

Honolulu MSA

# Employment Projections for Industries & Occupations 2010-2020

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## Introduction to the Employment Projections

**Employment Projections for Industries and Occupations, 2010 - 2020** provides long-term industry and occupational projections for Honolulu MSA from 2010 to 2020.

The first section of this report looks at employment projections by industry. Several charts illustrate what is expected to happen at the industry level in Honolulu MSA over the decade. A written analysis points out the trends at the broad industry level sector. Industries are classified by the North American Industry Classification System (NAICS) codes.

The second section of this report focuses on employment projections by occupation. There are tables and graphs that illustrate what is anticipated to happen over the ten-year projected period. A written analysis covers the aggregated major occupational groups. Occupations are classified under Standard Occupational Classification (SOC) codes.

Average annual job openings data are also included in this report. Job openings are either due to growth or replacement. The higher the replacements openings, the higher the turnover is for that occupation. It is recommended that both growth and replacement openings be used, therefore we also show total average annual openings.

Additionally, this report includes revised education and training level requirements for each occupation, assigning categories for entry-level education, related work experience, and typically required on-the-job training. These requirements

were determined by the Bureau of Labor Statistics (BLS) and allows occupations to be grouped to create estimates of the education and training needs of the labor force as a whole and estimates of the outlook for occupations with various types of education and training needs. This replaces the 11-category education and training system used in prior projection rounds. In some instances there are no clear guidelines regarding the education or training required for a given occupation. Multiple paths for entry are not captured by this report, instead the classification system captures the typical path for entry into an occupation as determined by BLS economists.

The information contained within can be used by students and jobseekers who are making career decisions; education and training program planners who develop specific occupational training programs; job placement specialists who help people find employment; counselors who assist individuals in choosing careers; managers who design, evaluate, and direct employment and training programs; policy decision makers who develop short- to long-range personnel policies; and employers who need information to help them plan the expansion or relocation of their businesses.

Prior to using the employment projections in this publication, it is important to understand the methodology used and assumptions made in developing these projections, and note the limitations of the data.

# Methodology

## Understanding the Numbers

These are the general steps used to produce long-term employment projections in Hawaii:

**Industry employment** is obtained from the Hawaii State Department of Labor and Industrial Relations' Quarterly Census of Employment and Wages (QCEW) and Current Employment Statistics (CES) programs. Average annual employment for each of the industries in the State of Hawaii was compiled from 1990 through 2010, the base year of the projection period.

**Industry employment projections** were produced using the *Long-Term Industry Projections* software system. The system allows the analyst to choose from a variety of predefined, generally accepted projection models including shift-share, simple time-series extrapolation, and linear regression models. Some of the independent variables that may be used in the regression models were time, resident population, gross state product, total personal income, average visitor census, visitor occupancy rates, and the number of unemployed persons. After the initial projections were developed, they were reviewed for reasonableness. Adjustments to the projections were made based on current knowledge of the industries and the economy.

**Industry staffing patterns** were obtained from the Occupational Employment Statistics (OES) survey, using Standard Occupational Classification (SOC 2010 Hybrid) codes. The staffing patterns for the agricultural industries were calculated by using census data. Staffing patterns for the self-employed and unpaid family workers were obtained from the Bureau of Labor Statistics.

**Occupational employment projections** were produced using the *MicroMatrix Occupational Projections System* software. The system used the staffing patterns to transform industry projections into occupational projections. The staffing pattern divides each industry's employment into different oc-

cupations, forming a matrix. The system then applies national change factors developed by BLS to adjust the projected pattern of each industry to account for changes brought about by new technology and changing business practices. Next, the system applies the national ratios for self-employed and unpaid family workers to each occupation's base and projected year employment to get self-employed figures. These figures are then added to the appropriate occupation total to obtain occupational employment totals that include the self-employed.

**Job openings** are divided into two categories: job openings due to growth and job openings due to replacement needs.

- Job openings *due to growth* are created by industry employment expansion. It is the difference between projected year employment and base year employment. For occupations where employment is projected to decline, a zero is used for openings due to growth, instead of posting a negative job opening.
- Job openings *due to replacement needs* reflect net replacement needs and estimates the number of workers leaving jobs that need to be replaced by other workers. Generally, this counts openings that occur when workers leave their jobs to work in another occupation, retire or permanently leave the job for other reasons, or die.
- The *total* job openings count is equal to the sum of job openings due to growth and job openings due to replacements. This number estimates the number of openings for workers entering an occupation for the first time. It also may be used to assess the number of workers who will need to receive training for a particular occupation.

### Assumptions and Limitations

The following conditions are assumed to prevail during the projection period:

1. The institutional framework of the national and local economy will not change radically.
2. Current social, technological, and scientific trends will continue, including values placed on work, education, income, and leisure.
3. No major event, such as widespread or long-lasting energy shortages or wars, will significantly alter the industrial structure of the economy or the rate of economic growth.
4. Changes in relative wages, technological changes, or other factors will not radically alter trends in the occupational pattern of the industries.
3. Cyclical, seasonal, and other factors, such as large plant openings or closings were considered only if the information was available.
4. Employment projections and the estimation of job openings were rounded to the nearest ten. Therefore, the data may not sum to the totals.

The data in this report has the following limitations:

1. The employment outlook for the various industries and occupations are based solely on an assessment of their projected demand. The supply of workers was not presented since a viable method for determining it has yet to be developed.
2. The employment projections were based on past trends and do not take into account any economic developments that may have occurred after the projections were completed. *Projections should be viewed as indicators of relative magnitude and probable direction rather than as predictions of absolute occupational demand. Therefore, it is more important to look at the growth rate and projected total openings rather than the projected employment estimate itself.*
5. The employment growth rates were calculated based on raw numbers and not the rounded data that is published. This may cause a slight difference when calculating the growth rates using the rounded data.
6. The net replacement rates used in developing job openings estimates did not count workers who changed jobs but remained in the same occupation. In addition, because the number of openings due to net replacements was limited to those created by older workers leaving the job permanently, it may have underestimated the openings for new entrants, especially in jobs where many people permanently leave at younger ages.
7. Adjustments were not made for persons who held two or more jobs in different establishments. In the OES survey, a worker was counted in each job held at different places of work. Furthermore, no distinction was made if a worker did several jobs within one company. That employee was counted in only one occupation - the one with the highest skill level. If the worker did several jobs at the same skill level, the person was reported in the occupation that he/she spent the most time doing.

# Industry Employment Trends

## Services-Providing and Goods Producing Industries

From 2010 to 2020, employment in Honolulu MSA will advance by 49,970 jobs, to 527,260, averaging modest growth of 1.0 percent annually. Since Honolulu MSA accounts for almost two-thirds of the employment gains throughout the state, many of its trends are reflected in the statewide movements.

Job gains in services-providing industries will largely overshadow job creation in goods-producing industries, comprising approximately four-fifths of the total advances within the county. However, the goods-producing industries will expand at a much faster rate of 21.0 percent versus 10.2 percent for services-providing industries.

Figure 1

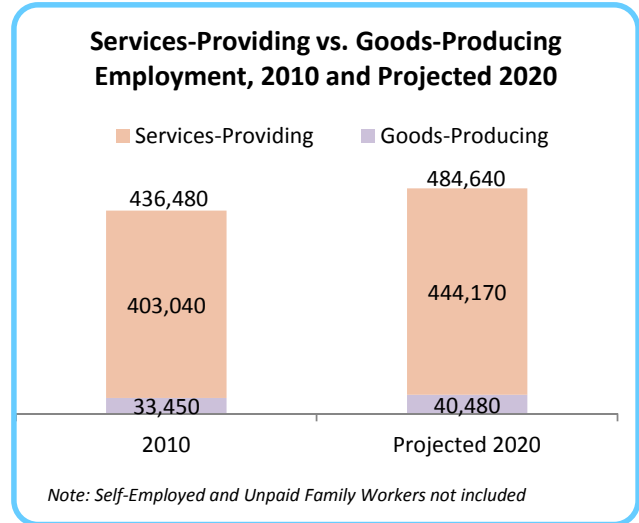
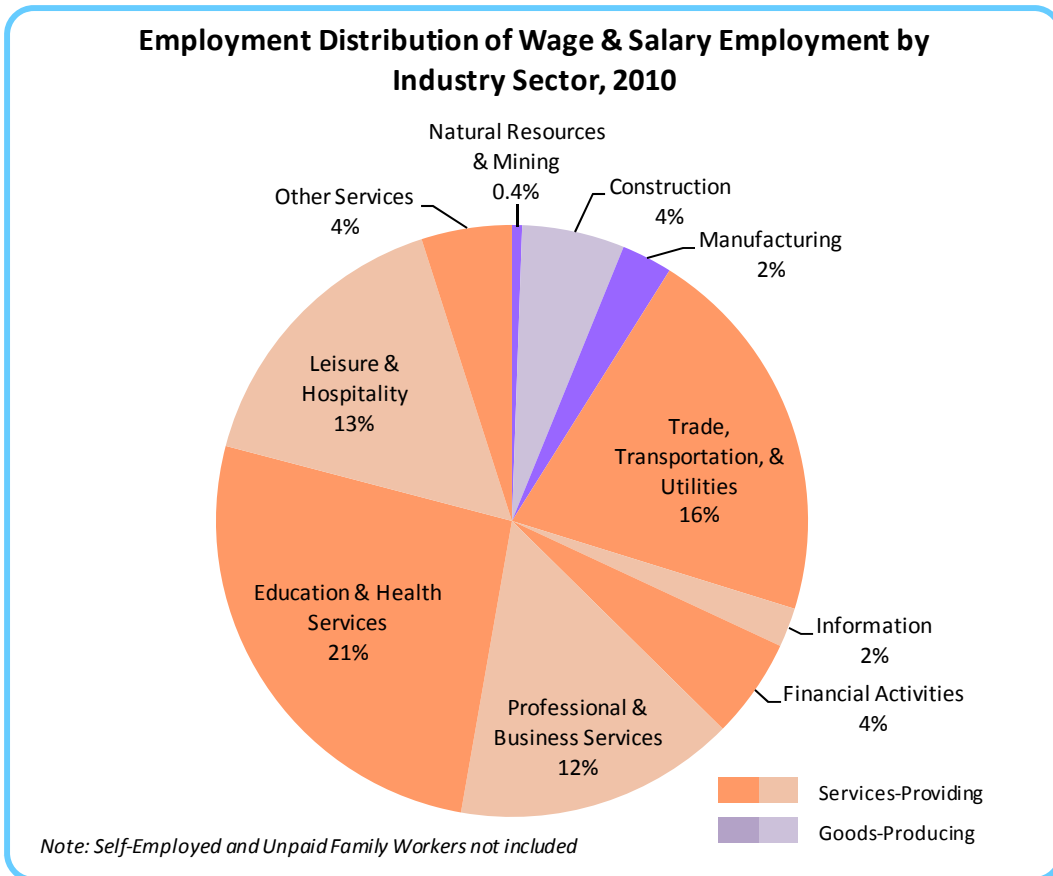


Figure 2





## Trends by Major Industry Division

As Honolulu MSA managed to halt and reverse the steep job decline experienced during the recession, employment advances will occur in ten of the twelve major industries from 2010 to 2020. Almost half of the numerical gains will originate from the two largest industries that employ the most workers, while the fastest advancing industries will vary.

**Education and health services**, the largest industry group, will generate the most number of job openings and will be the third fastest growing industry among the groups. This increase constitutes more than a quarter of the total jobs added in Honolulu MSA. Throughout the recent economic downturn, this industry offered the one bright spot, continuing to provide job growth, while all other industries suffered losses. Healthcare and social assistance, in particular, surged ahead throughout the recession, and is projected to contribute more than 55 percent to the uptick in employment. Educational services will also lift employment upward.

**Trade, transportation, and utilities**, with an increase of 9,710 positions, will generate the second highest job gain. Over 84 percent of the industry's growth will emanate from combined gains in the retail trade sector and the transportation and warehousing sector, both largely impacted by the visitor market. Retail trade, the largest component of this industry will generate the biggest numerical increase, while transportation and warehousing will expand at a faster rate.

The third largest industry, **government**, will be one of two industries anticipating a dip in employment. Cutbacks in federal government jobs will outweigh modest gains at both the state and county level, dragging the overall job count downward. As a result, the percentage of workers employed in this industry will shrink from 13 percent to 12 percent.

Growth in **leisure and hospitality** will account for approximately 15 percent of Honolulu's total job expansion. Accommodation and food services will be responsible for more than three-fourths of the gains within this industry. In addition to the boost from tourism, population growth, and a greater number of consumers choosing to dine out, will spur gains within this sector.

**Professional and business services** will be another major source of job opportunities. The pickup of 9,240 jobs anticipated during the projected period will be the third largest, and the growth rate of 16.0 percent will rank second highest among the twelve industries. Over 54 percent of the job openings will originate from administrative and support and waste management and remediation services, which includes employment service agencies, services to buildings, and investigation and security services.

The **self-employed and unpaid family workers** division is forecast to increase by 1,810 jobs, resulting in modest growth of 4.4 percent. From 2010 to 2020, the percentage of workers employed in this division will drop slightly, from 9 percent to 8 percent.

Not surprisingly, **construction**, which suffered severe cutbacks during the recession, will expand the fastest among all the major industries. Construction jobs will spike upward by 31.4 percent, nearly three times higher than the industry wide growth rate of 10.5 percent. All sectors should enjoy sizable advances, as various projects move forward. In addition to the rail transit project, which still faces some legal opposition, construction of high-rise condominiums and infrastructure work should keep the industry busy.

**Financial activities** will expand at a slower pace than the projected rate for Honolulu MSA. While the

# Industry Employment Trends

## Trends by Major Industry Division (continued)

real estate and rental and leasing sector will rise by 10.2 percent, the finance and insurance sector is anticipating a minimal increase of 3.1 percent. This will lead to an overall growth of 5.7 percent for the industry.

A projected increase of 1,470 jobs will drive the **other services** industry upward by 7.9 percent. More than half of the job opportunities created, will be due to advances in religious, grantmaking, civic, professional, and similar organizations.

**Manufacturing** is predicted to edge upward by 2.6 percent throughout the ten-year period, which equates to the smallest percentage gain of all the industries. An increase in durable goods manufactur-

ing jobs will outnumber the small gain in nondurable goods, resulting in a generally positive outcome for the industry.

The **information** industry will lose 260 jobs, amounting to a decline of 3.2 percent. Slowdowns affecting the motion picture and sound recording sector, along with the publishing industries sector, will account for the overall contraction in positions.

**Natural resources and mining**, the smallest industry, with less than a one percent share of the workforce, will post a scant increase of 150 jobs. This industry will largely benefit from job gains in agriculture, forestry, fishing and hunting, particularly jobs related to crop production.

Table 1

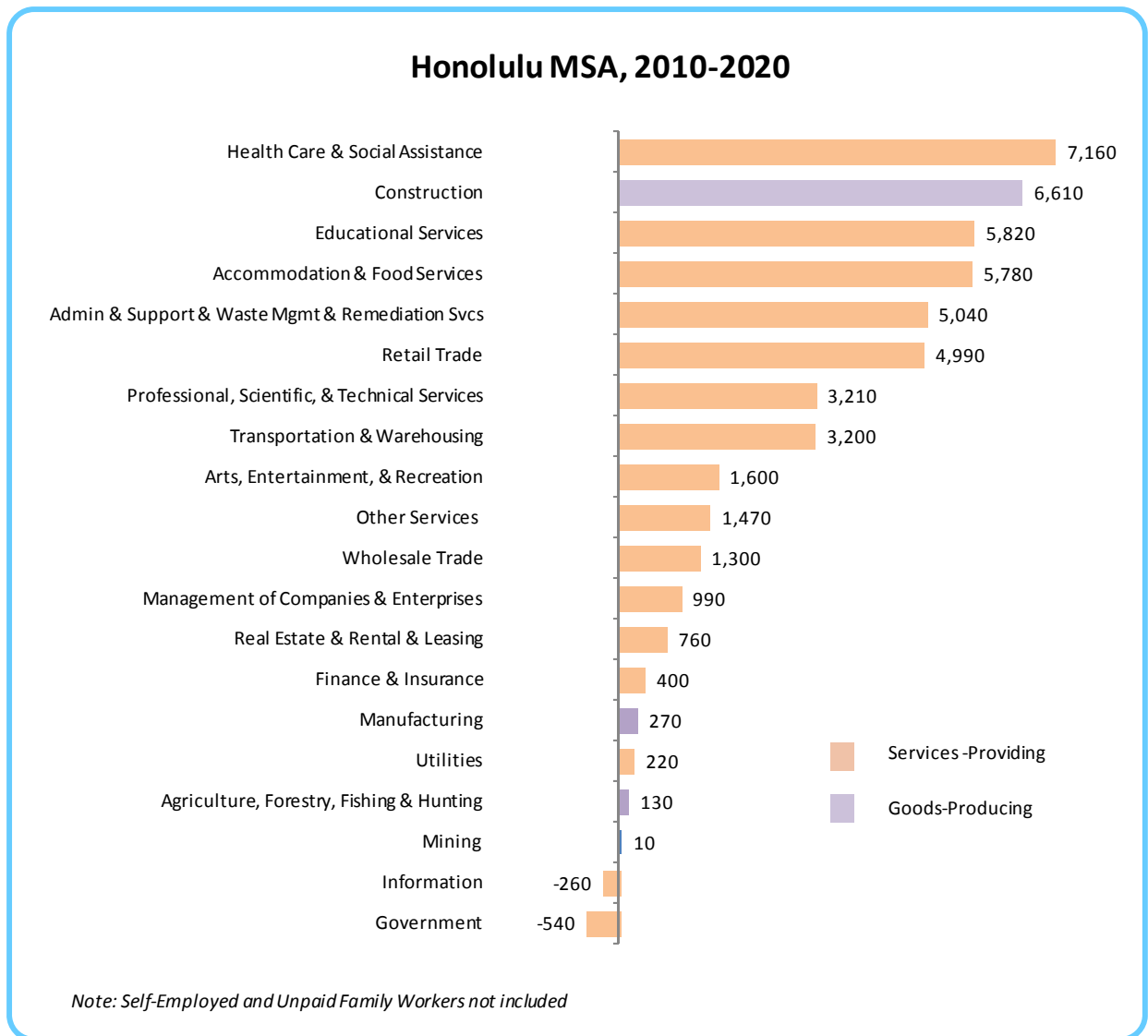
Employment Projections by Major Industry Division, Honolulu MSA, 2010-2020					
Industry Division	2010	2020	Net Growth	Percent Growth	Ann. Avg. Growth
<b>Total All Industries</b>	<b>477,290</b>	<b>527,260</b>	<b>49,970</b>	<b>10.5%</b>	<b>1.0%</b>
Education & Health Services (inc. State Education & Hospitals)	98,740	111,720	12,980	13.1%	1.3%
Trade, Transportation, & Utilities	78,330	88,040	9,710	12.4%	1.2%
Government (exc. State Education & Hospitals)	61,190	60,660	-540	-0.9%	-0.1%
Leisure & Hospitality	59,970	67,350	7,380	12.3%	1.2%
Professional & Business Services	57,710	66,950	9,240	16.0%	1.6%
Self-Employed & Unpaid Family Workers	40,800	42,600	1,810	4.4%	0.4%
Construction	21,030	27,650	6,610	31.4%	3.1%
Financial Activities	20,500	21,660	1,160	5.7%	0.6%
Other Services	18,590	20,050	1,470	7.9%	0.8%
Manufacturing	10,390	10,650	270	2.6%	0.3%
Information	8,010	7,750	-260	-3.2%	-0.3%
Natural Resources & Mining	2,030	2,180	150	7.1%	0.7%

## Numerical Change in Detailed Wage and Salary Industries

The total jobs added by the top two industries, healthcare and social assistance, and the construction industry, will account for more than a quarter of the total jobs added for Honolulu MSA. Employment in the healthcare and social assistance sector will lead all industries, with the addition of 7,160 positions. All

subsectors will share in the employment advances projected for this industry. Construction will post the next highest increase of 6,610 jobs. Although most of the gains will be derived from specialty trade contractors, the other two sectors will also contribute significant advances.

Figure 3



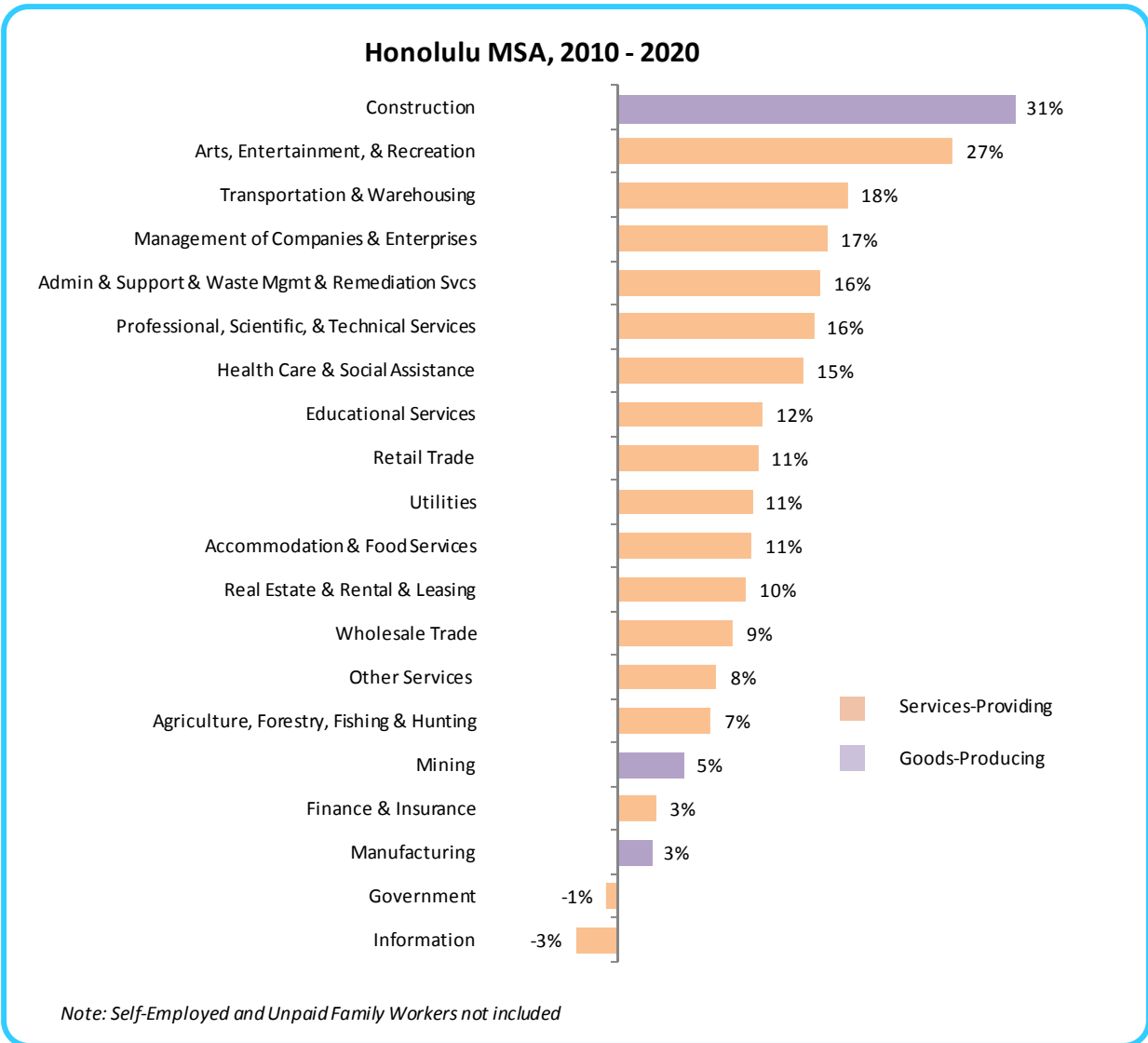
# Industry Employment Trends

## Percent Change in Detailed Wage and Salary Industries

As construction continues to add jobs after suffering losses during the recent recession, this industry is anticipated to grow almost three times as fast as the average for all industries. However, the pickup in jobs is not expected to bring the industry's job count

back to pre-recession levels. Arts, entertainment and recreation will also experience sizable growth, stimulated largely by numerous openings created by the museums, historical sites, and similar institutions in industry.

Figure 4



**Table 2. Long-term Industry Projections, Honolulu MSA, 2010-2020**

NAICS Code	Industry Title	Employment		Growth		Ann. Avg.
		2010	2020	Net	Percent	Growth
<b>000000</b>	<b>Total All Industries</b>	<b>477,290</b>	<b>527,260</b>	<b>49,970</b>	<b>10.5%</b>	<b>1.0%</b>
<b>101000</b>	<b>Goods-Producing</b>	<b>33,450</b>	<b>40,480</b>	<b>7,030</b>	<b>21.0%</b>	<b>2.1%</b>
<b>101100</b>	<b>Natural Resources &amp; Mining</b>	<b>2,030</b>	<b>2,180</b>	<b>150</b>	<b>7.1%</b>	<b>0.7%</b>
<b>110000</b>	<b>Agriculture, Forestry, Fishing &amp; Hunting</b>	<b>1,770</b>	<b>1,900</b>	<b>130</b>	<b>7.4%</b>	<b>0.7%</b>
111000	Crop Production	1,470	1,580	120	7.9%	0.8%
112000	Animal Production	110	130	20	13.5%	1.4%
115000	Support Activities for Agriculture & Forestry	50	60	0	5.7%	0.6%
<b>101200</b>	<b>Construction</b>	<b>21,030</b>	<b>27,650</b>	<b>6,610</b>	<b>31.4%</b>	<b>3.1%</b>
<b>230000</b>	<b>Construction</b>	<b>21,030</b>	<b>27,650</b>	<b>6,610</b>	<b>31.4%</b>	<b>3.1%</b>
236000	Construction of Buildings	6,220	7,800	1,580	25.4%	2.5%
237000	Heavy & Civil Engineering Construction	3,020	4,990	1,980	65.5%	6.5%
238000	Specialty Trade Contractors	11,800	14,860	3,060	25.9%	2.6%
<b>101300</b>	<b>Manufacturing</b>	<b>10,390</b>	<b>10,650</b>	<b>270</b>	<b>2.6%</b>	<b>0.3%</b>
<b>310000</b>	<b>Manufacturing</b>	<b>10,390</b>	<b>10,650</b>	<b>270</b>	<b>2.6%</b>	<b>0.3%</b>
311000	Food Manufacturing	4,220	4,290	70	1.6%	0.2%
312000	Beverage & Tobacco Product Manufacturing	670	750	90	12.7%	1.3%
313000	Textile Mills	50	60	10	19.2%	1.9%
314000	Textile Product Mills	150	150	0	-2.6%	-0.3%
315000	Apparel Manufacturing	430	280	-140	-34.0%	-3.4%
321000	Wood Product Manufacturing	170	210	40	22.5%	2.3%
322000	Paper Manufacturing	80	50	-30	-36.7%	-3.7%
323000	Printing & Related Support Activities	680	630	-40	-6.6%	-0.7%
325000	Chemical Manufacturing	200	180	-10	-7.1%	-0.7%
326000	Plastics & Rubber Products Manufacturing	220	300	90	40.1%	4.0%
327000	Nonmetallic Mineral Product Manufacturing	490	540	60	11.5%	1.1%
332000	Fabricated Metal Product Manufacturing	320	370	60	17.7%	1.8%
333000	Machinery Manufacturing	30	30	0	0.0%	0.0%
334000	Computer & Electronic Product Manufacturing	150	140	-10	-7.1%	-0.7%
336000	Transportation Equipment Manufacturing	820	880	70	8.0%	0.8%
337000	Furniture & Related Product Manufacturing	320	380	60	17.7%	1.8%
339000	Miscellaneous Manufacturing	890	900	20	2.0%	0.2%
<b>102000</b>	<b>Services-Providing</b>	<b>403,040</b>	<b>444,170</b>	<b>41,140</b>	<b>10.2%</b>	<b>1.0%</b>
<b>102100</b>	<b>Trade, Transportation, &amp; Utilities</b>	<b>78,330</b>	<b>88,040</b>	<b>9,710</b>	<b>12.4%</b>	<b>1.2%</b>
<b>420000</b>	<b>Wholesale Trade</b>	<b>14,180</b>	<b>15,490</b>	<b>1,300</b>	<b>9.2%</b>	<b>0.9%</b>
423000	Merchant Wholesalers, Durable Goods	5,490	5,790	310	5.6%	0.6%
424000	Merchant Wholesalers, Nondurable Goods	6,900	7,470	570	8.2%	0.8%
425000	Wholesale Electronic Markets & Agents & Brokers	1,800	2,230	430	23.9%	2.4%
<b>440000</b>	<b>Retail Trade</b>	<b>44,640</b>	<b>49,620</b>	<b>4,990</b>	<b>11.2%</b>	<b>1.1%</b>
441000	Motor Vehicle & Parts Dealers	4,350	4,870	520	12.1%	1.2%
442000	Furniture & Home Furnishings Stores	980	1,170	180	18.6%	1.9%
443000	Electronics & Appliance Stores	1,190	1,370	180	15.3%	1.5%
444000	Building Material & Garden Equipment & Supplies Dealers	2,190	2,580	390	17.8%	1.8%
445000	Food & Beverage Stores	8,460	8,830	370	4.4%	0.4%

**Table 2. Long-term Industry Projections, Honolulu MSA, 2010-2020**

NAICS Code	Industry Title	Employment		Growth		Ann. Avg.
		2010	2020	Net	Percent	Growth
446000	Health & Personal Care Stores	3,450	4,020	570	16.6%	1.7%
447000	Gasoline Stations	1,190	950	-240	-20.6%	-2.1%
448000	Clothing & Clothing Accessories Stores	7,800	8,970	1,160	14.9%	1.5%
451000	Sporting Goods, Hobby, Book, & Music Stores	2,190	2,240	50	2.5%	0.2%
452000	General Merchandise Stores	8,880	10,030	1,150	13.0%	1.3%
453000	Miscellaneous Store Retailers	3,750	4,260	510	13.7%	1.4%
454000	Nonstore Retailers	220	350	130	58.5%	5.8%
<b>480000</b>	<b>Transportation &amp; Warehousing</b>	<b>17,490</b>	<b>20,690</b>	<b>3,200</b>	<b>18.3%</b>	<b>1.8%</b>
481000	Air Transportation	5,970	7,120	1,160	19.4%	1.9%
483000	Water Transportation	1,560	1,960	400	25.3%	2.5%
484000	Truck Transportation	2,120	2,390	270	12.5%	1.2%
485000	Transit & Ground Passenger Transport	1,340	1,660	320	23.5%	2.4%
487000	Scenic & Sightseeing Transportation	1,490	1,880	390	26.4%	2.6%
488000	Support Activities for Transportation	3,330	3,680	350	10.5%	1.0%
492000	Couriers & Messengers	1,130	1,320	190	16.5%	1.6%
493000	Warehousing & Storage	550	690	140	26.2%	2.6%
<b>220000</b>	<b>Utilities</b>	<b>2,030</b>	<b>2,240</b>	<b>220</b>	<b>10.7%</b>	<b>1.1%</b>
221000	Utilities	2,030	2,240	220	10.7%	1.1%
<b>102200</b>	<b>Information</b>	<b>8,010</b>	<b>7,750</b>	<b>-260</b>	<b>-3.2%</b>	<b>-0.3%</b>
<b>510000</b>	<b>Information</b>	<b>8,010</b>	<b>7,750</b>	<b>-260</b>	<b>-3.2%</b>	<b>-0.3%</b>
511000	Publishing Industries	1,240	1,020	-220	-18.0%	-1.8%
512000	Motion Picture & Sound Recording Industries	2,390	2,070	-330	-13.6%	-1.4%
515000	Broadcasting (except Internet)	850	940	90	10.2%	1.0%
517000	Telecommunications	2,980	3,100	120	4.0%	0.4%
518000	Internet Service Providers, Web Search Portals, & Data Processing Services	370	380	10	3.5%	0.4%
519000	Other Information Services	190	260	70	37.2%	3.7%
<b>102300</b>	<b>Financial Activities</b>	<b>20,500</b>	<b>21,660</b>	<b>1,160</b>	<b>5.7%</b>	<b>0.6%</b>
<b>520000</b>	<b>Finance &amp; Insurance</b>	<b>13,060</b>	<b>13,460</b>	<b>400</b>	<b>3.1%</b>	<b>0.3%</b>
522000	Credit Intermediation & Related Activities	6,090	6,200	110	1.7%	0.2%
523000	Securities, Commodity Contracts, & Other Financial Investments & Related Activities	930	1,060	130	14.0%	1.4%
524000	Insurance Carriers & Related Activities	6,000	6,160	160	2.6%	0.3%
525000	Funds, Trusts, & Other Financial Vehicles	30	40	10	25.8%	2.6%
<b>530000</b>	<b>Real Estate &amp; Rental &amp; Leasing</b>	<b>7,440</b>	<b>8,200</b>	<b>760</b>	<b>10.2%</b>	<b>1.0%</b>
531000	Real Estate	5,230	5,640	420	7.9%	0.8%
532000	Rental & Leasing Services	2,200	2,550	350	16.0%	1.6%
533000	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	20	10	0	-23.5%	-2.4%
<b>102400</b>	<b>Professional &amp; Business Services</b>	<b>57,710</b>	<b>66,950</b>	<b>9,240</b>	<b>16.0%</b>	<b>1.6%</b>
<b>540000</b>	<b>Professional, Scientific, &amp; Technical Services</b>	<b>20,570</b>	<b>23,770</b>	<b>3,210</b>	<b>15.6%</b>	<b>1.6%</b>
541000	Professional, Scientific, & Technical Services	20,570	23,770	3,210	15.6%	1.6%
<b>550000</b>	<b>Management of Companies &amp; Enterprises</b>	<b>5,950</b>	<b>6,950</b>	<b>990</b>	<b>16.7%</b>	<b>1.7%</b>
551000	Management of Companies & Enterprises	5,950	6,950	990	16.7%	1.7%

**Table 2. Long-term Industry Projections, Honolulu MSA, 2010-2020**

NAICS Code	Industry Title	Employment		Growth		Ann. Avg.
		2010	2020	Net	Percent	Growth
<b>560000</b>	<b>Administrative &amp; Support &amp; Waste Management &amp; Remediation Services</b>	<b>31,190</b>	<b>36,230</b>	<b>5,040</b>	<b>16.2%</b>	<b>1.6%</b>
561000	Administrative & Support Services	29,880	34,630	4,750	15.9%	1.6%
562000	Waste Management & Remediation Service	1,320	1,600	290	21.8%	2.2%
<b>102500</b>	<b>Education &amp; Health Services, Inc. State Education &amp; Hospitals</b>	<b>98,740</b>	<b>111,720</b>	<b>12,980</b>	<b>13.1%</b>	<b>1.3%</b>
<b>610000</b>	<b>Educational Services</b>	<b>50,340</b>	<b>56,170</b>	<b>5,820</b>	<b>11.6%</b>	<b>1.2%</b>
611000	Educational Services	50,340	56,170	5,820	11.6%	1.2%
<b>620000</b>	<b>Health Care &amp; Social Assistance</b>	<b>48,400</b>	<b>55,550</b>	<b>7,160</b>	<b>14.8%</b>	<b>1.5%</b>
621000	Ambulatory Health Care Services	17,570	20,660	3,090	17.6%	1.8%
622000	Hospitals	14,820	15,930	1,110	7.5%	0.7%
623000	Nursing & Residential Care Facilities	5,360	6,770	1,410	26.3%	2.6%
624000	Social Assistance	10,640	12,190	1,550	14.6%	1.5%
<b>102600</b>	<b>Leisure &amp; Hospitality</b>	<b>59,970</b>	<b>67,350</b>	<b>7,380</b>	<b>12.3%</b>	<b>1.2%</b>
<b>710000</b>	<b>Arts, Entertainment, &amp; Recreation</b>	<b>6,000</b>	<b>7,600</b>	<b>1,600</b>	<b>26.7%</b>	<b>2.7%</b>
711000	Performing Arts, Spectator Sports, & Related Industries	520	620	100	18.7%	1.9%
712000	Museums, Historical Sites, & Similar Institutions	920	2,250	1,330	144.1%	14.4%
713000	Amusement, Gambling, & Recreation Industries	4,560	4,730	170	3.8%	0.4%
<b>720000</b>	<b>Accommodation &amp; Food Services</b>	<b>53,970</b>	<b>59,740</b>	<b>5,780</b>	<b>10.7%</b>	<b>1.1%</b>
721000	Accommodation	14,700	16,880	2,180	14.8%	1.5%
722000	Food Services & Drinking Places	39,270	42,860	3,600	9.2%	0.9%
<b>102700</b>	<b>Other Services (Except Government)</b>	<b>18,590</b>	<b>20,050</b>	<b>1,470</b>	<b>7.9%</b>	<b>0.8%</b>
<b>810000</b>	<b>Other Services (Except Government)</b>	<b>18,590</b>	<b>20,050</b>	<b>1,470</b>	<b>7.9%</b>	<b>0.8%</b>
811000	Repair & Maintenance	2,750	3,090	340	12.4%	1.2%
812000	Personal & Laundry Services	6,030	6,410	390	6.4%	0.6%
813000	Religious, Grantmaking, Civic, Professional, & Similar Organizations	9,490	10,250	750	7.9%	0.8%
814000	Private Households	320	310	-10	-3.8%	-0.4%
<b>102800</b>	<b>Government</b>	<b>61,190</b>	<b>60,660</b>	<b>-540</b>	<b>-0.9%</b>	<b>-0.1%</b>
<b>900000</b>	<b>Government</b>	<b>61,190</b>	<b>60,660</b>	<b>-540</b>	<b>-0.9%</b>	<b>-0.1%</b>
910000	Total Federal Government Employment	31,590	29,310	-2,280	-7.2%	-0.7%
491100	Postal Service	1,930	1,640	-280	-14.8%	-1.5%
999100	Federal Government, Excluding Post Office	29,670	27,670	-2,000	-6.7%	-0.7%
920000	State Government, Exc. Education & Hospitals	17,440	18,270	830	4.8%	0.5%
930000	Local Government, Exc. Education & Hospitals	12,160	13,070	910	7.5%	0.7%
<b>000671</b>	<b>Total Self-Employed &amp; Unpaid Family Workers, All Jobs</b>	<b>40,800</b>	<b>42,600</b>	<b>1,810</b>	<b>4.4%</b>	<b>0.4%</b>
<b>006010</b>	<b>Self-Employed Workers, All Jobs</b>	<b>40,220</b>	<b>42,010</b>	<b>1,800</b>	<b>4.5%</b>	<b>0.4%</b>
<b>007010</b>	<b>Unpaid Family Workers, All Jobs</b>	<b>580</b>	<b>590</b>	<b>10</b>	<b>2.1%</b>	<b>0.2%</b>

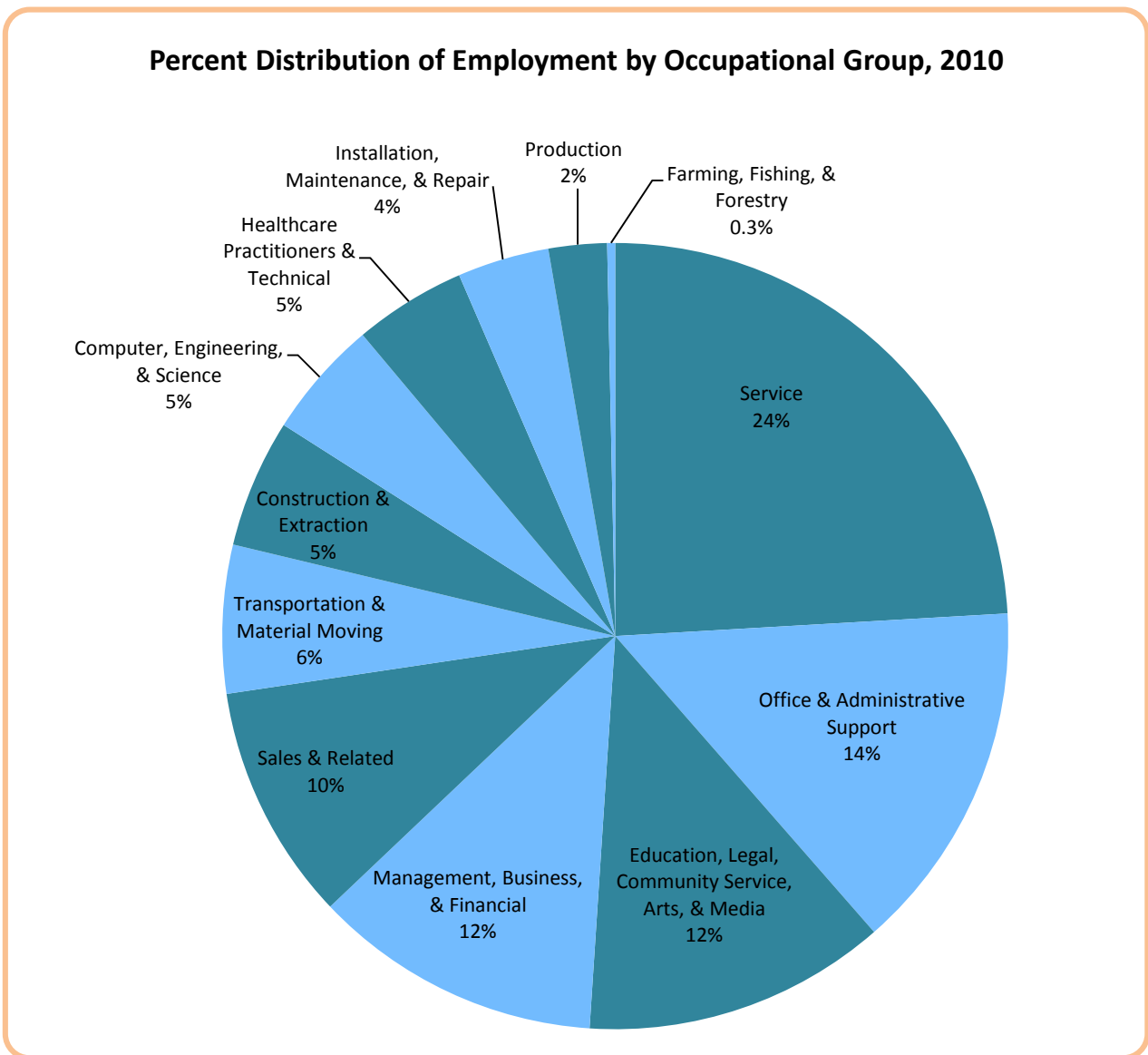
# Occupational Employment Trends

## Distribution of Occupations

The chart below shows the breakout of the twelve major occupational groups in 2010. Approximately 38 percent of all jobs will fall under service and office and administrative support occupations.

Although growth among each division will vary throughout the projection period, the occupational distribution and ranking may change slightly by the year 2020; however, no major changes will occur.

Figure 5





## Trends by Aggregated Major Occupational Divisions

Between 2010 and 2020, all major occupational groups will expand. An estimated 49,970 jobs will be created over the projected period.

**Service** occupations, which cover the largest segment of Honolulu MSA's workforce, are predicted to generate the biggest job increase. The creation of 13,760 new jobs translates into a 12.0 percent growth, making it the second fastest growing occupational division. About one-third of all gains will originate from food preparation and serving related occupations, as consumers opt to dine out rather than prepare home cooked meals. The fastest growth among the subsectors will occur in personal care and service occupations, particularly for those seeking employment as personal and home care aides.

The second largest group, **office and administrative support** occupations will post a modest gain of 4,500 positions. With an increase of 6.5 percent, this group will rank second lowest in terms of percentage growth compared to the other divisions. The increasing usage of electronic technology at home and in the workplace will reduce the need for work performed by postal service personnel, along with word processors and typists. This will slow expansion opportunities within this group.

Those employed in **education, legal, community service, arts, and media** jobs will make up the third largest division, with a 12 percent share of all occupations. The largest subgroup – education, training, and library occupations should account for almost 70 percent of the hike in jobs. Increased hiring of instructors at all levels will boost the job count upward.

**Management, business, and financial** occupations will expand by 4,530 jobs or 8.0 percent. Both of the major subsectors will realize employment advances between 2010 and 2020. Of the two, business and financial operations, the smaller subsector,

should outperform the management subsector.

**Sales and related** occupations will continue to keep its share of the workforce steady at around 10 percent. More than 61 percent of the job expansion will result from advances in retail sales workers, primarily for positions as retail salespersons.

Growth in **transportation and material moving** occupations, up by 11.3 percent, will rise faster than Honolulu MSA's average of 10.5 percent for all occupations. The two largest subsectors – motor vehicle operators and material moving workers, will contribute more than two-thirds of the total numerical gain for the group as a whole. In terms of percentage increases, water transportation workers will lead all sectors within this division.

The percentage of jobs classified within the **construction and extraction** occupational group will nudge upward from 5 percent to 6 percent by 2020. With anticipated growth expected to reach 19.5 percent, which is well above the county average, this division will boast by far the highest percentage gain among all of the occupational groups. All components in this group will benefit from the construction activity predicted for the upcoming years.

Slower than average growth of 9.1 percent is anticipated for **computer, engineering, and science** occupations. More than 58 percent of the positions added during the projection period will arise from demand for computer and mathematical occupations, pushing the count upward by 13.9 percent. Growth in the other sectors will remain weaker than the average for Honolulu MSA.

**Healthcare practitioners and technical** occupations will gain 2,590 positions, up 11.8 percent over the ten-year period. Expansion in the health diagnosing and treating practitioners sector, driven largely by

# Occupational Employment Trends

## Trends by Aggregated Major Occupational Divisions (continued)

a jump in registered nurses, will provide the bulk of the advances for the group as a whole. Increases within this occupational group reflect the rising demand for the services of healthcare professionals in the future.

Growth in **installation, maintenance, and repair** occupations, one of the three smallest occupational groups, will be slightly above the county average of 10.5 percent. A little over a quarter of the total gain in this occupational sector will stem from a pickup in general maintenance and repair workers.

Approximately 2 percent of all jobs will be classified as **production** occupations. Total jobs added by this division will be second lowest, while the increase of 3.8 percent will rank last relative to all of the major occupational groups. Job losses within the textile, apparel, and furnishings workers sector will weaken the overall job count.

**Farming, fishing, and forestry** occupations, with less than a 1 percent share of all jobholders, will add the least number of positions. Minimal growth of 6.7 percent is anticipated for the projected period.

Table 3

### Employment Projections by Occupational Group, Honolulu MSA, 2010-2020

Occupational Group	2010	2020	Net Growth	Percent Growth	Ann. Avg Growth
<b>Total, All Occupations</b>	<b>477,290</b>	<b>527,260</b>	<b>49,970</b>	<b>10.5%</b>	<b>1.0%</b>
<b>Service</b>	<b>114,900</b>	<b>128,660</b>	<b>13,760</b>	<b>12.0%</b>	<b>2.4%</b>
Healthcare Support	11,980	13,770	1,790	14.9%	1.5%
Protective Service Occupations	16,130	17,930	1,800	11.2%	1.1%
Food Preparation & Serving Related	46,810	51,370	4,550	9.7%	1.0%
Building and Grounds Cleaning & Maintenance	24,100	26,690	2,590	10.8%	1.1%
Personal Care and Service	15,890	18,910	3,020	19.0%	1.9%
<b>Office &amp; Administrative Support</b>	<b>69,120</b>	<b>73,630</b>	<b>4,500</b>	<b>6.5%</b>	<b>0.7%</b>
<b>Education, Legal, Community Service, Arts, &amp; Media</b>	<b>59,580</b>	<b>65,780</b>	<b>6,200</b>	<b>10.4%</b>	<b>1.2%</b>
Community & Social Services	8,370	9,410	1,040	12.4%	1.2%
Legal	3,690	3,860	170	4.7%	0.5%
Education, Training, & Library	36,420	40,710	4,290	11.8%	1.2%
Arts, Design, Entertainment, Sports, & Media	11,100	11,800	700	6.3%	0.6%
<b>Management, Business &amp; Financial</b>	<b>56,710</b>	<b>61,240</b>	<b>4,530</b>	<b>8.0%</b>	<b>1.2%</b>
Management	33,180	35,110	1,930	5.8%	0.6%
Business & Financial Operations	23,520	26,130	2,600	11.1%	1.1%
<b>Sales &amp; Related</b>	<b>46,420</b>	<b>51,920</b>	<b>5,500</b>	<b>11.8%</b>	<b>1.2%</b>
<b>Transportation &amp; Material Moving</b>	<b>29,060</b>	<b>32,340</b>	<b>3,280</b>	<b>11.3%</b>	<b>1.1%</b>
<b>Construction &amp; Extraction</b>	<b>25,190</b>	<b>30,090</b>	<b>4,900</b>	<b>19.5%</b>	<b>1.9%</b>
<b>Computer, Engineering, &amp; Science</b>	<b>23,260</b>	<b>25,380</b>	<b>2,110</b>	<b>9.1%</b>	<b>0.5%</b>
Computer & Mathematical	8,970	10,220	1,240	13.9%	1.4%
Architecture & Engineering	8,800	9,210	420	4.8%	0.5%
Life, Physical, & Social Science	5,500	5,950	450	8.2%	0.8%
<b>Healthcare Practitioners &amp; Technical</b>	<b>22,010</b>	<b>24,600</b>	<b>2,590</b>	<b>11.8%</b>	<b>1.2%</b>
<b>Installation, Maintenance, &amp; Repair</b>	<b>17,990</b>	<b>20,050</b>	<b>2,050</b>	<b>11.4%</b>	<b>1.1%</b>
<b>Production</b>	<b>11,450</b>	<b>11,890</b>	<b>440</b>	<b>3.8%</b>	<b>0.4%</b>
<b>Farming, Fishing, &amp; Forestry</b>	<b>1,580</b>	<b>1,690</b>	<b>110</b>	<b>6.7%</b>	<b>0.7%</b>

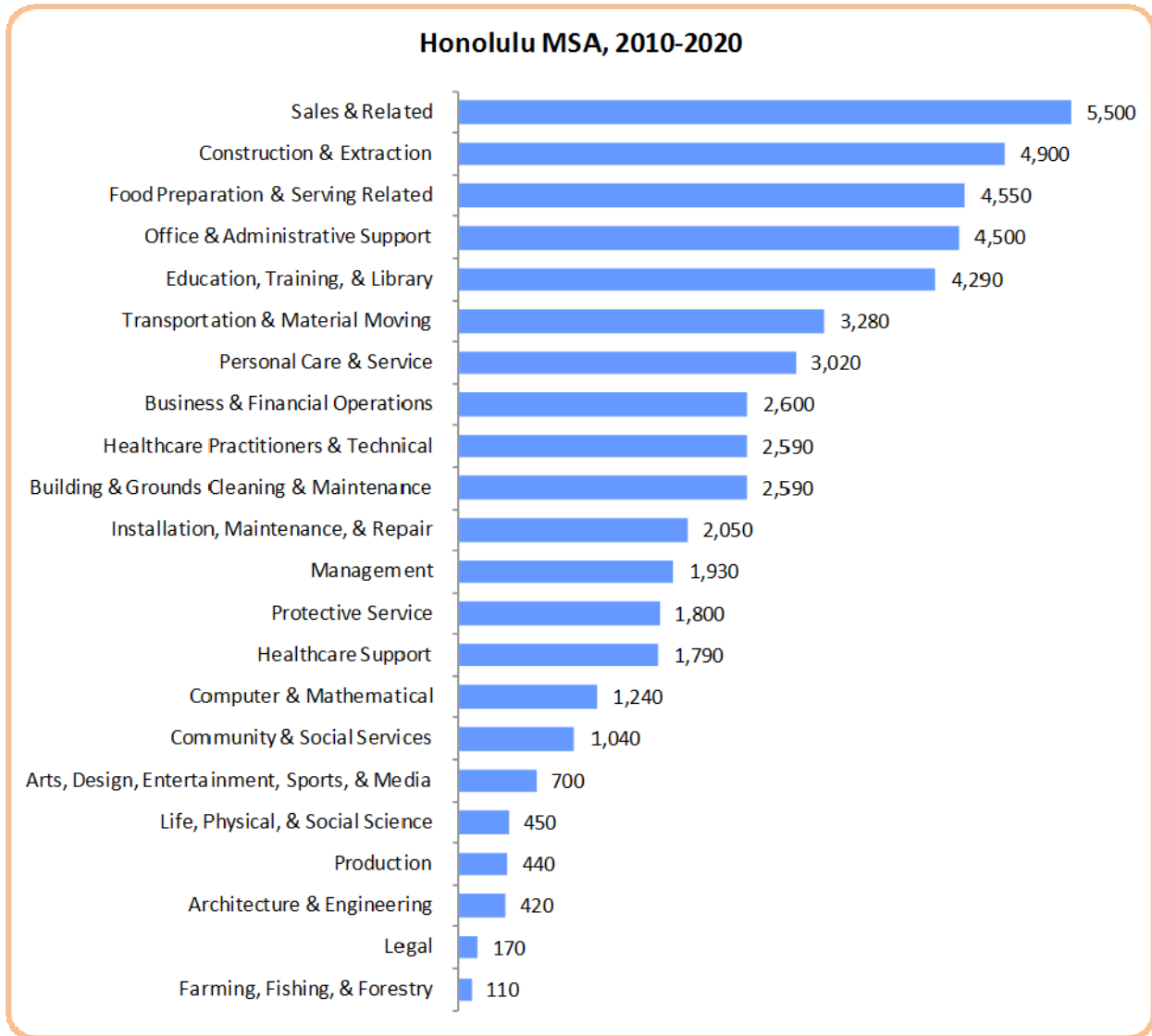
# Occupational Employment Trends

## Numeric Change in Employment by Major Occupational Group

All 22 of the major occupational groups will expand from 2010 to 2020. The sales and related workers group is projected to gain the most jobs, driven largely by retail sales workers, namely retail salespersons. Although the construction and extraction sec-

tor is one of the smaller divisions, this group will add a significant number of jobs. Within this sector, occupations increasing the most include: carpenters, construction laborers, and operating engineers and other construction equipment operators.

Figure 6



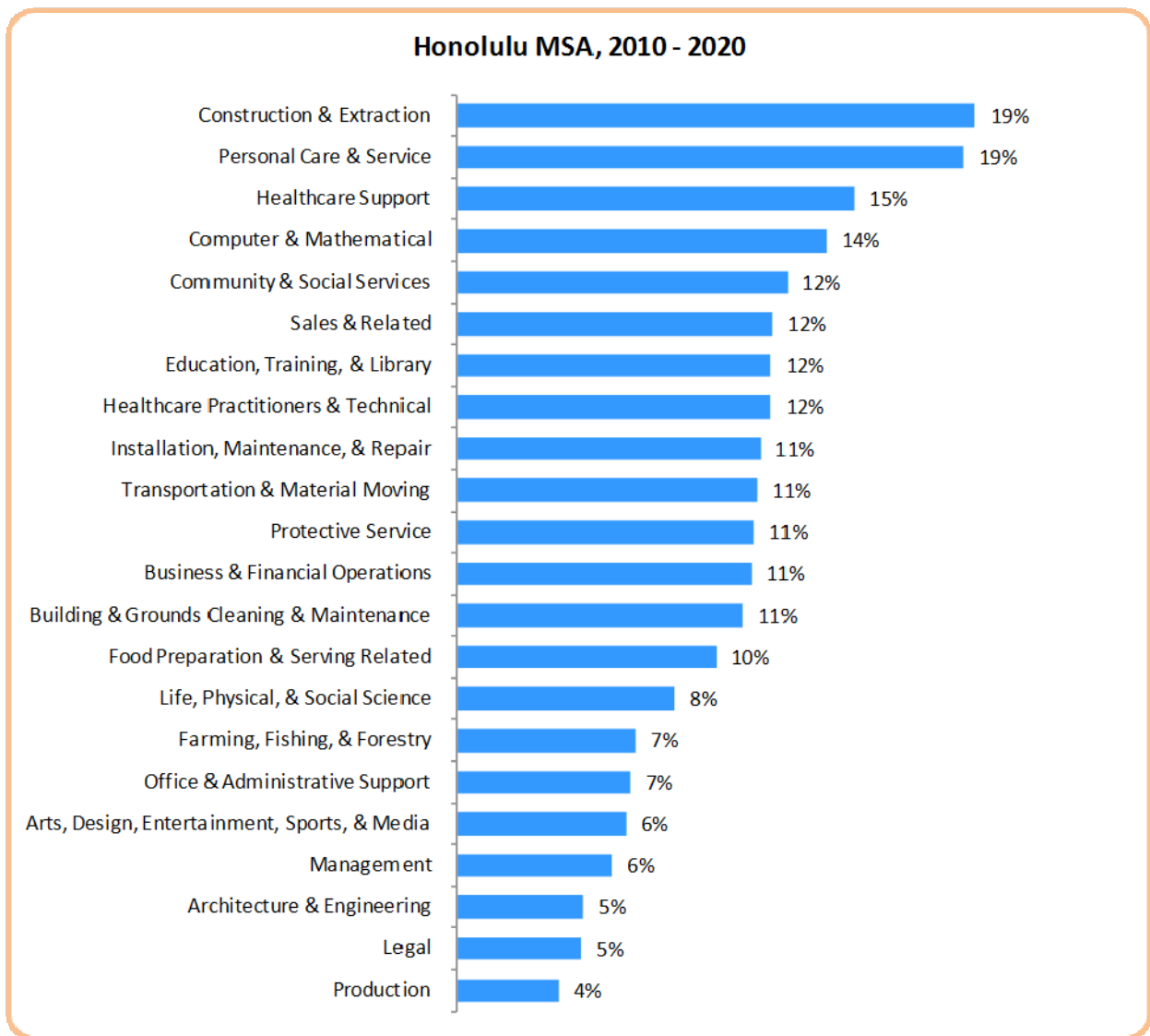
# Occupational Employment Trends

## Percent Change in Employment by Major Occupational Group

Construction and extraction occupations, with a projected expansion of 19 percent, will top all occupations with the highest growth rate. This group will benefit from numerous construction projects scheduled for the future. Within the personal care and

service occupational group, personal and home care aides will be the major driving force behind the increase as businesses look for cost saving alternatives and use aides in place of nurses.

Figure 7



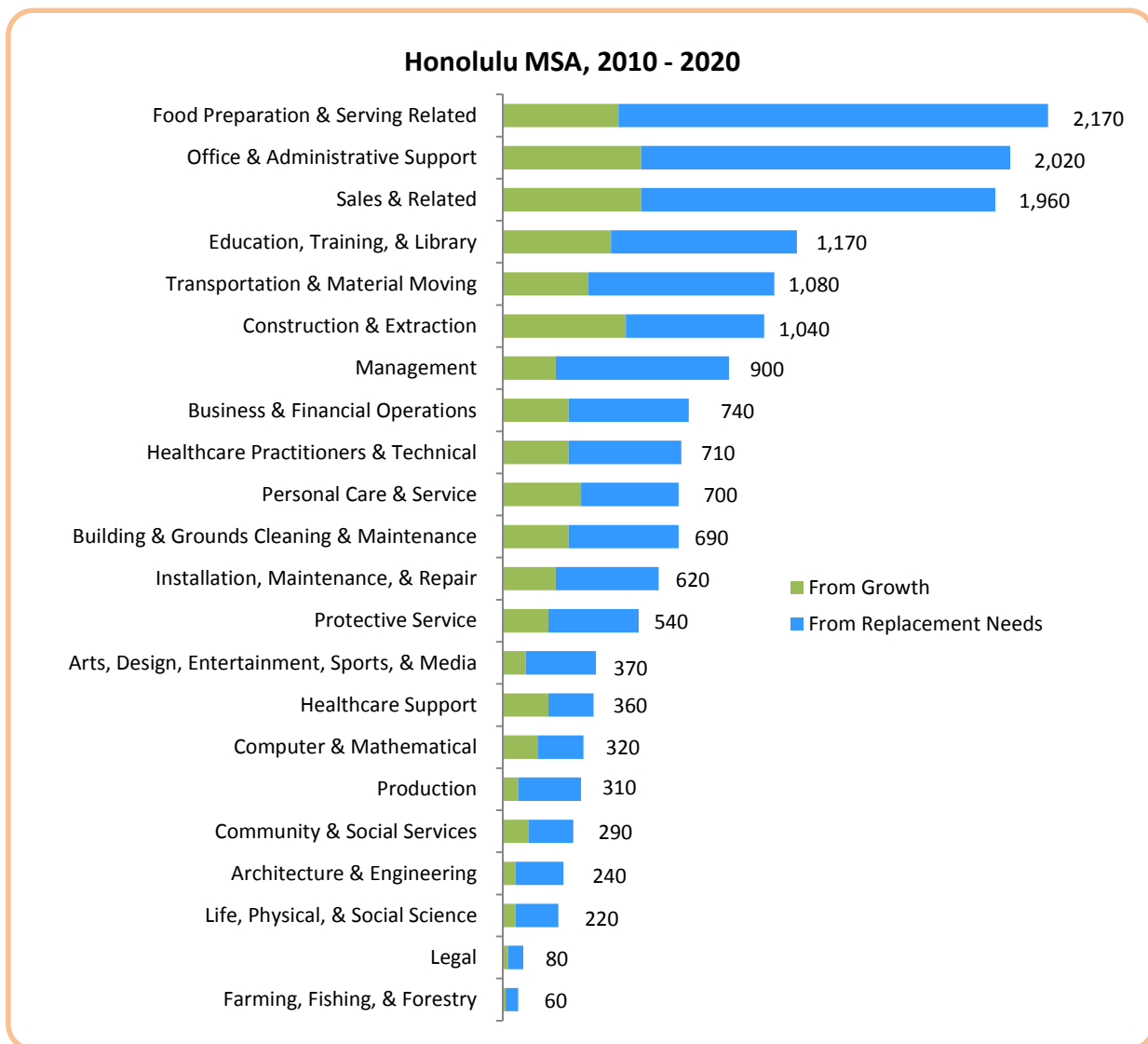
# Occupational Employment Trends

## Job Openings by Major Occupational

In addition to growth, job openings will also become available based on the need to replace workers permanently leaving an occupation either through retirement or various other reasons.

Openings created by economic expansion combined with replacement needs will be responsible for an estimated 16,570 openings per year during the projected period.

Figure 8



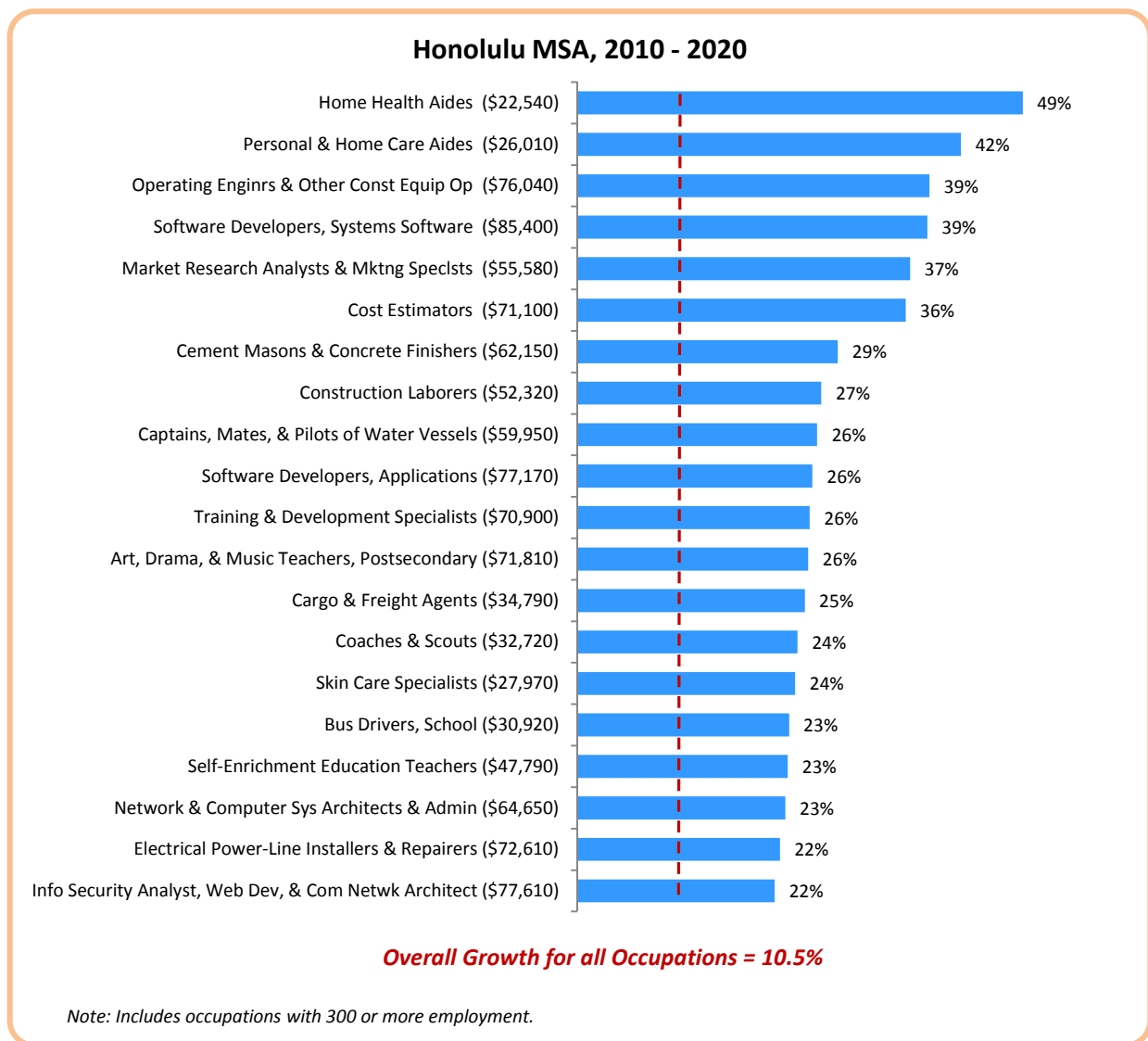
# Occupational Employment Trends

## Fastest Growing Occupations by Percentage

The growth rates of the 20 fastest expanding occupations contained in the chart below are well above the average rate for all occupations of 10.5 percent. These occupations offer a variety of job op-

portunities with varying education requirements and salary levels. The following fields are represented in this listing: healthcare, construction, technology, and education.

Figure 9



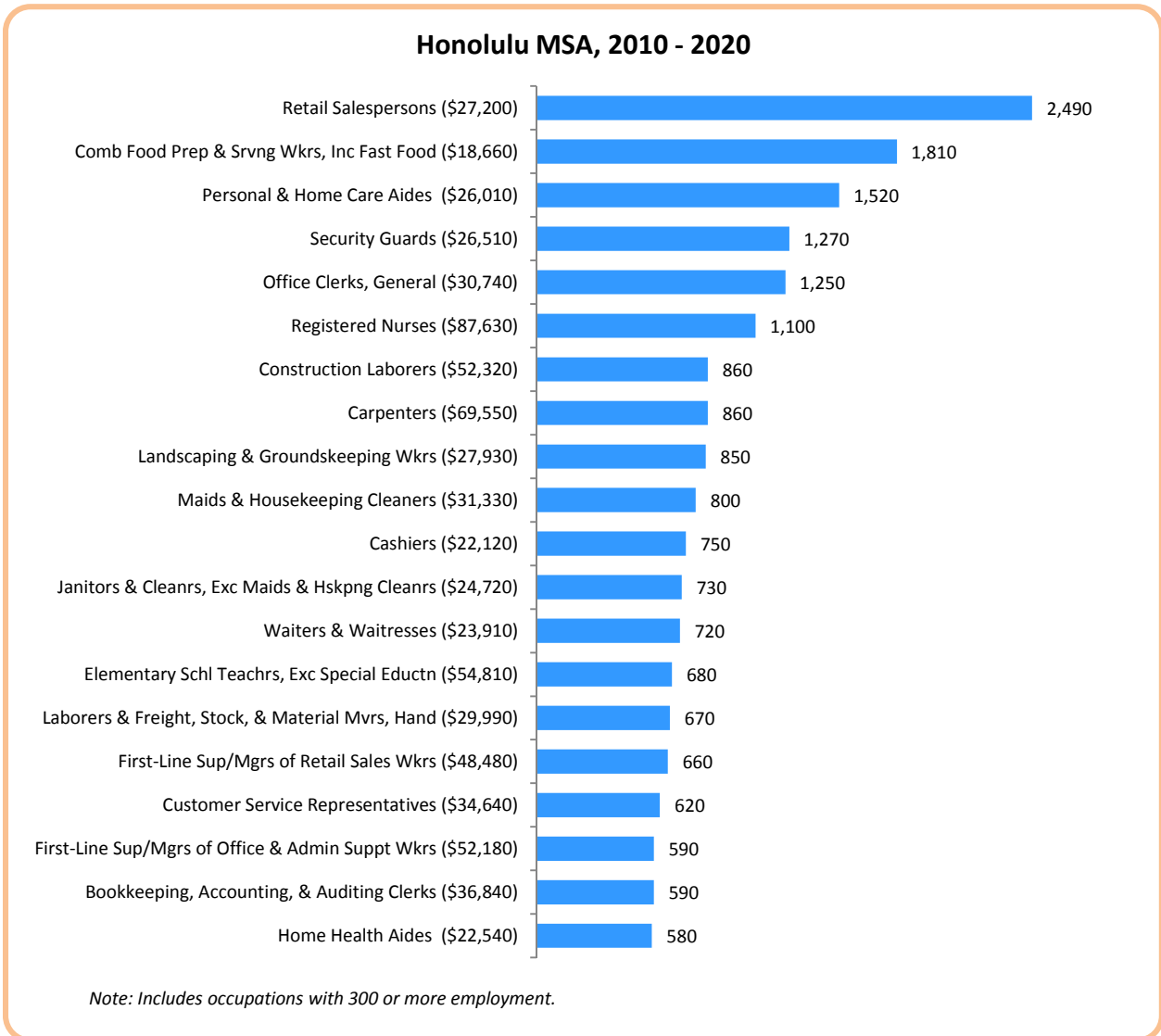
# Occupational Employment Trends

## Largest Numeric Growth in Occupations

The 20 occupations adding the greatest number of positions during the projected period will account for 19,400 openings, or more than 38 percent of the overall total gains. Not surprisingly, since service occupations represent the largest occupational group, a fair portion of the jobs correspond to tourism such

as: retail salespersons, combined food preparation and serving workers, security guards, landscaping and groundskeeping workers, maids and housekeeping cleaners, cashiers, janitors and cleaners, waiters and waitresses, and customer service representatives.

Figure 10



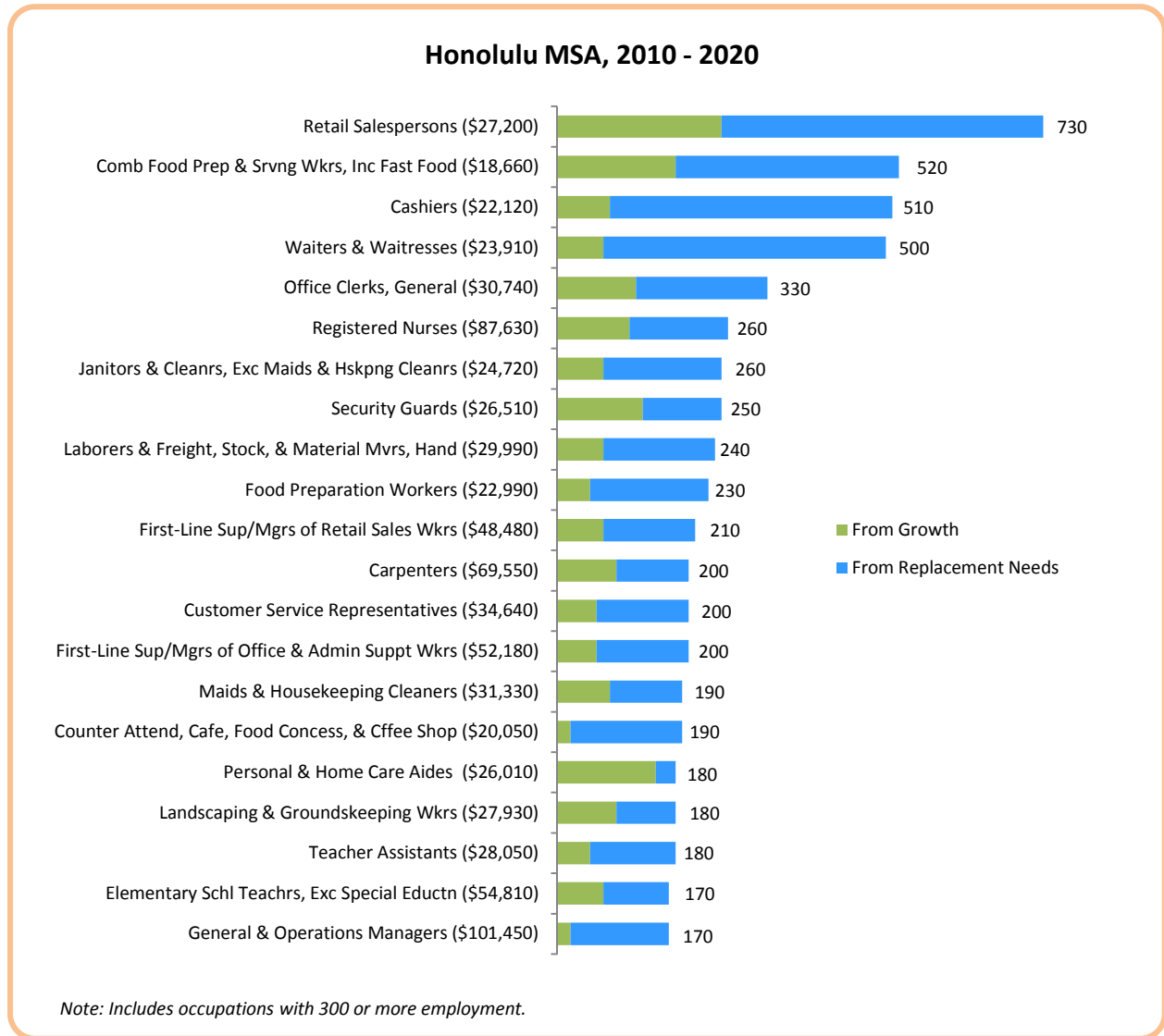
# Occupational Employment Trends

## Job Openings Based on Annual Growth and Replace-

Most of the jobs listed in the following chart are large sized occupations with most of the openings created through replacement needs rather than job growth. Honolulu’s strong tourist market will boost employment opportunities for the following occupations: retail salespersons; food preparation and serv-

ing workers; cashiers; waiters and waitresses; janitors and cleaners; security guards; first-line supervisors/managers of retail sales workers; maids and house-keeping cleaners; and counter attendants of café, food concession, and coffee shops.

Figure 11





# Occupational Employment Trends

## Graduate Degree Occupa-

Approximately four percent of the occupations will fall under this category, which includes employees who have earned either a master's or doctoral degree. In general, workers in this category earn

more compared to the other education levels. Jobs related to healthcare and education will experience the most growth in terms of percentage and numerical gains.

Figure 12

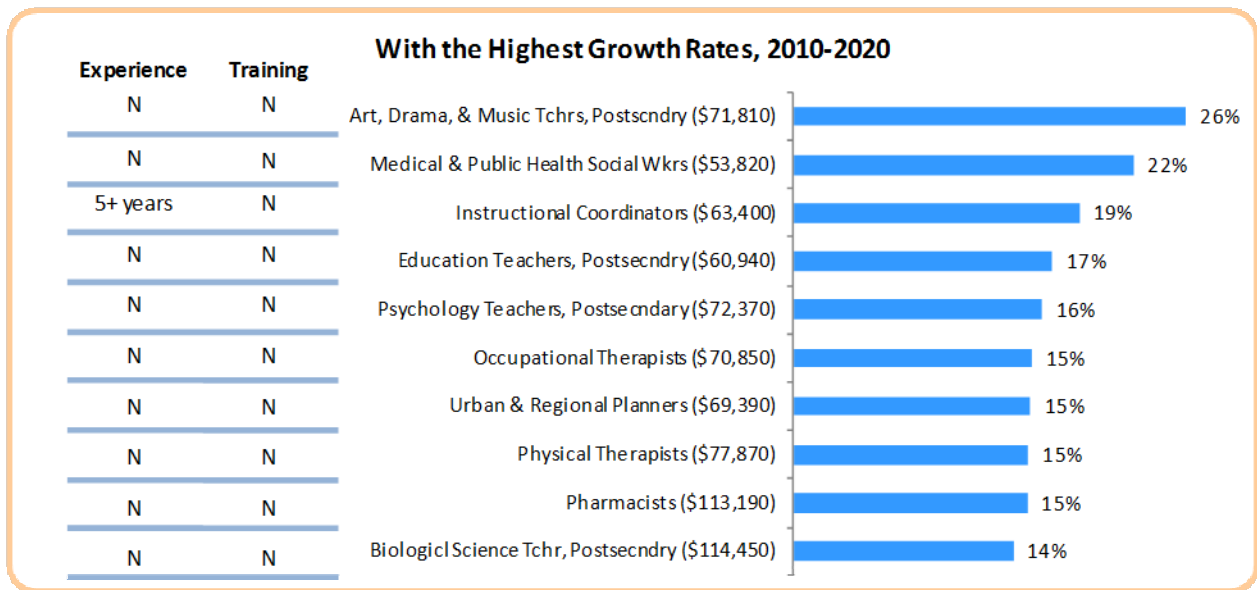
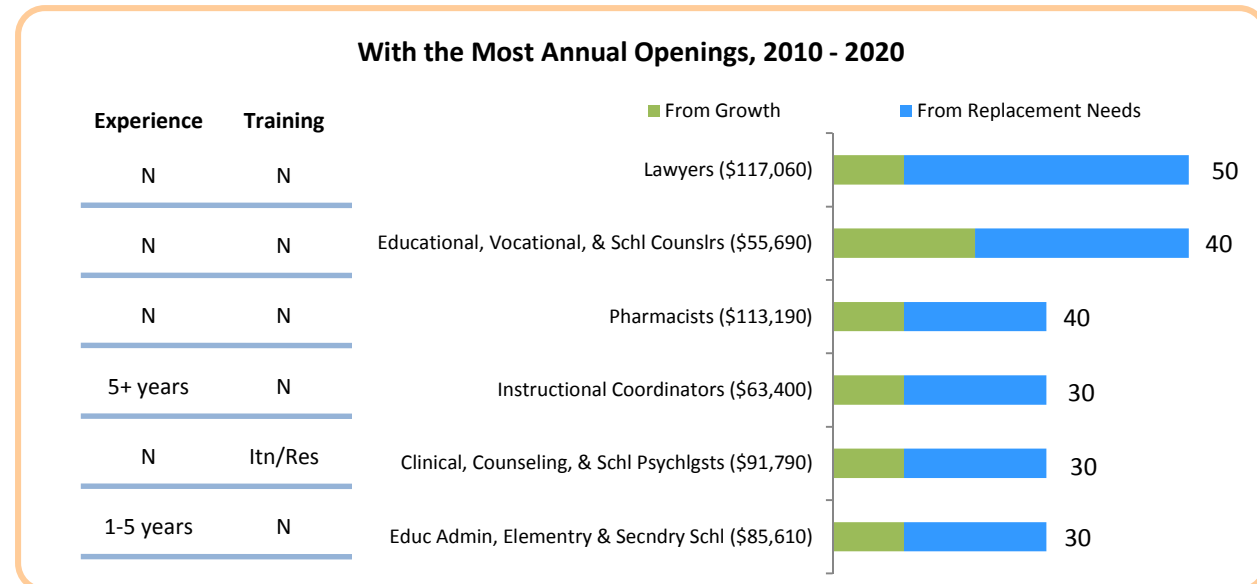


Figure 13



N=None; See Appendix for work experience and training requirements; Wages as of May 2012

# Occupational Employment Trends

## Bachelor's Degree Occupa-

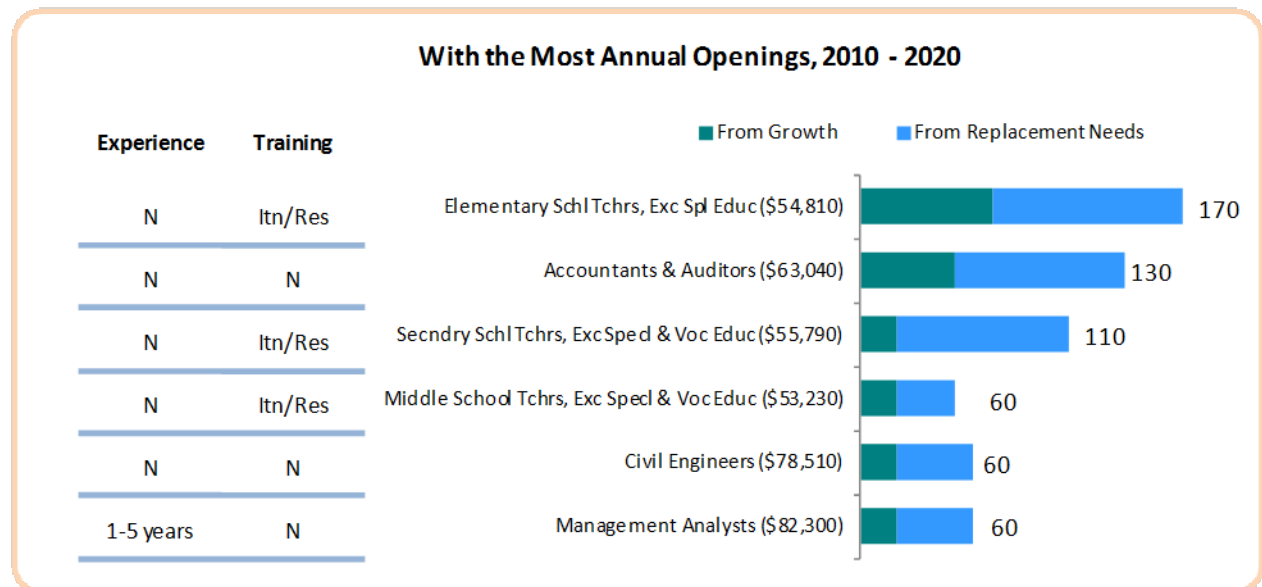
Jobs that require a bachelor's degree will constitute sixteen percent of all positions. More than 80 percent of the positions advancing the fastest are classified under either the business and financial operations group or the computer and mathematical

group. Occupations with the most projected openings reveal the need for more teachers at all levels. Seven of the sixteen occupations, or almost half, require some form of experience or training.

Figure 14



Figure 15



N=None; See Appendix for work experience and training requirements; Wages as of May 2012

# Occupational Employment Trends

## Associate's Degree or Postsecondary Non-Degree Award Occu-

During the projected period, roughly one in ten employed will fall within this education level. The jobs most in demand will relate to the medical field and construction. Workers with at least some post-secondary training have opportunities to earn as much as persons with more education, as evidenced

by the salary of construction managers at \$98,430 and general and operations managers at \$101,450. In fact, eight of the eighteen occupations listed below will earn more than the average for all occupations of \$46,249 for Honolulu MSA.

Figure 16

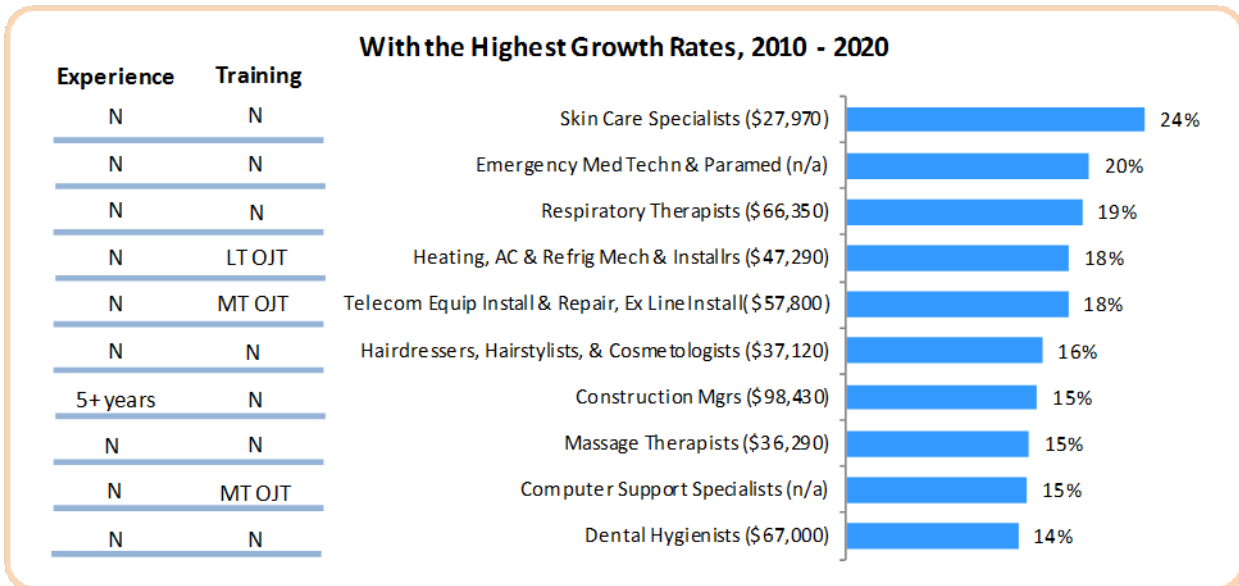
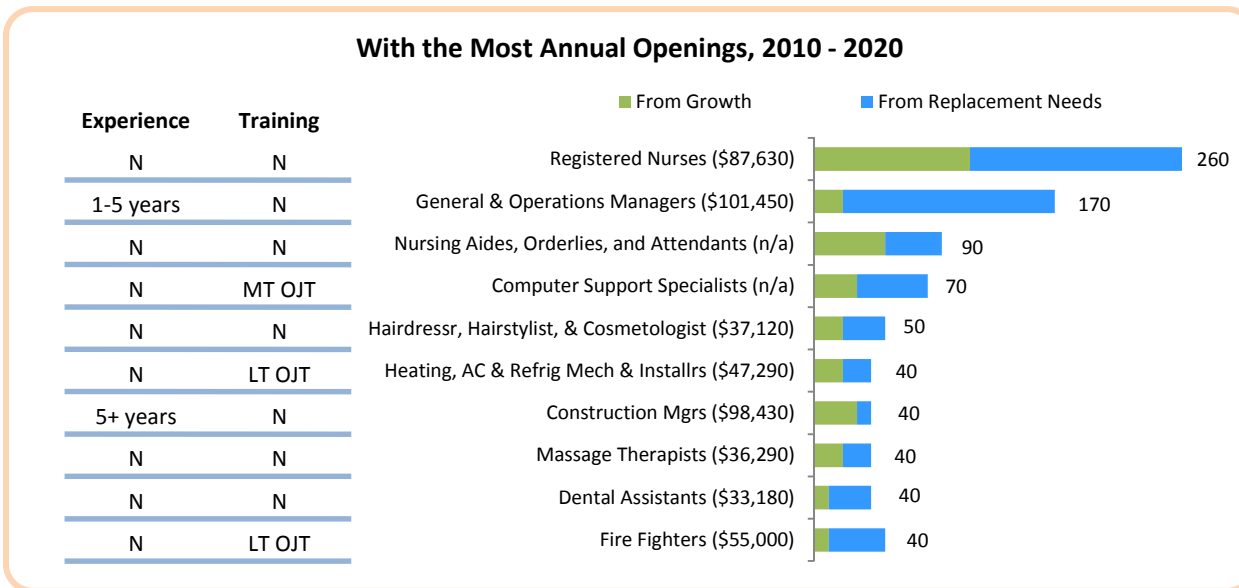


Figure 17



N=None; See Appendix for work experience and training requirements; Wages as of May 2012

# Occupational Employment Trends

## Occupations Requiring a High School Diploma or Equivalent

Occupations that typically need a high school diploma for entry will be the most plentiful, accounting for 42 percent of the total. Persons employed in all of the following jobs will either have to undergo training or will need to have previous work experi-

ence. Training will mainly consist of moderate to short-term on-the-job training. Three occupations will require one to five years of experience, while the prerequisite for one occupation is more than five years of work experience.

Figure 18

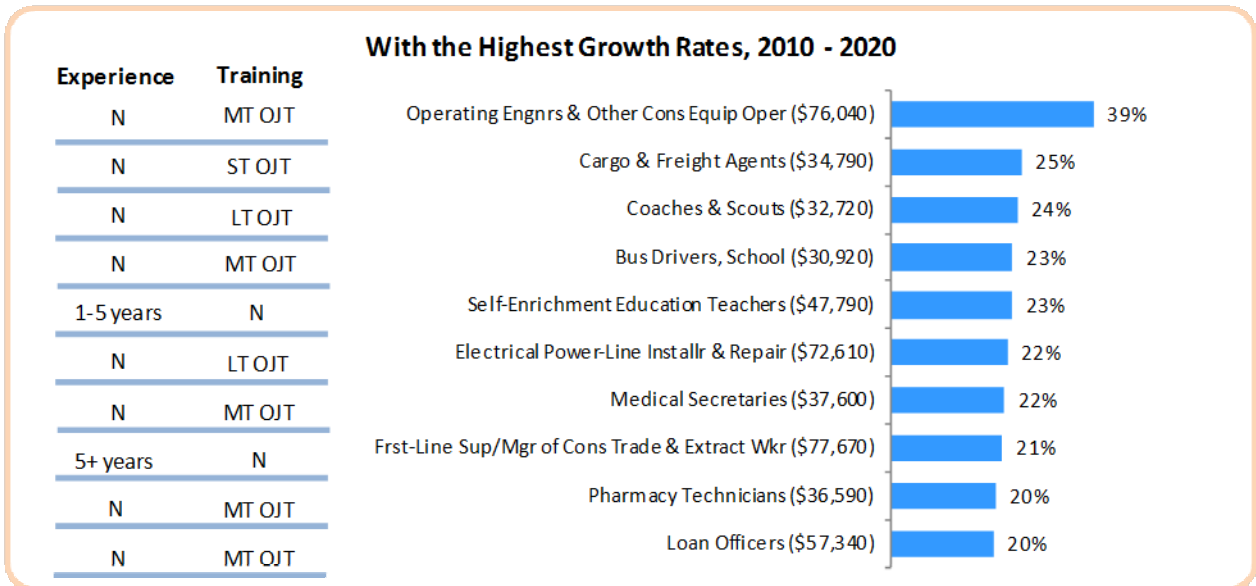
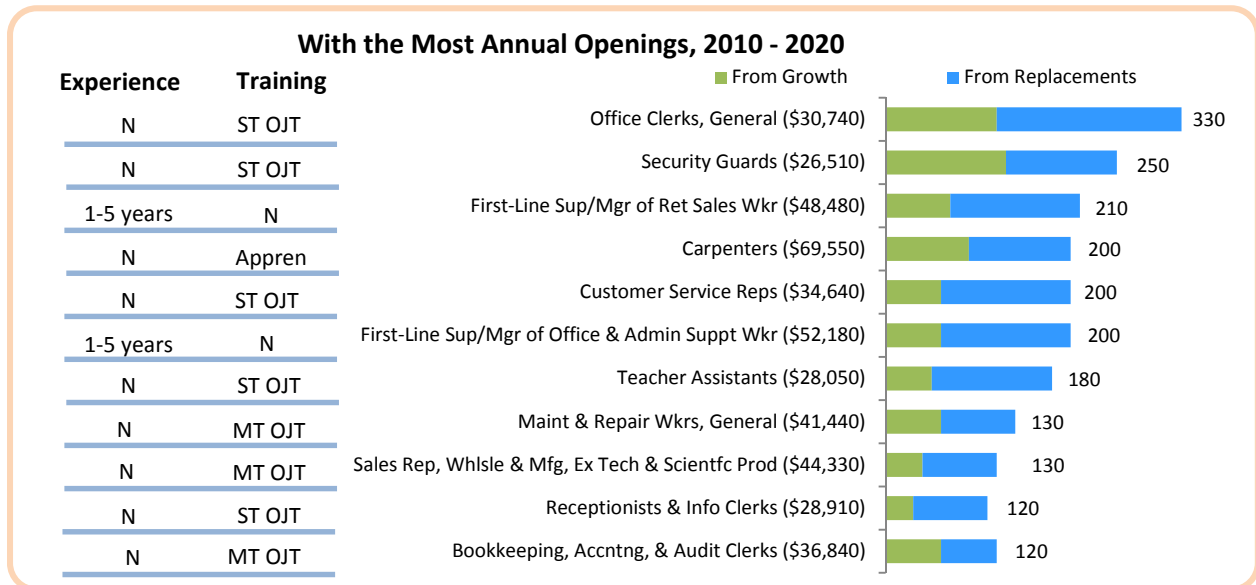


Figure 19



N=None; See Appendix for work experience and training requirements; Wages as of May 2012

# Occupational Employment Trends

## Occupations Requiring Less Than a High School Di-

Within this education level, construction work and jobs connected to the visitor industry will be the most prevalent. Although a high school diploma is not necessary, some form of training, will be needed

for all of the jobs posted in the charts below. Most of the training will be short-term meaning one month or less. More than a quarter of all positions will be included in this category.

Figure 20

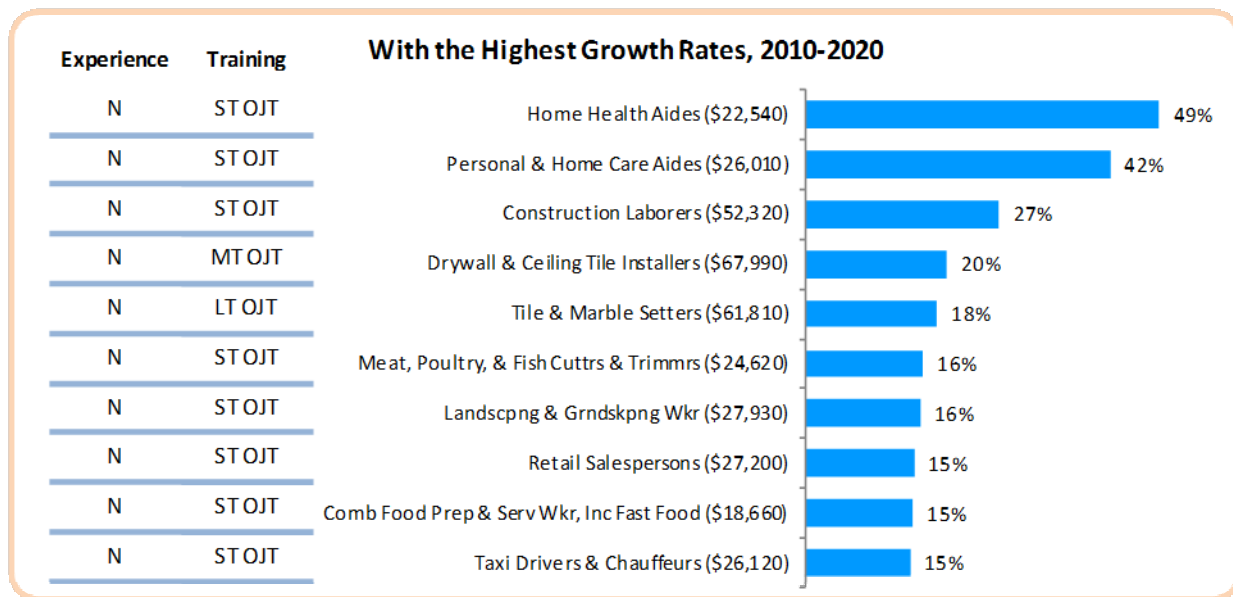
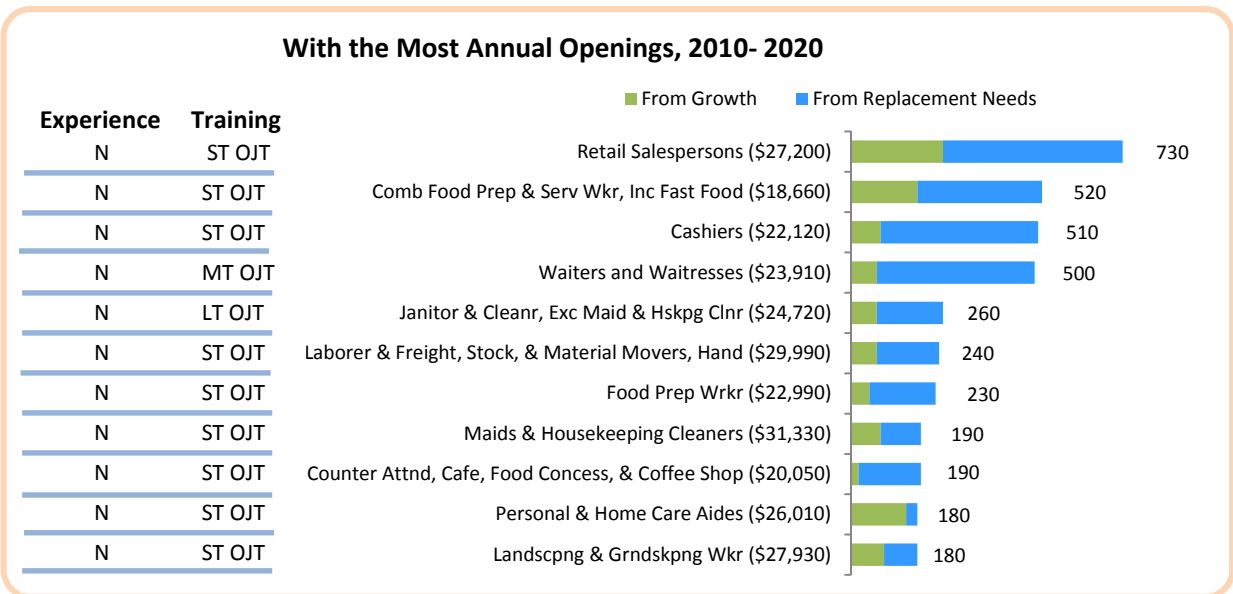


Figure 21



N=None; See Appendix for work experience and training requirements; Wages as of May 2012

# Occupational Employment Trends

## Largest Declining Occupa-

Many of the jobs lost among declining occupations will be due to the automation of duties. More than one-third of these positions are classified under the office and administrative support sector. How-

ever, these occupations will still create openings as workers need to be replaced when they leave or retire.

Figure 22

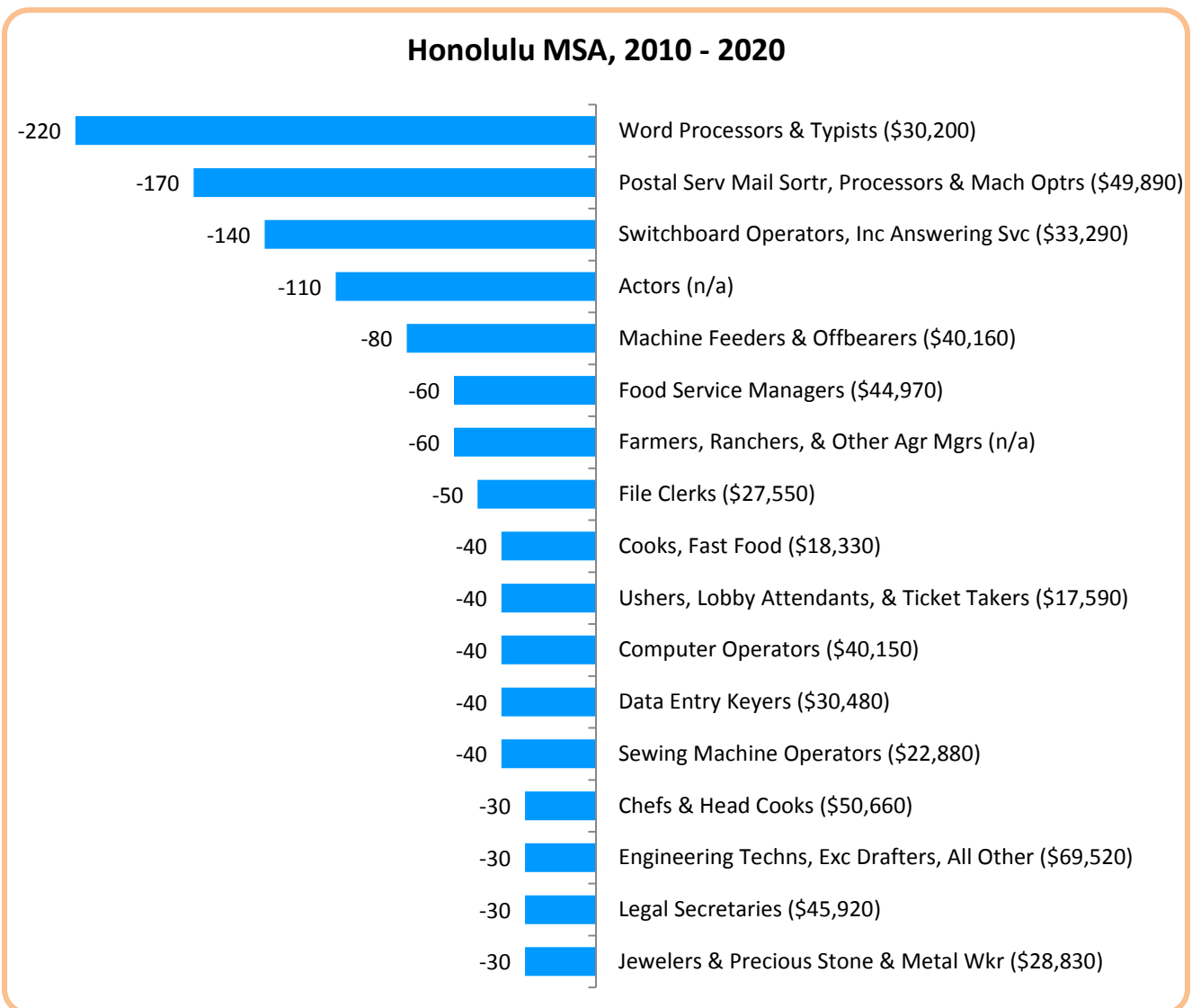


Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
<b>00-0000 Total, All Occupations</b>		<b>477,290</b>	<b>527,260</b>	<b>49,970</b>	<b>10.5%</b>	<b>1.0%</b>	<b>5,200</b>	<b>11,370</b>	<b>16,570</b>			
<b>11-0000</b>	<b>Management Occupations</b>	<b>33,180</b>	<b>35,110</b>	<b>1,930</b>	<b>5.8%</b>	<b>0.6%</b>	<b>210</b>	<b>690</b>	<b>900</b>			
<b>11-1000</b>	<b>Top Executives</b>	<b>9,660</b>	<b>9,900</b>	<b>240</b>	<b>2.5%</b>	<b>0.2%</b>	<b>20</b>	<b>190</b>	<b>220</b>			
11-1011	Chief Executives	1,540	1,600	60	4.0%	0.4%	10	40	50	Bachelors	5+ years	None
11-1021	General & Operations Managers	8,010	8,190	180	2.2%	0.2%	20	150	170	Associates	1-5 years	None
11-1031	Legislators	110	110	0	0.9%	0.1%	0	**	**	Bachelors	1-5 years	None
<b>11-2000</b>	<b>Advertising, Marketing, Promotions, Public Relations, &amp; Sales Managers</b>	<b>2,140</b>	<b>2,390</b>	<b>260</b>	<b>11.9%</b>	<b>1.2%</b>	<b>30</b>	<b>60</b>	<b>90</b>			
11-2011	Advertising & Promotions Managers	170	190	20	8.8%	0.9%	**	10	10	Bachelors	1-5 years	None
11-2021	Marketing Managers	470	540	70	15.4%	1.5%	10	10	20	Bachelors	1-5 years	None
11-2022	Sales Managers	1,350	1,500	150	11.0%	1.1%	20	40	50	Bachelors	1-5 years	None
11-2031	Public Relations Managers	140	160	20	13.2%	1.3%	**	**	10	Bachelors	1-5 years	None
<b>11-3000</b>	<b>Operations Specialties Managers</b>	<b>4,780</b>	<b>5,280</b>	<b>490</b>	<b>10.3%</b>	<b>1.0%</b>	<b>50</b>	<b>100</b>	<b>150</b>			
11-3011	Administrative Services Managers	1,270	1,430	160	12.8%	1.3%	20	30	50	HS or Eqv	1-5 years	None
11-3021	Computer & Information Systems Mgrs.	590	690	100	16.4%	1.6%	10	10	20	Bachelors	5+ years	None
11-3031	Financial Managers	1,770	1,900	130	7.3%	0.7%	10	30	50	Bachelors	5+ years	None
11-3051	Industrial Production Managers	140	160	20	15.3%	1.5%	**	**	10	Bachelors	1-5 years	None
11-3061	Purchasing Managers	170	180	10	7.7%	0.8%	**	10	10	Bachelors	5+ years	None
11-3071	Transportation, Storage, & Distribution Mgrs.	350	360	10	3.7%	0.4%	**	10	10	HS or Eqv	5+ years	None
11-3111	Compensation & Benefits Managers	100	110	10	5.9%	0.6%	**	**	**	Bachelors	1-5 years	None
11-3121	Human Resources Managers	270	310	40	12.8%	1.3%	**	10	10	Bachelors	1-5 years	None
11-3131	Training & Development Managers	120	140	20	13.3%	1.3%	**	**	10	Bachelors	1-5 years	None
<b>11-9000</b>	<b>Other Management Occupations</b>	<b>16,600</b>	<b>17,550</b>	<b>950</b>	<b>5.7%</b>	<b>0.6%</b>	<b>110</b>	<b>340</b>	<b>440</b>			
11-9013	Farmers, Ranchers, & Other Agricultural Managers	1,510	1,450	-60	-4.2%	-0.4%	0	30	30	HS or Eqv	5+ years	None
11-9021	Construction Managers	1,910	2,200	290	15.4%	1.5%	30	10	40	Associates	5+ years	None
11-9031	Education Administrators, Preschool & Child Care Center/Program	130	130	0	1.6%	0.2%	0	**	**	Bachelors	1-5 years	None
11-9032	Education Administrators, Elementary & Secondary School	760	820	50	7.1%	0.7%	10	20	30	Masters	1-5 years	None
11-9033	Education Administrators, Postsecondary	220	260	40	16.6%	1.7%	**	10	10	Masters	1-5 years	None
11-9039	Education Administrators, All Other	90	100	10	9.0%	0.9%	**	**	**	Bachelors	1-5 years	None
11-9041	Engineering Managers	600	670	70	10.8%	1.1%	10	10	20	Bachelors	5+ years	None
11-9051	Food Service Managers	2,060	2,000	-60	-2.9%	-0.3%	0	40	40	HS or Eqv	1-5 years	None
11-9081	Lodging Managers	270	310	40	12.9%	1.3%	**	10	10	HS or Eqv	1-5 years	None
11-9111	Medical & Health Services Managers	860	950	90	10.1%	1.0%	10	20	30	Bachelors	None	None
11-9121	Natural Sciences Managers	160	170	10	3.1%	0.3%	0	10	10	Bachelors	5+ years	None
11-9131	PostMasters & Mail Superintendents	20	10	0	-12.5%	-1.3%	0	0	0	HS or Eqv	1-5 years	MT OJT
11-9141	Property, Real Estate, & Community Association Managers	3,570	3,750	190	5.3%	0.5%	20	80	90	HS or Eqv	1-5 years	None
11-9151	Social & Community Service Managers	450	500	50	11.9%	1.2%	10	10	20	Bachelors	1-5 years	None
11-9161	Emergency Management Directors	60	70	10	7.9%	0.8%	0	**	**	Bachelors	1-5 years	LT OJT
11-9199	Managers, All Other	3,930	4,170	240	6.0%	0.6%	20	90	110	HS or Eqv	1-5 years	None

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replacements	Total Openings	Education Value	Work Experience Value	Job Training Value
<b>13-0000</b>	<b>Business &amp; Financial Operations Occupations</b>	<b>23,520</b>	<b>26,130</b>	<b>2,600</b>	<b>11.1%</b>	<b>1.1%</b>	<b>260</b>	<b>480</b>	<b>740</b>			
<b>13-1000</b>	<b>Business Operations Specialists</b>	<b>14,980</b>	<b>16,660</b>	<b>1,690</b>	<b>11.3%</b>	<b>1.1%</b>	<b>170</b>	<b>290</b>	<b>460</b>			
13-1021	Purchasing Agents & Buyers, Farm Products	30	30	0	0.0%	0.0%	0	0	0	HS or Eqv	None	LT OJT
13-1022	Wholesale & Retail Buyers, Except Farm Products	700	760	70	9.3%	0.9%	10	20	20	HS or Eqv	None	LT OJT
13-1031	Claims Adjusters, Examiners, & Investigators	670	660	-10	-1.8%	-0.2%	0	20	20	HS or Eqv	None	LT OJT
13-1032	Insurance Appraisers, Auto Damage	30	30	0	-12.9%	-1.3%	0	**	**	PS Non-Deg	None	MT OJT
13-1041	Compliance Officers, Except Agriculture, Construction, Health & Safety, & Transportation	1,270	1,440	170	13.0%	1.3%	20	20	30	Bachelors	None	MT OJT
13-1051	Cost Estimators	830	1,130	300	36.3%	3.6%	30	20	50	Bachelors	None	None
13-1078	Human Resources, Labor Relations, & Training Specialists, All Other	1,490	1,620	130	8.7%	0.9%	10	30	40	Bachelors	None	None
13-1081	Logisticians	470	520	50	9.8%	1.0%	10	10	10	Bachelors	1-5 years	None
13-1111	Management Analysts	2,380	2,590	210	8.9%	0.9%	20	40	60	Bachelors	1-5 years	None
13-1121	Meeting & Convention Planners	260	380	120	43.7%	4.4%	10	10	20	Bachelors	< 1 year	None
13-1141	Compensation, Benefits, & Job Analysis Specialists	200	230	20	11.3%	1.1%	**	**	10	Bachelors	None	None
13-1151	Training & Development Specialists	500	620	130	25.7%	2.6%	10	10	20	Bachelors	None	None
13-1161	Market Research Analysts & Marketing Specialists	600	830	220	36.8%	3.7%	20	20	40	Bachelors	None	None
13-1199	Business Operations Specialists, All Other	4,600	4,880	290	6.2%	0.6%	30	90	120	HS or Eqv	< 1 year	LT OJT
<b>13-2000</b>	<b>Financial Specialists</b>	<b>8,550</b>	<b>9,470</b>	<b>920</b>	<b>10.7%</b>	<b>1.1%</b>	<b>90</b>	<b>190</b>	<b>280</b>			
13-2011	Accountants & Auditors	4,020	4,460	450	11.1%	1.1%	50	90	130	Bachelors	None	None
13-2021	Appraisers & Assessors of Real Estate	200	220	10	6.9%	0.7%	**	**	10	HS or Eqv	None	Appren
13-2031	Budget Analysts	380	400	20	6.1%	0.6%	**	10	10	Bachelors	None	None
13-2051	Financial Analysts	300	360	60	18.9%	1.9%	10	10	10	Bachelors	None	None
13-2052	Personal Financial Advisors	370	440	60	16.9%	1.7%	10	**	10	Bachelors	None	None
13-2053	Insurance Underwriters	330	330	0	0.3%	0.0%	0	10	10	Bachelors	None	MT OJT
13-2061	Financial Examiners	70	80	10	18.2%	1.8%	**	**	**	Bachelors	None	MT OJT
13-2072	Loan Officers	1,180	1,420	230	19.7%	2.0%	20	30	50	HS or Eqv	None	MT OJT
13-2081	Tax Examiners, Collectors, & Revenue Agents	130	140	10	10.3%	1.0%	**	**	**	Bachelors	None	MT OJT
13-2082	Tax Preparers	320	320	0	-0.9%	-0.1%	0	10	10	HS or Eqv	None	MT OJT
13-2099	Financial Specialists, All Other	1,140	1,170	30	3.0%	0.3%	**	20	30	Bachelors	None	MT OJT
<b>15-0000</b>	<b>Computer &amp; Mathematical Occupations</b>	<b>8,970</b>	<b>10,220</b>	<b>1,240</b>	<b>13.9%</b>	<b>1.4%</b>	<b>140</b>	<b>180</b>	<b>320</b>			
<b>15-1000</b>	<b>Computer Specialists</b>	<b>8,570</b>	<b>9,760</b>	<b>1,190</b>	<b>13.9%</b>	<b>1.4%</b>	<b>130</b>	<b>160</b>	<b>290</b>			
15-1111	Computer & Information Research Scientists	80	80	10	6.6%	0.7%	0	**	**	Doctor/Prof	None	None
15-1121	Computer Systems Analysts	790	930	140	17.7%	1.8%	10	20	30	Bachelors	None	None
15-1131	Computer Programmers	730	740	10	1.4%	0.1%	**	20	20	Bachelors	None	None
15-1132	Software Developers, Applications	640	810	170	26.0%	2.6%	20	10	20	Bachelors	None	None



Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
15-1133	Software Developers, Systems Software	430	600	170	38.7%	3.9%	20	**	20	Bachelors	None	None
15-1141	Database Administrators	230	300	70	28.6%	2.9%	10	**	10	Bachelors	1-5 years	None
15-1142	Network & Computer Systems Architects & Administrators	1,240	1,520	280	23.0%	2.3%	30	20	50	Bachelors	None	None
15-1150	Computer Support Specialists	1,730	1,980	250	14.6%	1.5%	30	50	70	SC, no deg	None	MT OJT
15-1179	Information Security Analysts, Web Developers, & Computer Network Architects	1,030	1,260	230	21.8%	2.2%	20	20	40	Bachelors	1-5 years	None
15-1799	Computer Occupations, All Other	1,670	1,550	-120	-7.3%	-0.7%	0	30	30	Bachelors	None	None
<b>15-2000</b>	<b>Mathematical Scientists</b>	<b>410</b>	<b>460</b>	<b>50</b>	<b>12.6%</b>	<b>1.3%</b>	<b>10</b>	<b>20</b>	<b>20</b>			
15-2031	Operations Research Analysts	200	220	20	10.0%	1.0%	**	10	10	Bachelors	None	None
15-2041	Statisticians	120	130	10	6.6%	0.7%	**	10	10	Masters	None	None
<b>17-0000</b>	<b>Architecture &amp; Engineering Occupations</b>	<b>8,800</b>	<b>9,210</b>	<b>420</b>	<b>4.8%</b>	<b>0.5%</b>	<b>50</b>	<b>190</b>	<b>240</b>			
<b>17-1000</b>	<b>Architects, Surveyors, &amp; Cartographers</b>	<b>1,090</b>	<b>1,190</b>	<b>100</b>	<b>9.3%</b>	<b>0.9%</b>	<b>10</b>	<b>20</b>	<b>30</b>			
17-1011	Architects, Except Landscape & Naval	510	550	40	8.1%	0.8%	**	10	10	Bachelors	None	Itn/Res
17-1012	Landscape Architects	310	340	30	9.1%	0.9%	**	10	10	Bachelors	None	Itn/Res
17-1021	Cartographers & Photogrammetrists	50	60	10	9.8%	1.0%	0	**	**	Bachelors	None	None
17-1022	Surveyors	220	250	30	12.2%	1.2%	**	10	10	Bachelors	None	None
<b>17-2000</b>	<b>Engineers</b>	<b>5,440</b>	<b>5,750</b>	<b>310</b>	<b>5.7%</b>	<b>0.6%</b>	<b>40</b>	<b>120</b>	<b>160</b>			
17-2011	Aerospace Engineers	30	40	10	21.2%	2.1%	**	**	**	Bachelors	None	None
17-2051	Civil Engineers	2,000	2,190	180	9.1%	0.9%	20	40	60	Bachelors	None	None
17-2061	Computer Hardware Engineers	230	270	40	18.8%	1.9%	**	10	10	Bachelors	None	None
17-2071	Electrical Engineers	560	590	30	5.2%	0.5%	**	10	20	Bachelors	None	None
17-2072	Electronics Engineers, Except Computer	420	410	-10	-1.2%	-0.1%	0	10	10	Bachelors	None	None
17-2081	Environmental Engineers	300	320	30	8.8%	0.9%	**	10	10	Bachelors	None	None
17-2111	Health & Safety Engineers, Except Mining Safety Engineers & Inspectors	150	170	30	19.2%	1.9%	**	**	10	Bachelors	None	None
17-2112	Industrial Engineers	50	60	10	9.4%	0.9%	0	**	**	Bachelors	None	None
17-2121	Marine Engineers & Naval Architects	60	60	0	-6.5%	-0.6%	0	**	**	Bachelors	None	None
17-2141	Mechanical Engineers	480	510	30	5.4%	0.5%	**	20	20	Bachelors	None	None
17-2199	Engineers, All Other	800	800	0	-0.3%	0.0%	0	20	20	Bachelors	None	None
<b>17-3000</b>	<b>Drafters, Engineering, &amp; Mapping Technicians</b>	<b>2,260</b>	<b>2,270</b>	<b>10</b>	<b>0.4%</b>	<b>0.0%</b>	<b>10</b>	<b>40</b>	<b>50</b>			
17-3011	Architectural & Civil Drafters	430	410	-20	-4.9%	-0.5%	0	10	10	Associates	None	None
17-3012	Electrical & Electronics Drafters	200	200	10	3.6%	0.4%	**	**	10	Associates	None	None
17-3013	Mechanical Drafters	110	120	20	15.9%	1.6%	**	**	**	Associates	None	None
17-3019	Drafters, All Other	50	50	-10	-11.1%	-1.1%	0	**	**	Associates	None	None
17-3022	Civil Engineering Technicians	140	150	20	11.1%	1.1%	**	**	10	Associates	None	None
17-3023	Electrical & Electronic Engineering Technicians	400	390	0	-1.0%	-0.1%	0	10	10	Associates	None	None
17-3025	Environmental Engineering Technicians	80	100	10	15.9%	1.6%	**	**	**	Associates	None	None
17-3026	Industrial Engineering Technicians	30	30	0	3.1%	0.3%	0	**	**	Associates	None	None
17-3029	Engineering Technicians, Except Drafters, All Other	590	560	-30	-4.9%	-0.5%	0	10	10	Associates	None	None
17-3031	Surveying & Mapping Technicians	110	120	10	6.4%	0.6%	**	**	**	HS or Eqv	None	MT OJT

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
<b>19-0000</b>	<b>Life, Physical, &amp; Social Science Occupations</b>	<b>5,500</b>	<b>5,950</b>	<b>450</b>	<b>8.2%</b>	<b>0.8%</b>	<b>50</b>	<b>170</b>	<b>220</b>			
<b>19-1000</b>	<b>Life Scientists</b>	<b>1,060</b>	<b>1,200</b>	<b>130</b>	<b>12.4%</b>	<b>1.2%</b>	<b>10</b>	<b>20</b>	<b>30</b>			
19-1013	Soil & Plant Scientists	60	70	10	7.9%	0.8%	0	**	**	Bachelors	None	None
19-1022	Microbiologists	60	60	0	3.5%	0.3%	0	**	**	Bachelors	None	None
19-1023	Zoologists & Wildlife Biologists	220	230	20	7.4%	0.7%	**	10	10	Bachelors	None	None
19-1029	Biological Scientists, All Other	270	280	10	2.6%	0.3%	**	10	10	Doctor/Prof	None	None
19-1031	Conservation Scientists	70	70	0	4.4%	0.4%	0	**	**	Bachelors	None	None
19-1042	Medical Scientists, Except Epidemiologists	240	320	80	34.8%	3.5%	10	**	10	Doctor/Prof	None	None
19-1099	Life Scientists, All Other											
<b>19-2000</b>	<b>Physical Scientists</b>	<b>1,210</b>	<b>1,300</b>	<b>90</b>	<b>7.3%</b>	<b>0.7%</b>	<b>10</b>	<b>40</b>	<b>50</b>			
19-2011	Astronomers	50	60	10	19.2%	1.9%	**	**	**	Doctor/Prof	None	None
19-2012	Physicists	60	70	10	7.9%	0.8%	0	**	**	Doctor/Prof	None	None
19-2021	Atmospheric & Space Scientists	80	80	0	-1.3%	-0.1%	0	**	**	Bachelors	None	None
19-2031	Chemists	160	170	10	5.0%	0.5%	**	10	10	Bachelors	None	None
19-2041	Environmental Scientists & Specialists, Including Health	580	630	40	7.6%	0.8%	**	20	20	Bachelors	None	None
19-2042	Geoscientists, Except Hydrologists & Geographers	100	110	10	10.1%	1.0%	**	**	**	Bachelors	None	None
19-2099	Physical Scientists, All Other	150	160	10	8.1%	0.8%	**	10	10	Bachelors	None	None
<b>19-3000</b>	<b>Social Scientists &amp; Related Workers</b>	<b>2,000</b>	<b>2,180</b>	<b>190</b>	<b>9.3%</b>	<b>0.9%</b>	<b>20</b>	<b>70</b>	<b>90</b>			
19-3011	Economists	50	50	0	4.1%	0.4%	0	**	**	Bachelors	None	None
19-3022	Survey Researchers	130	140	10	10.9%	1.1%	**	**	**	Bachelors	None	None
19-3031	Clinical, Counseling, & School Psychologists	610	680	70	11.4%	1.1%	10	20	30	Doctor/Prof	None	ltn/Res
19-3039	Psychologists, All Other	210	230	10	6.6%	0.7%	**	10	10	Masters	None	ltn/Res
19-3051	Urban & Regional Planners	330	380	50	15.4%	1.5%	10	10	10	Masters	None	None
19-3091	Anthropologists & Archeologists	180	200	20	8.7%	0.9%	**	10	10	Masters	None	None
19-3099	Social Scientists & Related Workers, All Other	430	440	10	3.3%	0.3%	**	20	20	Bachelors	None	None
<b>19-4000</b>	<b>Life, Physical, &amp; Social Science Technicians</b>	<b>1,220</b>	<b>1,270</b>	<b>50</b>	<b>3.7%</b>	<b>0.4%</b>	<b>10</b>	<b>50</b>	<b>50</b>			
19-4011	Agricultural & Food Science Technicians	80	80	10	9.2%	0.9%	**	**	**	Associates	None	None
19-4021	Biological Technicians	310	290	-20	-6.9%	-0.7%	0	10	10	Bachelors	None	None
19-4041	Geological & Petroleum Technicians	50	50	10	10.2%	1.0%	0	**	**	Associates	None	MT OJT
19-4061	Social Science Research Assistants	50	60	10	11.1%	1.1%	**	**	**	Associates	None	None
19-4091	Environmental Science & Protection Technicians, Including Health	140	160	30	18.0%	1.8%	**	10	10	Associates	None	MT OJT
19-4093	Forest & Conservation Technicians	60	70	10	7.8%	0.8%	0	**	**	Associates	None	None
19-4099	Life, Physical, & Social Science Technicians, All Other	500	520	20	3.2%	0.3%	**	20	20	Associates	None	MT OJT
<b>21-0000</b>	<b>Community &amp; Social Services Occupations</b>	<b>8,370</b>	<b>9,410</b>	<b>1,040</b>	<b>12.4%</b>	<b>1.2%</b>	<b>100</b>	<b>180</b>	<b>290</b>			
<b>21-1000</b>	<b>Counselors, Social Workers, &amp; Other Community &amp; Social Service Specialists</b>	<b>7,790</b>	<b>8,760</b>	<b>970</b>	<b>12.5%</b>	<b>1.2%</b>	<b>100</b>	<b>170</b>	<b>270</b>			

**Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020**

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
21-1011	Substance Abuse & Behavioral Disorder Counselors	190	220	30	16.0%	1.6%	**	**	10	HS or Eqv	None	MT OJT
21-1012	Educational, Vocational, & School Counselors	1,230	1,390	160	13.4%	1.3%	20	30	40	Masters	None	None
21-1013	Marriage & Family Therapists	60	70	10	15.3%	1.5%	**	**	**	Masters	None	ltn/Res
21-1014	Mental Health Counselors	100	110	10	10.4%	1.0%	**	**	**	Masters	None	ltn/Res
21-1015	Rehabilitation Counselors	100	110	10	12.9%	1.3%	**	**	**	Masters	None	None
21-1019	Counselors, All Other	60	60	10	10.9%	1.1%	**	**	**	Masters	None	None
21-1021	Child, Family, & School Social Workers	1,580	1,700	120	7.8%	0.8%	10	40	50	Bachelors	None	None
21-1022	Medical & Public Health Social Workers	450	550	100	22.1%	2.2%	10	10	20	Masters	None	None
21-1023	Mental Health & Substance Abuse Social Workers	290	330	40	15.2%	1.5%	**	10	10	Bachelors	None	None
21-1029	Social Workers, All Other	300	300	0	1.0%	0.1%	0	10	10	Bachelors	None	None
21-1091	Health Educators	270	340	80	29.0%	2.9%	10	10	10	Bachelors	None	None
21-1092	Probation Officers & Correctional Treatment Specialists	40	40	10	13.9%	1.4%	0	**	**	Bachelors	None	ST OJT
21-1093	Social & Human Service Assistants	1,910	2,150	240	12.7%	1.3%	20	40	70	HS or Eqv	None	ST OJT
21-1798	Community & Social Service Specialists, All Other	1,250	1,390	150	11.8%	1.2%	20	30	40	Bachelors	None	None
<b>21-2000</b>	<b>Religious Workers</b>	<b>580</b>	<b>650</b>	<b>60</b>	<b>11.0%</b>	<b>1.1%</b>	<b>10</b>	<b>10</b>	<b>20</b>			
21-2011	Clergy	390	440	40	10.7%	1.1%	**	10	10	Bachelors	None	MT OJT
<b>23-0000</b>	<b>Legal Occupations</b>	<b>3,690</b>	<b>3,860</b>	<b>170</b>	<b>4.7%</b>	<b>0.5%</b>	<b>20</b>	<b>60</b>	<b>80</b>			
<b>23-1000</b>	<b>Lawyers, Judges, &amp; Related Workers</b>	<b>2,310</b>	<b>2,400</b>	<b>80</b>	<b>3.6%</b>	<b>0.4%</b>	<b>10</b>	<b>40</b>	<b>50</b>			
23-1011	Lawyers	1,990	2,070	80	3.8%	0.4%	10	40	50	Doctor/Prof	None	None
<b>23-2000</b>	<b>Legal Support Workers</b>	<b>1,380</b>	<b>1,470</b>	<b>90</b>	<b>6.4%</b>	<b>0.6%</b>	<b>10</b>	<b>20</b>	<b>30</b>			
23-2011	Paralegals & Legal Assistants	750	820	70	9.7%	1.0%	10	10	20	Associates	None	None
23-2099	Legal Support Workers, All Other	350	360	10	2.6%	0.3%	**	10	10	HS or Eqv	None	ST OJT
<b>25-0000</b>	<b>Education, Training, &amp; Library Occupations</b>	<b>36,420</b>	<b>40,710</b>	<b>4,290</b>	<b>11.8%</b>	<b>1.2%</b>	<b>430</b>	<b>740</b>	<b>1,170</b>			
<b>25-1000</b>	<b>Postsecondary Teachers</b>	<b>7,470</b>	<b>8,630</b>	<b>1,160</b>	<b>15.6%</b>	<b>1.6%</b>	<b>120</b>	<b>120</b>	<b>240</b>			
25-1011	Business Teachers, Postsecondary	260	300	40	16.8%	1.7%	**	**	10	Doctor/Prof	None	None
25-1021	Computer Science Teachers, Postsecondary	130	140	20	14.3%	1.4%	**	**	**	Doctor/Prof	None	None
25-1022	Mathematical Science Teachers, Postsecondary	150	170	20	12.7%	1.3%	**	**	**	Doctor/Prof	None	None
25-1042	Biological Science Teachers, Postsecondary	520	590	70	14.3%	1.4%	10	10	20	Doctor/Prof	None	None
25-1051	Atmospheric, Earth, Marine, & Space Sciences Teachers, Postsecondary	230	260	30	13.0%	1.3%	**	**	10	Doctor/Prof	None	None
25-1052	Chemistry Teachers, Postsecondary	60	70	10	15.3%	1.5%	**	**	**	Doctor/Prof	None	None
25-1054	Physics Teachers, Postsecondary	40	50	10	14.6%	1.5%	**	**	**	Doctor/Prof	None	None
25-1061	Anthropology & Archeology Teachers, Postsecondary	40	50	10	15.0%	1.5%	**	**	**	Doctor/Prof	None	None
25-1063	Economics Teachers, Postsecondary	70	90	10	16.2%	1.6%	**	**	**	Doctor/Prof	None	None
25-1064	Geography Teachers, Postsecondary	30	40	10	15.2%	1.5%	0	0	0	Doctor/Prof	None	None

**Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020**

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replacements	Total Openings	Education Value	Work Experience Value	Job Training Value
25-1065	Political Science Teachers, Postsecondary	50	60	10	15.7%	1.6%	**	**	**	Doctor/Prof	None	None
25-1066	Psychology Teachers, Postsecondary	340	400	60	16.1%	1.6%	10	10	10	Doctor/Prof	None	None
25-1067	Sociology Teachers, Postsecondary	130	140	20	14.4%	1.4%	**	**	**	Doctor/Prof	None	None
25-1071	Health Specialties Teachers, Postsecondary	150	180	30	16.5%	1.6%	**	**	**	Doctor/Prof	None	None
25-1072	Nursing Instructors & Teachers, Postsecondary	100	120	10	13.9%	1.4%	**	**	**	Masters	None	None
25-1081	Education Teachers, Postsecondary	730	850	120	16.8%	1.7%	10	10	20	Doctor/Prof	None	None
25-1111	Criminal Justice & Law Enforcement Teachers, Postsecondary	170	190	20	13.3%	1.3%	**	**	10	Doctor/Prof	None	None
25-1121	Art, Drama, & Music Teachers, Postsecondary	350	440	90	25.5%	2.5%	10	10	20	Doctor/Prof	None	None
25-1122	Communications Teachers, Postsecondary	120	140	20	15.3%	1.5%	**	**	**	Doctor/Prof	None	None
25-1123	English Language & Literature Teachers, Postsecondary	340	390	50	13.9%	1.4%	10	10	10	Doctor/Prof	None	None
25-1124	Foreign Language & Literature Teachers, Postsecondary	270	320	50	17.2%	1.7%	10	**	10	Doctor/Prof	None	None
25-1125	History Teachers, Postsecondary	140	160	20	15.6%	1.6%	**	**	**	Doctor/Prof	None	None
25-1126	Philosophy & Religion Teachers, Postsecondary	130	160	30	20.8%	2.1%	**	**	10	Doctor/Prof	None	None
25-1193	Recreation & Fitness Studies Teachers, Postsecondary	0	0	0	0.0%	0.0%	0	0	0	Masters	None	None
25-1194	Vocational Education Teachers, Postsecondary	530	610	90	16.2%	1.6%	10	10	20	Bachelors	1-5 years	None
25-1199	Postsecondary Teachers, All Other	240	270	30	14.0%	1.4%	**	**	10	Masters	None	None
<b>25-2000</b>	<b>Primary, Secondary, &amp; Special Education School Teachers</b>	<b>12,680</b>	<b>14,080</b>	<b>1,400</b>	<b>11.0%</b>	<b>1.1%</b>	<b>140</b>	<b>320</b>	<b>460</b>			
25-2011	Preschool Teachers, Except Special Education	1,160	1,180	20	1.6%	0.2%	**	30	30	Associates	None	None
25-2012	Kindergarten Teachers, Except Special Education	50	50	10	15.2%	1.5%	**	**	**	Bachelors	None	ltn/Res
25-2021	Elementary School Teachers, Except Special Education	4,560	5,230	680	14.8%	1.5%	70	100	170	Bachelors	None	ltn/Res
25-2022	Middle School Teachers, Except Special & Vocational Education	1,520	1,750	230	14.9%	1.5%	20	30	60	Bachelors	None	ltn/Res
25-2031	Secondary School Teachers, Except Special & Vocational Education	3,340	3,510	170	5.2%	0.5%	20	90	110	Bachelors	None	ltn/Res
25-2041	Special Education Teachers, Preschool, Kindergarten, & Elementary School	1,130	1,340	210	18.1%	1.8%	20	30	50	Bachelors	None	ltn/Res
<b>25-3000</b>	<b>Other Teachers &amp; Instructors</b>	<b>8,910</b>	<b>9,820</b>	<b>910</b>	<b>10.3%</b>	<b>1.0%</b>	<b>90</b>	<b>140</b>	<b>230</b>			
25-3011	Adult Literacy, Remedial Education, & GED Teachers & Instructors	680	750	60	9.1%	0.9%	10	10	20	Bachelors	None	ltn/Res
25-3021	Self-Enrichment Education Teachers	930	1,140	220	23.2%	2.3%	20	10	40	HS or Eqv	1-5 years	None
25-3999	Teachers & Instructors, All Other	7,300	7,940	640	8.7%	0.9%	60	110	180	Bachelors	None	None
<b>25-4000</b>	<b>Librarians, Curators, &amp; Archivists</b>	<b>810</b>	<b>930</b>	<b>120</b>	<b>15.0%</b>	<b>1.5%</b>	<b>10</b>	<b>20</b>	<b>40</b>			
25-4011	Archivists	20	30	10	41.7%	4.2%	**	**	**	Bachelors	None	None

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
25-4012	Curators	40	70	40	108.6%	10.9%	**	**	10	Masters	None	None
25-4013	Museum Technicians & Conservators	20	40	30	131.6%	13.2%	**	0	**	Bachelors	None	None
25-4021	Librarians	540	580	40	6.8%	0.7%	**	10	20	Masters	None	None
25-4031	Library Technicians	190	200	10	6.3%	0.6%	**	10	10	PS Non-Deg	None	None
<b>25-9000</b>	<b>Other Education, Training, &amp; Library Occupations</b>	<b>6,560</b>	<b>7,250</b>	<b>690</b>	<b>10.5%</b>	<b>1.1%</b>	<b>70</b>	<b>150</b>	<b>220</b>			
25-9031	Instructional Coordinators	670	800	130	18.6%	1.9%	10	20	30	Masters	5+ years	None
25-9041	Teacher Assistants	5,540	6,070	520	9.5%	0.9%	50	130	180	HS or Eqv	None	ST OJT
25-9099	Education, Training, & Library Workers, All Other	300	340	40	12.2%	1.2%	**	10	10	Bachelors	None	None
<b>27-0000</b>	<b>Arts, Design, Entertainment, Sports, &amp; Media Occupations</b>	<b>11,100</b>	<b>11,800</b>	<b>700</b>	<b>6.3%</b>	<b>0.6%</b>	<b>90</b>	<b>280</b>	<b>370</b>			
<b>27-1000</b>	<b>Art &amp; Design Workers</b>	<b>2,640</b>	<b>2,790</b>	<b>150</b>	<b>5.8%</b>	<b>0.6%</b>	<b>20</b>	<b>80</b>	<b>90</b>			
27-1011	Art Directors	210	220	20	8.3%	0.8%	**	10	10	Bachelors	1-5 years	None
27-1013	Fine Artists, Including Painters, Sculptors, & Illustrators	70	80	10	11.3%	1.1%	**	**	**	HS or Eqv	None	LT OJT
27-1014	Multi-Media Artists & Animators	580	590	10	1.9%	0.2%	**	10	20	Bachelors	None	MT OJT
27-1021	Commercial & Industrial Designers	50	60	10	11.5%	1.2%	**	**	**	Bachelors	None	None
27-1022	Fashion Designers	30	30	0	-3.5%	-0.3%	0	**	**	HS or Eqv	None	LT OJT
27-1023	Floral Designers	170	160	-10	-3.6%	-0.4%	0	10	10	HS or Eqv	None	ST OJT
27-1024	Graphic Designers	710	770	60	8.3%	0.8%	10	20	30	Bachelors	None	None
27-1025	Interior Designers	170	180	20	10.3%	1.0%	**	10	10	Bachelors	None	None
27-1026	Merchandise Displayers & Window Trimmers	430	470	40	9.6%	1.0%	**	10	20	HS or Eqv	None	MT OJT
27-1029	Designers, All Other	120	120	0	-2.4%	-0.2%	0	**	**	Bachelors	None	None
<b>27-2000</b>	<b>Entertainers &amp; Performers, Sports &amp; Related Workers</b>	<b>3,750</b>	<b>3,980</b>	<b>220</b>	<b>6.0%</b>	<b>0.6%</b>	<b>30</b>	<b>100</b>	<b>140</b>			
27-2011	Actors	1,020	910	-110	-10.7%	-1.1%	0	30	30	SC, no deg	None	LT OJT
27-2012	Producers & Directors	440	450	10	2.5%	0.2%	**	10	10	Bachelors	1-5 years	None
27-2022	Coaches & Scouts	1,060	1,310	260	24.3%	2.4%	30	30	50	HS or Eqv	None	LT OJT
27-2031	Dancers	470	470	0	0.2%	0.0%	0	20	20	HS or Eqv	None	LT OJT
27-2041	Music Directors & Composers	130	140	10	6.8%	0.7%	**	**	**	Bachelors	1-5 years	None
27-2042	Musicians & Singers	470	500	30	7.1%	0.7%	**	10	10	HS or Eqv	None	LT OJT
27-2099	Entertainers & Performers, Sports & Related Workers, All Other	170	190	20	13.0%	1.3%	**	**	10	HS or Eqv	None	None
<b>27-3000</b>	<b>Media &amp; Communication Workers</b>	<b>2,390</b>	<b>2,620</b>	<b>230</b>	<b>9.7%</b>	<b>1.0%</b>	<b>20</b>	<b>70</b>	<b>90</b>			
27-3011	Radio & Television Announcers	170	190	10	7.5%	0.7%	**	10	10	Bachelors	None	None
27-3022	Reporters & Correspondents	190	200	10	7.5%	0.7%	**	10	10	Bachelors	None	None
27-3031	Public Relations Specialists	710	790	80	11.0%	1.1%	10	20	30	Bachelors	None	MT OJT
27-3041	Editors	230	240	10	2.6%	0.3%	**	10	10	Bachelors	1-5 years	None
27-3042	Technical Writers	70	90	20	21.1%	2.1%	**	**	**	Bachelors	1-5 years	ST OJT
27-3043	Writers & Authors	450	460	10	1.3%	0.1%	**	10	10	Bachelors	None	LT OJT
27-3091	Interpreters & Translators	280	380	100	34.3%	3.4%	10	10	20	Bachelors	None	LT OJT
27-3099	Media & Communication Workers, All Other	220	220	0	0.5%	0.0%	0	10	10	HS or Eqv	None	ST OJT

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
<b>27-4000</b>	<b>Media &amp; Communication Equipment Workers</b>	<b>2,320</b>	<b>2,420</b>	<b>100</b>	<b>4.1%</b>	<b>0.4%</b>	<b>10</b>	<b>40</b>	<b>50</b>			
27-4011	Audio & Video Equipment Technicians	360	400	40	10.8%	1.1%	**	10	10	PS Non-Deg	None	MT OJT
27-4012	Broadcast Technicians	110	120	10	6.3%	0.6%	**	**	**	Associates	None	ST OJT
27-4021	Photographers	1,170	1,240	70	6.2%	0.6%	10	10	20	HS or Eqv	None	LT OJT
27-4031	Camera Operators, Television, Video, & Motion Picture	290	290	0	-1.4%	-0.1%	0	10	10	Bachelors	None	MT OJT
27-4032	Film & Video Editors	90	90	0	0.0%	0.0%	0	**	**	Bachelors	1-5 years	None
27-4099	Media & Communication Equipment Workers, All Other	250	230	-20	-8.3%	-0.8%	0	10	10	HS or Eqv	None	MT OJT
<b>29-0000</b>	<b>Healthcare Practitioners &amp; Technical Occupations</b>	<b>22,010</b>	<b>24,600</b>	<b>2,590</b>	<b>11.8%</b>	<b>1.2%</b>	<b>260</b>	<b>450</b>	<b>710</b>			
<b>29-1000</b>	<b>Health Diagnosing &amp; Treating Practitioners</b>	<b>14,410</b>	<b>16,140</b>	<b>1,730</b>	<b>12.0%</b>	<b>1.2%</b>	<b>170</b>	<b>280</b>	<b>460</b>			
29-1011	Chiropractors	100	110	10	7.0%	0.7%	**	**	**	Doctor/Prof	None	None
29-1021	Dentists, General	400	400	10	1.3%	0.1%	0	10	10	Doctor/Prof	None	ltn/Res
29-1031	Dietitians & Nutritionists	230	250	30	10.9%	1.1%	**	10	10	Bachelors	None	ltn/Res
29-1041	Optometrists	270	310	40	13.4%	1.3%	**	10	10	Doctor/Prof	None	None
29-1051	Pharmacists	860	990	130	15.2%	1.5%	10	20	40	Doctor/Prof	None	None
29-1062	Family & General Practitioners	470	510	40	9.3%	0.9%	**	10	10	Doctor/Prof	None	ltn/Res
29-1063	Internists, General	350	380	30	9.1%	0.9%	**	10	10	Doctor/Prof	None	ltn/Res
29-1064	Obstetricians & Gynecologists	180	190	20	8.6%	0.9%	**	**	10	Doctor/Prof	None	ltn/Res
29-1065	Pediatricians, General	80	90	10	9.9%	1.0%	**	**	**	Doctor/Prof	None	ltn/Res
29-1066	Psychiatrists	160	180	10	8.0%	0.8%	**	**	**	Doctor/Prof	None	ltn/Res
29-1069	Physicians & Surgeons, All Other	690	690	0	0.0%	0.0%	0	10	10	Doctor/Prof	None	ltn/Res
29-1071	Physician Assistants	180	190	10	7.3%	0.7%	**	**	**	Masters	None	None
29-1111	Registered Nurses	8,130	9,230	1,100	13.6%	1.4%	110	150	260	Associates	None	None
29-1122	Occupational Therapists	310	360	50	15.5%	1.5%	10	10	10	Masters	None	None
29-1123	Physical Therapists	570	660	90	15.3%	1.5%	10	10	20	Doctor/Prof	None	None
29-1124	Radiation Therapists	30	40	0	12.5%	1.3%	0	**	**	Associates	None	None
29-1125	Recreational Therapists	80	90	10	18.4%	1.8%	**	**	**	Bachelors	None	None
29-1126	Respiratory Therapists	300	350	60	19.0%	1.9%	10	10	10	Associates	None	None
29-1127	Speech-Language Pathologists	320	340	20	6.5%	0.7%	**	10	10	Masters	None	None
29-1131	Veterinarians	90	110	20	24.1%	2.4%	**	**	**	Doctor/Prof	None	None
29-1181	Audiologists	80	80	10	10.7%	1.1%	**	0	**	Doctor/Prof	None	None
29-1199	Health Diagnosing & Treating Practitioners, All Other	340	370	30	8.8%	0.9%	**	10	10	Masters	None	None
<b>29-2000</b>	<b>Health Technologists &amp; Technicians</b>	<b>6,760</b>	<b>7,540</b>	<b>780</b>	<b>11.5%</b>	<b>1.2%</b>	<b>80</b>	<b>130</b>	<b>210</b>			
29-2011	Medical & Clinical Laboratory Technologists	490	500	10	1.0%	0.1%	0	10	10	Bachelors	None	None
29-2012	Medical & Clinical Laboratory Technicians	630	640	20	2.4%	0.2%	**	10	10	Associates	None	None
29-2021	Dental Hygienists	780	890	110	13.8%	1.4%	10	20	30	Associates	None	None
29-2031	Cardiovascular Technologists & Technicians	130	150	20	15.9%	1.6%	**	**	**	Associates	None	None
29-2032	Diagnostic Medical Sonographers	120	150	30	25.8%	2.6%	**	**	10	Associates	None	None
29-2033	Nuclear Medicine Technologists	60	60	0	1.6%	0.2%	0	**	**	Associates	None	None



Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

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		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
29-2037	Radiologic Technologists & Technicians	520	580	60	12.4%	1.2%	10	10	10	Associates	None	None
29-2041	Emergency Medical Technicians & Paramedics	510	610	100	19.6%	2.0%	10	10	20	PS Non-Deg	None	None
29-2051	Dietetic Technicians	130	160	30	19.7%	2.0%	**	**	10	HS or Eqv	None	MT OJT
29-2052	Pharmacy Technicians	880	1,050	180	20.1%	2.0%	20	20	30	HS or Eqv	None	MT OJT
29-2054	Respiratory Therapy Technicians	110	100	-10	-4.7%	-0.5%	0	**	**	Associates	None	MT OJT
29-2055	Surgical Technologists	230	240	10	5.6%	0.6%	**	**	10	PS Non-Deg	None	None
29-2056	Veterinary Technologists & Technicians	180	250	70	38.8%	3.9%	10	**	10	Associates	None	None
29-2061	Licensed Practical & Licensed Vocational Nurses	910	1,000	90	9.9%	1.0%	10	20	30	PS Non-Deg	None	None
29-2071	Medical Records & Health Information Technicians	380	400	20	5.2%	0.5%	**	10	10	PS Non-Deg	None	None
29-2081	Opticians, Dispensing	240	260	20	8.0%	0.8%	**	10	10	HS or Eqv	None	LT OJT
29-2799	Health Technologists & Technicians, All Other	410	440	20	5.6%	0.6%	**	10	10	PS Non-Deg	None	ST OJT
<b>29-9000</b>	<b>Other Healthcare Practitioners &amp; Technical Occupations</b>	<b>840</b>	<b>920</b>	<b>80</b>	<b>9.2%</b>	<b>0.9%</b>	<b>10</b>	<b>30</b>	<b>40</b>			
29-9011	Occupational Health & Safety Specialists	300	310	10	2.7%	0.3%	**	10	10	Bachelors	None	MT OJT
29-9799	Healthcare Practitioners & Technical Workers, All Other, inc. Genetic Counselors	420	460	40	9.5%	0.9%	**	20	20	Bachelors	None	None
<b>31-0000</b>	<b>Healthcare Support Occupations</b>	<b>11,980</b>	<b>13,770</b>	<b>1,790</b>	<b>14.9%</b>	<b>1.5%</b>	<b>180</b>	<b>180</b>	<b>360</b>			
<b>31-1000</b>	<b>Nursing, Psychiatric, &amp; Home Health Aides</b>	<b>4,960</b>	<b>6,020</b>	<b>1,060</b>	<b>21.4%</b>	<b>2.1%</b>	<b>110</b>	<b>60</b>	<b>170</b>			
31-1011	Home Health Aides	1,180	1,760	580	49.2%	4.9%	60	20	70	<HS	None	ST OJT
31-1012	Nursing Aides, Orderlies, & Attendants	3,450	3,930	480	13.8%	1.4%	50	40	90	PS Non-Deg	None	None
<b>31-2000</b>	<b>Occupational &amp; Physical Therapist Assistants &amp; Aides</b>	<b>320</b>	<b>400</b>	<b>80</b>	<b>23.4%</b>	<b>2.3%</b>	<b>10</b>	<b>10</b>	<b>10</b>			
<b>31-9000</b>	<b>Other Healthcare Support Occupations</b>	<b>6,700</b>	<b>7,350</b>	<b>650</b>	<b>9.7%</b>	<b>1.0%</b>	<b>70</b>	<b>110</b>	<b>180</b>			
31-9011	Massage Therapists	1,230	1,410	180	14.7%	1.5%	20	20	40	PS Non-Deg	None	None
31-9091	Dental Assistants	1,220	1,320	100	7.9%	0.8%	10	30	40	PS Non-Deg	None	None
31-9092	Medical Assistants	2,750	3,050	300	10.9%	1.1%	30	40	70	HS or Eqv	None	MT OJT
31-9093	Medical Equipment Preparers	190	200	10	4.8%	0.5%	**	**	**	HS or Eqv	None	MT OJT
31-9094	Medical Transcriptionists	80	80	0	-3.7%	-0.4%	0	**	**	PS Non-Deg	None	None
31-9095	Pharmacy Aides	170	210	40	24.6%	2.5%	**	**	10	HS or Eqv	None	ST OJT
31-9096	Veterinary Assistants & Laboratory Animal Caretakers	210	210	10	2.4%	0.2%	0	**	**	HS or Eqv	None	ST OJT
31-9799	Healthcare Support Workers, All Other	850	870	20	2.7%	0.3%	**	10	20	HS or Eqv	None	ST OJT
<b>33-0000</b>	<b>Protective Service Occupations</b>	<b>16,130</b>	<b>17,930</b>	<b>1,800</b>	<b>11.2%</b>	<b>1.1%</b>	<b>180</b>	<b>360</b>	<b>540</b>			
<b>33-1000</b>	<b>First-Line Supervisors/Managers, Protective Service Workers</b>	<b>1,640</b>	<b>1,710</b>	<b>70</b>	<b>4.5%</b>	<b>0.4%</b>	<b>10</b>	<b>60</b>	<b>70</b>			
33-1011	First-Line Supervisors/Mgrs. of Correctional Officers	100	110	10	7.1%	0.7%	**	**	**	HS or Eqv	1-5 years	MT OJT
33-1012	First-Line Supervisors/Mgrs. of Police & Detectives	610	610	0	0.5%	0.0%	0	20	20	HS or Eqv	1-5 years	MT OJT
33-1021	First-Line Supervisors/Mgrs. of Fire Fighting & Prevention Workers	320	330	20	5.7%	0.6%	**	20	20	PS Non-Deg	1-5 years	None

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
33-1099	First-Line Supervisors/Mgrs., Protective Service Workers, All Other	620	670	50	7.3%	0.7%	**	20	30	HS or Eqv	1-5 years	None
<b>33-2000</b>	<b>Fire Fighting &amp; Prevention Workers</b>	<b>1,290</b>	<b>1,350</b>	<b>50</b>	<b>4.1%</b>	<b>0.4%</b>	<b>10</b>	<b>40</b>	<b>40</b>			
33-2011	Fire Fighters	1,290	1,350	50	4.1%	0.4%	10	40	40	PS Non-Deg	None	LT OJT
<b>33-3000</b>	<b>Law Enforcement Workers</b>	<b>4,000</b>	<b>4,250</b>	<b>250</b>	<b>6.3%</b>	<b>0.6%</b>	<b>30</b>	<b>100</b>	<b>120</b>			
33-3012	Correctional Officers & Jailers	1,600	1,740	140	8.7%	0.9%	10	30	40	HS or Eqv	None	MT OJT
33-3021	Detectives & Criminal Investigators	240	240	0	-0.8%	-0.1%	0	10	10	HS or Eqv	1-5 years	MT OJT
33-3041	Parking Enforcement Workers	40	50	0	9.3%	0.9%	0	**	**	HS or Eqv	None	ST OJT
33-3051	Police & Sheriffs Patrol Officers	2,030	2,140	100	5.1%	0.5%	10	60	70	HS or Eqv	None	MT OJT
<b>33-9000</b>	<b>Other Protective Service Workers</b>	<b>9,190</b>	<b>10,620</b>	<b>1,420</b>	<b>15.5%</b>	<b>1.5%</b>	<b>140</b>	<b>170</b>	<b>310</b>			
33-9011	Animal Control Workers	10	10	0	22.2%	2.2%	0	0	0	HS or Eqv	None	MT OJT
33-9032	Security Guards	7,840	9,110	1,270	16.2%	1.6%	130	120	250	HS or Eqv	None	ST OJT
33-9092	Lifeguards, Ski Patrol, & Other Recreational Protective Service Workers	410	440	30	7.1%	0.7%	**	30	30	HS or Eqv	None	ST OJT
33-9093	Transportation Security Screeners	780	880	100	12.4%	1.2%	10	10	20	HS or Eqv	None	MT OJT
33-9099	Protective Service Workers, All Other	130	150	20	16.7%	1.7%	**	10	10	HS or Eqv	None	ST OJT
<b>35-0000</b>	<b>Food Preparation &amp; Serving Related Occupations</b>	<b>46,810</b>	<b>51,370</b>	<b>4,550</b>	<b>9.7%</b>	<b>1.0%</b>	<b>460</b>	<b>1,710</b>	<b>2,170</b>			
<b>35-1000</b>	<b>Supervisors, Food Preparation &amp; Serving Workers</b>	<b>4,070</b>	<b>4,330</b>	<b>260</b>	<b>6.3%</b>	<b>0.6%</b>	<b>30</b>	<b>80</b>	<b>110</b>			
35-1011	Chefs & Head Cooks	1,050	1,020	-30	-2.6%	-0.3%	0	20	20	HS or Eqv	1-5 years	None
35-1012	First-Line Supervisors/Mgrs. of Food Preparation & Serving Workers	3,020	3,300	280	9.3%	0.9%	30	60	90	HS or Eqv	1-5 years	None
<b>35-2000</b>	<b>Cooks &amp; Food Preparation Workers</b>	<b>11,400</b>	<b>12,450</b>	<b>1,050</b>	<b>9.2%</b>	<b>0.9%</b>	<b>110</b>	<b>320</b>	<b>430</b>			
35-2011	Cooks, Fast Food	1,060	1,010	-40	-3.9%	-0.4%	0	20	20	<HS	None	ST OJT
35-2012	Cooks, Institution & Cafeteria	800	910	110	13.9%	1.4%	10	20	30	<HS	None	ST OJT
35-2014	Cooks, Restaurant	3,070	3,470	400	13.0%	1.3%	40	70	110	<HS	< 1 year	MT OJT
35-2015	Cooks, Short Order	1,350	1,410	70	4.9%	0.5%	10	30	40	<HS	None	ST OJT
35-2019	Cooks, All Other	150	180	30	18.2%	1.8%	**	**	10	<HS	None	MT OJT
35-2021	Food Preparation Workers	4,980	5,470	490	9.8%	1.0%	50	180	230	<HS	None	ST OJT
<b>35-3000</b>	<b>Food &amp; Beverage Serving Workers</b>	<b>25,170</b>	<b>28,090</b>	<b>2,920</b>	<b>11.6%</b>	<b>1.2%</b>	<b>290</b>	<b>1,010</b>	<b>1,300</b>			
35-3011	Bartenders	1,720	1,890	170	10.1%	1.0%	20	60	80	<HS	None	ST OJT
35-3021	Combined Food Preparation & Serving Workers, Including Fast Food	12,110	13,930	1,810	15.0%	1.5%	180	340	520	<HS	None	ST OJT
35-3022	Counter Attendants, Cafeteria, Food Concession, & Coffee Shop	2,390	2,560	170	6.9%	0.7%	20	170	190	<HS	None	ST OJT
35-3031	Waiters & Waitresses	8,560	9,280	720	8.4%	0.8%	70	430	500	<HS	None	ST OJT
35-3041	Food Servers, Nonrestaurant	390	440	50	12.6%	1.3%	10	10	20	<HS	None	ST OJT
<b>35-9000</b>	<b>Other Food Preparation &amp; Serving Related Workers</b>	<b>6,170</b>	<b>6,500</b>	<b>330</b>	<b>5.3%</b>	<b>0.5%</b>	<b>30</b>	<b>300</b>	<b>330</b>			
35-9011	Dining Room & Cafeteria Attendants & Bartender Helpers	2,820	2,920	100	3.5%	0.4%	10	110	120	<HS	None	ST OJT
35-9021	Dishwashers	1,680	1,850	170	9.9%	1.0%	20	80	90	<HS	None	ST OJT
35-9031	Hosts & Hostesses, Restaurant, Lounge, & Coffee Shop	1,560	1,630	70	4.4%	0.4%	10	110	120	<HS	None	None



**Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020**

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replacements	Total Openings	Education Value	Work Experience Value	Job Training Value
35-9099	Food Preparation & Serving Related Workers, All Other	120	110	-10	-5.9%	-0.6%	0	10	10	<HS	None	ST OJT
<b>37-0000</b>	<b>Building &amp; Grounds Cleaning &amp; Maintenance Occupations</b>	<b>24,100</b>	<b>26,690</b>	<b>2,590</b>	<b>10.8%</b>	<b>1.1%</b>	<b>260</b>	<b>440</b>	<b>690</b>			
37-1000	Supervisors, Building & Grounds Cleaning & Maintenance Workers	1,780	1,880	100	5.7%	0.6%	10	30	40			
37-1011	First-Line Supervisors/Mgrs. of Housekeeping & Janitorial Workers	920	920	0	0.2%	0.0%	0	10	10	HS or Eqv	1-5 years	None
37-1012	First-Line Supervisors/Mgrs. of Landscaping, Lawn Service, & Groundskeeping Workers	860	960	100	11.7%	1.2%	10	10	20	HS or Eqv	1-5 years	None
37-2000	Building Cleaning & Pest Control Workers	16,590	18,180	1,590	9.6%	1.0%	160	310	470			
37-2011	Janitors & Cleaners, Except Maids & Housekeeping Cleaners	9,720	10,450	730	7.5%	0.7%	70	180	260	<HS	None	ST OJT
37-2012	Maids & Housekeeping Cleaners	6,520	7,320	800	12.3%	1.2%	80	110	190	<HS	None	ST OJT
37-2021	Pest Control Workers	350	410	70	18.8%	1.9%	10	20	20	HS or Eqv	None	MT OJT
37-3000	Grounds Maintenance Workers	5,730	6,630	900	15.6%	1.6%	90	100	190			
37-3011	Landscaping & Groundskeeping Workers	5,340	6,190	850	16.0%	1.6%	90	90	180	<HS	None	ST OJT
37-3012	Pesticide Handlers, Sprayers, & Applicators, Vegetation	60	60	0	1.6%	0.2%	0	**	**	HS or Eqv	None	MT OJT
<b>39-0000</b>	<b>Personal Care &amp; Service Occupations</b>	<b>15,890</b>	<b>18,910</b>	<b>3,020</b>	<b>19.0%</b>	<b>1.9%</b>	<b>310</b>	<b>390</b>	<b>700</b>			
39-1000	Supervisors, Personal Care & Service Workers	750	810	60	7.6%	0.8%	10	20	20			
39-2000	Animal Care & Service Workers	560	730	180	31.3%	3.1%	20	10	30			
39-3000	Entertainment Attendants & Related Workers	1,480	1,550	70	5.0%	0.5%	10	80	100			
39-3021	Motion Picture Projectionists	80	70	-10	-12.4%	-1.2%	0	**	**	<HS	None	ST OJT
39-3031	Ushers, Lobby Attendants, & Ticket Takers	520	480	-40	-7.3%	-0.7%	0	30	30	<HS	None	ST OJT
39-3091	Amusement & Recreation Attendants	670	750	80	11.2%	1.1%	10	40	50	<HS	None	ST OJT
39-3093	Locker Room, Coatroom, & Dressing Room Attendants	140	180	30	23.1%	2.3%	**	10	10	HS or Eqv	None	ST OJT
39-4000	Funeral Service Workers	150	170	20	13.3%	1.3%	**	10	10			
39-4011	Embalmers	20	30	0	4.2%	0.4%	0	**	**	PS Non-Deg	None	ST OJT
39-4021	Funeral Attendants	50	60	0	7.7%	0.8%	0	**	**	HS or Eqv	None	ST OJT
39-4831	Funeral service managers, directors, morticians, & undertakers	80	90	20	20.0%	2.0%	**	**	**	Associates	None	Appren
39-5000	Personal Appearance Workers	2,400	2,790	390	16.1%	1.6%	40	50	80			
39-5012	Hairdressers, Hairstylists, & Cosmetologists	1,440	1,670	230	15.8%	1.6%	20	30	50	PS Non-Deg	None	None
39-5092	Manicurists & Pedicurists											
39-5094	Skin Care Specialists	320	400	80	24.1%	2.4%	10	10	10	PS Non-Deg	None	None
39-6000	Transportation, Tourism, & Lodging Attendants	830	970	140	17.4%	1.7%	10	20	30			
39-6011	Baggage Porters & Bellhops	630	740	110	17.8%	1.8%	10	20	30	HS or Eqv	None	ST OJT
39-6012	Concierges	200	230	30	15.8%	1.6%	**	10	10	HS or Eqv	None	MT OJT

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
39-7000	Tour & Travel Guides	990	1,230	240	24.1%	2.4%	20	40	60			
39-9000	Other Personal Care & Service Workers	8,720	10,650	1,930	22.1%	2.2%	190	170	360			
39-9011	Child Care Workers	3,130	3,280	150	4.8%	0.5%	20	100	110	HS or Eqv	None	ST OJT
39-9021	Personal & Home Care Aides	3,590	5,110	1,520	42.4%	4.2%	150	30	180	<HS	None	ST OJT
39-9031	Fitness Trainers & Aerobics Instructors	330	380	50	14.9%	1.5%	10	10	10	HS or Eqv	None	ST OJT
39-9032	Recreation Workers	950	1,080	130	13.8%	1.4%	10	20	30	Bachelors	None	None
39-9041	Residential Advisors	120	150	30	23.0%	2.3%	**	10	10	SC, no deg	< 1 year	ST OJT
39-9099	Personal Care & Service Workers, All Other	610	660	50	8.4%	0.8%	10	10	20	HS or Eqv	None	ST OJT
41-0000	<b>Sales &amp; Related Occupations</b>	<b>46,420</b>	<b>51,920</b>	<b>5,500</b>	<b>11.8%</b>	<b>1.2%</b>	<b>550</b>	<b>1,410</b>	<b>1,960</b>			
41-1000	<b>Supervisors, Sales Workers</b>	<b>7,520</b>	<b>8,280</b>	<b>760</b>	<b>10.1%</b>	<b>1.0%</b>	<b>80</b>	<b>180</b>	<b>250</b>			
41-1011	First-Line Supervisors/Mgrs.of Retail Sales Workers	6,080	6,740	660	10.9%	1.1%	70	140	210	HS or Eqv	1-5 years	None
41-1012	First-Line Supervisors/Mgrs.of Non-Retail Sales Workers	1,440	1,540	100	6.9%	0.7%	10	40	50	HS or Eqv	5+ years	None
41-2000	<b>Retail Sales Workers</b>	<b>27,420</b>	<b>30,820</b>	<b>3,390</b>	<b>12.4%</b>	<b>1.2%</b>	<b>340</b>	<b>950</b>	<b>1,290</b>			
41-2011	Cashiers	9,530	10,270	750	7.9%	0.8%	80	430	510	<HS	None	ST OJT
41-2021	Counter & Rental Clerks	1,100	1,230	120	11.3%	1.1%	10	30	40	<HS	None	ST OJT
41-2022	Parts Salespersons	300	330	40	12.5%	1.2%	**	10	20	<HS	None	MT OJT
41-2031	Retail Salespersons	16,500	18,980	2,490	15.1%	1.5%	250	490	730	<HS	None	ST OJT
41-3000	<b>Sales Representatives, Services</b>	<b>4,520</b>	<b>5,000</b>	<b>480</b>	<b>10.6%</b>	<b>1.1%</b>	<b>50</b>	<b>110</b>	<b>160</b>			
41-3011	Advertising Sales Agents	410	400	-10	-2.2%	-0.2%	0	10	10	HS or Eqv	None	MT OJT
41-3021	Insurance Sales Agents	1,220	1,380	160	13.2%	1.3%	20	30	40	HS or Eqv	None	MT OJT
41-3031	Securities, Commodities, & Financial Services Sales Agents	620	670	50	8.1%	0.8%	10	20	20	Bachelors	None	MT OJT
41-3041	Travel Agents	560	590	30	5.5%	0.6%	**	10	10	HS or Eqv	None	MT OJT
41-3099	Sales Representatives, Services, All Other	1,720	1,960	250	14.3%	1.4%	20	50	70	HS or Eqv	None	ST OJT
41-4000	<b>Sales Representatives, Wholesale &amp; Manufacturing</b>	<b>4,000</b>	<b>4,510</b>	<b>510</b>	<b>12.8%</b>	<b>1.3%</b>	<b>50</b>	<b>90</b>	<b>150</b>			
41-4011	Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	570	650	70	12.7%	1.3%	10	10	20	Bachelors	None	MT OJT
41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	3,420	3,860	440	12.8%	1.3%	40	80	130	HS or Eqv	None	MT OJT
41-9000	<b>Other Sales &amp; Related Workers</b>	<b>2,960</b>	<b>3,320</b>	<b>350</b>	<b>12.0%</b>	<b>1.2%</b>	<b>40</b>	<b>70</b>	<b>110</b>			
41-9011	Demonstrators & Product Promoters	630	710	70	11.6%	1.2%	10	20	30	HS or Eqv	None	ST OJT
41-9021	Real Estate Brokers	360	390	30	7.1%	0.7%	**	10	10	HS or Eqv	1-5 years	None
41-9022	Real Estate Sales Agents	390	440	60	14.1%	1.4%	10	10	20	HS or Eqv	None	LT OJT
41-9799	Sales & Related Workers, All Other	1,270	1,460	190	15.1%	1.5%	20	30	50	HS or Eqv	None	MT OJT
43-0000	<b>Office &amp; Administrative Support Occupations</b>	<b>69,120</b>	<b>73,630</b>	<b>4,500</b>	<b>6.5%</b>	<b>0.7%</b>	<b>550</b>	<b>1,470</b>	<b>2,020</b>			
43-1000	<b>Supervisors, Office &amp; Administrative Support Workers</b>	<b>5,100</b>	<b>5,680</b>	<b>590</b>	<b>11.5%</b>	<b>1.2%</b>	<b>60</b>	<b>140</b>	<b>200</b>			

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
43-1011	First-Line Supervisors/Mgrs.of Office & Administrative Support Workers	5,100	5,680	590	11.5%	1.2%	60	140	200	HS or Eqv	1-5 years	None
<b>43-2000</b>	<b>Communications Equipment Operators</b>	<b>550</b>	<b>410</b>	<b>-140</b>	<b>-25.8%</b>	<b>-2.6%</b>	<b>0</b>	<b>10</b>	<b>10</b>			
43-2011	Switchboard Operators, Including Answering Service	500	360	-140	-28.2%	-2.8%	0	10	10	HS or Eqv	None	ST OJT
<b>43-3000</b>	<b>Financial Clerks</b>	<b>10,030</b>	<b>10,910</b>	<b>880</b>	<b>8.8%</b>	<b>0.9%</b>	<b>90</b>	<b>190</b>	<b>280</b>			
43-3011	Bill & Account Collectors	790	830	40	5.3%	0.5%	**	20	20	HS or Eqv	None	MT OJT
43-3021	Billing & Posting Clerks & Machine Operators	1,330	1,510	180	13.2%	1.3%	20	20	40	HS or Eqv	None	ST OJT
43-3031	Bookkeeping, Accounting, & Auditing Clerks	5,280	5,870	590	11.1%	1.1%	60	60	120	HS or Eqv	None	MT OJT
43-3051	Payroll & Timekeeping Clerks	620	680	70	10.7%	1.1%	10	10	20	HS or Eqv	None	MT OJT
43-3061	Procurement Clerks	380	370	-10	-2.6%	-0.3%	0	20	20	HS or Eqv	None	MT OJT
43-3071	Tellers	1,630	1,650	20	1.1%	0.1%	**	70	70	HS or Eqv	None	ST OJT
<b>43-4000</b>	<b>Information &amp; Record Clerks</b>	<b>16,130</b>	<b>17,600</b>	<b>1,470</b>	<b>9.1%</b>	<b>0.9%</b>	<b>160</b>	<b>450</b>	<b>610</b>			
43-4031	Court, Municipal, & License Clerks	590	620	40	6.0%	0.6%	**	20	20	HS or Eqv	None	MT OJT
43-4051	Customer Service Representatives	5,000	5,620	620	12.3%	1.2%	60	140	200	HS or Eqv	None	ST OJT
43-4061	Eligibility Interviewers, Government Programs	660	690	30	4.3%	0.4%	**	20	20	Associates	None	MT OJT
43-4071	File Clerks	460	410	-50	-11.5%	-1.1%	0	10	10	HS or Eqv	None	ST OJT
43-4081	Hotel, Motel, & Resort Desk Clerks	1,030	1,220	190	18.5%	1.9%	20	40	60	HS or Eqv	None	ST OJT
43-4111	Interviewers, Except Eligibility & Loan	440	470	30	7.1%	0.7%	**	10	10	HS or Eqv	None	ST OJT
43-4121	Library Assistants, Clerical	230	240	20	6.6%	0.7%	**	10	10	HS or Eqv	None	ST OJT
43-4131	Loan Interviewers & Clerks	500	470	-20	-4.4%	-0.4%	0	10	10	HS or Eqv	None	ST OJT
43-4141	New Accounts Clerks	170	170	0	1.2%	0.1%	0	10	10	HS or Eqv	None	ST OJT
43-4151	Order Clerks	370	400	20	5.9%	0.6%	**	10	10	HS or Eqv	None	ST OJT
43-4161	Human Resources Assistants, Except Payroll & Timekeeping	890	940	50	5.6%	0.6%	10	30	30	HS or Eqv	None	ST OJT
43-4171	Receptionists & Information Clerks	2,720	3,060	340	12.6%	1.3%	30	80	120	HS or Eqv	None	ST OJT
43-4181	Reservation & Transportation Ticket Agents & Travel Clerks	1,850	2,140	290	15.5%	1.5%	30	40	60	HS or Eqv	None	ST OJT
43-4199	Information & Record Clerks, All Other	1,100	1,020	-70	-6.7%	-0.7%	0	30	30	HS or Eqv	None	ST OJT
<b>43-5000</b>	<b>Material Recording, Scheduling, Dispatching, &amp; Distributing Workers</b>	<b>10,460</b>	<b>10,600</b>	<b>140</b>	<b>1.3%</b>	<b>0.1%</b>	<b>40</b>	<b>260</b>	<b>310</b>			
43-5011	Cargo & Freight Agents	420	520	110	25.1%	2.5%	10	10	20	HS or Eqv	None	ST OJT
43-5021	Couriers & Messengers	360	380	20	5.9%	0.6%	**	10	10	HS or Eqv	None	ST OJT
43-5032	Dispatchers, Except Police, Fire, & Ambulance	560	640	80	14.4%	1.4%	10	10	20	HS or Eqv	None	MT OJT
43-5051	Postal Service Clerks	270	170	-100	-38.1%	-3.8%	0	10	10	HS or Eqv	None	ST OJT
43-5052	Postal Service Mail Carriers	800	850	50	5.6%	0.6%	**	30	30	HS or Eqv	None	ST OJT
43-5053	Postal Service Mail Sorters, Processors, & Processing Machine Operators	450	280	-170	-38.6%	-3.9%	0	**	**	HS or Eqv	None	ST OJT
43-5061	Production, Planning, & Expediting Clerks	490	530	40	7.5%	0.8%	**	10	20	HS or Eqv	None	MT OJT
43-5071	Shipping, Receiving, & Traffic Clerks	1,560	1,550	-20	-1.0%	-0.1%	0	40	40	HS or Eqv	None	ST OJT
43-5081	Stock Clerks & Order Fillers	4,800	4,840	40	0.9%	0.1%	**	120	120	<HS	None	ST OJT
<b>43-6000</b>	<b>Secretaries &amp; Administrative Assistants</b>	<b>10,370</b>	<b>10,860</b>	<b>480</b>	<b>4.7%</b>	<b>0.5%</b>	<b>50</b>	<b>140</b>	<b>190</b>			

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
43-6011	Executive Secretaries & Administrative Assistants	2,790	3,060	280	9.9%	1.0%	30	40	70	HS or Eqv	1-5 years	None
43-6012	Legal Secretaries	690	650	-30	-5.0%	-0.5%	0	10	10	HS or Eqv	None	MT OJT
43-6013	Medical Secretaries	710	860	150	21.8%	2.2%	20	10	30	HS or Eqv	None	MT OJT
43-6014	Secretaries, Except Legal, Medical, & Executive	6,190	6,280	90	1.4%	0.1%	10	80	90	HS or Eqv	None	ST OJT
<b>43-9000</b>	<b>Other Office &amp; Administrative Support Workers</b>	<b>16,490</b>	<b>17,570</b>	<b>1,090</b>	<b>6.6%</b>	<b>0.7%</b>	<b>140</b>	<b>280</b>	<b>420</b>			
43-9011	Computer Operators	370	330	-40	-10.1%	-1.0%	0	**	**	HS or Eqv	None	MT OJT
43-9021	Data Entry Keyers	410	370	-40	-10.5%	-1.1%	0	10	10	HS or Eqv	None	MT OJT
43-9022	Word Processors & Typists	1,580	1,370	-220	-13.6%	-1.4%	0	10	10	HS or Eqv	None	ST OJT
43-9041	Insurance Claims & Policy Processing Clerks	350	350	10	2.3%	0.2%	**	10	10	HS or Eqv	None	MT OJT
43-9051	Mail Clerks & Mail Machine Operators, Except Postal Service	200	200	10	3.1%	0.3%	**	**	10	HS or Eqv	None	ST OJT
43-9061	Office Clerks, General	11,480	12,730	1,250	10.8%	1.1%	120	200	330	HS or Eqv	None	ST OJT
43-9071	Office Machine Operators, Except Computer	110	100	-10	-11.1%	-1.1%	0	**	**	HS or Eqv	None	ST OJT
43-9799	Office & Administrative Support Workers, All Other	1,910	2,050	140	7.5%	0.7%	10	40	50	HS or Eqv	None	ST OJT
<b>45-0000</b>	<b>Farming, Fishing, &amp; Forestry Occupations</b>	<b>1,580</b>	<b>1,690</b>	<b>110</b>	<b>6.7%</b>	<b>0.7%</b>	<b>10</b>	<b>50</b>	<b>60</b>			
<b>45-1000</b>	<b>Supervisors, Farming, Fishing, &amp; Forestry Workers</b>	<b>70</b>	<b>80</b>	<b>10</b>	<b>6.9%</b>	<b>0.7%</b>	<b>0</b>	<b>**</b>	<b>**</b>			
45-1011	First-Line Supervisors/Mgrs.of Farming, Fishing, & Forestry Workers	70	80	10	6.9%	0.7%	0	**	**	HS or Eqv	1-5 years	None
<b>45-2000</b>	<b>Agricultural Workers</b>	<b>1,230</b>	<b>1,330</b>	<b>100</b>	<b>7.8%</b>	<b>0.8%</b>	<b>10</b>	<b>40</b>	<b>50</b>			
45-2091	Agricultural Equipment Operators	20	20	0	21.1%	2.1%	0	**	**	<HS	< 1 year	ST OJT
45-2092	Farmworkers & Laborers, Crop, Nursery, & Greenhouse	900	960	60	6.9%	0.7%	10	30	30	<HS	None	ST OJT
45-2093	Farmworkers, Farm & Ranch Animals	180	200	20	9.4%	0.9%	**	10	10	<HS	None	ST OJT
<b>45-3000</b>	<b>Fishing &amp; Hunting Workers</b>	<b>260</b>	<b>270</b>	<b>0</b>	<b>1.1%</b>	<b>0.1%</b>	<b>0</b>	<b>10</b>	<b>10</b>			
<b>45-4000</b>	<b>Forest, Conservation, &amp; Logging Workers</b>	<b>10</b>	<b>20</b>	<b>0</b>	<b>15.4%</b>	<b>1.5%</b>	<b>0</b>	<b>0</b>	<b>0</b>			
45-4011	Forest & Conservation Workers	10	20	0	15.4%	1.5%	0	0	0	HS or Eqv	None	MT OJT
<b>47-0000</b>	<b>Construction &amp; Extraction Occupations</b>	<b>25,190</b>	<b>30,090</b>	<b>4,900</b>	<b>19.5%</b>	<b>1.9%</b>	<b>490</b>	<b>550</b>	<b>1,040</b>			
<b>47-1000</b>	<b>Supervisors, Construction &amp; Extraction Workers</b>	<b>1,910</b>	<b>2,320</b>	<b>410</b>	<b>21.5%</b>	<b>2.1%</b>	<b>40</b>	<b>40</b>	<b>90</b>			
47-1011	First-Line Supervisors/Mgrs.of Construction Trades & Extraction Workers	1,910	2,320	410	21.5%	2.1%	40	40	90	HS or Eqv	5+ years	None
<b>47-2000</b>	<b>Construction Trades Workers</b>	<b>21,050</b>	<b>25,060</b>	<b>4,010</b>	<b>19.1%</b>	<b>1.9%</b>	<b>400</b>	<b>440</b>	<b>840</b>			
47-2021	Brickmasons & Blockmasons	260	300	40	14.9%	1.5%	**	10	10	HS or Eqv	None	Appren
47-2022	Stonemasons	130	170	40	34.9%	3.5%	**	**	10	HS or Eqv	None	Appren
47-2031	Carpenters	5,310	6,170	860	16.2%	1.6%	90	110	200	HS or Eqv	None	Appren
47-2041	Carpet Installers	440	480	50	10.3%	1.0%	**	10	10	<HS	None	ST OJT
47-2042	Floor Layers, Except Carpet, Wood, & Hard Tiles	120	130	10	5.0%	0.5%	**	**	**	HS or Eqv	None	MT OJT

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
47-2044	Tile & Marble Setters	400	480	70	18.3%	1.8%	10	10	20	<HS	None	LT OJT
47-2051	Cement Masons & Concrete Finishers	500	650	150	28.8%	2.9%	10	10	20	<HS	None	MT OJT
47-2061	Construction Laborers	3,190	4,040	860	26.9%	2.7%	90	30	110	<HS	None	ST OJT
47-2071	Paving, Surfacing, & Tamping Equipment Operators	110	170	60	52.6%	5.3%	10	**	10	HS or Eqv	None	MT OJT
47-2073	Operating Engineers & Other Construction Equipment Operators	1,110	1,550	430	38.9%	3.9%	40	30	70	HS or Eqv	None	MT OJT
47-2081	Drywall & Ceiling Tile Installers	530	630	100	19.7%	2.0%	10	10	20	<HS	None	MT OJT
47-2082	Tapers	200	260	50	25.5%	2.5%	10	10	10	<HS	None	MT OJT
47-2111	Electricians	2,110	2,450	340	16.2%	1.6%	30	60	90	HS or Eqv	None	Appren
47-2121	Glaziers	140	200	60	38.7%	3.9%	10	10	10	HS or Eqv	None	Appren
47-2141	Painters, Construction & Maintenance	2,930	3,260	330	11.2%	1.1%	30	60	100	<HS	None	MT OJT
47-2151	Pipelayers	70	80	10	13.7%	1.4%	**	**	**	HS or Eqv	None	ST OJT
47-2152	Plumbers, Pipefitters, & Steamfitters	1,910	2,220	310	16.3%	1.6%	30	60	90	HS or Eqv	None	Appren
47-2161	Plasterers & Stucco Masons	140	160	20	11.2%	1.1%	**	**	10	<HS	None	LT OJT
47-2181	Roofers	370	410	40	9.5%	0.9%	**	10	10	<HS	None	MT OJT
47-2211	Sheet Metal Workers	550	590	40	8.0%	0.8%	**	10	10	HS or Eqv	None	Appren
47-2221	Structural Iron & Steel Workers	150	180	30	23.0%	2.3%	**	**	10	HS or Eqv	None	Appren
<b>47-3000</b>	<b>Helpers, Construction Trades</b>	<b>640</b>	<b>860</b>	<b>220</b>	<b>35.0%</b>	<b>3.5%</b>	<b>20</b>	<b>20</b>	<b>40</b>			
47-3012	Helpers--Carpenters	230	340	110	50.2%	5.0%	10	10	20	<HS	None	ST OJT
47-3013	Helpers--Electricians	90	110	20	22.7%	2.3%	**	**	**	HS or Eqv	None	ST OJT
47-3014	Helpers--Painters, Paperhangers, Plasterers, & Stucco Masons	10	20	0	7.1%	0.7%	0	0	0	<HS	None	ST OJT
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, & Steamfitters	110	140	30	26.9%	2.7%	**	**	10	HS or Eqv	None	ST OJT
47-3019	Helpers, Construction Trades, All Other	90	110	20	27.9%	2.8%	**	**	**	<HS	None	ST OJT
<b>47-4000</b>	<b>Other Construction &amp; Related Workers</b>	<b>1,430</b>	<b>1,620</b>	<b>200</b>	<b>13.7%</b>	<b>1.4%</b>	<b>20</b>	<b>40</b>	<b>60</b>			
47-4011	Construction & Building Inspectors	590	670	80	13.8%	1.4%	10	20	30	HS or Eqv	5+ years	MT OJT
47-4021	Elevator Installers & Repairers	270	280	10	3.8%	0.4%	**	10	10	HS or Eqv	None	Appren
47-4031	Fence Erectors	200	240	40	18.9%	1.9%	**	10	10	HS or Eqv	None	MT OJT
47-4041	Hazardous Materials Removal Workers	330	380	60	17.2%	1.7%	10	10	20	HS or Eqv	None	MT OJT
47-4071	Septic Tank Servicers & Sewer Pipe Cleaners	20	30	10	23.8%	2.4%	0	**	**	<HS	None	MT OJT
<b>47-5000</b>	<b>Extraction Workers</b>	<b>170</b>	<b>230</b>	<b>60</b>	<b>36.1%</b>	<b>3.6%</b>	<b>10</b>	<b>**</b>	<b>10</b>			
47-5021	Earth Drillers, Except Oil & Gas	40	50	10	35.0%	3.5%	**	**	**	HS or Eqv	None	MT OJT
<b>49-0000</b>	<b>Installation, Maintenance, &amp; Repair Occupations</b>	<b>17,990</b>	<b>20,050</b>	<b>2,050</b>	<b>11.4%</b>	<b>1.1%</b>	<b>210</b>	<b>410</b>	<b>620</b>			
<b>49-1000</b>	<b>Supervisors of Installation, Maintenance, &amp; Repair Workers</b>	<b>1,790</b>	<b>1,910</b>	<b>110</b>	<b>6.4%</b>	<b>0.6%</b>	<b>10</b>	<b>50</b>	<b>60</b>			
49-1011	First-Line Supervisors/Mgrs.of Mechanics, Installers, & Repairers	1,790	1,910	110	6.4%	0.6%	10	50	60	HS or Eqv	1-5 years	None
<b>49-2000</b>	<b>Electrical &amp; Electronic Equipment Mechanics, Installers, &amp; Repairers</b>	<b>2,190</b>	<b>2,440</b>	<b>260</b>	<b>11.8%</b>	<b>1.2%</b>	<b>30</b>	<b>50</b>	<b>70</b>			
49-2011	Computer, Automated Teller, & Office Machine Repairers	300	300	-10	-1.7%	-0.2%	0	10	10	PS Non-Deg	None	None
49-2021	Radio Mechanics	160	220	60	35.4%	3.5%	10	**	10	Associates	None	MT OJT

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replacements	Total Openings	Education Value	Work Experience Value	Job Training Value
49-2022	Telecommunications Equipment Installers & Repairers, Except Line Installers	570	670	100	17.9%	1.8%	10	10	20	PS Non-Deg	None	MT OJT
49-2091	Avionics Technicians	40	40	0	2.6%	0.3%	0	**	**	PS Non-Deg	None	None
49-2094	Electrical & Electronics Repairers, Commercial & Industrial Equipment	400	390	0	-0.5%	-0.1%	0	10	10	PS Non-Deg	None	LT OJT
49-2096	Electronic Equipment Installers & Repairers, Motor Vehicles	270	260	-10	-2.6%	-0.3%	0	10	10	PS Non-Deg	None	ST OJT
49-2098	Security & Fire Alarm Systems Installers	200	260	60	29.4%	2.9%	10	10	10	HS or Eqv	None	MT OJT
<b>49-3000</b>	<b>Vehicle &amp; Mobile Equipment Mechanics, Installers</b>	<b>4,620</b>	<b>5,080</b>	<b>470</b>	<b>10.1%</b>	<b>1.0%</b>	<b>50</b>	<b>120</b>	<b>170</b>			
49-3011	Aircraft Mechanics & Service Technicians	940	1,010	60	6.6%	0.7%	10	30	30	PS Non-Deg	None	None
49-3021	Automotive Body & Related Repairers	390	440	50	12.7%	1.3%	10	10	10	HS or Eqv	None	MT OJT
49-3023	Automotive Service Technicians & Mechanics	1,940	2,130	190	10.0%	1.0%	20	50	70	HS or Eqv	None	LT OJT
49-3031	Bus & Truck Mechanics & Diesel Engine Specialists	570	630	50	9.2%	0.9%	10	10	20	HS or Eqv	None	LT OJT
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	300	320	20	6.0%	0.6%	**	10	10	HS or Eqv	None	LT OJT
49-3051	Motorboat Mechanics	40	40	10	25.7%	2.6%	**	**	**	HS or Eqv	None	LT OJT
49-3052	Motorcycle Mechanics	30	30	0	12.0%	1.2%	0	**	**	HS or Eqv	None	LT OJT
49-3053	Outdoor Power Equipment & Other Small Engine Mechanics	80	90	10	14.6%	1.5%	**	**	**	HS or Eqv	None	MT OJT
49-3093	Tire Repairers & Changers	290	350	50	18.4%	1.8%	10	10	10	HS or Eqv	None	MT OJT
<b>49-9000</b>	<b>Other Installation, Maintenance, &amp; Repair Occupations</b>	<b>9,400</b>	<b>10,610</b>	<b>1,220</b>	<b>12.9%</b>	<b>1.3%</b>	<b>120</b>	<b>190</b>	<b>320</b>			
49-9011	Mechanical Door Repairers	60	70	10	18.2%	1.8%	**	**	**	HS or Eqv	None	MT OJT
49-9012	Control & Valve Installers & Repairers, Except Mechanical Door	50	50	0	6.1%	0.6%	0	**	**	HS or Eqv	None	MT OJT
49-9021	Heating, Air Conditioning, & Refrigeration Mechanics & Installers	1,040	1,230	190	18.0%	1.8%	20	20	40	PS Non-Deg	None	LT OJT
49-9031	Home Appliance Repairers	220	240	20	9.1%	0.9%	**	**	10	HS or Eqv	None	MT OJT
49-9041	Industrial Machinery Mechanics	570	670	100	17.9%	1.8%	10	10	20	HS or Eqv	None	LT OJT
49-9043	Maintenance Workers, Machinery	100	100	0	0.0%	0.0%	0	**	**	HS or Eqv	None	MT OJT
49-9051	Electrical Power-Line Installers & Repairers	450	550	100	22.4%	2.2%	10	20	30	HS or Eqv	None	LT OJT
49-9052	Telecommunications Line Installers & Repairers	410	470	60	14.5%	1.5%	10	10	10	HS or Eqv	None	LT OJT
49-9062	Medical Equipment Repairers	70	90	20	24.6%	2.5%	**	**	**	Associates	None	MT OJT
49-9071	Maintenance & Repair Workers, General	4,260	4,810	550	12.8%	1.3%	60	80	130	HS or Eqv	None	MT OJT
49-9096	Riggers	190	180	-20	-8.8%	-0.9%	0	**	**	HS or Eqv	None	ST OJT
49-9098	Helpers--Installation, Maintenance, & Repair Workers	430	480	60	13.4%	1.3%	10	20	30	HS or Eqv	None	MT OJT
49-9799	Installation, Maintenance, & Repair Workers, All Other	1,120	1,180	50	4.8%	0.5%	10	20	30	HS or Eqv	None	MT OJT
<b>51-0000</b>	<b>Production Occupations</b>	<b>11,450</b>	<b>11,890</b>	<b>440</b>	<b>3.8%</b>	<b>0.4%</b>	<b>60</b>	<b>250</b>	<b>310</b>			
<b>51-1000</b>	<b>Supervisors, Production Workers</b>	<b>1,080</b>	<b>1,130</b>	<b>50</b>	<b>4.6%</b>	<b>0.5%</b>	<b>10</b>	<b>10</b>	<b>20</b>			



**Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020**

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
51-1011	First-Line Supervisors/Mgrs.of Production & Operating Workers	1,080	1,130	50	4.6%	0.5%	10	10	20	PS Non-Deg	1-5 years	None
<b>51-2000</b>	<b>Assemblers &amp; Fabricators</b>	<b>850</b>	<b>970</b>	<b>120</b>	<b>14.2%</b>	<b>1.4%</b>	<b>10</b>	<b>20</b>	<b>30</b>			
51-2041	Structural Metal Fabricators & Fitters	120	150	20	18.6%	1.9%	**	**	**	HS or Eqv	None	MT OJT
51-2092	Team Assemblers	420	480	60	15.0%	1.5%	10	10	10	HS or Eqv	None	MT OJT
51-2099	Assemblers & Fabricators, All Other	180	220	40	19.8%	2.0%	**	**	10	HS or Eqv	None	MT OJT
<b>51-3000</b>	<b>Food Processing Workers</b>	<b>2,160</b>	<b>2,310</b>	<b>150</b>	<b>6.9%</b>	<b>0.7%</b>	<b>20</b>	<b>60</b>	<b>80</b>			
51-3011	Bakers	990	1,030	40	4.0%	0.4%	**	30	30	<HS	None	LT OJT
51-3021	Butchers & Meat Cutters	330	360	30	9.4%	0.9%	**	10	10	<HS	None	LT OJT
51-3022	Meat, Poultry, & Fish Cutters & Trimmers	400	460	70	16.4%	1.6%	10	10	20	<HS	None	ST OJT
51-3092	Food Batchmakers	290	290	0	0.7%	0.1%	0	10	10	HS or Eqv	< 1 year	ST OJT
51-3093	Food Cooking Machine Operators & Tenders	90	90	0	3.3%	0.3%	0	**	**	HS or Eqv	< 1 year	ST OJT
<b>51-4000</b>	<b>Metal Workers &amp; Plastic Workers</b>	<b>1,270</b>	<b>1,310</b>	<b>40</b>	<b>2.9%</b>	<b>0.3%</b>	<b>10</b>	<b>30</b>	<b>30</b>			
51-4041	Machinists	220	220	-10	-2.2%	-0.2%	0	**	**	HS or Eqv	None	LT OJT
51-4121	Welders, Cutters, Solderers, & Brazers	510	530	30	5.1%	0.5%	**	10	20	HS or Eqv	< 1 year	MT OJT
51-4122	Welding, Soldering, & Brazing Machine Setters, Operators, & Tenders	50	60	10	11.3%	1.1%	**	**	**	HS or Eqv	None	MT OJT
<b>51-5000</b>	<b>Printing Workers</b>	<b>340</b>	<b>320</b>	<b>-20</b>	<b>-6.8%</b>	<b>-0.7%</b>	<b>0</b>	<b>10</b>	<b>10</b>			
51-5112	Printing Press Operators & Job Printers	280	260	-20	-6.5%	-0.6%	0	10	10	HS or Eqv	None	MT OJT
<b>51-6000</b>	<b>Textile, Apparel, &amp; Furnishings Workers</b>	<b>1,530</b>	<b>1,460</b>	<b>-70</b>	<b>-4.5%</b>	<b>-0.5%</b>	<b>**</b>	<b>20</b>	<b>20</b>			
51-6011	Laundry & Dry-Cleaning Workers	840	840	-10	-0.7%	-0.1%	0	20	20	<HS	None	ST OJT
51-6021	Pressers, Textile, Garment, & Related Materials	80	70	-10	-10.7%	-1.1%	0	0	0	<HS	None	ST OJT
51-6031	Sewing Machine Operators	320	280	-40	-13.1%	-1.3%	0	**	**	<HS	None	ST OJT
51-6052	Tailors, Dressmakers, & Custom Sewers	120	110	-10	-9.4%	-0.9%	0	**	**	<HS	None	MT OJT
51-6099	Textile, Apparel, & Furnishings Workers, All Other	90	90	-10	-5.4%	-0.5%	0	**	**	HS or Eqv	None	ST OJT
<b>51-7000</b>	<b>Woodworkers</b>	<b>290</b>	<b>330</b>	<b>40</b>	<b>13.3%</b>	<b>1.3%</b>	<b>**</b>	<b>10</b>	<b>10</b>			
51-7011	Cabinetmakers & Bench Carpenters	200	240	40	20.5%	2.1%	**	10	10	HS or Eqv	None	MT OJT
<b>51-8000</b>	<b>Plant &amp; System Operators</b>	<b>780</b>	<b>810</b>	<b>30</b>	<b>4.0%</b>	<b>0.4%</b>	<b>10</b>	<b>20</b>	<b>30</b>			
51-8021	Stationary Engineers & Boiler Operators	50	50	0	8.3%	0.8%	0	**	**	HS or Eqv	None	LT OJT
51-8031	Water & Liquid Waste Treatment Plant & System Operators	170	190	20	12.1%	1.2%	**	**	10	HS or Eqv	None	LT OJT
51-8093	Petroleum Pump System Operators, Refinery Operators, & Gaugers	230	200	-30	-11.1%	-1.1%	0	10	10	HS or Eqv	None	LT OJT
51-8099	Plant & System Operators, All Other	120	120	0	0.0%	0.0%	0	**	**	HS or Eqv	None	LT OJT
<b>51-9000</b>	<b>Other Production Occupations</b>	<b>3,150</b>	<b>3,260</b>	<b>100</b>	<b>3.3%</b>	<b>0.3%</b>	<b>20</b>	<b>70</b>	<b>80</b>			
51-9012	Separating, Filtering, Clarifying, Precipitating, & Still Machine Setters, Operators, & Tenders	30	30	0	6.5%	0.6%	0	0	0	HS or Eqv	None	MT OJT
51-9021	Crushing, Grinding, & Polishing Machine Setters, Operators, & Tenders	60	70	0	3.2%	0.3%	0	**	**	HS or Eqv	None	MT OJT
51-9023	Mixing & Blending Machine Setters, Operators, & Tenders	40	40	0	-2.8%	-0.3%	0	**	**	HS or Eqv	None	MT OJT

Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Avg. Ann. Growth	Average Annual Openings			Education and Training		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
51-9032	Cutting & Slicing Machine Setters, Operators, & Tenders	80	80	0	0.0%	0.0%	0	**	**	HS or Eqv	None	ST OJT
51-9041	Extruding, Forming, Pressing, & Compacting Machine Setters, Operators, & Tenders	60	70	0	6.5%	0.6%	0	**	**	HS or Eqv	None	MT OJT
51-9061	Inspectors, Testers, Sorters, Samplers, & Weighers	330	370	50	14.8%	1.5%	10	10	10	HS or Eqv	None	MT OJT
51-9071	Jewelers & Precious Stone & Metal Workers	430	400	-30	-5.9%	-0.6%	0	10	10	HS or Eqv	None	LT OJT
51-9081	Dental Laboratory Technicians	130	150	20	14.2%	1.4%	**	**	10	HS or Eqv	None	MT OJT
51-9083	Ophthalmic Laboratory Technicians	40	50	10	11.9%	1.2%	0	**	**	HS or Eqv	None	MT OJT
51-9111	Packaging & Filling Machine Operators & Tenders	510	530	20	3.1%	0.3%	**	10	10	HS or Eqv	None	MT OJT
51-9122	Painters, Transportation Equipment	250	260	10	3.5%	0.4%	**	10	10	HS or Eqv	None	MT OJT
51-9151	Photographic Process Workers & Processing Machine Operators	130	120	-10	-10.1%	-1.0%	0	**	**	HS or Eqv	None	ST OJT
51-9198	Helpers--Production Workers	640	660	20	3.0%	0.3%	**	10	10	<HS	None	ST OJT
51-9399	Production Workers, All Other	200	210	20	7.7%	0.8%	**	10	10	HS or Eqv	None	MT OJT
<b>53-0000</b>	<b>Transportation &amp; Material Moving Occupations</b>	<b>29,060</b>	<b>32,340</b>	<b>3,280</b>	<b>11.3%</b>	<b>1.1%</b>	<b>340</b>	<b>740</b>	<b>1,080</b>			
<b>53-1000</b>	<b>Supervisors, Transportation &amp; Material Moving Workers</b>	<b>1,300</b>	<b>1,490</b>	<b>190</b>	<b>14.5%</b>	<b>1.4%</b>	<b>20</b>	<b>30</b>	<b>50</b>			
53-1011	Aircraft Cargo Handling Supervisors	100	110	20	15.5%	1.5%	**	**	**	HS or Eqv	1-5 years	None
53-1021	First-Line Supervisors/Mgrs.of Helpers, Laborers, & Material Movers, Hand	540	640	110	19.7%	2.0%	10	10	20	HS or Eqv	1-5 years	None
53-1031	First-Line Supervisors/Mgrs.of Transportation & Material-Moving Machine & Vehicle Operators	670	730	70	10.0%	1.0%	10	10	20	HS or Eqv	1-5 years	None
<b>53-2000</b>	<b>Air Transportation Workers</b>	<b>2,920</b>	<b>3,370</b>	<b>450</b>	<b>15.4%</b>	<b>1.5%</b>	<b>50</b>	<b>80</b>	<b>120</b>			
53-2011	Airline Pilots, Copilots, & Flight Engineers	610	740	130	21.4%	2.1%	10	20	40	Bachelors	1-5 years	MT OJT
53-2012	Commercial Pilots	190	230	50	24.9%	2.5%	10	10	10	PS Non-Deg	None	None
53-2021	Air Traffic Controllers	250	240	-10	-2.4%	-0.2%	0	10	10	Associates	None	LT OJT
<b>53-3000</b>	<b>Motor Vehicle Operators</b>	<b>10,580</b>	<b>11,770</b>	<b>1,190</b>	<b>11.3%</b>	<b>1.1%</b>	<b>120</b>	<b>200</b>	<b>320</b>			
53-3021	Bus Drivers, Transit & Intercity	2,080	2,340	260	12.3%	1.2%	30	40	70	HS or Eqv	None	MT OJT
53-3022	Bus Drivers, School	680	840	160	23.4%	2.3%	20	10	30	HS or Eqv	None	MT OJT
53-3031	Driver/Sales Workers	720	770	60	8.3%	0.8%	10	10	20	HS or Eqv	None	ST OJT
53-3032	Truck Drivers, Heavy & Tractor-Trailer	2,590	2,930	350	13.4%	1.3%	30	50	90	HS or Eqv	1-5 years	ST OJT
53-3033	Truck Drivers, Light or Delivery Services	3,340	3,600	270	8.0%	0.8%	30	70	90	HS or Eqv	None	ST OJT
53-3041	Taxi Drivers & Chauffeurs	750	860	110	14.5%	1.5%	10	10	20	<HS	None	ST OJT
<b>53-5000</b>	<b>Water Transportation Workers</b>	<b>1,150</b>	<b>1,450</b>	<b>300</b>	<b>26.5%</b>	<b>2.6%</b>	<b>30</b>	<b>50</b>	<b>80</b>			
53-5021	Captains, Mates, & Pilots of Water Vessels	390	490	100	26.5%	2.6%	10	10	20	Bachelors	None	None
<b>53-6000</b>	<b>Other Transportation Workers</b>	<b>2,850</b>	<b>2,980</b>	<b>120</b>	<b>4.3%</b>	<b>0.4%</b>	<b>20</b>	<b>80</b>	<b>100</b>			
53-6021	Parking Lot Attendants	1,470	1,440	-20	-1.6%	-0.2%	0	40	40	<HS	None	ST OJT
53-6031	Service Station Attendants	330	300	-20	-7.1%	-0.7%	0	10	10	<HS	None	ST OJT
53-6051	Transportation Inspectors	190	210	20	12.1%	1.2%	**	10	10	SC, no deg	None	ST OJT



Table 4. Long-term Occupational Projections, Honolulu MSA, 2010 - 2020

SOC Code	Occupation Title	<u>Employment</u>		<u>Growth</u>		Avg. Ann. Growth	<u>Average Annual Openings</u>			<u>Education and Training</u>		
		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
53-6099	Transportation Workers, All Other	470	530	60	13.7%	1.4%	10	10	20	HS or Eqv	None	ST OJT
<b>53-7000</b>	<b>Material Moving Workers</b>	<b>10,270</b>	<b>11,290</b>	<b>1,020</b>	<b>9.9%</b>	<b>1.0%</b>	<b>110</b>	<b>310</b>	<b>420</b>			
53-7011	Conveyor Operators & Tenders	80	90	10	10.8%	1.1%	**	**	**	<HS	None	ST OJT
53-7021	Crane & Tower Operators	140	150	10	8.1%	0.8%	**	**	10	<HS	1-5 years	LT OJT
53-7051	Industrial Truck & Tractor Operators	680	770	90	12.9%	1.3%	10	20	30	<HS	< 1 year	ST OJT
53-7061	Cleaners of Vehicles & Equipment	1,250	1,410	170	13.5%	1.3%	20	40	50	<HS	None	ST OJT
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	5,410	6,070	670	12.3%	1.2%	70	170	240	<HS	None	ST OJT
53-7063	Machine Feeders & Offbearers	350	280	-80	-21.8%	-2.2%	0	10	10	<HS	None	ST OJT
53-7064	Packers & Packagers, Hand	1,740	1,840	100	5.9%	0.6%	10	50	60	<HS	None	ST OJT
53-7081	Refuse & Recyclable Material Collectors	340	380	50	13.4%	1.3%	**	10	10	<HS	None	ST OJT
53-7199	Material Moving Workers, All Other	160	180	10	8.0%	0.8%	**	**	**	<HS	None	ST OJT

# Appendix

## Appendix A: Definitions for the Education and Training Classification System

Entry Level Education Requirements	
Education Level	Definition
Doctoral or professional degree	Requires at least 3 years of full-time academic work beyond a bachelor's degree
Master's degree	Requires 1 or 2 years of full-time academic study beyond a bachelor's degree
Bachelor's degree	Requires at least 4 years, but not more than 5 years, of full-time academic study
Associate's degree	Requires at least 2 years but not more than 4 years of full-time academic study beyond high school
Postsecondary non-degree award	Some programs may last a few weeks while others may last 1 to 2 years and leads to a certificate or other award but not a degree
Some college, no degree	Includes the completion of one or more postsecondary courses that did not result in a degree or award
High School diploma or equivalent	Completion of high school or an equivalent program
Less than high school	Completion of any level of primary or secondary education that did not result in a high school diploma or equivalent

Experience Requirements	
Training Level	Definition
More than 5 years experience (5+)	More than 5 years of work experience in a related occupation may be a typical method of entry
1-5 years experience (1-5)	Workers typically need 1-5 years of work experience in a related occupation
Less than 1 year of experience (<1)	Workers typically need less than 1 year of work experience in a related occupation

Training Requirements	
Training Level	Definition
Internship/residency (Itn/Res)	Training that involves preparation in a field, generally under supervision, in a professional setting, may be paid or unpaid and varies from 1 to 8 years
Apprenticeship (Appren)	Combines on-the-job training and related occupation-specific technical instruction which may last between 3 to 5 years
Long-term on-the-job training (LT OJT)	Lasts more than 12 months and includes either on-the-job training or combines work experience with formal instruction
Moderate-term on-the-job training (MT OJT)	Includes informal instruction and on-the-job training that lasts between 1 and 12 months
Short-term on-the-job training (ST OJT)	Includes informal, on-the-job training or experience of 1 month or less

## Appendix B: Industry Definitions

This report contains data for eleven major industry divisions.

### Goods-producing industries

**Natural resources and mining** is made up of two parts:

- *Agriculture, forestry, fishing, and hunting* which is comprised of growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats; and
- *Mining* activities of extracting naturally occurring mineral solids, liquid minerals, and gases.

**Construction** is made up of establishments primarily engaged in the construction of buildings and other structures, heavy construction other than buildings, and alterations, reconstruction, installation, and maintenance and repairs.

**Manufacturing** includes the mechanical, physical, or chemical transformation of materials, substances, or components into new products.

### Services-providing industries

**Trade, transportation, and utilities** is comprised of:

- *Wholesale trade* includes activities of selling or arranging for the purchase or sale of goods for resale; capital or durable non-consumer goods; and raw and intermediate materials and supplies used in production, and providing services incidental to the sale of the merchandise;
- *Retail trade* includes retailing merchandise, generally in small quantities to the general public and providing services incidental to the sale of merchandise;
- *Transportation and warehousing* includes industries providing transportation of passengers and cargo, warehousing and storing goods, scenic and sightseeing transportation, and supporting these activities; and
- *Utilities* sector activities include the provision of utility services.

**Information** includes the following activities: a) producing and distributing information and cultural products; b) providing the means to transmit or distribute these products as well as data or communications; and c) processing data.

**Financial activities** consists of:

- *Finance and insurance* involves the creation, liquidation, or change in ownership of financial transactions and/or facilitating financial transactions; and
- *Real estate and rental and leasing* includes activities such as renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services.

**Professional and business services** has three sectors:

- *Professional, scientific, and technical services* is comprised of establishments that specialize in performing professional, scientific, and technical activities for the operations of other organizations;
- *Management of companies and enterprises* involve the holding of securities of companies and enterprises, for the purpose of owning controlling interest or influencing their management decisions, or administering, overseeing, and managing other establishments of the same company or enterprise and normally undertaking the strategic or organizational planning and decision-making of the company or enterprise; and
- *Administrative and support and waste management and remediation services* include performing routine support activities for the day-to-day operations of other organizations.

**Education and health services** is made up of two sectors:

- *Educational services* involves providing instruction and training in a wide variety of subjects; and
- *Health care and social assistance* provides health care and social assistance for individuals.

## Appendix C: Occupational Classifications

The occupational classification system used in this publication corresponds to the Standard Occupational Classification (SOC) system.

Four levels of occupational classifications are used in this publication: broad group, major group, minor group, broad occupation, and detailed occupation. Each lower level of detail identifies a more specific group of occupations. Each occupation is classified in one of 22 major groups. Major groups are broken into minor groups, which in turn are divided into broad occupations. Broad occupations are then divided into one or more detailed occupations.

Each item in the hierarchy is designated by a six-digit code, an SOC code. The first two digits of the SOC code represent the major group such as 11-0000 for Management Occupations. Major groups end with "0000." The third digit, represents the minor occupational group such as 11-3000 for Operations Specialties Managers. Minor groups end with "000." The fourth and fifth digits represent the broad occupation such as 13-1020 for Buyers and Purchasing Agents. Broad occupations end with "0." And the sixth digit represents the detailed occupation, such as 13-1021 for Buyers and Purchasing Agents, Farm Products. Detailed occupations end with a non-zero.

An alternate hierarchy used in this publication is an intermediate aggregation of 12 broad groups. It basically recognizes the major groups as broad groups with the following aggregations of major groups into broad groups:

- 1) Management, business, science, and arts broad group consists of the following major groups: management; business and financial operations; computer and mathematical; architecture and engineering; life, physical, and social science; community and social

service; legal; education, training, and library ; arts, design, entertainment, sports, & media; and healthcare practitioners and technical .

- 2) Service broad group consists of the following major groups: healthcare support; protective service; food preparation and serving related; building and grounds cleaning and maintenance; and personal care and service.
- 3) Sales and office broad group consists of the major groups: sales and related; and office and administrative support.
- 4) Natural resources, construction, and maintenance broad group consists of the following major groups: farming, fishing and forestry; construction and extraction; and installation, maintenance, and repair.
- 5) Production, transportation, and material moving broad group consists of the following major groups: production occupations; and transportation and material moving.

The following paragraphs provide a brief definition of each major group.

**Management Occupations** consist of managers responsible for the policy-making, planning, directing, or coordination of work activities of an establishment or organization. Examples include financial managers, construction managers, and engineering managers.

**Business and Financial Operations Occupations** include business operations specialists such as business agents, buyers, claims adjusters, appraisers and examiners, compliance officers, cost estimators, emergency management specialists, human resources specialists, logisticians, management ana-

## Occupational Classifications (continued)

lysts, and meeting planners; and financial specialists like accountants and auditors, real estate appraisers, budget analysts, credit analysts, financial analysts, financial examiners, loan counselors, and tax examiners.

**Computer and Mathematical Occupations** include computer specialists who perform computer research, programming, software development, provide technical assistance, database administration, and network administration. Mathematical science occupations develop and apply mathematical theory to analyze statistical data, which provides useful information that may assist in decision-making or policy formulation.

**Architecture and Engineering Occupations** are primarily responsible for planning and designing structures, land areas, machines, and processes. Also included are drafters and engineering and mapping technicians.

**Life, Physical, and Social Science Occupations** are comprised of life scientists including agriculture, biological, conservation, and medical scientists; physical scientists such as astronomers and physicists, atmospheric and space scientists, chemists, and environmental scientists and social scientists and related workers like economists, market researchers, psychologists, sociologists, and urban and regional planners.

**Community and Social Service Occupations** provide services such as counseling, social services, and religious worship to various groups or individuals.

**Legal Occupations** consists of lawyers, judges, arbitrators, mediators, magistrates, and legal support workers such as paralegals, law clerks, court reporters, and title examiners.

**Education, Training, and Library Occupations** include postsecondary, primary, secondary, and special education teachers, adult literacy instructors, librarians, curators, archivists, library technicians and teacher assistants.

**Arts, Design, Entertainment, Sports, and Media Occupations** are comprised of art and design workers such as craft and multi-media artists, fashion, floral, graphic, and interior designers; entertainers and performers, sports and related workers, consisting of actors, athletes, dancers, and musicians; media and communication workers including announcers, reporters, public relations specialists, and writers; and media and communication equipment workers which includes broadcast technicians, radio operators, photographers, and camera operators.

**Healthcare Practitioner and Technical Occupations** includes workers directly involved in the diagnosis and treatment of health-related matters. This occupational group includes physicians, chiropractors, dentists, pharmacists, physician assistants, registered nurses, therapists, veterinarians, and health technologists and technicians.

**Healthcare Support Occupations** perform healthcare duties under the direct supervision of medical staff. Those classified under this category include home health aides, physical therapist assistants, dental assistants, pharmacy aides, and massage therapists.

**Protective Service Occupations** protect people and property. Workers in this group include law enforcement workers, fire fighters, animal control workers, and security guards.

**Food Preparation and Serving Related Occupations** prepare, clean, and serve meals and beverages to patrons. Examples of workers in this group are

## Occupational Classifications (continued)

cooks, bartenders, waiters and waitresses, dining room attendants, and hosts and hostesses.

**Building and Grounds Cleaning and Maintenance Occupations** consists of building cleaning and pest control workers and grounds maintenance workers who clean and maintain the interior of buildings and property grounds. First-line supervisors are also included.

**Personal Care and Service Occupations** include entertainment attendants, funeral service workers, personal appearance workers, transportation attendants, childcare workers, and recreation workers.

**Sales and Related Occupations** influence or assist customers in the purchase of merchandise, real estate, services, or investments. This category includes retail salespersons, travel agents, cashiers, and insurance brokers.

**Office and Administrative Support Occupations** perform office and clerical tasks such as typing, filing, computer operations, record keeping, mail preparation, and distribution. Examples include tellers, hotel desk clerks, and public safety dispatchers.

**Farming, Fishing, and Forestry Occupations** include agriculture inspectors, graders and sorters, and forest and conservation workers. Also included are the first-line supervisors of these workers.

**Construction and Extraction Occupations** construct, assemble, maintain, install, and perform repair work on structures and fixtures. This may involve the use of hand and power tools. Examples

of jobs classified under this group include boiler-makers, carpenters, electricians, painters, and construction trades helpers.

**Installation, Maintenance, and Repair Occupations** primarily deal with electrical and electronic equipment or vehicle and mobile equipment. They repair, maintain, install, test, or make adjustments to the equipment using various power and hand tools. Examples of workers in this field include telecommunications equipment installers, aircraft mechanics, and medical equipment repairers.

**Production Occupations** include assemblers and fabricators, food processing workers, metal and plastic workers, printing workers, textile and apparel workers, woodworkers, and plant and system operators. Workers employed as bakers, machinists, printing machine operators, and cabinetmakers would be included in this occupational group.

**Transportation and Material Moving Occupations** consist of air transportation workers which includes aircraft pilots and air traffic controllers; motor vehicle operators such as ambulance drivers and attendants, bus drivers, and delivery drivers; water transportation workers like sailors, boat captains, and ship engineers; other transportation workers including parking lot attendants, service station attendants, traffic technicians, and transportation inspectors; and material moving workers including conveyor operators, crane operators, dredging and excavating operators, hoist and winch operators, laborers, pumping station operators, refuse collectors, and truck and ship loaders.