540*	*21.0%*
United States	**53-7199**	**Material Moving Workers, All Other**	**22,910**	**$18.19**	**Less than high school**	**28,700**	**30,200**	**1,500**	**5.2%**
Arizona	53-7199	Material Moving Workers, All Other	160	$16.68	Less than high school	350	450	100	28.6%
California	53-7199	Material Moving Workers, All Other	6,580	$21.60	Less than high school	5,500	6,800	1,300	23.6%
Nevada	53-7199	Material Moving Workers, All Other	110	$22.48	Less than high school	100	110	10	10.0%
New Mexico	53-7199	Material Moving Workers, All Other	NA	NA	Less than high school	140	140	0	0.0%
Oklahoma	53-7199	Material Moving Workers, All Other	40	$12.12	Less than high school	70	80	10	14.3%
Texas	53-7199	Material Moving Workers, All Other	970	$19.85	Less than high school	1,640	1,940	300	18.3%
Utah	53-7199	Material Moving Workers, All Other	40	$17.90	Less than high school	NA	NA	NA	NA
Southwest Region	*53-7199*	*Material Moving Workers, All Other*	*7,900*		*Less than high school*	*7,800*	*9,520*	*1,720*	*22.1%*

Sources. [a] BLS Employment Data (http://www.bls.gov/oes/current/oes_nat.htm) and [b] BLS Long Term Projections (http://www.projectionscentral.com/Projections/LongTerm).
Note. NA indicates that data were not available from the identified source. * indicates that a wage estimate is not available. ** indicates that an employment estimate is not available.

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 Southwest Transportation Workforce Center.

The goal of the Southwest Transportation Workforce Center is to enhance transportation workforce development activities in the region, which includes eight states: Arizona, California, Colorado, New Mexico, Nevada, Oklahoma, Texas, and Utah. The center is part of a network of five regional centers that cover the entire U.S. In the Southwest 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 90 jobs that comprise the SW transportation workforce. We then used labor market data to identify those jobs within the list that are projected be in the highest demand over the next 5-7 years, including those occupations with a projected demand increase of 15% or more by 2022 and those jobs with more than 500 annual openings in the SW 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 SW region. These priority jobs will be the focus of future SW 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 Southwest 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. What do you think are the underlying issues (e.g., limit supply of qualified applicants, applicants unaware of transportation opportunities)?
    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. What do you think are the underlying issues (e.g., low pay, limited career ladder)?
b. Are there jobs not on the list that you have had challenges in retaining staff?

5. What are the specific challenges experienced? For example, is the difficulty that there are not enough applicants available or that the applicants do not have appropriate skill sets?

6. Is there something unique about your city, state, or the southwest region in general that makes workforce development for these jobs particularly challenging?

Assessment of Southwest Occupation Skill needs

7. 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?

8. 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?

9. Are there any transportation occupations on the list that you believe are unique to or more important in the Southwest than in other regions of the U.S.? What are these occupations?

    a. What about occupations that exist in transportation in the Southwest Region but are not needed in other regions?
    b. Are there jobs not on this list that should be noted?

Assessment of the Southwest Transportation Workforce Center's Strategic Focus Areas
Our final questions focus on identifying any occupations that specifically align with the Southwest Center's strategic focus areas.

10. What jobs do you think are the most important for maintaining and completing work regarding gateways and corridors?

11. What occupations best support traffic management and ITS (intelligent transportation systems)?

12. In reviewing the list, which jobs would the SWTW best be able to support and engage non-native English speakers?

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