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Texas Workforce Commission

Commission Meeting Materials: January 8, 2018 - Report on Texas Growth Occupations 2018

LMCI
11-18-2018

1 I. Executive Summary

2
3 House Bill 2478 requires the Texas Workforce Commission (TWC) to gather and study
4 information relating to existing and projected shortages in high-wage, high-demand
5 occupations in this state on an annual basis. HB 2478 (83rd Legislature, Regular Session,
6 Section 302.019) also directed TWC to include information on existing and projected
7 shortages in high-wage, high-demand occupations in selected industries.

8 Data included in this report was the most current data available as of the end of fiscal
9 year 2018. Thus, the Quarterly Census of Employment and Wage (QCEW) data covers
10 the period through the first quarter of 2018. The Current Employment Statistics (CES) data
11 covers the period through the September 2018 estimates.

12 Since the end of the national recession of 2008-2009, Texas has been among the leading
13 states in the nation in terms of job growth. Based on employment data from the Current
14 Employment Statistics (CES) program, Texas has experienced 100 consecutive months of
15 annualized employment growth, which dates back to May 2010.

16 Texas is a diverse state in terms of industry, driven by a continued economic shift to
17 “knowledge-based jobs” in the business and professional services sector and the rapid
18 population growth in Texas that increases demand for jobs across many industries. Four
19 of the largest private major industries were Education and Health Services; Leisure and
20 Hospitality; Professional and Business Services; and Trade, Transportation, and Utilities.
21 Combined, these four major industries accounted for over 58 percent of the jobs in Texas.

22 The industries showing the highest growth rates in employment in the CES data have been
23 Mining and Logging, Construction, Arts, Entertainment, and Recreation, and
24 Administration, Support and Waste, Management and Remediation Services sectors.
25 Industries, like occupations, are adding workers at different paces. For this report, the
26 industry employment levels were also measured over the most recent five-year period
27 available (first quarter 2013 to first quarter 2018) using employment levels reported by
28 Texas employers under the Quarterly Census of Employment and Wages (QCEW)
29 program at TWC. This industry-level staffing data is given to provide comparison and
30 context.

31 This report also contains TWC’s most current projections for employment growth for Texas,
32 released in 2018 with a base year of 2016 and covering the period of 2016 to 2026. As a
33 result, this report uses current employment statistics programs such as the QCEW and CES
34 to develop a better understanding of the current economic situation. The next
35 employment projections, covering the period of 2018 to 2028, will be released in the fall
36 of 2020.

1 Of the 2.1 Million new jobs projected to be added between 2016 and 2026, 37% will
2 require some form of postsecondary education and training, many of which are high
3 growth professional jobs requiring a college degree. Jobs in construction and
4 manufacturing will also require training in specific technical skills. Higher demand, higher
5 pay occupations tend to fall into one of these categories:

- 6 a) Jobs requiring a bachelor's degree and specific technical skill training.
- 7 b) Jobs requiring some form of post-secondary education, specific technical skill
8 training, and additional on-the-job training.

9
10 There is no official definition of a high wage occupation so, for purposes of this report,
11 TWC focuses on growing occupations that pay more than \$36,200 a year (i.e. exceed
12 the Texas median pay of \$36,168).

13 To segment Texas occupations by sector, TWC follows statistical data standards set by
14 the agency's contracts with the U.S. Bureau of Labor Statistics and the Employment and
15 Training Administration division of the U.S. Department of Labor. TWC examined more
16 than 800 occupations in Texas in making the occupational projections and segmenting
17 those occupations for specific industries. Those growth occupations within industries are
18 listed by industry sector in Section II.

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20 **II. Growth Occupations in Growth Industries**

21
22 A growing economy in the United States and particularly in Texas and its surrounding
23 states has resulted in more demand for workers. That increased demand for workers is
24 focused in key occupations where local supply has at times struggled to keep up with
25 demand.

26 Predicting the occupations most in demand in an evolving labor market is part of the
27 mission of TWC. While this report shows the most in-demand occupations in Texas for the
28 2016 through 2026 period, it is important to remember that each employer needs a
29 unique combination of technical skills, education, work experience, and even soft skills
30 for each of these jobs at each of their workplaces.

31 This section identifies occupations within major industries as defined in House Bill 2478. The
32 charts display staffing and wage information for a specific occupation in that specific
33 industry. Occupations listed in this section are ranked by the projected change in
34 employment in Texas from 2016 to 2026. Industry employment data listed corresponds
35 with the Texas employers identified by that industry's North American Industry
36 Classification System (NAICS) code.

1 **A. Construction**

2 Demand for construction workers has increased dramatically, especially in the last two
 3 years. Across much of Texas, the economy in the Lone Star state has continued to grow
 4 due largely to the twin engines of population growth and business expansion. This data
 5 is for NAICS code 23.

6 In the first quarter of 2018, according to the Quarterly Census of Employment and Wages
 7 data, employment with Construction companies reached 751,557 workers. Compared
 8 to the first quarter 2013, Construction employment was up 19.9 percent.

9 The occupations within the Construction industry that are projected to add the most jobs
 10 and grow at the fastest rates from 2016 to 2026 are listed below. The Construction industry
 11 continues to experience increased demand from commercial Construction projects and
 12 residential building in both urban and suburban areas of Texas. This increased demand,
 13 along with increasing openings for experienced line workers and managers who are
 14 starting to retire, supports a growing need for trained workers in this industry.

15

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Supervisors of Construction and Extraction Workers	50,070	61,182	11,112	22.2%	\$66,744
Plumbers, Pipefitters, and Steamfitters	32,573	41,137	8,564	26.3%	\$48,406
Electricians	44,269	52,467	8,198	18.5%	\$47,962
Carpenters	30,016	36,110	6,094	20.3%	\$40,377
Operating Engineers and Other Construction Equipment Operators	24,056	29,801	5,745	23.9%	\$41,672
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	16,966	21,712	4,746	28.0%	\$44,492
Construction Managers	21,957	26,681	4,724	21.5%	\$98,262
General and Operations Managers	17,485	21,399	3,914	22.4%	\$129,587
Welders, Cutters, Solderers, and Brazers	14,154	17,187	3,033	21.4%	\$54,815
Office Clerks, General	27,576	30,581	3,005	10.9%	\$39,342

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1 A high school diploma or equivalent is the typical education needed for entry into a
2 majority (70 percent) of the 2016-2026 high growth occupations in the Construction
3 industry; however, additional and on-the-job training for certifications and hard skills is
4 usually required.

5 The following table shows the hard skills and certifications associated with the high growth
6 occupations within this industry:

7

Hard Skills	Certifications
Blueprints	Driver's License
Microsoft Office	EPA certification
Quality control	Occupational Safety & Health Administration Certification
Air conditioning systems	HVAC Certification
Water heaters	General contractor
Electrical systems	NCCER
Preventive maintenance	Continuing Education
Bilingual	Journeyman Plumber
Safety vests	Commercial Driver's License
Scaffolding	First Aid certification

8

9 Apprenticeships are very common within the Construction industry. All but three of the
10 listed occupations are considered apprenticeable occupations. They include Plumbers,
11 Pipefitters, and Steamfitters, Electricians, Carpenters, Operating Engineers and Other
12 Construction Equipment Operators, Heating, Air Conditioning and Refrigeration
13 Mechanics and Installers, Welders, Cutters, Solderers, and Brazers, and General Office
14 Clerks.

15 All but one apprenticeable occupation share a high school diploma as their typical
16 education and all occupations except General Office Clerks, show an Average Annual
17 Wage of over \$40,000.

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1 **B. Manufacturing**

2 In the last five years, demand for Manufacturing workers has varied, rebounding the last
3 two years according to the Current Employment Statistics. This data is for NAICS codes
4 31-33.

5 According to seasonally adjusted Current Employment Statistics data, the number of
6 workers in Texas Manufacturing reached 883,000 in September 2018, and was up 4.9
7 percent since September 2016.

8 In general, the Manufacturing industry has staffing issues that are often evolving with
9 more automation and computerization occurring. New educated and specialized staff
10 are needed during a time of expanding demand for manufactured products. This has
11 meant that production plants are faced with hiring line workers who either need to have
12 years of experience, or expanded education and training to be effective at their jobs.

13 The occupations within Manufacturing companies that are projected to add the most
14 jobs and grow at the fastest rates from 2016 to 2026 are listed below.

15

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Welders, Cutters, Solderers, and Brazers	24,810	28,603	3,793	15.3%	\$41,046
Machinists	18,871	22,115	3,244	17.2%	\$45,015
First-Line Supervisors of Production and Operating Workers	32,169	35,372	3,203	10.0%	\$68,352
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	19,352	21,459	2,107	10.9%	\$67,460
Industrial Machinery Mechanics	9,931	11,867	1,936	19.5%	\$56,364
Heavy and Tractor-Trailer Truck Drivers	14,478	16,405	1,927	13.3%	\$40,531
General and Operations Managers	15,883	17,553	1,670	10.5%	\$143,810
Industrial Engineers	9,263	10,925	1,662	17.9%	\$100,649
Computer-Controlled Machine Tool Operators, Metal and Plastic	10,136	11,600	1,464	14.4%	\$41,597
Structural Metal Fabricators and Fitters	5,460	6,731	1,271	23.3%	\$39,570

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1 The high growth occupations listed in the manufacturing industry contain two STEM
 2 occupations, Industrial Engineers which is projected to increase by 17.9 percent by 2026
 3 and Computer-Controlled Machine Tool Operators, Metal and Plastic with a projected
 4 increase of 14.4 percent.

5 Seven of the 10 occupations listed require a high school diploma or equivalent for entry.
 6 However, most of the occupations are considered apprenticeable, including, Welders,
 7 Cutters, Solderers, and Brazers, Machinists, Industrial Machinery Mechanics, Heavy and
 8 Tractor-Trailer Truck Drivers, Industrial Engineers, Computer-Controlled Machine Tool
 9 Operators, and Structural Metal Fabricators and Fitters. Industrial Machinery Mechanics
 10 are projected to grow 19.5 percent over the next 10 years and the 2017 average annual
 11 wage is \$56,364 which exceeds the statewide annual average wage by over \$7,000.

12 The following table shows the hard skills and certifications associated with the high growth
 13 occupations within this industry:

14

Hard Skills	Certifications
Microsoft Office	Class A Commercial Drivers License
Quality Assurance	Commercial Driver's License
Tractor-trailers	HAZMAT
Blueprints	Security clearance
Six Sigma	Driver's License
Preventive maintenance	Occupational Safety & Health Administration Certification
Technical support	Food safety programs
Forklifts	DOT Medical card
Freight+	Six Sigma Green Belt
Quality Systems	Secret Clearance

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1 **C. Agriculture and Forestry**

2 In the last five years, demand for Agriculture and Forestry workers increased modestly,
3 according to the Quarterly Census of Employment and Wages data. This data is for NAICS
4 code 11.

5 In the first quarter of 2018, the number of workers with Agriculture and Forestry employees
6 in Texas reached 59,175, up 6.0 percent from the same quarter in 2013.

7 The Agriculture and Forestry industry in Texas had been using fewer workers in recent
8 decades as farming methods have become more efficient. But a rebounding economy
9 in Texas and globally, coupled with the population boom in Texas, has driven up demand
10 for what Texas grows, which is increasing demand for workers in this historic industry.

11 The occupations within Agriculture and Forestry that are projected to add the most jobs
12 and grow at the fastest rates from 2016 to 2026 are listed below. It should be noted that
13 due to limited staffing in this industry, many of these occupations do not have the numeric
14 change of at least 400 jobs. *

15

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
First-Line Supervisors of Farming, Fishing, and Forestry Workers	1,517	1,653	136	9.0%	\$56,544
Animal Trainers	454	529	75	16.5%	\$64,379
Heavy and Tractor-Trailer Truck Drivers	1,314	1,372	58	4.4%	\$36,463
Farm Equipment Mechanics and Service Technicians	323	361	38	11.8%	\$41,539
First-Line Supervisors of Production and Operating Workers	54	58	4	7.4%	\$52,409
Office Clerks, General	606	595	-11	-1.8%	\$37,052
Logging Equipment Operators	596	585	-11	-1.8%	\$37,066

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1 Though commonly under 400 jobs, the numeric change in the growing occupations
 2 shows that there is a need for trained individuals to fill projected openings within this
 3 industry. Not unlike the construction industry, a high school diploma or equivalent is the
 4 typical education needed for entry into most of the high growth occupations. However,
 5 the agriculture and forestry industry requires specialized, additional or on-the-job training
 6 to acquire the hard skills and certifications preferred for these occupations.

7 The following table shows the hard skills and certifications associated with the high growth
 8 occupations within this industry:

9

Hard Skills	Certifications
Irrigation equipment	Commercial Driver's License
Electrical systems	Class A Commercial Drivers License
Freight+	Driver's License
Tractor-trailers	Food safety programs
Forklifts	Tanker and Hazmat Endorsement
English speaker	scaled agile framework
Bilingual	Occupational Safety & Health Administration Certification
Microsoft Office	HAZMAT
Quality control	Class B Commercial Driver's License
Pallet jacks	Proof of Insurance

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1 **D. Health Care and Social Assistance**

2 In the last five years, demand for Health Care and Social Assistance workers in Texas
 3 expanded robustly, according to the Quarterly Census of Employment and Wages. This
 4 data is for NAICS code 62.

5 In the first quarter of 2018, the number of workers with Health Care and Social Assistance
 6 employers in Texas was 1.642 million, up 14.2 percent from the same quarter in 2013.

7 The Health Care and Social Assistance industry has become the dominant industry for
 8 employment in Texas – and the United States – in the last decade. Demand for health
 9 care workers in Texas is expected to continue to increase as the state has growing
 10 populations of both old and young people, who are the primary customers of the Health
 11 Care and Social Assistance industry.

12 This sector is faced with training challenges as employers are demanding higher
 13 educated workers due to market demands and industry expectations. This industry is also
 14 challenged with high turnover in key occupations, which increases worker demand.

15 The occupations within Health Care and Social Assistance that are projected to add
 16 the most jobs and grow at the fastest rates from 2016 to 2026 are listed below.

17

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Registered Nurses	181,073	227,276	46,203	25.5%	\$72,082
Licensed Practical and Licensed Vocational Nurses	61,358	73,471	12,113	19.7%	\$46,085
Medical and Health Services Managers	18,872	24,863	5,991	31.7%	\$104,557
Office Clerks, General	36,597	41,183	4,586	12.5%	\$38,506
Physicians and Surgeons, All Other	16,399	20,609	4,210	25.7%	\$216,812
Respiratory Therapists	11,182	15,255	4,073	36.4%	\$60,188
Physical Therapists	13,419	17,487	4,068	30.3%	\$97,316
Nurse Practitioners	7,929	11,707	3,778	47.6%	\$112,074
Radiologic Technologists	14,935	18,464	3,529	23.6%	\$57,331
General and Operations Managers	11,742	14,686	2,944	25.1%	\$108,292

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1 Of the listed high growth occupations within the Health Care and Social Assistance
 2 industry, 80 percent are classified as STEM occupations. Of these STEM occupations, all
 3 but one are projected to grow by at least 20 percent over the next ten years. Five out of
 4 eight of these occupations have typical education for entry as a bachelor's degree or
 5 above.

6 The middle skill occupations include Respiratory Therapists, Licensed Practical and
 7 Licensed Vocational Nurses, and Radiologic Technologists, all of which are also STEM
 8 occupations, but cite typical education of an associate's degree or a post-secondary
 9 nondegree award.

10 The following table shows the hard skills and certifications associated with the high growth
 11 occupations within this industry:

12

Hard Skills	Certifications
Pediatrics	Certified Registered Nurse
Critical care	Basic Life Support
Medical-Surgical Nursing	Certification in Cardiopulmonary Resuscitation
Emergency room	Advanced Cardiac Life Support
Geriatrics	Basic Cardiac Life Support
Behavioral health	Pediatric Advanced Life Support
Quality Assurance	Continuing Education
Labor and Delivery	Licensed Vocational Nurse
Patient Electronic Medical Record	Licensed Practical Nurse
Electrocardiography machines	National Council Licensure Examination

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1 E. Educational Services

2 In the last five years, demand for Educational Services workers in Texas grew at a modest
 3 pace, according to the Quarterly Census of Employment and Wages. This data is for
 4 NAICS code 61.

5 In the first quarter of 2018, the number of workers in Educational Services in Texas was 1.22
 6 million, up 8.9 percent from the same quarter in 2013.

7 The Educational Services industry in Texas is facing growing demand from a marketplace
 8 that increasingly needs better educated workers for a more "knowledge-based
 9 economy" as well as an expanding population bringing more students into schools.

10 The occupations within the Educational Services industry that are projected to add the
 11 most jobs and grow at the fastest rates from 2016 to 2026 are listed below. Nine of the 10
 12 occupations listed are above the 2017 Texas average wage of \$48,703. Of those,
 13 Education Administrators, Elementary and Secondary School and Educational,
 14 Guidance, School, and Vocational Counselors make significantly more than the
 15 average Texas salary.

16

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Elementary School Teachers, Except Special Education	143,517	172,825	29,308	20.4%	\$56,788
Secondary School Teachers, Except Special and Career/Technical Education	105,746	127,485	21,739	20.6%	\$57,832
Education Administrators, Elementary and Secondary School	24,696	29,858	5,162	20.9%	\$84,818
Educational, Guidance, School, and Vocational Counselors	22,046	26,515	4,469	20.3%	\$61,634
Self-Enrichment Education Teachers	11,248	14,391	3,143	27.9%	\$47,296
Kindergarten Teachers, Except Special Education	13,642	16,535	2,893	21.2%	\$57,136
Health Specialties Teachers, Postsecondary	8,780	11,255	2,475	28.2%	\$138,065
Preschool Teachers, Except Special Education	10,723	13,155	2,432	22.7%	\$53,538
Coaches and Scouts	10,663	13,015	2,352	22.1%	\$50,553
Instructional Coordinators	11,280	13,512	2,232	19.8%	\$69,328

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1 Of the 10 high growth occupations in this industry, eight of them require at least a
 2 bachelor's degree, while Health Specialties Teachers in Postsecondary Education is the
 3 only occupation listed above that is also considered a STEM profession, and has both the
 4 highest percentage job growth projected at 28.2 percent and highest average salary at
 5 \$138,065.

6 The following table shows the hard skills and certifications associated with the high growth
 7 high demand occupations within this industry:

8

Hard Skills	Certifications
Bilingualism	Certification of Teaching
Microsoft Office	Special Education
Defibrillators	Driver's License
Bilingual Spanish	English as Second Language
English speaker	Early Childhood Education
Microsoft PowerPoint	Automated External Defibrillator
Conducting research	Child Development Associate
Computer Network	State Board for Educator Certification
Group counseling	No Child Left Behind Certification
Student information systems	First Aid certification

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1 **F. Transportation and Warehousing**

2 In the last five years, demand for Transportation and Warehousing workers in Texas
 3 increased, according to the Quarterly Census of Employment and Wages. This data is for
 4 NAICS codes 48-49.

5 In the first quarter of 2018, the number of workers with Transportation and Warehousing
 6 employers in Texas was 543,232, up 20.8 percent from the same quarter in 2013.

7 The Transportation and Warehousing industry in Texas has seen increasing employment
 8 in the last couple of years, particularly in distribution-center warehouses. During this time
 9 warehousing and storage employment rose by 39,220 jobs, showing a 77.8 percent
 10 increase.

11 As the economy grows, both businesses and consumers typically buy more goods; those
 12 goods must be moved, stored, and distributed on their way to consumers' homes. This
 13 warehousing of goods has driven up demand for workers in this sector and is expected
 14 to continue as Texas continues to bolster its transportation infrastructures. A high turnover
 15 rate among truck drivers creates an additional challenge in this industry.

16 The occupations within Transportation and Warehousing that are projected to add the
 17 most jobs and grow at the fastest rates from 2016 to 2026 are listed below. Of the 10
 18 occupations listed, 5 of them have wages above the 2017 Texas average wage of
 19 \$48,703. General and Operations Managers specifically make considerably more than
 20 the Texas average salary at \$131,299.

21

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Heavy and Tractor-Trailer Truck Drivers	92,118	109,743	17,625	19.1%	\$46,480
Light Truck or Delivery Services Drivers	21,838	26,143	4,305	19.7%	\$45,363
Flight Attendants	15,397	17,939	2,542	16.5%	\$55,133
Postal Service Mail Carriers	23,229	25,153	1,924	8.3%	\$49,961
Cargo and Freight Agents	9,839	11,623	1,784	18.1%	\$45,978
Bus and Truck Mechanics and Diesel Engine Specialists	6,795	8,032	1,237	18.2%	\$47,733
General and Operations Managers	6,070	7,236	1,166	19.2%	\$131,299
Aircraft Mechanics and Service Technicians	9,428	10,537	1,109	11.8%	\$67,270
Sales Representatives, Services, All Other	5,622	6,729	1,107	19.7%	\$66,604
Reservation and Transportation Ticket Agents and Travel Clerks	9,783	10,796	1,013	10.4%	\$44,911

22

1 Most of the occupations listed above (70 percent) require a High School Diploma or
 2 equivalent, with additional on the job training required to meet the varying needs of
 3 employers. The following table shows the hard skills and certifications associated with
 4 the high growth occupations within this industry:

5

Hard Skills	Certifications
Freight+	Class A Commercial Drivers License
Tractor-trailers	Commercial Driver's License
Preventive maintenance	HAZMAT
Flatbed trucks	Driver's License
Forklifts	DOT Medical card
Flatbed trailers	Tanker and Hazmat Endorsement
ISO 9001	Transportation Worker Identification Credential
Touch screens	Certified Purchasing Manager
Straight trucks	Automotive Service Excellence
Tanker trucks	International Federation of Technical Analysts

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1 **G. Mining, Quarrying, and Oil and Gas Extraction**

2 In the last five years, demand for Mining, Quarrying, and Oil and Gas Extraction industry
 3 workers in Texas has varied, according to the Quarterly Census of Employment and
 4 Wages. This data is for NAICS code 21.

5 According to seasonally adjusted Current Employment Statistics data, this industry has
 6 seen an increase of 58,800 jobs from September 2016 to September 2018, growing by
 7 28.7 percent. During this time frame, the price of West Texas Intermediate Crude
 8 increased from \$45.18 to \$70.23¹ a barrel as rig counts more than doubled from 244 to
 9 528.²

10 The occupations within the Mining, Quarrying, and Oil and Gas Extraction industry that
 11 are projected to add at least 400 jobs and grow at the fastest rates from 2016 to 2026 are
 12 listed below. Six of those listed are above the 2017 Texas average wage of \$48,703.
 13 Petroleum Engineers and Geoscientists specifically make considerably more than the
 14 average Texas salary at \$158,510 and \$166,532 respectively.

15

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Service Unit Operators, Oil, Gas, and Mining	15,583	18,067	2,484	15.9%	\$50,202
Roustabouts, Oil and Gas	15,424	17,906	2,482	16.1%	\$37,904
Heavy and Tractor-Trailer Truck Drivers	10,483	12,118	1,635	15.6%	\$43,081
Petroleum Engineers	8,342	9,449	1,107	13.3%	\$158,510
Rotary Drill Operators, Oil and Gas	5,510	6,399	889	16.1%	\$53,351
Derrick Operators, Oil and Gas	4,299	4,997	698	16.2%	\$44,905
Geoscientists, Except Hydrologists and Geographers	4,314	4,840	526	12.2%	\$166,532
Geological and Petroleum Technicians	3,565	4,085	520	14.6%	\$73,508
Wellhead Pumpers	3,838	4,342	504	13.1%	\$55,041
Pump Operators, Except Wellhead Pumpers	1,852	2,138	286	15.4%	\$40,628

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¹ U.S. Energy Information Administration, <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=M>

² Baker Hughes North America Rig Count, <http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother>

- 1 There is a mix of educational requirements associated with the above listed occupations.
 2 Forty percent require no formal education, while 20 percent require a bachelor's degree
 3 and another 20 percent requiring a High School Diploma or equivalent.
- 4 Both Geological and Petroleum Technicians and Heavy and Tractor Trailer Drivers are
 5 high growth occupations in this industry that are also considered middle skills jobs.
- 6 Petroleum Engineers, Geoscientists, and Geological and Petroleum Technicians are the
 7 only three occupations that are also considered STEM professions. Typical education for
 8 Petroleum Engineers and Geoscientists is a Bachelor's Degree and an Associate's Degree
 9 is generally required for Geological/Petroleum Technicians.
- 10 The following table shows the hard skills and certifications associated with the high growth
 11 occupations within this industry:

12

Hard Skills	Certifications
Preventive maintenance	Commercial Driver's License
Health, Safety, and Environmental	Class A Commercial Drivers License
Microsoft Office	Driver's License
Two-way radios	Tanker and Hazmat Endorsement
Water hoses	Class B Commercial Driver's License
English speaker	HAZMAT
Forklifts	Occupational Safety & Health Administration Certification
Vacuum trucks	DOT Medical card
Drilling operations	Mining Safety & Health Administration Certification
Artificial lift systems	First Aid certification

13

1 H. Utilities

2 In the last five years, demand for utilities workers in Texas was largely unchanged,
3 according to the Quarterly Census of Employment and Wages data. This data is for NAICS
4 code 22.

5 In the first quarter of 2018, the number of workers with Utilities employers in Texas was
6 82,618, up 3.5 percent from the same quarter in 2013. When looking at Current
7 Employment Statistics data the industry shows a 1.0 percent increase in demand for
8 utilities workers in the last two years.

9 Continuing technological advances have changed the Utilities industry's need for a
10 more skilled worker. Meanwhile, the Utilities industry has been dominated by "Baby
11 Boomer" workers, who are now starting to retire as part of "the Great Shift Change."
12 Those retirements come as economic growth and population increases in Texas are
13 creating more demand for energy delivery. The result is increased demand for new and
14 replacement workers for utility jobs, which mostly require years of training.

15 The occupations within Utilities employers that are projected to add the most jobs and
16 grow at the fastest rates from 2016 to 2026 are listed below. It should be noted that due
17 to limited staffing in this industry, many of these occupations do not have numeric
18 changes of at least 400 jobs.

19

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Electrical Power-Line Installers and Repairers	4,256	4,655	399	9.4%	\$60,957
Industrial Machinery Mechanics	1,890	2,064	174	9.2%	\$63,293
Power Plant Operators	2,083	2,253	170	8.2%	\$72,908
General and Operations Managers	1,096	1,240	144	13.1%	\$132,587
First-Line Supervisors of Mechanics, Installers, and Repairers	1,248	1,369	121	9.7%	\$76,733
Electrical Engineers	1,121	1,238	117	10.4%	\$94,092
Accountants and Auditors	928	1,032	104	11.2%	\$81,138
Software Developers, Applications	387	479	92	23.8%	\$105,298
Business Operations Specialists, All Other	1,207	1,298	91	7.5%	\$81,273
Water and Wastewater Treatment Plant and System Operators	1,408	1,494	86	6.1%	\$41,297

20

1 Five out of 10 occupations listed have an educational requirement of only a High School
 2 Diploma or equivalent, four of which offer wages of \$60,900 and higher. The remaining
 3 five occupations site a bachelor's degree for entry into the position. Nine of the 10 listed
 4 above in the Utilities Industry pay above Texas's 2017 Average Annual Wage of \$48,703.

5 In the Utilities industry, Software Developers, Applications, Accountants and Auditors, and
 6 Electrical Engineers are among the high growth STEM occupations, projecting double-
 7 digit growth rates from 2016-2026. These occupations typically require a bachelor's
 8 degree with an Average Annual Wage of at least \$81,138 for Accountants and Auditors.

9 The following table shows the hard skills and certifications associated with the high growth
 10 occupations within this industry:

11

Hard Skills	Certifications
Microsoft Office	Driver's License
Preventive maintenance	Commercial Driver's License
Instrumentation	Class A Commercial Driver's License
Switches	Accounting
Technical support	CIP Compliance
National Electrical Safety Code	First Aid certification
Mathematics	Professional Engineer
Blueprints	Occupational Safety & Health Administration Certification
Digger-derrick trucks	Certified Public Accountant
Electrical distribution	National Electrical Code

12

1 **I. Wholesale Trade**

2 In the last five years, demand for Wholesale Trade industry workers in Texas rose rapidly,
 3 according to the Quarterly Census of Employment and Wages. This data is for NAICS
 4 code 42.

5 In the first quarter of 2018, the number of workers with Wholesale Trade employers in Texas
 6 was 584,122, up 6.1 percent from the same quarter in 2013.

7 The wholesale trade industry has experienced rising demand for workers due to a
 8 recovering economy in Texas and across North America. The companies in this sector
 9 have sought to take advantage of this population and economic expansion by putting
 10 more sales professionals into the field while also trying to fill management positions that
 11 have been staffed by Baby Boomer supervisors who are set to retire.

12 As of 2016, the 10 most in-demand occupations in the Wholesale Industry employed over
 13 188,000 people and is expected to grow another 28,000 by 2026. Seven of the 10
 14 occupations listed pay Average Annual Wages well above the state average according
 15 to 2017 data.

16 The occupations within the Wholesale Trade industry that are projected to add the most
 17 jobs and grow at the fastest rates from 2016 to 2026 are listed below.

18

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	72,182	84,020	11,838	16.4%	\$70,661
Heavy and Tractor-Trailer Truck Drivers	22,781	26,650	3,869	17.0%	\$43,318
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	17,533	20,606	3,073	17.5%	\$109,425
General and Operations Managers	14,524	17,068	2,544	17.5%	\$144,046
First-Line Supervisors of Non-Retail Sales Workers	8,599	10,050	1,451	16.9%	\$81,997
Customer Service Representatives	14,875	16,134	1,259	8.5%	\$36,493
Office Clerks, General	25,615	26,833	1,218	4.8%	\$38,312
Market Research Analysts and Marketing Specialists	4,126	5,305	1,179	28.6%	\$74,127
Sales Managers	5,553	6,502	949	17.1%	\$142,671
Software Developers, Applications	2,942	3,828	886	30.1%	\$102,833

19

1 Two of the 10 occupations listed, Market Research Analysts and Marketing Specialists and
 2 Software Developers, Applications, are STEM occupations with high demand employing
 3 over 7,000 workers as of 2016. These occupations typically require a bachelor's degree,
 4 pay well over the 2017 Average Annual Wage in Texas and are expected to grow about
 5 30 percent each by 2026.

6 The following table shows the hard skills and certifications associated with the high growth
 7 occupations within this industry:

8

Hard Skills	Certifications
Freight+	Driver's License
Microsoft Office	Class A Commercial Drivers License
Tractor-trailers	Commercial Driver's License
Customer Relationship Management	HAZMAT
Microsoft PowerPoint	Tanker and Hazmat Endorsement
Forklifts	DOT Medical card
Bilingual	Occupational Safety & Health Administration Certification
Salesforce CRM SFDC	Transportation Worker Identification Credential
Technical Support	Class B Commercial Driver's License
Medical Devices	Forklift certification

9

1 **J. Retail Trade**

2 In the last five years, demand for Retail Trade workers in Texas increased, according to
 3 the Quarterly Census of Employment and Wages program. This data is for NAICS codes
 4 44-45.

5 In the first quarter of 2018, the number of workers in the Retail Trade industry in Texas was
 6 1.321 million, up 10.5 percent from the same quarter in 2013. Population growth across
 7 most of Texas, coupled with a rebounding economy, has pushed up demand for retail
 8 goods. Retail Trade companies have been adding workers to jobs across the board from
 9 sales people to stocking clerks to drivers to managers.

10 The occupations within retail trade employers that are projected to add the most jobs
 11 and grow at the fastest rates from 2016 to 2026 are listed below.

12

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
First-Line Supervisors of Retail Sales Workers	89,295	103,081	13,786	15.4%	\$44,894
Automotive Service Technicians and Mechanics	25,141	29,372	4,231	16.8%	\$43,724
General and Operations Managers	17,503	20,565	3,062	17.5%	\$110,581
First-Line Supervisors of Office and Administrative Support Workers	14,997	17,120	2,123	14.2%	\$50,160
Sales Representatives, Services, All Other	10,888	12,505	1,617	14.9%	\$42,376
Pharmacists	12,916	14,479	1,563	12.1%	\$129,176
First-Line Supervisors of Mechanics, Installers, and Repairers	4,844	5,828	984	20.3%	\$67,652
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	5,005	5,866	861	17.2%	\$65,951
Automotive Body and Related Repairers	3,478	4,255	777	22.3%	\$45,233
Securities, Commodities, and Financial Services Sales Agents	2,607	3,193	586	22.5%	\$94,353

13

14

1 Of the top 10 high demand occupations, six have an Average Annual Wage above the
2 2017 state average of \$48,703 and are projected to grow by over 9,000 jobs by 2026.

3 The only STEM occupation on the list is Pharmacists. The Average Annual Wage in 2017
4 for Pharmacists was just over \$129,000, the highest of any top 10 occupations in the
5 industry. The occupation is projected to grow an estimated 12.1 percent by 2026 with an
6 increase of over 1,500 in employment for the same period. Pharmacists are considered
7 a high-skill occupation, requiring a doctoral or professional degree.

8 The following table shows the hard skills and certifications associated with the high growth
9 occupations within this industry:

10

Hard Skills	Certifications
Box cutters	Driver's License
Dollies	Automotive Service Excellence
Microsoft Office	Medium/Heavy Truck Aftermarket Parts Specialist
Legal compliance	Pharmacy Technician Certification Board
Freight+	Doctor of Pharmacy
Asset protection	Occupational Safety & Health Administration Certification
Bilingual	National Association of Boards of Pharmacy
Forklifts	Association for Clinical Pastoral Education
Pharmacy Benefit Management	Scaled Agile Framework
Reverse logistics	Pharmacy Technician

11

1 **K. Finance and Insurance**

2 In the last five years, demand for Finance and Insurance industry workers in Texas rose,
 3 according to the Quarterly Census of Employment and Wages. This data is for NAICS
 4 code 52.

5 In the first quarter of 2018, the number of workers with Finance and Insurance industry
 6 employers in Texas was 531,819, up 11 percent from the same quarter in 2013. Following
 7 the economic downturn of 2008-2009, the Finance and Insurance sector has rebounded
 8 in Texas with rising demand for workers who interact with customers as well as back-office
 9 workers.

10 The occupations within the Finance and Insurance industry that are projected to add the
 11 most jobs and grow at the fastest rates from 2016 to 2026 are listed below. Seven of the
 12 10 occupations shown made well above the average 2017 annual Texas wage.

13

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Insurance Claims and Policy Processing Clerks	31,763	37,320	5,557	17.5%	\$40,026
Loan Interviewers and Clerks	21,659	25,788	4,129	19.1%	\$46,160
Customer Service Representatives	50,308	53,533	3,225	6.4%	\$36,739
Personal Financial Advisors	12,274	15,133	2,859	23.3%	\$109,984
Software Developers, Applications	6,634	8,576	1,942	29.3%	\$105,809
Accountants and Auditors	8,796	10,433	1,637	18.6%	\$92,212
First-Line Supervisors of Office and Administrative Support Workers	23,235	24,832	1,597	6.9%	\$63,224
Financial Managers	5,240	6,732	1,492	28.5%	\$147,317
General and Operations Managers	7,862	9,347	1,485	18.9%	\$171,731
Financial Analysts	8,074	9,536	1,462	18.1%	\$101,915

14

15

1 Of the occupations listed, Software Developers, Applications, Accountants and Auditors,
 2 Financial Managers, and Financial Analysts are identified as STEM occupations and all
 3 have wages approximately double the annual Texas wage or higher. Software
 4 developers, Applications and Financial Managers are projected to grow more than 25
 5 percent by 2026.

6 The following table shows the hard skills and certifications associated with the high growth
 7 occupations within this industry:

8

Hard Skills	Certifications
Microsoft Office	Associate in Reinsurance
Bilingual	Accounting
Java	FINRA Series 7
Investment Management	Continuing Education
Microsoft PowerPoint	Certified Public Accountant
Quality Assurance	Driver's License
Software development	Certified Financial Planner
Structured query language	Nationwide Mortgage Licensing System
Investment banking	Accredited Purchasing Practitioner
Bilingual Spanish	Certified Internal Auditor

9

1 **L. Professional, Scientific, and Technical Services**

2 In the last five years, demand for Professional, Scientific, and Technical Services workers
 3 in Texas has accelerated, according to the Quarterly Census of Employment and Wages.
 4 This data is for NAICS code 54.

5 In the first quarter of 2018, the number of workers with Professional, Scientific, and
 6 Technical Services industry employers in Texas was 774,321, up 19.7 percent from the
 7 same quarter in 2013.

8 The ongoing shift to an American economy that focuses on services is seen in Texas in
 9 above-average employment growth in the Professional, Scientific, and Technical
 10 Services industry.

11 This professional services industry is also shifting to require workers with more education
 12 than in the past, which is creating training challenges.

13 The occupations within the Professional, Scientific, and Technical Services industry that
 14 are projected to add the most jobs and grow at the fastest rates from 2016 to 2026 are
 15 listed below. All 10 of the occupations earn more than the 2017 Texas average wage.

16

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
Software Developers, Applications	23,073	33,324	10,251	44.4%	\$109,837
Accountants and Auditors	40,265	49,323	9,058	22.5%	\$83,479
Computer Systems Analysts	22,393	27,080	4,687	20.9%	\$103,200
Lawyers	27,903	32,069	4,166	14.9%	\$148,991
General and Operations Managers	18,311	22,424	4,113	22.5%	\$163,522
Paralegals and Legal Assistants	17,320	21,151	3,831	22.1%	\$52,727
Civil Engineers	12,734	16,084	3,350	26.3%	\$99,436
Management Analysts	12,734	16,059	3,325	26.1%	\$107,066
Computer User Support Specialists	14,951	18,243	3,292	22.0%	\$57,474
Sales Representatives, Services, All Other	14,494	17,753	3,259	22.5%	\$72,648

17

18

1 Of the occupations listed above, Software Developers, Applications, Accountants and
 2 Auditors, Computer Systems Analysts and Civil Engineers are also STEM professions and
 3 earn considerably more than the 2017 Texas average wage. Software developers have
 4 an above average growth projected at 44.4 percent and earn more than double the
 5 Texas average wage. The typical education required for these STEM professions is a
 6 bachelor's degree.

7 The following table shows the hard skills and certifications associated with the high growth
 8 occupations within this industry:

9

Hard Skills	Certifications
Microsoft Office	Accounting
Java	Certified Public Accountant
Software development	Driver's License
Public accounting	Professional Engineer
Structured query language	Security clearance
Microsoft PowerPoint	Engineer-In-Training
JavaScript	Secret Clearance
Quality Assurance	Top Secret Sensitive Compartmented Information
Systems Development Life Cycle	Accreditation Board for Engineering and Technology
Technical support	Microsoft Certified Professional

10

1 **M. Accommodation and Food Services**

2 In the last five years, demand for Accommodation and Food Services workers in Texas
 3 has grown, according to Quarterly Census of Employment and Wages. This data is for
 4 NAICS code 72.

5 In the first quarter of 2018, the number of workers at Accommodation and Food Services
 6 industry employers in Texas was 1.183 million, up 19.2 percent from the same quarter in
 7 2013.

8 The large Accommodation and Food Services industry has also felt the immediate
 9 impact of a rebounding economy and the expansion of the population in Texas. Above-
 10 average employment growth in this sector has been spread across many occupations,
 11 whose pay ranges are broad.

12 The occupations within Accommodation and Food Services employers that are
 13 projected to add the most jobs and grow at the fastest rates from 2016 to 2026 are listed
 14 below:

15

Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Growth 2016-2026	Average Annual Wage 2017
First-Line Supervisors of Food Preparation and Serving Workers	66,642	84,856	18,214	27.3%	\$40,217
Food Service Managers	8,342	10,405	2,063	24.7%	\$61,157
Chefs and Head Cooks	6,841	8,420	1,579	23.1%	\$49,540
General and Operations Managers	5,904	7,350	1,446	24.5%	\$90,914
Sales Representatives, Services, All Other	2,727	3,244	517	19.0%	\$47,883
First-Line Supervisors of Housekeeping and Janitorial Workers	1,799	2,138	339	18.8%	\$37,450
First-Line Supervisors of Office and Administrative Support Workers	1,948	2,272	324	16.6%	\$44,281
Meeting, Convention, and Event Planners	1,159	1,382	223	19.2%	\$49,061
Public Relations Specialists	881	1,096	215	24.4%	\$56,914
Accountants and Auditors	1,027	1,234	207	20.2%	\$58,272

16

17

1 The typical educational requirement for six out of 10 occupations listed is a high school
 2 diploma, with Food Service Managers earning an annual average wage of \$61,157.
 3 There is one STEM occupation, Accounts and Auditors, in the high growth category for
 4 this industry.

5 The following table shows the hard skills and certifications associated with the high growth
 6 occupations within this industry:

7

Hard Skills	Certifications
Food preparation	Food safety programs
Quality Assurance	Driver's License
Microsoft Office	Accounting
Hazard analysis and critical control points	Occupational Safety & Health Administration Certification
Point of sale POS systems	Texas Alcoholic Beverage Commission
Preventive maintenance	Certified Executive Chef
Financial accounting	First Aid certification
Maintenance repairs	Certified Public Accountant
Steam tables	Certified Dietary Manager
Microsoft PowerPoint	Continuing Education

8

1 III. Conclusion

2

3 TWC reviewed the top growth occupations across the key industries for this report as
4 required by statute.

5 TWC tracks approximately 800 different occupations in and employment is projected to
6 increase in nearly all those occupations based on the 2016-2026 projections.

7 Economic changes can impact employment in all industries in Texas. Still, demand across
8 occupations varies depending on the need of employers in different industries and in
9 different locations.

10 It is important to note that Texas employers continue to experience the retirements of the
11 Baby Boom generation of workers. The workforce for many industries in Texas has been
12 dominated by Baby Boomer workers, many of whom are now in their sixties and had
13 delayed retirement but now are starting to exit the workforce.

14 This demographic shift is increasing demand for many occupations. These workforce
15 demographic and economic changes are occurring as Texas employers also have
16 enhanced their employment requirements. Hiring managers are looking for more workers
17 while also demanding workers with more technical skills, more work experience, and
18 more education than in the past.

19 Such trends lead to rising demand for two kinds of workers in the high-demand, high-
20 wage fields:

- 21 a) Jobs requiring a bachelor's degree and specific technical skill training.
- 22 b) Jobs requiring some form of post-secondary education, specific technical skill
23 training, and additional on-the-job training.

24 These trends show no signs of slowing down in Texas.

25

1 **IV. Methodology**

2

3 The Texas Workforce Commission collects data and makes projections on employment
4 by industry as part of its contracts with the U.S. Bureau of Labor Statistics (BLS) and the
5 Employment and Training Division of the U.S. Department of Labor (DOL). In accordance
6 with the statistical methodology established by the DOL and the federal Office of
7 Management and Budget, the TWC calculated employment data for approximately 800
8 occupations to analyze pay ranges and growth trends for these different occupations.

9 TWC measures many aspects of the Texas labor market. The number of workers employed
10 and wages paid by industry are tracked by the Quarterly Census of Employment and
11 Wages (QCEW). This program utilizes data from TWC's Unemployment Insurance program
12 and is updated every three months. Wage information for specific occupations is
13 gathered from surveys sent to sampled employers in the Occupational Employment
14 Statistics (OES) program, which updates each year.

15 Employers supply the data for both of these programs, and TWC analyzed the
16 employment and wage data from both the QCEW and OES programs. This data is further
17 supplemented by monthly employment data from the Current Employment Statistics
18 program surveys of employers in Texas. All of these programs serve to validate each other
19 in identifying staffing trends with employers.

20 TWC then examines the number of workers by industry as the basis for producing industry
21 employment projections. TWC produces these industry employment projections and
22 corresponding occupational employment projections to help job seekers, students,
23 parents, policy makers, and company hiring managers better understand their regional
24 labor market. Occupational employment growth is based on industry growth and other
25 variables, which will include population growth and changing skill requirements by
26 employers.

27 The current long-term projections were completed in September 2018 for the period of
28 2016 to 2026. This report also includes industry employment level comparisons from QCEW
29 data over the most recent five years to give context, as Section II of this report shows.

30 This report focuses on occupations with high demand or significant job growth and high
31 pay rates as required by statute. Not all occupations are specific to a single industry.

32 For determination of hard skills, as well as industry certifications, TWC used data from
33 Gartner Inc.'s TalentNeuron for fiscal year 2018. The job listings data captured by
34 TalentNeuron is from online ads from a broad and comprehensive set of job boards.

35 For topics regarding occupational education requirements, TWC considered typical
36 education identified in the 2016-2026 long term occupational projections. For middle-
37 skilled occupations, typical education that includes associate's degrees, postsecondary

1 nondegree awards, and some college no degree were included. For higher skilled
2 occupations, bachelor's degrees, master's degrees, and doctoral or professional
3 degrees were considered.

4 For occupations heavily involved with science, technology, engineering, and math
5 (STEM), TWC used Labor Market and Career Information's web application Texas Labor
6 Analysis.

7 Occupations considered apprenticeable were derived from the U.S. Department of
8 Labor's Employment and Training Administration apprenticeable occupations listing,
9 updated April 03,2018.

10 There is no official definition of a "high-wage" job and the term may be interpreted
11 differently by individuals depending on their age, work history, education level,
12 geographic setting, ability to stay at a job for the long term, and even their expectations
13 in life. The median pay across all occupations in Texas is \$36,168 a year, according to the
14 most recent Occupational Employment Statistics survey of Texas employers. For the
15 purposes of this report, TWC only looked at occupations where the annual pay was
16 estimated to be more than the statewide median, \$36,168 a year.

17