

Hawaii County

Employment Projections for Industries & Occupations 2010-2020

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*Neil Abercrombie, Governor
State of Hawaii*

*Dwight Takamine, Director
Department of Labor and Industrial Relations*

*Phyllis Dayao, Chief
Research and Statistics Office*

*Vicki Lau, Section Supervisor
Melonie Ogata, Research Statistician
Labor Market Research Section*



830 Punchbowl Street, Room 304
Honolulu, HI 96813
Phone: 808-586-9025
Email: dlir.rs.hiwi@hawaii.gov
Website: www.hiwi.org



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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 Hawaii County 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 Hawaii County 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 Hawaii County will increase by 10,250 jobs to 79,550 which translates to 13.5 percent of the total state-wide job gains. The county's growth rate of 14.8 percent will rank higher than the statewide rate of 11.7 percent.

Services-providing industries will be the major source of job gains, providing over four-fifths of the total job opportunities for Hawaii County. While this sector will continue to employ 80 percent of the counties' workforce, the actual percentage gains in goods-producing industries will vastly outpace services-providing advances. Goods-producing industries will shoot up by 21.7 percent versus 15.0 percent growth in the services-providing sector

Figure 1

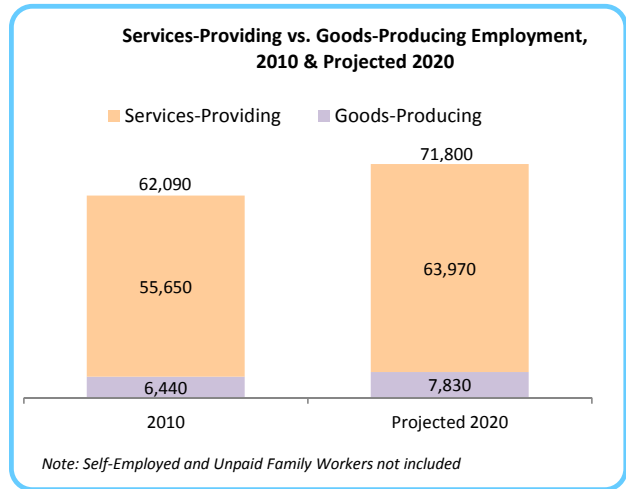
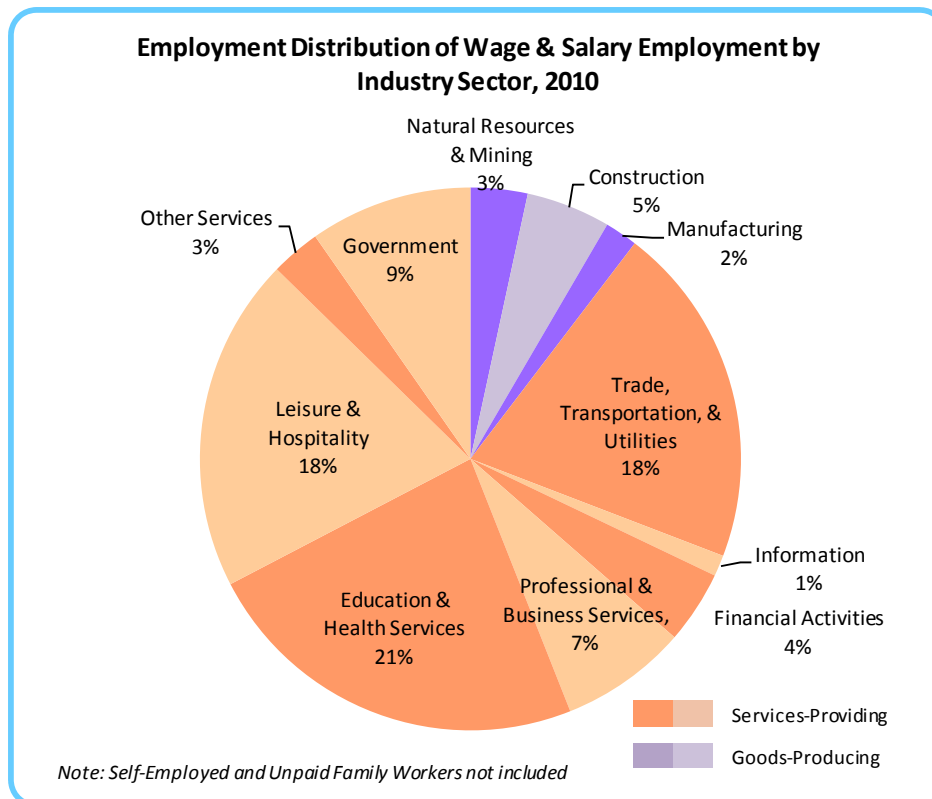


Figure 2



Trends by Major Industry Division

As Hawaii County continues to reverse the steep job decline that has hampered the economy for the past several years, eleven out of the twelve major divisions will experience growth. A significant chunk of the numerical gains will originate from the industries that employ the most workers, while the industries advancing the fastest will vary.

The county's largest industry division, **education and health services**, which consists of approximately 21 percent of the total workforce, will create the most jobs generating almost one-fourth of the total county employment gains. Advances in both sectors will lead to an overall growth rate of 16.5 percent. Healthcare and social assistance, up by 17.8 percent, will outperform educational services, which will rise by 14.9 percent.

Trade, transportation, and utilities, with an increase of 2,170 positions, will post the second highest job gain. Over 85 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.

Growth in the **leisure and hospitality** industry will offer another major source of employment, providing the third largest numerical gain in jobs. Accommodation and food services, which constitutes over 86 percent of the total employment in this industry, will contribute the bulk of the openings. 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.

The **self-employed and unpaid family workers** division is forecasted to increase by 530 jobs, result-

ing in modest growth of 7.4 percent. Approximately 10 percent of the county workforce will be classified in this division throughout the projected period.

Government will see minimal growth of 4.5 percent or 270 positions. Minor gains will occur at the state and local level of government, while federal government will fall slightly. This slower growth will shrink the proportion of government jobs from 9 percent to 8 percent of the total employed.

With the pickup of 1,320 jobs, **professional and business services** will post the fourth largest job gain, and the growth rate of 28.0 percent will rank second highest among the twelve industries. Over three-fourths of the job openings will originate from administrative and support and waste management and remediation services. Within this sector, the following subsectors are most likely to be responsible for the upswing in jobs: employment service agencies; and services to buildings.

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 29.7 percent, more than double the industry wide growth rate of 14.8 percent. All sectors should enjoy sizable advances. However, because of the steep job decline in construction, the projected job growth will still fall short of the industry's pre-recession employment level.

Financial activities will be up by 12.5 percent with the addition of 340 positions. While the real estate and rental and leasing sector will rise by 15.6 percent, the finance and insurance sector is anticipating a modest increase of 7.7 percent.

Forecasted growth of 15.5 percent for the **natural resources and mining** sector will push the rate of expansion above the county's rate during the pro-

Industry Employment Trends

Trends by Major Industry Division (continued)

jected period. This industry will benefit from job gains in agriculture, forestry, fishing and hunting, particularly jobs related to crop production and support activities for agriculture and forestry.

A projected increase of 290 jobs will drive the **other services** industry division upward by 15.8 percent. Advances in religious, grantmaking, civic, professional, and similar organizations will account for about 45 percent of the job opportunities created within this industry.

Manufacturing is predicted to edge upward by 11.7 percent throughout the ten-year period, which equates to a minimal gain of 140 new jobs. Durable goods manufacturing will be the primary source for the positions added.

The **information** industry, with approximately one percent of the workforce, will be the lone industry that will suffer a 7.5 percent job loss. Slowdowns affecting the motion picture and sound recording industries will account for the contraction in jobs.

Table 1

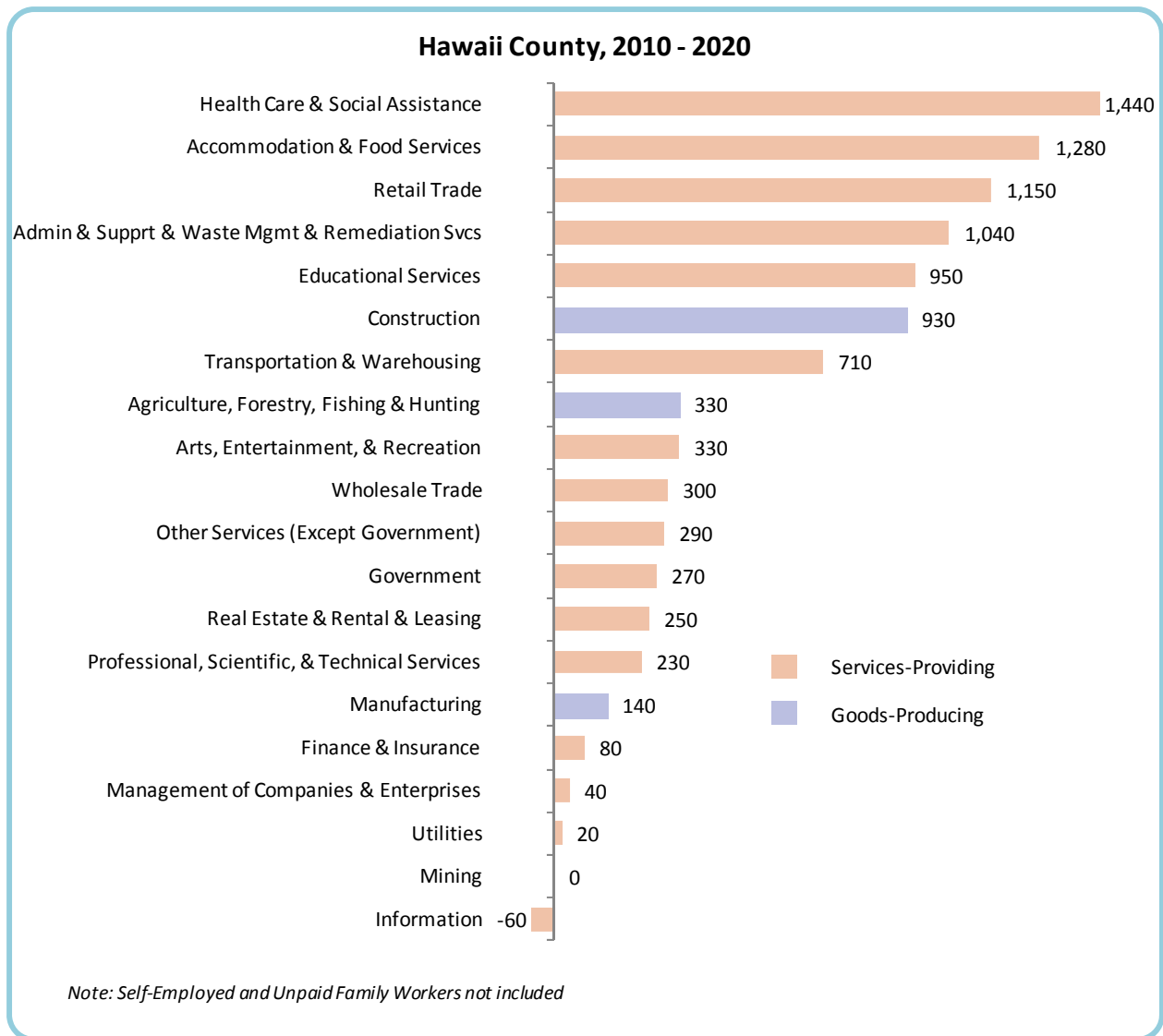
Employment Projections by Major Industry Division, Hawaii County, 2010-2020					
Industry Division	2010	2020	Net Growth	Percent Growth	Ann. Avg. Growth
Total All Industries	69,300	79,550	10,250	14.8%	1.5%
Education & Health Services (inc. State Education & Hospitals)	14,490	16,890	2,390	16.5%	1.6%
Trade, Transportation, & Utilities	12,710	14,880	2,170	17.1%	1.7%
Leisure & Hospitality	12,410	14,020	1,600	12.9%	1.3%
Self-Employed & Unpaid Family Workers	7,210	7,740	530	7.4%	0.7%
Government (exc. State Education & Hospitals)	6,020	6,290	270	4.5%	0.4%
Professional & Business Services	4,700	6,010	1,320	28.0%	2.8%
Construction	3,120	4,040	930	29.7%	3.0%
Financial Activities	2,700	3,040	340	12.5%	1.2%
Natural Resources & Mining	2,110	2,430	330	15.5%	1.5%
Other Services	1,840	2,130	290	15.8%	1.6%
Manufacturing	1,210	1,360	140	11.7%	1.2%
Information	780	720	-60	-7.5%	-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 accommodation and food services industry, will account for a little over one fourth of the total jobs added in Hawaii County. Employment in the healthcare and social assistance sector will lead all industries with the addi-

tion of 1,440 positions. All subsectors will share in the employment advances projected for this industry. Accommodation and food services will post the next highest increase of 1,280 jobs. Most of the gains will be derived from an increase in food services and drinking places.

Figure 3



Industry Employment Trends

Percent Change in Detailed Wage and Salary Industries

As tourism continues to gain momentum in Hawaii County, transportation and warehousing is anticipated to expand by more than twice as fast as the average for all industries. Growth in all of its sub-sectors except the postal service, will be well above the countywide average. Within this sector, air trans-

portation in particular will post the highest growth rate and will add the most jobs. Administration and support and waste management and remediation services will also experience sizable growth, largely due to advances in administrative and support services.

Figure 4

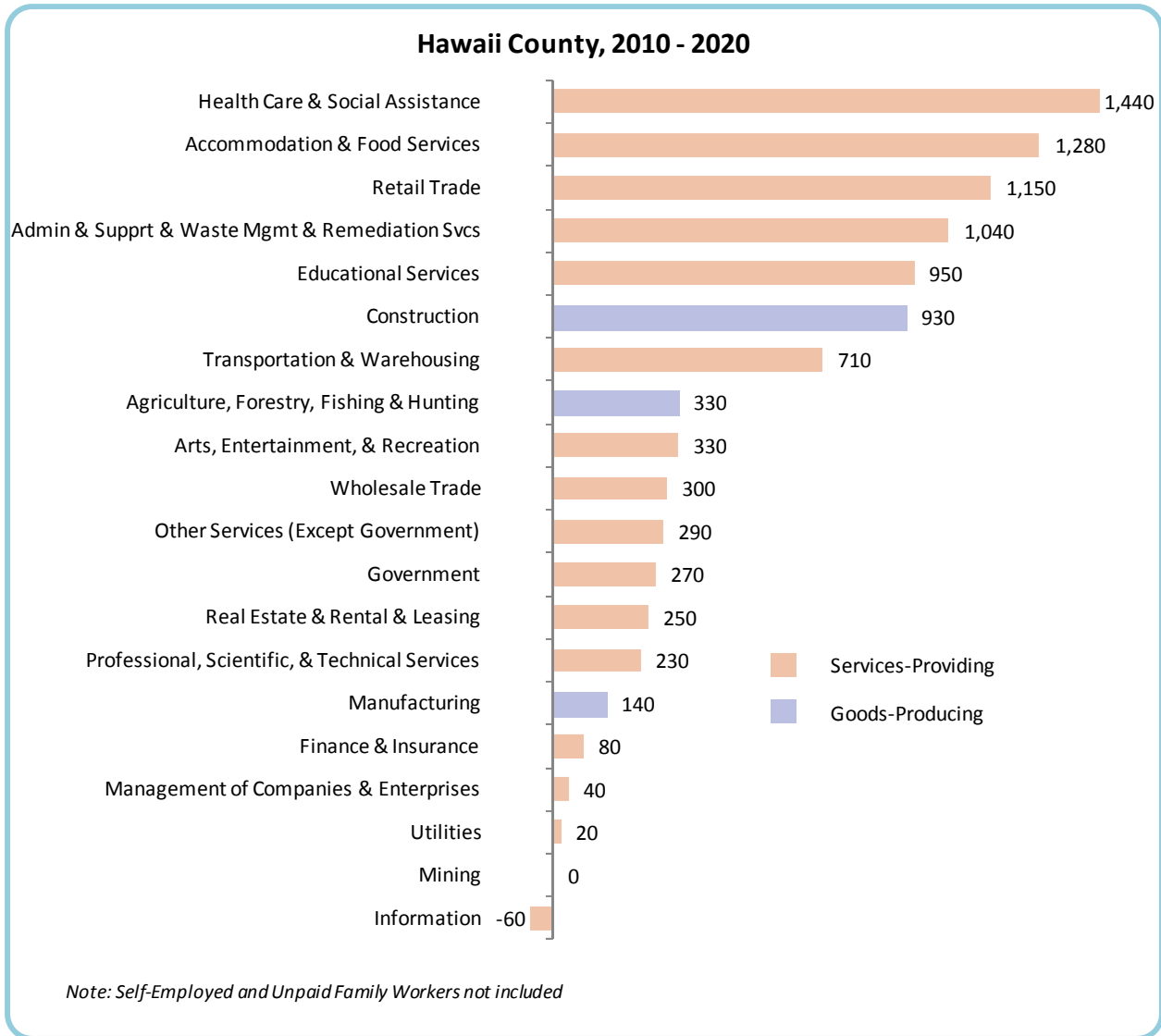


Table 2. Long-term Industry Projections, Hawaii County, 2010 - 2020

NAICS Code	Industry Title	Employment		Growth		Ann. Avg. Growth
		2010	2020	Net	Percent	
000000	Total All Industries	69,300	79,550	10,250	14.8%	1.5%
101000	Goods-Producing	6,440	7,830	1,400	21.7%	2.2%
101100	Natural Resources & Mining	2,110	2,430	330	15.5%	1.5%
110000	Agriculture, Forestry, Fishing & Hunting	2,080	2,400	330	15.7%	1.6%
111000	Crop Production	1,570	1,760	190	11.9%	1.2%
112000	Animal Production	340	350	10	1.5%	0.1%
115000	Support Activities for Agriculture & Forestry	150	280	130	86.5%	8.6%
210000	Mining	30	30	0	0.0%	0.0%
212000	Mining (except Oil & Gas)	30	30	0	0.0%	0.0%
101200	Construction	3,120	4,040	930	29.7%	3.0%
230000	Construction	3,120	4,040	930	29.7%	3.0%
236000	Construction of Buildings	970	1,340	370	38.4%	3.8%
237000	Heavy & Civil Engineering Construction	500	570	80	16.0%	1.6%
238000	Specialty Trade Contractors	1,650	2,130	480	28.8%	2.9%
101300	Manufacturing	1,210	1,360	140	11.7%	1.2%
310000	Manufacturing	1,210	1,360	140	11.7%	1.2%
311000	Food Manufacturing	670	630	-40	-6.7%	-0.7%
312000	Beverage & Tobacco Product Manufacturing	100	110	20	16.3%	1.6%
321000	Wood Product Manufacturing	50	50	10	15.6%	1.6%
323000	Printing & Related Support Activities	60	60	0	-5.0%	-0.5%
325000	Chemical Manufacturing	70	120	50	60.8%	6.1%
327000	Nonmetallic Mineral Product Manufacturing	110	130	30	24.5%	2.5%
332000	Fabricated Metal Product Manufacturing	20	30	10	34.8%	3.5%
337000	Furniture & Related Product Manufacturing	60	80	20	40.0%	4.0%
339000	Miscellaneous Manufacturing	80	150	70	81.5%	8.1%
102000	Services-Providing	55,650	63,970	8,320	15.0%	1.5%
102100	Trade, Transportation, & Utilities	12,710	14,880	2,170	17.1%	1.7%
420000	Wholesale Trade	1,560	1,850	300	19.0%	1.9%
423000	Merchant Wholesalers, Durable Goods	360	450	100	27.3%	2.7%
424000	Merchant Wholesalers, Nondurable Goods	1,170	1,350	180	15.8%	1.6%
425000	Wholesale Electronic Markets & Agents & Brokers	30	50	10	41.2%	4.1%
440000	Retail Trade	8,620	9,760	1,150	13.3%	1.3%
441000	Motor Vehicle & Parts Dealers	720	860	140	19.5%	2.0%
442000	Furniture & Home Furnishings Stores	130	170	30	25.8%	2.6%
443000	Electronics & Appliance Stores	80	90	10	15.6%	1.6%
444000	Building Material & Garden Equipment & Supplies Dealers	950	1,140	200	20.7%	2.1%
445000	Food & Beverage Stores	2,320	2,450	130	5.6%	0.6%
446000	Health & Personal Care Stores	430	540	110	24.9%	2.5%
447000	Gasoline Stations	460	410	-50	-10.9%	-1.1%
448000	Clothing & Clothing Accessories Stores	600	700	100	15.9%	1.6%
451000	Sporting Goods, Hobby, Book, & Music Stores	290	310	20	8.3%	0.8%
452000	General Merchandise Stores	2,120	2,470	360	16.9%	1.7%
453000	Miscellaneous Store Retailers	500	570	70	14.2%	1.4%

Table 2. Long-term Industry Projections, Hawaii County, 2010 - 2020

NAICS Code	Industry Title	Employment		Growth		Ann. Avg.
		2010	2020	Net	Percent	Growth
454000	Nonstore Retailers	30	60	30	81.8%	8.2%
480000	Transportation & Warehousing	2,010	2,720	710	35.3%	3.5%
481000	Air Transportation	350	560	210	60.0%	6.0%
483000	Water Transportation	50	70	20	41.3%	4.1%
484000	Truck Transportation	430	540	100	24.0%	2.4%
485000	Transit & Ground Passenger Transport	290	390	100	34.6%	3.5%
487000	Scenic & Sightseeing Transportation	590	780	190	32.3%	3.2%
488000	Support Activities for Transportation	130	160	30	20.9%	2.1%
492000	Couriers & Messengers	140	190	50	36.0%	3.6%
493000	Warehousing & Storage	30	30	10	26.9%	2.7%
220000	Utilities	530	540	20	3.4%	0.3%
221000	Utilities	530	540	20	3.4%	0.3%
102200	Information	780	720	-60	-7.5%	-0.7%
510000	Information	780	720	-60	-7.5%	-0.7%
511000	Publishing Industries	160	160	0	-1.3%	-0.1%
512000	Motion Picture & Sound Recording Industries	270	150	-110	-43.0%	-4.3%
515000	Broadcasting (except Internet)	50	60	10	9.8%	1.0%
517000	Telecommunications	270	290	20	8.1%	0.8%
518000	Internet Service Providers, Web Search Portals, & Data Processing Services	10	30	20	142.9%	14.3%
519000	Other Information Services	20	30	10	64.7%	6.5%
102300	Financial Activities	2,700	3,040	340	12.5%	1.2%
520000	Finance & Insurance	1,080	1,160	80	7.7%	0.8%
522000	Credit Intermediation & Related Activities	800	850	50	6.1%	0.6%
523000	Securities, Commodity Contracts, & Other Financial Investments & Related Activities	60	70	20	26.8%	2.7%
524000	Insurance Carriers & Related Activities	220	240	20	8.6%	0.9%
525000	Funds, Trusts, & Other Financial Vehicles					
530000	Real Estate & Rental & Leasing	1,630	1,880	250	15.6%	1.6%
531000	Real Estate	960	1,040	80	8.4%	0.8%
532000	Rental & Leasing Services	670	840	170	26.0%	2.6%
102400	Professional & Business Services	4,700	6,010	1,320	28.0%	2.8%
540000	Professional, Scientific, & Technical Services	1,370	1,610	230	16.9%	1.7%
541000	Professional, Scientific, & Technical Services	1,370	1,610	230	16.9%	1.7%
550000	Management of Companies & Enterprises	250	290	40	17.7%	1.8%
551000	Management of Companies & Enterprises	250	290	40	17.7%	1.8%
560000	Administrative & Support & Waste Management & Remediation Services	3,070	4,110	1,040	33.9%	3.4%
561000	Administrative & Support Services	2,930	3,880	950	32.2%	3.2%
562000	Waste Management & Remediation Service	140	240	100	67.9%	6.8%
102500	Education & Health Services, Inc. State Education & Hospitals	14,490	16,890	2,390	16.5%	1.6%
610000	Educational Services	6,380	7,330	950	14.9%	1.5%
611000	Educational Services	6,380	7,330	950	14.9%	1.5%

Table 2. Long-term Industry Projections, Hawaii County, 2010 - 2020

NAICS Code	Industry Title	Employment		Growth		Ann. Avg.
		2010	2020	Net	Percent	Growth
620000	Health Care & Social Assistance	8,110	9,550	1,440	17.8%	1.8%
621000	Ambulatory Health Care Services	2,800	3,230	420	15.1%	1.5%
622000	Hospitals	2,020	2,300	280	14.0%	1.4%
623000	Nursing & Residential Care Facilities	840	970	130	15.9%	1.6%
624000	Social Assistance	2,460	3,060	600	24.5%	2.5%
102600	Leisure & Hospitality	12,410	14,020	1,600	12.9%	1.3%
710000	Arts, Entertainment, & Recreation	1,660	1,990	330	19.6%	2.0%
711000	Performing Arts, Spectator Sports, & Related Industries	220	230	10	4.7%	0.5%
712000	Museums, Historical Sites, & Similar Institutions	130	140	10	6.7%	0.7%
713000	Amusement, Gambling, & Recreation Industries	1,310	1,620	310	23.3%	2.3%
720000	Accommodation & Food Services	10,750	12,030	1,280	11.9%	1.2%
721000	Accommodation	5,550	6,000	450	8.1%	0.8%
722000	Food Services & Drinking Places	5,200	6,030	830	16.0%	1.6%
102700	Other Services (Except Government)	1,840	2,130	290	15.8%	1.6%
810000	Other Services (Except Government)	1,840	2,130	290	15.8%	1.6%
811000	Repair & Maintenance	380	460	90	23.1%	2.3%
812000	Personal & Laundry Services	340	390	60	17.0%	1.7%
813000	Religious, Grantmaking, Civic, Professional, & Similar Organizations	1,050	1,170	130	12.0%	1.2%
814000	Private Households	80	100	20	25.9%	2.6%
102800	Government	6,020	6,290	270	4.5%	0.4%
900000	Government	6,020	6,290	270	4.5%	0.4%
910000	Total Federal Government Employment	1,410	1,390	-20	-1.4%	-0.1%
491100	Postal Service	240	210	-30	-10.8%	-1.1%
999100	Federal Government, Exc. Post Office	1,170	1,180	10	0.5%	0.1%
920000	State Government, Exc. Education & Hospitals	1,940	2,020	80	4.0%	0.4%
930000	Local Government, Exc. Education & Hospitals	2,670	2,880	210	8.0%	0.8%
000671	Total Self-Employed & Unpaid Family Workers, All Jobs	7,210	7,740	530	7.4%	0.7%
006010	Self-Employed Workers, All Jobs	7,130	7,660	530	7.4%	0.7%
007010	Unpaid Family Workers, All Jobs	80	80	0	5.1%	0.5%

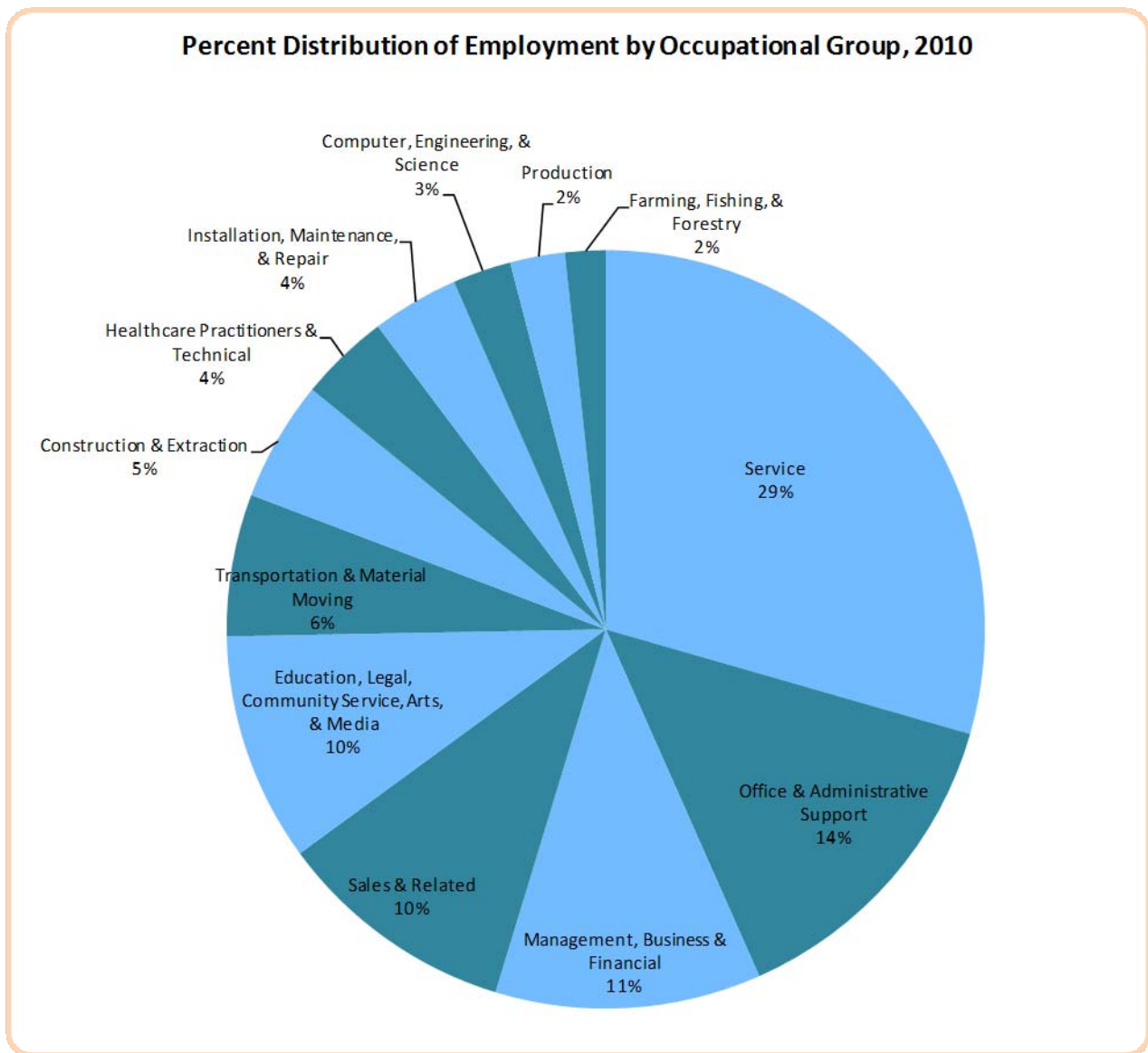
Occupational Employment Trends

Distribution of Occupations

The chart below shows the breakout of the twelve major occupational groups in 2010. Approximately 43 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 10,250 jobs will be created over the projected period.

Service occupations, which cover the largest segment of Hawaii County's workforce, are predicted to generate the biggest job increase. The creation of 3,180 service positions means almost one-third of the overall increase in county jobs will be derived from this occupational group. Over 82 percent of the gains will originate from three subsectors. Food preparation and serving related occupations, the largest subsector, will produce the biggest increase. Personal care and service occupations will follow with the next highest job gain and will also post the fastest growth rate among the subsectors. Advances in building and grounds cleaning and maintenance occupations should also provide more jobs.

The second largest group, **office and administrative support** occupations will post the third highest gain of 1,120 positions. However, the increase of 11.6 percent will rank second lowest 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.

An expansion of 720 jobs within **management, business, and financial** occupations, will translate into the slowest percentage growth of 9.2 percent for the county. Both of the major subsectors will realize employment advances during the projection period. Management occupations will create more openings, while the smaller subsector, business and financial operations occupations, should rise by a faster rate.

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

Those employed in **education, legal, community service, arts, and media** jobs will make up the fifth largest division, with a 10 percent share of all occupations. The largest subgroup – education, training, and library occupations should account for more than three-fourths of the hike in jobs. Increased hiring of instructors at all levels will boost the job count upward.

Transportation and material moving occupations, with a projected increase of 20.5 percent, will expand by the second fastest ratio of all the occupational divisions. The two largest subsectors – motor vehicle operators and material moving workers, will contribute more than 80 percent 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 in the **construction and extraction** occupational group will nudge upward from 5 percent to 6 percent by 2020. With anticipated growth expected to reach 23.2 percent, which is more than one and a half times above the county average, this division will boast 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.

Healthcare practitioners and technical occupations will gain 440 positions, up 16.5 percent over the ten-year period. Expansion in the health diagnosing and treating practitioners sector, driven largely by 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.

Projected growth of 16.8 percent for **installation, maintenance, and repair** occupations, one of the four smallest occupational groups, will be above the county average of 14.8 percent. A little over one-third of the total gain in this occupational sector will stem from a pickup in general maintenance and repair workers.

Occupational Employment Trends

Trends by Aggregated Major Occupational Divisions (continued)

Slower than average growth of 11.8 percent is anticipated for **computer, engineering, and science** occupations. Job gains will be split fairly equally among the major sectors. Computer and mathematical occupations will advance the fastest, while the other sectors will remain weaker than the average for all Hawaii County occupations.

Approximately 2 percent of all jobs will be classified as **production** occupations. Total jobs added by this division will be third lowest, relative to all the ma-

job occupational groups. This division contains smaller sized occupations that will add a limited number of new positions, thereby leading to slower overall growth.

Farming, fishing, and forestry occupations, with only a 2 percent share of all jobholders, will add the least number of positions. Most of the openings will be the result of an increase in agricultural workers, namely farm workers and laborers dealing with crops and nurseries.

Table 3

Employment Projections by Occupational Group, Hawaii County, 2010-2020					
Occupation Title	2010	2020	Net Growth	Percent Growth	Ann. Avg. Growth
Total, All Occupations	69,300	79,550	10,250	14.8%	1.5%
Service	20,400	23,580	3,180	15.6%	1.6%
Healthcare Support	1,850	2,180	330	17.7%	1.8%
Protective Service	2,030	2,260	230	11.3%	1.1%
Food Preparation & Serving Related	7,690	8,650	960	12.5%	1.2%
Building & Grounds Cleaning & Maintenance	5,220	6,050	830	15.8%	1.6%
Personal Care & Service	3,610	4,450	840	23.1%	2.3%
Office & Administrative Support	9,650	10,760	1,120	11.6%	1.2%
Management, Business & Financial	7,860	8,580	720	9.2%	0.9%
Management	6,220	6,640	420	6.7%	0.7%
Business & Financial Operations	1,640	1,950	310	18.8%	1.9%
Sales & Related	7,100	8,270	1,160	16.4%	1.6%
Education, Legal, Community Service, Arts, & Media	6,770	7,690	920	13.6%	1.4%
Community & Social Services	1,090	1,230	130	12.2%	1.2%
Legal	150	160	10	8.7%	0.9%
Education, Training, & Library	4,590	5,290	700	15.3%	1.5%
Arts, Design, Entertainment, Sports, & Media	940	1,010	70	7.8%	0.8%
Transportation & Material Moving	4,200	5,060	860	20.5%	2.1%
Construction & Extraction Occupations	3,550	4,380	830	23.2%	2.3%
Healthcare Practitioners & Technical	2,660	3,100	440	16.5%	1.7%
Installation, Maintenance, & Repair	2,570	3,000	430	16.8%	1.7%
Computer, Engineering, & Science	1,730	1,930	200	11.8%	1.2%
Computer & Mathematical	340	410	70	21.2%	2.1%
Architecture & Engineering	510	580	70	14.0%	1.4%
Life, Physical, & Social Science	890	950	60	6.9%	0.7%
Production	1,610	1,830	220	13.5%	1.4%
Farming, Fishing, & Forestry	1,200	1,360	170	13.8%	1.4%

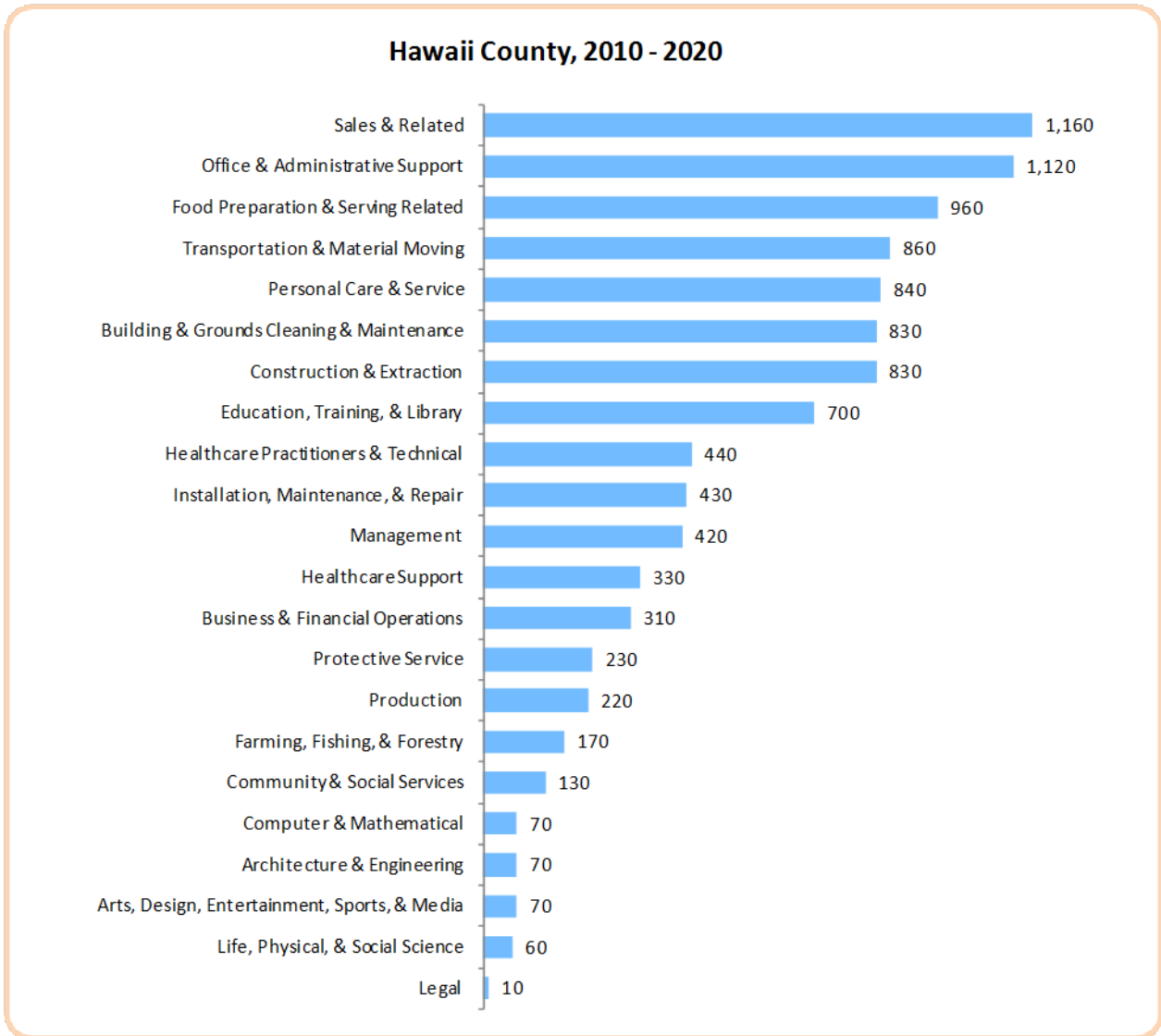
Occupational Employment Trends

Numeric Change in Employment by Major Occupational Group

All 22 of the major occupational groups will expand during the 2010 to 2020 projection period. The sales and related workers group is projected to gain the most jobs, driven largely by retail sales workers, namely retail salespersons. Within the office and

administrative support sector, occupations increasing the most include: general office clerks, reservation and transportation ticket agents and travel clerks, and bookkeeping, accounting, and auditing clerks.

Figure 6



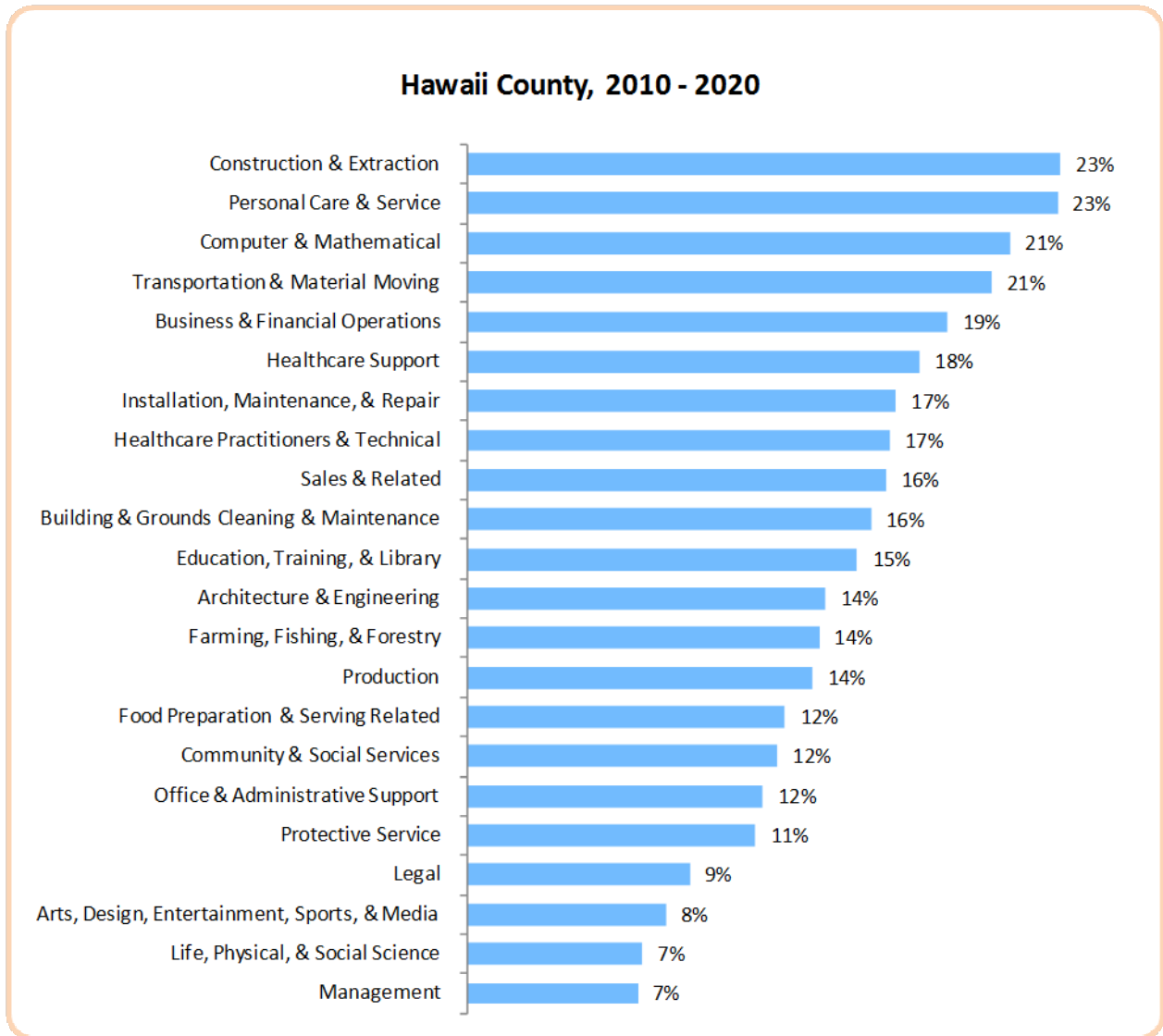
Occupational Employment Trends

Percent Change in Employment by Major Occupational Group

Construction and extraction occupations, with a projected expansion of 23 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 ser-

vice 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



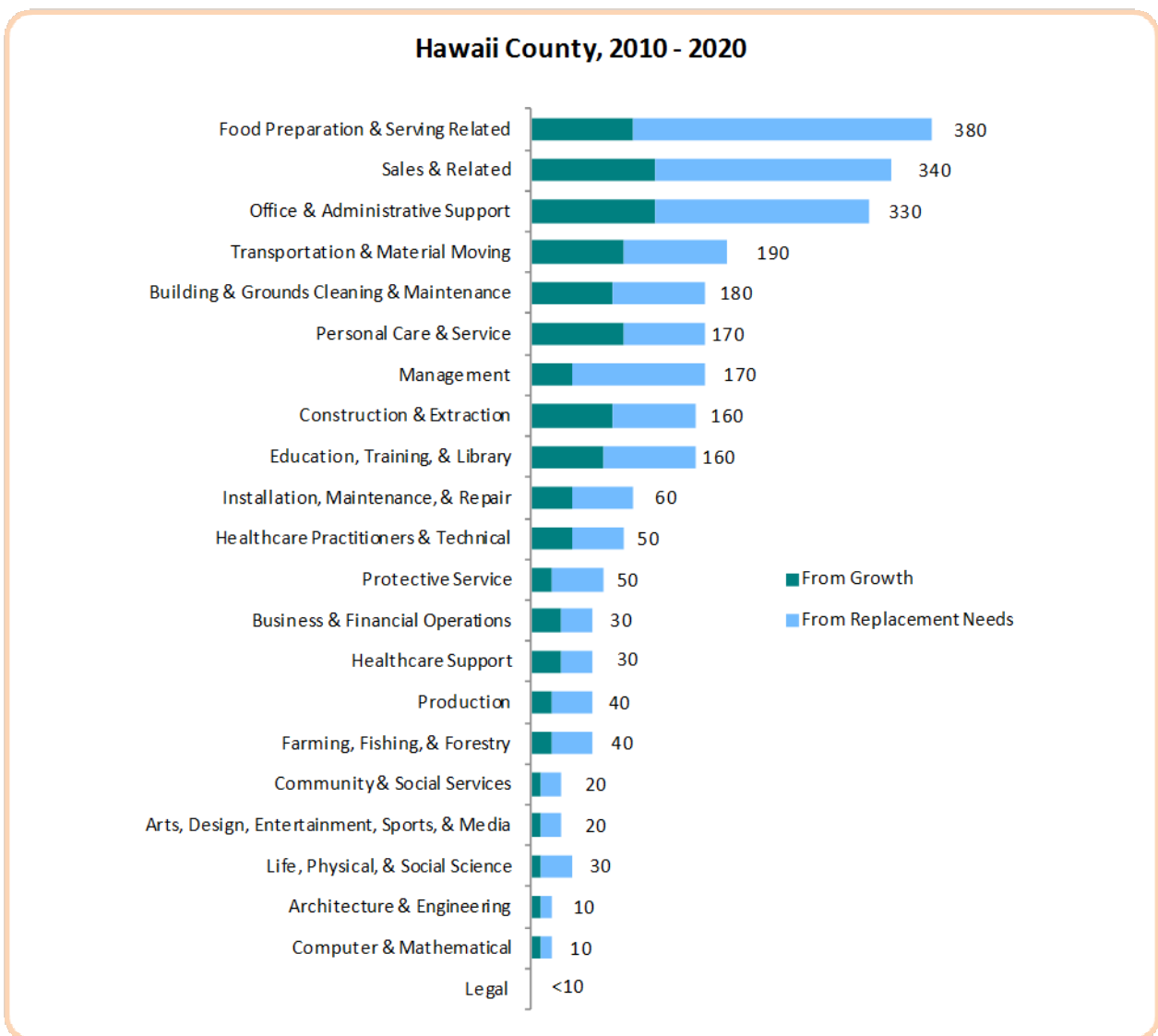
Occupational Employment Trends

Job Openings by Major Occupational Group

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 cre-

ated by economic expansion combined with replacement needs will be responsible for an estimated 2,740 openings per year during the projected period.

Figure 8



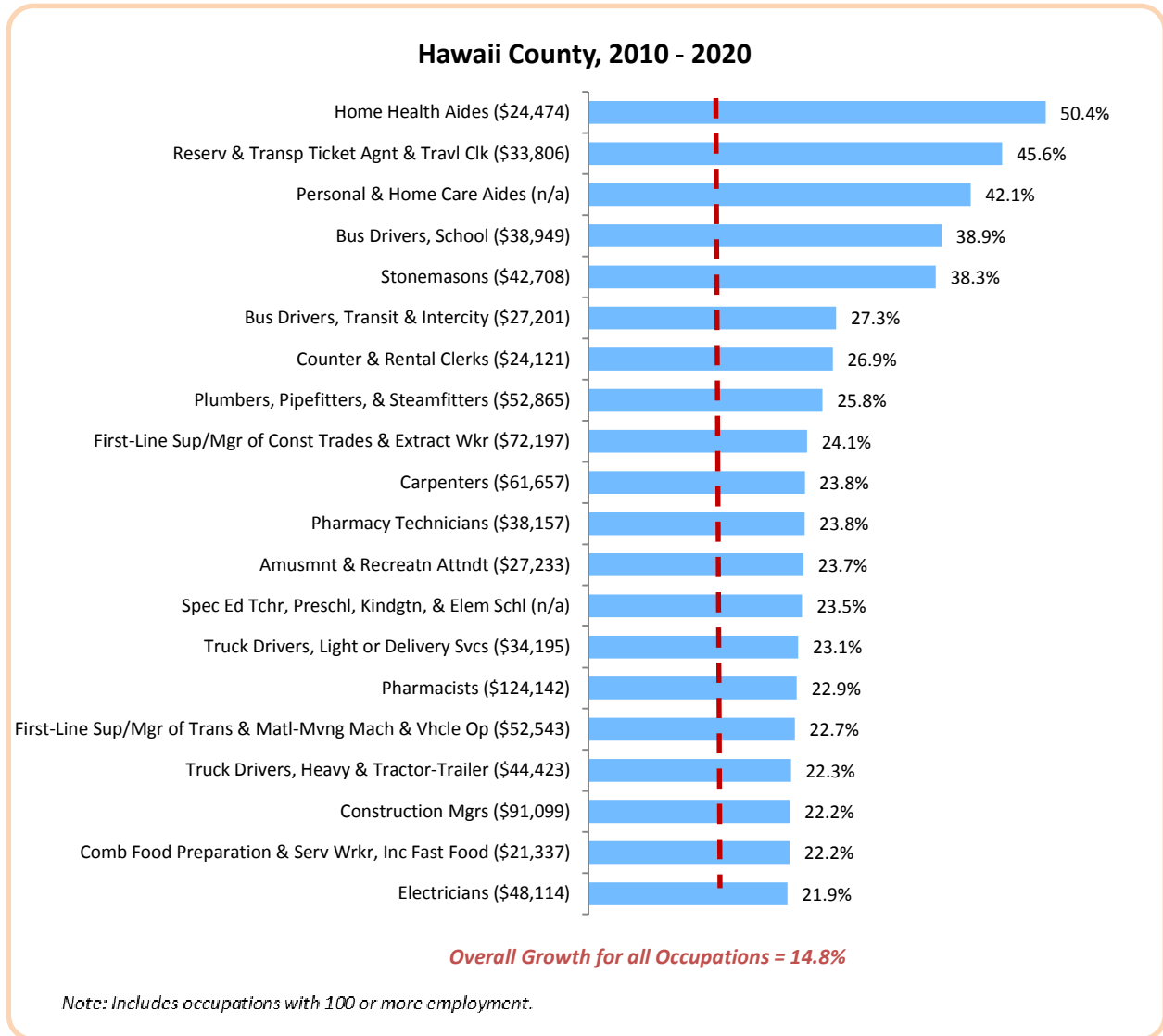
Occupational Employment Trends

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 of 14.8 percent for all occupations. Eight of the occupations relate to construction. These include: stonemasons; plumbers, pipefitters, and steamfitters; first-line supervisors/managers of construction trades and extraction workers; carpenters;

first-line supervisors/managers of transportation and material-moving machines and vehicle operators; heavy and tractor-trailer truck drivers; construction managers; and electricians. Job opportunities in healthcare, and tourism are also represented on this chart.

Figure 9



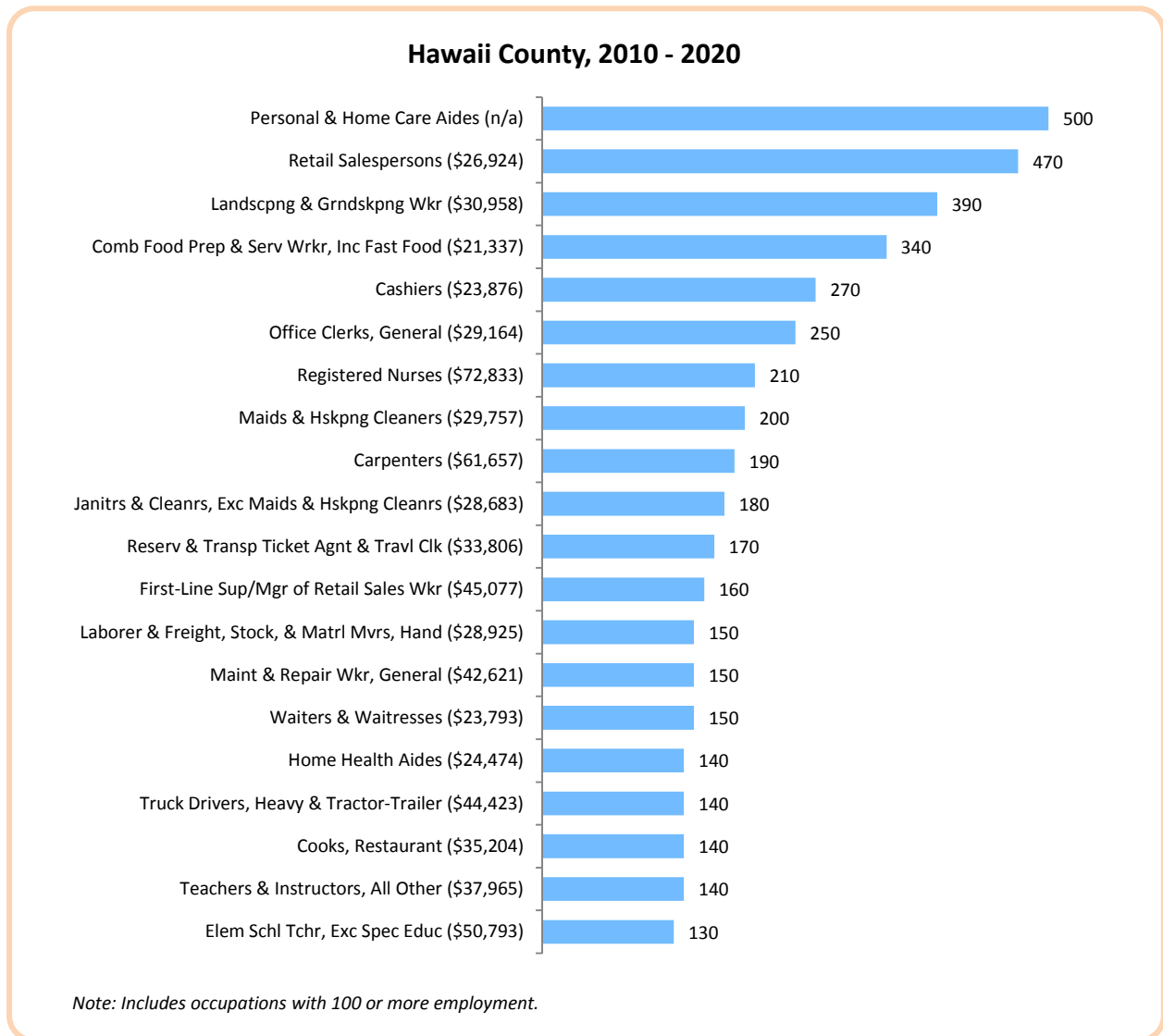
Occupational Employment Trends

Largest Numeric Growth in Occupations

The 20 occupations adding the greatest number of positions during the projected period will account for 4,470 openings, or 44 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 sales-

persons, combined food preparation and serving workers, cashiers, maids and housekeeping cleaners, janitors and cleaners, reservation and transportation ticket agents and travel clerks, waiters and waitresses, and restaurant cooks.

Figure 10



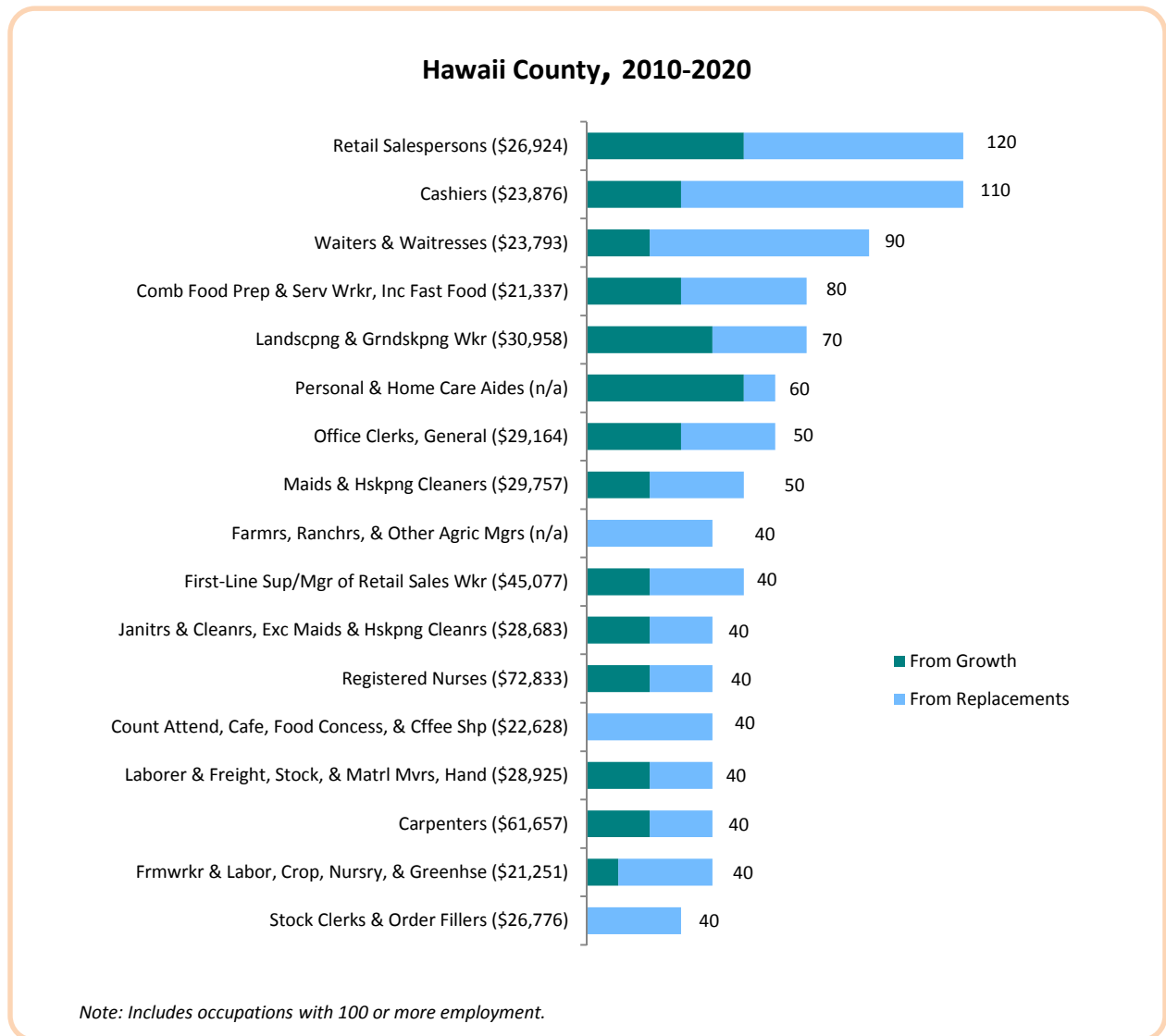
Occupational Employment Trends

Job Openings Based on Annual Growth and Replacements

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. Hawaii’s strong tourist market will boost employment opportunities for the following occupations: retail salespersons; cashiers; waiters and wait-

resses; combined food preparation and serving workers; maids and housekeeping cleaners; first-line supervisors/managers of retail sales workers; janitors and cleaners; and counter attendants at cafeteria food concession and coffee shops.

Figure 11



Occupational Employment Trends

Bachelor's Degree and Higher

Approximately 14 percent of the jobs in Hawaii County will fall under this category, which includes employees who have earned a bachelor's, master's or doctoral degree. In general, workers in this category earn more compared to the other education levels.

Jobs related to healthcare will experience the most growth in terms of percentage and numerical gains. Seven of the twelve occupations in these charts require some form of either experience or training.

Figure 12

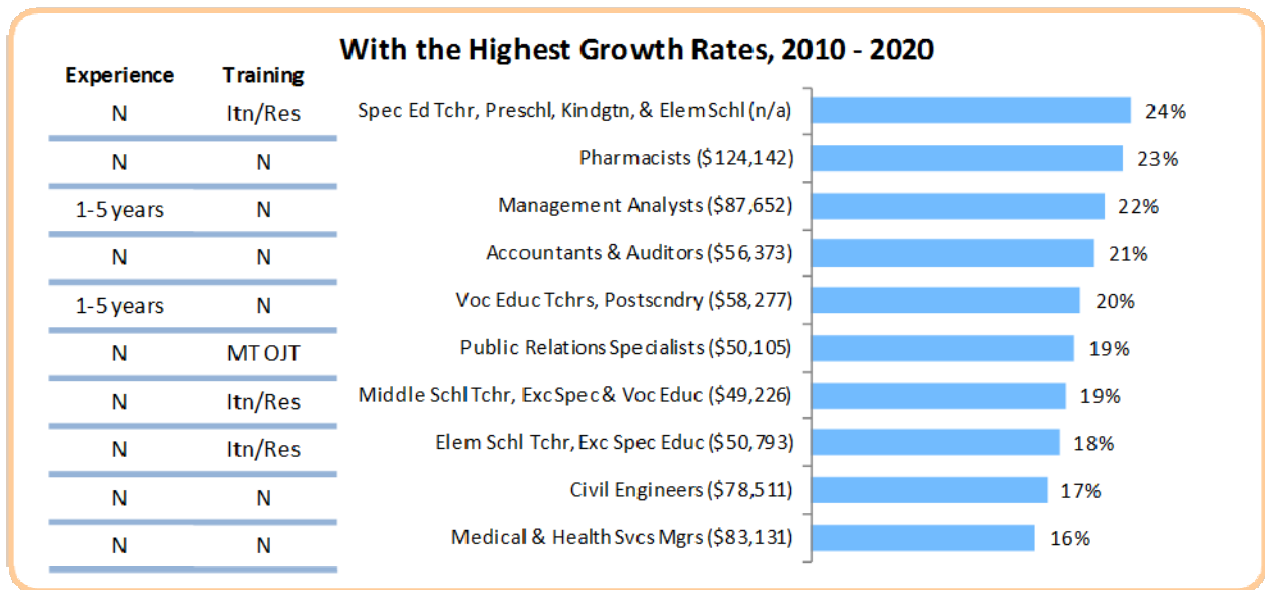
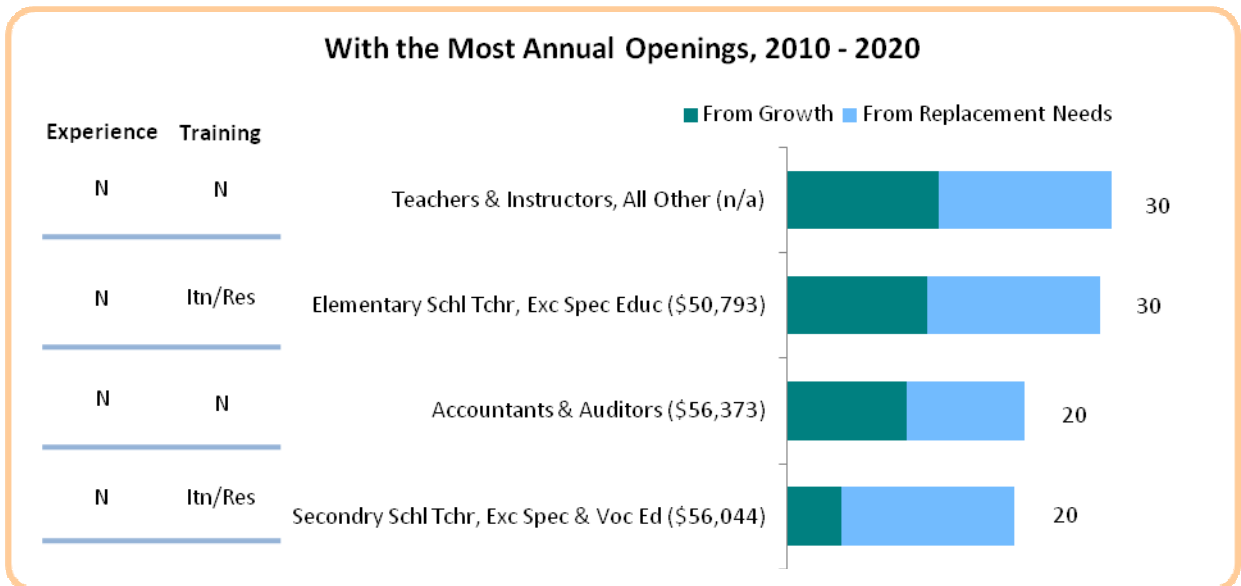


Figure 13



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 Occupations

During the projected period, roughly eight percent of the employed will fall within this education level. The jobs most in demand will originate from various occupational divisions. As a result of this diversity in job opportunities, workers with at least

some postsecondary training have the opportunity to earn as much as persons that have obtained more education. Construction managers earn an average of \$91,099, while the salary of general and operations managers is listed at \$95,285.

Figure 14

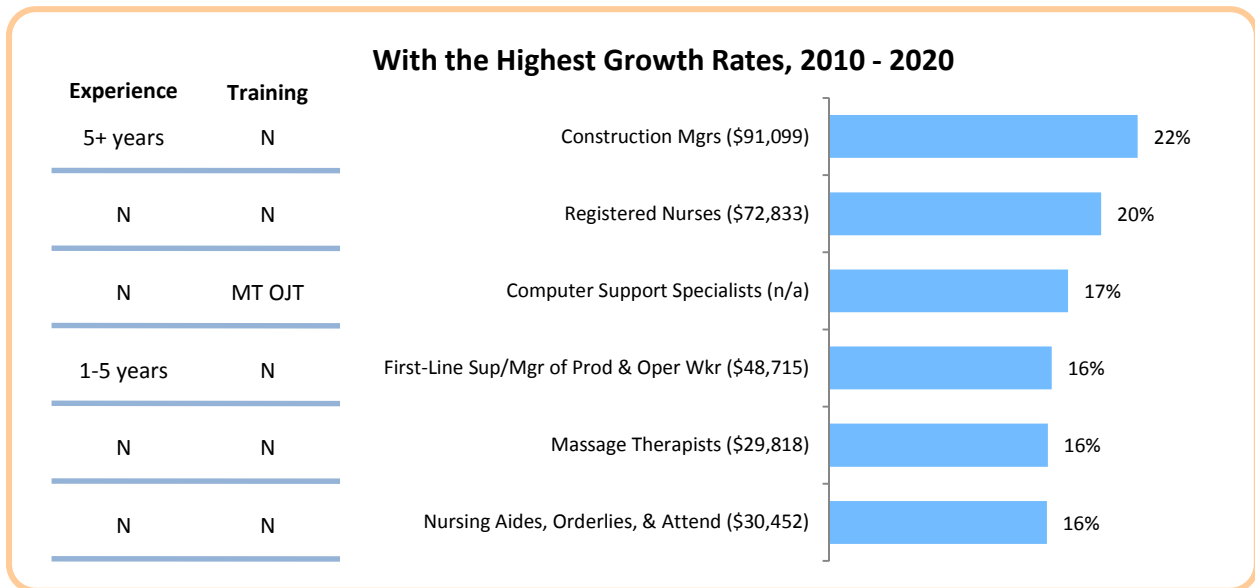
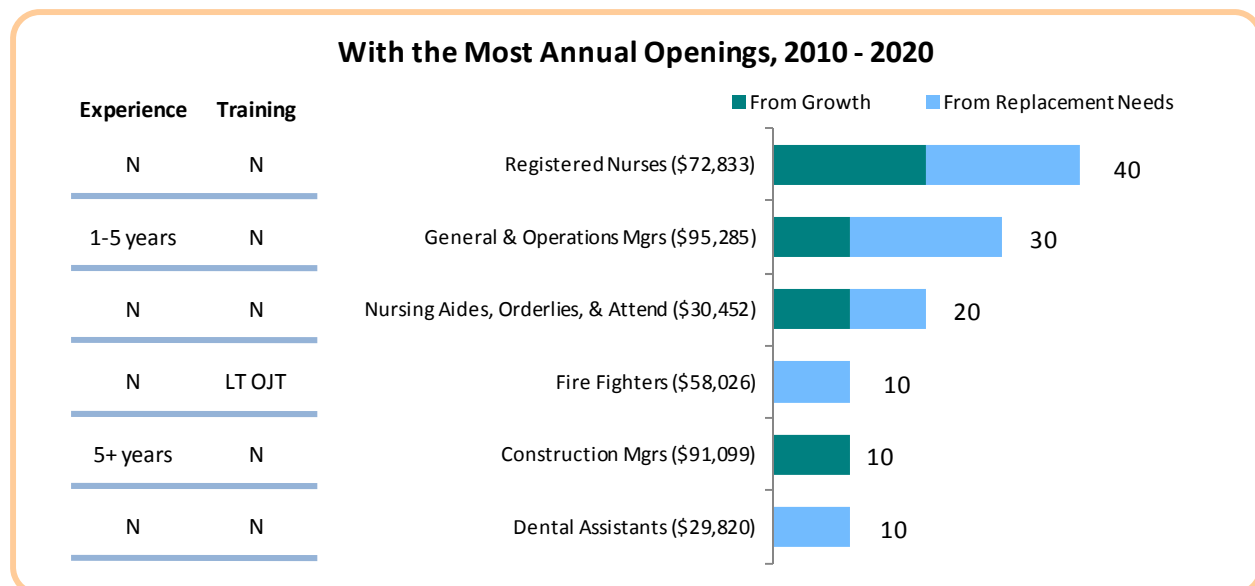


Figure 15



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 41 percent of the total. Training will be required in all of the jobs shown below except for four

of the occupations, all of them managerial positions. However, these four will need at least 1 to 5 years of work experience. Only heavy and tractor trailer truck drivers will need both experience and training.

Figure 16

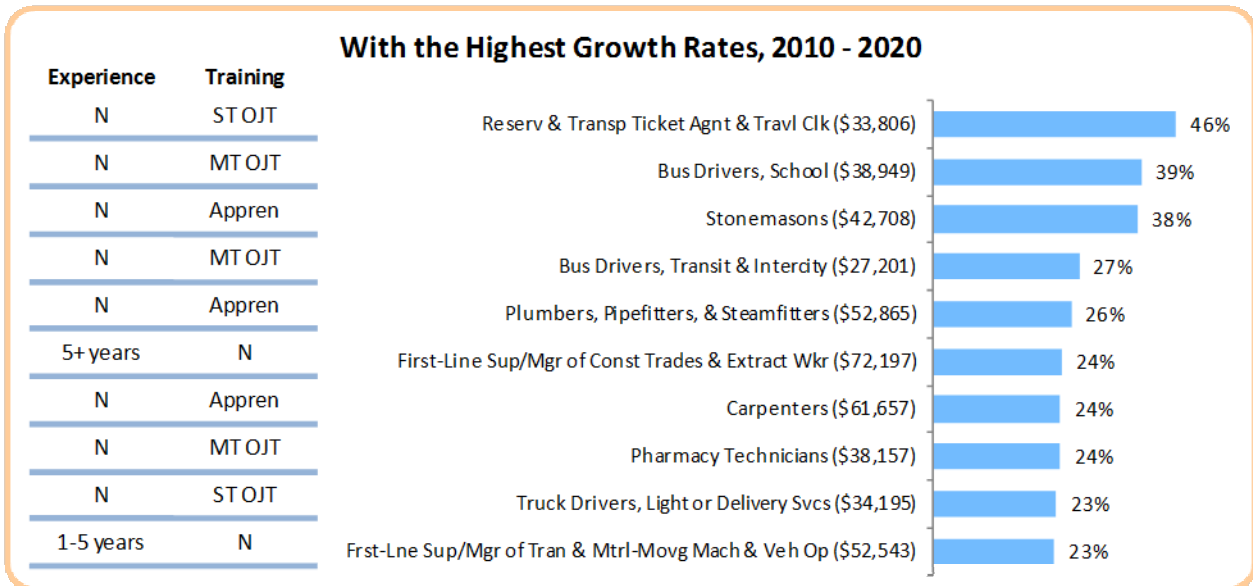
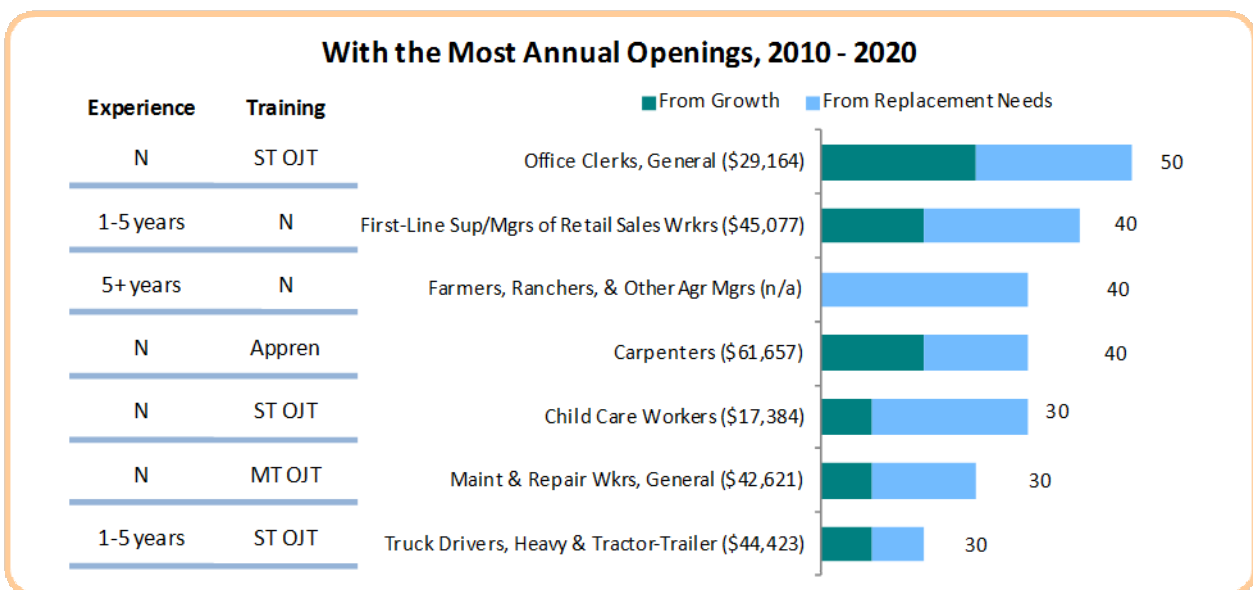


Figure 17



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 Diploma

Within this education level, jobs connected to the visitor industry will be the most prevalent. Although a high school diploma is not necessary, short-term on-the job training will be needed for all of the

jobs posted in the charts below, except for painters which require moderate-term on-the job training. Approximately 36 percent of all positions will be included in this category.

Figure 18

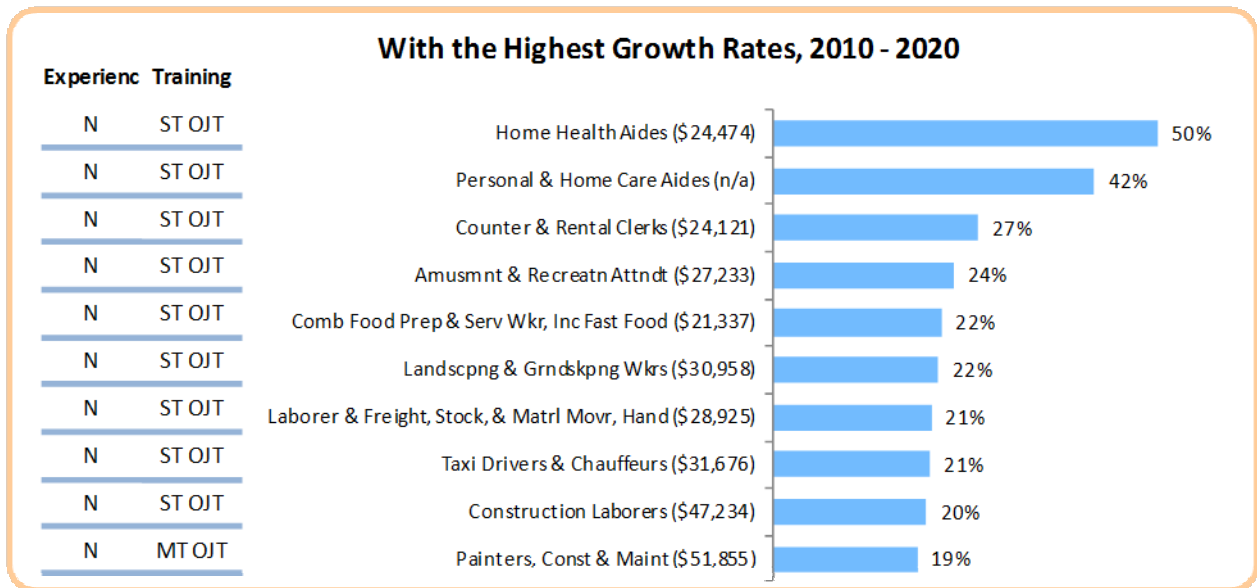
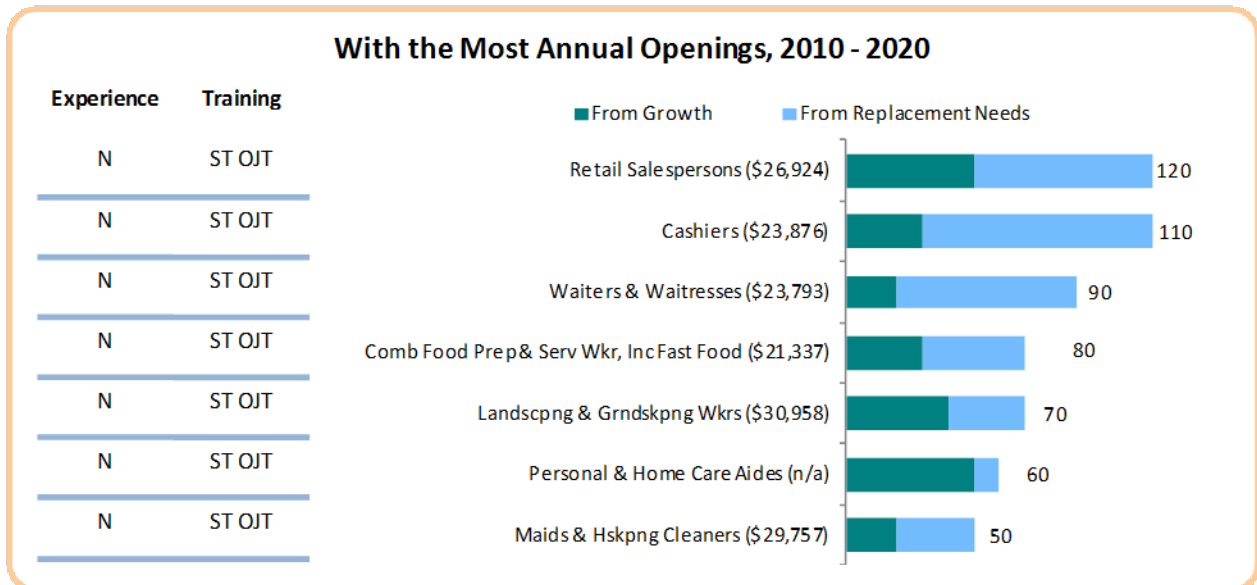


Figure 19



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

Occupational Employment Trends

Largest Declining Occupations

Many of the jobs lost among declining occupations will be due to the automation of duties. Most of the positions experiencing cutbacks are classified under the office and administrative support sector.

However, all of these occupations will still create openings, as some workers need to be replaced when they leave or retire.

Figure 20

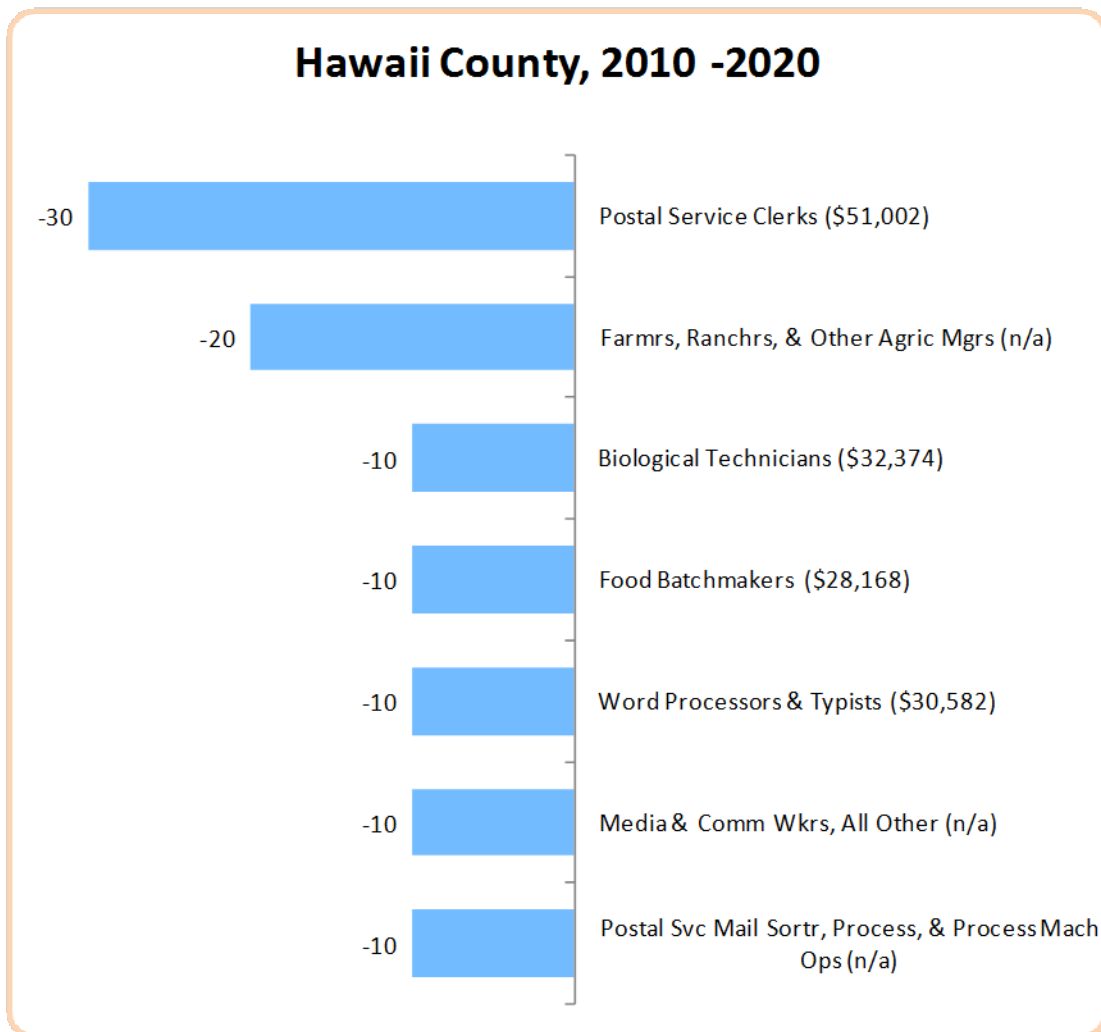


Table 4. Long-term Occupational Projections, Hawaii County, 2010 - 2020

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
00-0000	Total, All Occupations	69,300	79,550	10,250	14.8%	1.5%	1,040	1,690	2,740			
11-0000	Management Occupations	6,220	6,640	420	6.7%	0.7%	40	130	170			
11-1000	Top Executives	1,120	1,190	70	6.1%	0.6%	10	20	30			
11-1021	General & Operations Managers	1,020	1,090	70	6.4%	0.6%	10	20	30	Associates	1-5 years	None
11-2000	Advertising, Marketing, Promotions, Public Relations, & Sales Managers	200	220	30	13.2%	1.3%	**	10	10			
11-2021	Marketing Managers	50	50	10	13.0%	1.3%	**	**	**	Bachelors	1-5 years	None
11-2022	Sales Managers	130	150	20	13.3%	1.3%	**	**	10	Bachelors	1-5 years	None
11-2031	Public Relations Managers	20	20	0	11.1%	1.1%	0	0	0	Bachelors	1-5 years	None
11-3000	Operations Specialties Managers	380	430	50	13.9%	1.4%	10	10	10			
11-3011	Administrative Services Managers	70	80	10	20.0%	2.0%	**	**	**	HS or Eqv	1-5 years	None
11-3021	Computer & Information Systems Mgrs.	30	30	10	19.2%	1.9%	0	0	0	Bachelors	5+ years	None
11-3031	Financial Managers	190	200	20	9.1%	0.9%	**	**	10	Bachelors	5+ years	None
11-3051	Industrial Production Managers	20	20	0	18.8%	1.9%	0	0	0	Bachelors	1-5 years	None
11-3071	Transportation, Storage, & Distribution Mgrs	40	40	0	8.1%	0.8%	0	**	**	HS or Eqv	5+ years	None
11-3121	Human Resources Managers	20	30	10	20.8%	2.1%	0	**	**	Bachelors	1-5 years	None
11-9000	Other Management Occupations	4,530	4,800	270	6.0%	0.6%	30	90	120			
11-9013	Farmers, Ranchers, & Other Agricultural Managers	2,200	2,180	-20	-0.8%	-0.1%	0	40	40	HS or Eqv	5+ years	None
11-9021	Construction Managers	360	440	80	22.2%	2.2%	10	**	10	Associates	5+ years	None
11-9031	Education Administrators, Preschool & Child Care Center/Program	30	30	10	17.9%	1.8%	0	**	**	Bachelors	1-5 years	None
11-9032	Education Administrators, Elementary & Secondary School	150	160	20	11.0%	1.1%	**	**	10	Masters	1-5 years	None
11-9033	Education Administrators, Postsecondary	40	50	10	20.5%	2.1%	**	**	**	Masters	1-5 years	None
11-9041	Engineering Managers	70	80	10	15.4%	1.5%	**	**	**	Bachelors	5+ years	None
11-9051	Food Service Managers	230	240	0	1.7%	0.2%	0	**	**	HS or Eqv	1-5 years	None
11-9081	Lodging Managers	70	80	10	11.4%	1.1%	**	**	**	HS or Eqv	1-5 years	None
11-9111	Medical & Health Services Managers	100	110	20	16.5%	1.6%	**	**	**	Bachelors	None	None
11-9121	Natural Sciences Managers	50	50	0	6.4%	0.6%	0	**	**	Bachelors	5+ years	None
11-9131	PostMasters & Mail Superintendents	20	20	0	-9.5%	-1.0%	0	0	0	HS or Eqv	1-5 years	MT OJT
11-9141	Property, Real Estate, & Community Association Managers	510	550	50	8.9%	0.9%	**	10	20	HS or Eqv	1-5 years	None
11-9151	Social & Community Service Managers	160	180	20	11.5%	1.1%	**	**	10	Bachelors	1-5 years	None
11-9199	Managers, All Other	550	630	80	13.8%	1.4%	10	10	20	HS or Eqv	1-5 years	None
13-0000	Business & Financial Operations Occupations	1,640	1,950	310	18.8%	1.9%	30	30	60			
13-1000	Business Operations Specialists	920	1,100	180	19.3%	1.9%	20	20	40			
13-1022	Wholesale & Retail Buyers, Except Farm Products	90	100	10	10.9%	1.1%	**	**	**	HS or Eqv	None	LT OJT
13-1031	Claims Adjusters, Examiners, & Investigators	20	20	0	-4.2%	-0.4%	0	**	**	HS or Eqv	None	LT OJT

Table 4. Long-term Occupational Projections, Hawaii County, 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
13-1041	Compliance Officers, Except Agriculture, Construction, Health & Safety, & Transportation	70	90	20	25.0%	2.5%	**	**	**	Bachelors	None	MT OJT
13-1051	Cost Estimators	60	80	30	45.5%	4.5%	**	**	**	Bachelors	None	None
13-1078	Human Resources, Labor Relations, & Training Specialists, All Other	150	170	20	12.6%	1.3%	**	**	10	Bachelors	None	None
13-1111	Management Analysts	130	160	30	21.5%	2.2%	**	**	10	Bachelors	1-5 years	None
13-1121	Meeting & Convention Planners	30	40	10	37.0%	3.7%	**	0	**	Bachelors	< 1 year	None
13-1141	Compensation, Benefits, & Job Analysis Specialists	20	20	0	9.1%	0.9%	0	0	0	Bachelors	None	None
13-1151	Training & Development Specialists	30	40	10	26.5%	2.6%	**	**	**	Bachelors	None	None
13-1161	Market Research Analysts & Marketing Specialists	40	60	20	39.0%	3.9%	**	**	**	Bachelors	None	None
13-1199	Business Operations Specialists, All Other	190	210	30	13.4%	1.3%	**	**	10	HS or Eqv	< 1 year	LT OJT
13-2000	Financial Specialists	720	850	130	18.2%	1.8%	10	20	30			
13-2011	Accountants & Auditors	510	610	110	20.8%	2.1%	10	10	20	Bachelors	None	None
13-2021	Appraisers & Assessors of Real Estate	20	20	0	5.9%	0.6%	0	0	0	HS or Eqv	None	Appren
13-2052	Personal Financial Advisors	30	30	10	30.8%	3.1%	**	0	**	Bachelors	None	None
13-2072	Loan Officers	80	90	10	18.4%	1.8%	**	**	**	HS or Eqv	None	MT OJT
13-2082	Tax Preparers	40	40	0	0.0%	0.0%	0	**	**	HS or Eqv	None	MT OJT
13-2099	Financial Specialists, All Other	20	30	0	4.2%	0.4%	0	0	0	Bachelors	None	MT OJT
15-0000	Computer & Mathematical Occupations	340	410	70	21.2%	2.1%	10	10	10			
15-1000	Computer Specialists	330	400	70	21.3%	2.1%	10	10	10			
15-1121	Computer Systems Analysts	40	50	10	17.1%	1.7%	**	**	**	Bachelors	None	None
15-1131	Computer Programmers	20	20	0	0.0%	0.0%	0	0	0	Bachelors	None	None
15-1132	Software Developers, Applications	30	40	10	25.8%	2.6%	**	0	**	Bachelors	None	None
15-1133	Software Developers, Systems Software	30	40	10	40.7%	4.1%	**	0	**	Bachelors	None	None
15-1142	Network & Computer Systems Architects & Administrators	40	50	10	20.5%	2.0%	**	**	**	Bachelors	None	None
15-1150	Computer Support Specialists	100	120	20	17.2%	1.7%	**	**	10	SC, no deg	None	MT OJT
15-1179	Information Security Analysts, Web Developers, & Computer Network Architects	40	50	10	27.5%	2.8%	**	**	**	Bachelors	1-5 years	None
15-1799	Computer Occupations, All Other	20	20	0	9.5%	1.0%	0	0	0	Bachelors	None	None
17-0000	Architecture & Engineering Occupations	510	580	70	14.0%	1.4%	10	10	20			
17-1000	Architects, Surveyors, & Cartographers	50	60	10	18.0%	1.8%	**	**	**			
17-1022	Surveyors	40	50	10	18.0%	1.8%	**	**	**	Bachelors	None	None
17-2000	Engineers	270	310	50	18.5%	1.8%	10	10	10			
17-2051	Civil Engineers	160	180	30	17.3%	1.7%	**	**	10	Bachelors	None	None
17-2061	Computer Hardware Engineers	20	30	10	30.0%	3.0%	**	0	**	Bachelors	None	None
17-2071	Electrical Engineers	20	20	0	18.8%	1.9%	0	0	0	Bachelors	None	None
17-2072	Electronics Engineers, Except Computer	30	40	0	12.9%	1.3%	0	**	**	Bachelors	None	None
17-2199	Engineers, All Other	30	40	10	24.1%	2.4%	**	**	**	Bachelors	None	None

Table 4. Long-term Occupational Projections, Hawaii County, 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
17-3000	Drafters, Engineering, & Mapping Technicians	190	200	10	6.8%	0.7%	**	**	10			
17-3011	Architectural & Civil Drafters	30	40	0	5.9%	0.6%	0	**	**	Associates	None	None
17-3012	Electrical & Electronics Drafters	20	20	0	0.0%	0.0%	0	0	0	Associates	None	None
17-3023	Electrical & Electronic Engineering Technicians	40	40	0	11.4%	1.1%	0	**	**	Associates	None	None
17-3026	Industrial Engineering Technicians	30	30	0	-3.7%	-0.4%	0	0	0	Associates	None	None
17-3029	Engineering Technicians, Except Drafters, All Other	30	30	0	15.4%	1.5%	0	0	0	Associates	None	None
17-3031	Surveying & Mapping Technicians	40	50	0	9.8%	1.0%	0	**	**	HS or Eqv	None	MT OJT
19-0000	Life, Physical, & Social Science Occupations	890	950	60	6.9%	0.7%	10	30	30			
19-1000	Life Scientists	210	240	30	11.9%	1.2%	**	**	10			
19-1013	Soil & Plant Scientists	40	40	0	5.6%	0.6%	0	**	**	Bachelors	None	None
19-1029	Biological Scientists, All Other	40	50	0	6.8%	0.7%	0	**	**	Doctor/Prof	None	None
19-1031	Conservation Scientists	40	40	0	2.4%	0.2%	0	0	0	Bachelors	None	None
19-1042	Medical Scientists, Except Epidemiologists	40	50	10	36.8%	3.7%	**	0	**	Doctor/Prof	None	None
19-2000	Physical Scientists	140	150	10	5.0%	0.5%	**	**	10			
19-2011	Astronomers	50	50	0	4.4%	0.4%	0	**	**	Doctor/Prof	None	None
19-2012	Physicists	50	60	10	9.3%	0.9%	0	**	**	Bachelors	None	None
19-3000	Social Scientists & Related Workers	210	230	20	11.5%	1.2%	**	10	10			
19-3031	Clinical, Counseling, & School Psychologists	130	140	20	13.6%	1.4%	**	**	10	Doctor/Prof	None	ltn/Res
19-3051	Urban & Regional Planners	20	20	0	9.1%	0.9%	0	**	**	Masters	None	None
19-3091	Anthropologists & Archeologists	30	30	0	9.7%	1.0%	0	**	**	Masters	None	None
19-4000	Life, Physical, & Social Science Technicians	330	330	10	1.5%	0.2%	**	10	10			
19-4011	Agricultural & Food Science Technicians	50	50	10	12.5%	1.3%	**	**	**	Associates	None	None
19-4021	Biological Technicians	140	130	-10	-6.3%	-0.6%	0	10	10	Bachelors	None	None
19-4091	Environmental Science & Protection Technicians, Including Health	30	30	0	7.4%	0.7%	0	**	**	Associates	None	MT OJT
19-4093	Forest & Conservation Technicians	40	40	0	5.6%	0.6%	0	**	**	Associates	None	None
19-4099	Life, Physical, & Social Science Technicians, All Other	60	60	0	3.3%	0.3%	0	**	**	Associates	None	MT OJT
21-0000	Community & Social Services Occupations	1,090	1,230	130	12.2%	1.2%	10	20	40			
21-1000	Counselors, Social Workers, & Other Community & Social Service Specialists	1,070	1,200	130	12.1%	1.2%	10	20	40			
21-1011	Substance Abuse & Behavioral Disorder Counselors	30	30	0	0.0%	0.0%	0	**	**	HS or Eqv	None	MT OJT
21-1012	Educational, Vocational, & School Counselors	180	200	30	15.4%	1.5%	**	**	10	Masters	None	None
21-1013	Marriage & Family Therapists	30	40	10	25.8%	2.6%	**	**	**	Masters	None	ltn/Res
21-1021	Child, Family, & School Social Workers	300	320	20	8.1%	0.8%	**	10	10	Bachelors	None	None
21-1022	Medical & Public Health Social Workers	70	90	20	22.2%	2.2%	**	**	**	Masters	None	None
21-1091	Health Educators	20	30	10	21.7%	2.2%	0	0	0	Bachelors	None	None

Table 4. Long-term Occupational Projections, Hawaii County, 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
21-1093	Social & Human Service Assistants	300	330	40	12.2%	1.2%	**	10	10	HS or Eqv	None	ST OJT
21-1798	Community & Social Service Specialists, All Other	110	120	10	10.9%	1.1%	**	**	**	Bachelors	None	None
21-2000	Religious Workers	30	30	0	16.0%	1.6%	0	0	0			
23-0000	Legal Occupations	150	160	10	8.7%	0.9%	**	**	**			
23-1000	Lawyers, Judges, & Related Workers	120	120	10	7.8%	0.8%	**	**	**			
23-1011	Lawyers	100	100	10	8.3%	0.8%	**	**	**	Doctor/Prof	None	None
23-2000	Legal Support Workers	30	40	0	11.8%	1.2%	0	0	0			
23-2099	Legal Support Workers, All Other	20	20	0	0.0%	0.0%	0	0	0	HS or Eqv	None	ST OJT
25-0000	Education, Training, & Library Occupations	4,590	5,290	700	15.3%	1.5%	70	90	160			
25-1000	Postsecondary Teachers	760	910	150	19.5%	2.0%	20	10	30			
25-1011	Business Teachers, Postsecondary	20	30	10	22.7%	2.3%	0	0	0	Doctor/Prof	None	None
25-1022	Mathematical Science Teachers, Postsecondary	40	40	10	15.8%	1.6%	**	**	**	Doctor/Prof	None	None
25-1042	Biological Science Teachers, Postsecondary	50	50	10	17.8%	1.8%	**	**	**	Doctor/Prof	None	None
25-1051	Atmospheric, Earth, Marine, & Space Sciences Teachers, Postsecondary	20	20	0	17.7%	1.8%	0	0	0	Doctor/Prof	None	None
25-1066	Psychology Teachers, Postsecondary	30	40	10	21.9%	2.2%	**	0	**	Doctor/Prof	None	None
25-1067	Sociology Teachers, Postsecondary	20	30	10	22.7%	2.3%	0	0	0	Doctor/Prof	None	None
25-1071	Health Specialties Teachers, Postsecondary	30	40	10	20.6%	2.1%	**	0	**	Doctor/Prof	None	None
25-1072	Nursing Instructors & Teachers, Postsecondary	30	30	10	18.5%	1.9%	0	0	0	Masters	None	None
25-1081	Education Teachers, Postsecondary	30	40	10	20.0%	2.0%	**	0	**	Doctor/Prof	None	None
25-1121	Art, Drama, & Music Teachers, Postsecondary	30	40	10	22.6%	2.3%	**	0	**	Doctor/Prof	None	None
25-1122	Communications Teachers, Postsecondary	20	20	0	17.7%	1.8%	0	0	0	Doctor/Prof	None	None
25-1123	English Language & Literature Teachers, Postsecondary	60	70	10	18.0%	1.8%	**	**	**	Doctor/Prof	None	None
25-1125	History Teachers, Postsecondary	20	20	0	20.0%	2.0%	0	0	0	Doctor/Prof	None	None
25-1194	Vocational Education Teachers, Postsecondary	130	150	30	19.8%	2.0%	**	**	**	Bachelors	1-5 years	None
25-1199	Postsecondary Teachers, All Other	60	70	10	18.6%	1.9%	**	**	**	Masters	None	None
25-2000	Primary, Secondary, & Special Education School Teachers	1,790	2,050	260	14.4%	1.4%	30	40	70			
25-2011	Preschool Teachers, Except Special Education	80	90	10	6.3%	0.6%	0	**	**	Associates	None	None
25-2021	Elementary School Teachers, Except Special Education	710	840	130	18.3%	1.8%	10	20	30	Bachelors	None	Itn/Res
25-2022	Middle School Teachers, Except Special & Vocational Education	160	190	30	18.8%	1.9%	**	**	10	Bachelors	None	Itn/Res
25-2031	Secondary School Teachers, Except Special & Vocational Education	590	630	50	8.2%	0.8%	10	20	20	Bachelors	None	Itn/Res

Table 4. Long-term Occupational Projections, Hawaii County, 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
25-2041	Special Education Teachers, Preschool, Kindergarten, & Elementary School	100	130	20	23.5%	2.4%	**	**	10	Bachelors	None	Itn/Res
25-3000	Other Teachers & Instructors	1,350	1,560	210	15.2%	1.5%	20	20	40			
25-3011	Adult Literacy, Remedial Education, & GED Teachers & Instructors	30	30	0	16.0%	1.6%	0	0	0	Bachelors	None	Itn/Res
25-3021	Self-Enrichment Education Teachers	290	350	60	21.2%	2.1%	10	**	10	HS or Eqv	1-5 years	None
25-3999	Teachers & Instructors, All Other	1,040	1,180	140	13.5%	1.3%	10	20	30	Bachelors	None	None
25-4000	Librarians, Curators, & Archivists	110	120	10	8.0%	0.8%	**	**	10			
25-4021	Librarians	60	70	10	8.3%	0.8%	0	**	**	Masters	None	None
25-4031	Library Technicians	30	30	0	10.0%	1.0%	0	**	**	PS Non-Deg	None	None
25-9000	Other Education, Training, & Library Occupations	580	660	80	14.0%	1.4%	10	10	20			
25-9031	Instructional Coordinators	70	90	10	19.4%	1.9%	**	**	**	Masters	5+ years	None
25-9041	Teacher Assistants	460	530	60	13.2%	1.3%	10	10	20	HS or Eqv	None	ST OJT
25-9099	Education, Training, & Library Workers, All Other	20	20	0	5.6%	0.6%	0	0	0	Bachelors	None	None
27-0000	Arts, Design, Entertainment, Sports, & Media Occupations	940	1,010	70	7.8%	0.8%	10	20	30			
27-1000	Art & Design Workers	160	180	20	13.1%	1.3%	**	10	10			
27-1024	Graphic Designers	50	60	10	20.4%	2.0%	**	**	**	Bachelors	None	None
27-1026	Merchandise Displayers & Window Trimmers	50	50	10	17.4%	1.7%	**	**	**	HS or Eqv	None	MT OJT
27-2000	Entertainers & Performers, Sports & Related Workers	400	450	50	11.3%	1.1%	**	10	20			
27-2012	Producers & Directors	50	50	0	0.0%	0.0%	0	**	**	Bachelors	1-5 years	None
27-2022	Coaches & Scouts	70	90	20	34.3%	3.4%	**	**	**	HS or Eqv	None	LT OJT
27-2031	Dancers	70	80	10	10.0%	1.0%	**	**	**	HS or Eqv	None	LT OJT
27-2042	Musicians & Singers	140	150	10	8.0%	0.8%	**	**	**	HS or Eqv	None	LT OJT
27-2099	Entertainers & Performers, Sports & Related Workers, All Other	40	50	0	7.0%	0.7%	0	**	**	HS or Eqv	None	None
27-3000	Media & Communication Workers	200	210	10	5.0%	0.5%	**	10	10			
27-3022	Reporters & Correspondents	20	20	0	-17.4%	-1.7%	0	**	**	Bachelors	None	None
27-3031	Public Relations Specialists	100	120	20	19.4%	1.9%	**	**	10	Bachelors	None	MT OJT
27-3099	Media & Communication Workers, All Other	50	40	-10	-13.0%	-1.3%	0	**	**	HS or Eqv	None	ST OJT
27-4000	Media & Communication Equipment Workers	170	170	0	-1.7%	-0.2%	0	**	**			
27-4011	Audio & Video Equipment Technicians	40	40	0	0.0%	0.0%	0	**	**	PS Non-Deg	None	MT OJT
27-4021	Photographers	110	110	0	0.0%	0.0%	0	**	**	HS or Eqv	None	LT OJT
27-4099	Media & Communication Equipment Workers, All Other	20	20	0	-6.3%	-0.6%	0	0	0	HS or Eqv	None	MT OJT
29-0000	Healthcare Practitioners & Technical Occupations	2,660	3,100	440	16.5%	1.7%	40	50	100			

Table 4. Long-term Occupational Projections, Hawaii County, 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
29-1000	Health Diagnosing & Treating Practitioners	1,930	2,250	320	16.6%	1.7%	30	40	70			
29-1011	Chiropractors	20	20	0	9.1%	0.9%	0	0	0	Doctor/Prof	None	None
29-1021	Dentists, General	90	90	0	3.5%	0.3%	0	**	**	Doctor/Prof	None	Itn/Res
29-1031	Dietitians & Nutritionists	20	20	0	11.1%	1.1%	0	**	**	Bachelors	None	Itn/Res
29-1041	Optometrists	40	40	10	13.5%	1.4%	0	**	**	Doctor/Prof	None	None
29-1051	Pharmacists	110	130	30	22.9%	2.3%	**	**	10	Doctor/Prof	None	None
29-1062	Family & General Practitioners	170	180	20	8.9%	0.9%	**	**	10	Doctor/Prof	None	Itn/Res
29-1064	Obstetricians & Gynecologists	30	40	0	11.8%	1.2%	0	**	**	Doctor/Prof	None	Itn/Res
29-1066	Psychiatrists	30	30	0	3.3%	0.3%	0	**	**	Doctor/Prof	None	Itn/Res
29-1069	Physicians & Surgeons, All Other	70	70	10	7.4%	0.7%	0	**	**	Doctor/Prof	None	Itn/Res
29-1071	Physician Assistants	30	30	0	14.3%	1.4%	0	0	0	Masters	None	None
29-1111	Registered Nurses	1,080	1,290	210	19.6%	2.0%	20	20	40	Associates	None	None
29-1122	Occupational Therapists	40	50	10	19.1%	1.9%	**	**	**	Masters	None	None
29-1123	Physical Therapists	80	90	20	22.4%	2.2%	**	**	**	Doctor/Prof	None	None
29-1127	Speech-Language Pathologists	30	30	10	19.2%	1.9%	0	0	0	Masters	None	None
29-1199	Health Diagnosing & Treating Practitioners, All Other	20	30	0	19.1%	1.9%	0	0	0	Masters	None	None
29-2000	Health Technologists & Technicians	680	780	110	16.2%	1.6%	10	10	20			
29-2011	Medical & Clinical Laboratory Technologists	20	20	0	5.3%	0.5%	0	0	0	Bachelors	None	None
29-2012	Medical & Clinical Laboratory Technicians	60	70	0	6.6%	0.7%	0	**	**	Associates	None	None
29-2021	Dental Hygienists	120	140	20	13.5%	1.3%	**	**	**	Associates	None	None
29-2037	Radiologic Technologists & Technicians	90	110	20	20.2%	2.0%	**	**	**	Associates	None	None
29-2052	Pharmacy Technicians	170	210	40	23.8%	2.4%	**	**	10	HS or Eqv	None	MT OJT
29-2054	Respiratory Therapy Technicians	20	20	0	0.0%	0.0%	0	0	0	Associates	None	MT OJT
29-2061	Licensed Practical & Licensed Vocational Nurses	110	120	10	12.3%	1.2%	**	**	**	PS Non-Deg	None	None
29-2071	Medical Records & Health Information Technicians	50	50	10	10.9%	1.1%	0	**	**	PS Non-Deg	None	None
29-9000	Other Healthcare Practitioners & Technical Occupations	60	70	10	18.3%	1.8%	**	**	**			
29-9011	Occupational Health & Safety Specialists	20	20	0	10.0%	1.0%	0	**	**	Bachelors	None	MT OJT
29-9799	Healthcare Practitioners & Technical Workers, All Other, inc. Genetic Counselors	20,400	23,580	3,180	15.6%	1.6%	320	540	860			
31-0000	Healthcare Support Occupations	1,850	2,180	330	17.7%	1.8%	30	30	60			
31-1000	Nursing, Psychiatric, & Home Health Aides	910	1,140	240	26.1%	2.6%	20	10	40			
31-1011	Home Health Aides	280	420	140	50.4%	5.0%	10	**	20	< HS	None	ST OJT
31-1012	Nursing Aides, Orderlies, & Attendants	610	710	100	15.6%	1.6%	10	10	20	PS Non-Deg	None	None
31-2000	Occupational & Physical Therapist Assistants & Aides	40	40	10	15.8%	1.6%	**	**	**			
31-9000	Other Healthcare Support Occupations	910	990	90	9.5%	0.9%	10	20	30			

Table 4. Long-term Occupational Projections, Hawaii County, 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
31-9011	Massage Therapists	180	210	30	15.7%	1.6%	**	**	10	PS Non-Deg	None	None
31-9091	Dental Assistants	340	370	20	7.0%	0.7%	**	10	10	PS Non-Deg	None	None
31-9092	Medical Assistants	240	260	20	8.9%	0.9%	**	**	10	HS or Eqv	None	MT OJT
31-9093	Medical Equipment Preparers	40	40	0	8.3%	0.8%	0	**	**	HS or Eqv	None	MT OJT
31-9096	Veterinary Assistants & Laboratory Animal Caretakers	40	50	10	11.4%	1.1%	0	**	**	HS or Eqv	None	ST OJT
31-9799	Healthcare Support Workers, All Other	60	70	10	9.8%	1.0%	**	**	**	HS or Eqv	None	ST OJT
33-0000	Protective Service Occupations	2,030	2,260	230	11.3%	1.1%	20	50	80			
33-1000	First-Line Supervisors/Managers, Protective Service Workers	200	210	10	6.1%	0.6%	**	10	10			
33-1012	First-Line Supervisors/Mgrs. of Police & Detectives	80	80	0	4.0%	0.4%	0	**	**	HS or Eqv	1-5 years	MT OJT
33-1021	First-Line Supervisors/Mgrs. of Fire Fighting & Prevention Workers	80	90	10	7.6%	0.8%	**	**	10	PS Non-Deg	1-5 years	None
33-1099	First-Line Supervisors/Mgrs., Protective Service Workers, All Other	40	40	0	7.7%	0.8%	0	**	**	HS or Eqv	1-5 years	None
33-2000	Fire Fighting & Prevention Workers	330	350	30	7.9%	0.8%	**	10	10			
33-2011	Fire Fighters	330	350	30	8.0%	0.8%	**	10	10	PS Non-Deg	None	LT OJT
33-3000	Law Enforcement Workers	560	610	40	7.6%	0.8%	**	10	20			
33-3012	Correctional Officers & Jailers	130	140	10	5.2%	0.5%	**	**	**	HS or Eqv	None	MT OJT
33-3021	Detectives & Criminal Investigators	50	60	10	11.3%	1.1%	**	**	**	HS or Eqv	1-5 years	MT OJT
33-3051	Police & Sheriffs Patrol Officers	350	380	30	8.2%	0.8%	**	10	10	HS or Eqv	None	MT OJT
33-9000	Other Protective Service Workers	940	1,090	150	15.8%	1.6%	20	20	40			
33-9011	Animal Control Workers	30	30	10	30.8%	3.1%	**	**	**	HS or Eqv	None	MT OJT
33-9032	Security Guards	530	630	100	18.4%	1.8%	10	10	20	HS or Eqv	None	ST OJT
33-9092	Lifeguards, Ski Patrol, & Other Recreational Protective Service Workers	90	100	10	12.2%	1.2%	**	10	10	HS or Eqv	None	ST OJT
33-9093	Transportation Security Screeners	210	240	40	17.4%	1.7%	**	**	10	HS or Eqv	None	MT OJT
33-9099	Protective Service Workers, All Other	40	40	0	-4.6%	-0.5%	0	**	**	HS or Eqv	None	ST OJT
35-0000	Food Preparation & Serving Related Occupations	7,690	8,650	960	12.5%	1.2%	100	290	380			
35-1000	Supervisors, Food Preparation & Serving Workers	590	670	70	12.5%	1.3%	10	10	20			
35-1011	Chefs & Head Cooks	140	150	10	5.0%	0.5%	**	**	**	HS or Eqv	1-5 years	None
35-1012	First-Line Supervisors/Mgrs. of Food Preparation & Serving Workers	450	520	70	14.9%	1.5%	10	10	20	HS or Eqv	1-5 years	None
35-2000	Cooks & Food Preparation Workers	1,970	2,180	220	11.0%	1.1%	20	50	70			
35-2011	Cooks, Fast Food	370	370	10	2.2%	0.2%	**	10	10	< HS	None	ST OJT
35-2012	Cooks, Institution & Cafeteria	100	110	10	14.0%	1.4%	**	**	**	< HS	None	ST OJT
35-2014	Cooks, Restaurant	830	980	140	17.3%	1.7%	10	20	30	< HS	< 1 year	MT OJT
35-2015	Cooks, Short Order	140	150	10	9.4%	0.9%	**	**	**	< HS	None	ST OJT
35-2021	Food Preparation Workers	520	560	40	7.1%	0.7%	**	20	20	< HS	None	ST OJT
35-3000	Food & Beverage Serving Workers	3,880	4,450	570	14.6%	1.5%	60	170	220			

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		2010	2020	# Chg.	% Chg.		Due to Growth	Due to Replacements	Total Openings	Education Value	Work Experience Value	Job Training Value
35-3011	Bartenders	240	270	30	10.3%	1.0%	**	10	10	< HS	None	ST OJT
35-3021	Combined Food Preparation & Serving Workers, Including Fast Food	1,550	1,900	340	22.2%	2.2%	30	40	80	< HS	None	ST OJT
35-3022	Counter Attendants, Cafeteria, Food Concession, & Coffee Shop	500	540	40	7.7%	0.8%	**	40	40	< HS	None	ST OJT
35-3031	Waiters & Waitresses	1,480	1,630	150	10.4%	1.0%	20	70	90	< HS	None	ST OJT
35-3041	Food Servers, Nonrestaurant	110	110	0	3.8%	0.4%	0	**	**	< HS	None	ST OJT
35-9000	Other Food Preparation & Serving Related Workers	1,250	1,350	100	8.1%	0.8%	10	60	70			
35-9011	Dining Room & Cafeteria Attendants & Bartender Helpers	580	610	40	6.1%	0.6%	**	20	30	< HS	None	ST OJT
35-9021	Dishwashers	370	410	40	11.1%	1.1%	**	20	20	< HS	None	ST OJT
35-9031	Hosts & Hostesses, Restaurant, Lounge, & Coffee Shop	250	270	20	7.2%	0.7%	**	20	20	< HS	None	None
35-9099	Food Preparation & Serving Related Workers, All Other	50	60	10	13.5%	1.3%	**	**	**	< HS	None	ST OJT
37-0000	Building & Grounds Cleaning & Maintenance Occupations	5,220	6,050	830	15.8%	1.6%	80	90	180			
37-1000	Supervisors, Building & Grounds Cleaning & Maintenance Workers	340	380	40	11.2%	1.1%	**	10	10			
37-1011	First-Line Supervisors/Mgrs.of Housekeeping & Janitorial Workers	140	140	0	0.7%	0.1%	0	**	**	HS or Eqv	1-5 years	None
37-1012	First-Line Supervisors/Mgrs.of Landscaping, Lawn Service, & Groundskeeping Workers	200	240	40	18.1%	1.8%	**	**	10	HS or Eqv	1-5 years	None
37-2000	Building Cleaning & Pest Control Workers	3,050	3,430	390	12.7%	1.3%	40	60	100			
37-2011	Janitors & Cleaners, Except Maids & Housekeeping Cleaners	1,290	1,470	180	13.7%	1.4%	20	20	40	< HS	None	ST OJT
37-2012	Maids & Housekeeping Cleaners	1,700	1,900	200	11.8%	1.2%	20	30	50	< HS	None	ST OJT
37-2021	Pest Control Workers	60	70	10	17.2%	1.7%	**	**	**	HS or Eqv	None	MT OJT
37-3000	Grounds Maintenance Workers	1,840	2,240	400	21.8%	2.2%	40	30	70			
37-3011	Landscaping & Groundskeeping Workers	1,810	2,210	390	21.8%	2.2%	40	30	70	< HS	None	ST OJT
39-0000	Personal Care & Service Occupations	3,610	4,450	840	23.1%	2.3%	90	80	170			
39-1000	Supervisors, Personal Care & Service Workers	180	220	30	16.9%	1.7%	**	**	10			
39-2000	Animal Care & Service Workers	160	210	50	30.6%	3.1%	10	**	10			
39-3000	Entertainment Attendants & Related Workers	240	260	20	7.4%	0.7%	**	10	20			
39-3091	Amusement & Recreation Attendants	150	190	40	23.7%	2.4%	**	10	10	< HS	None	ST OJT
39-3093	Locker Room, Coatroom, & Dressing Room Attendants	30	30	10	22.2%	2.2%	**	**	**	HS or Eqv	None	ST OJT
39-4000	Funeral Service Workers	30	40	10	28.1%	2.8%	**	**	**			
39-4021	Funeral Attendants	20	20	0	20.0%	2.0%	0	**	**	HS or Eqv	None	ST OJT
39-5000	Personal Appearance Workers	100	110	20	15.8%	1.6%	**	**	**			

Table 4. Long-term Occupational Projections, Hawaii County, 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
39-5012	Hairdressers, Hairstylists, & Cosmetologists	40	50	10	20.0%	2.0%	**	**	**	PS Non-Deg	None	None
39-6000	Transportation, Tourism, & Lodging Attendants	230	260	30	12.1%	1.2%	**	10	10			
39-6011	Baggage Porters & Bellhops	160	180	20	12.1%	1.2%	**	**	10	HS or Eqv	None	ST OJT
39-6012	Concierges	70	80	10	12.2%	1.2%	**	**	**	HS or Eqv	None	MT OJT
39-7000	Tour & Travel Guides	230	280	50	20.8%	2.1%	10	10	10			
39-9000	Other Personal Care & Service Workers	2,440	3,080	640	26.1%	2.6%	60	40	110			
39-9011	Child Care Workers	790	830	50	6.1%	0.6%	10	30	30	HS or Eqv	None	ST OJT
39-9021	Personal & Home Care Aides	1,190	1,680	500	42.1%	4.2%	50	10	60	< HS	None	ST OJT
39-9031	Fitness Trainers & Aerobics Instructors	60	80	20	31.2%	3.1%	**	**	**	HS or Eqv	None	ST OJT
39-9032	Recreation Workers	180	210	30	15.5%	1.5%	**	**	10	Bachelors	None	None
39-9041	Residential Advisors	30	30	10	21.4%	2.1%	**	**	**	SC, no deg	< 1 year	ST OJT
39-9099	Personal Care & Service Workers, All Other	200	230	40	18.8%	1.9%	**	**	10	HS or Eqv	None	ST OJT
41-0000	Sales & Related Occupations	7,100	8,270	1,160	16.4%	1.6%	120	230	340			
41-1000	Supervisors, Sales Workers	1,200	1,370	180	14.6%	1.5%	20	30	50			
41-1011	First-Line Supervisors/Mgrs. of Retail Sales Workers	1,080	1,250	160	15.1%	1.5%	20	30	40	HS or Eqv	1-5 years	None
41-1012	First-Line Supervisors/Mgrs. of Non-Retail Sales Workers	110	130	10	10.5%	1.1%	**	**	**	HS or Eqv	5+ years	None
41-2000	Retail Sales Workers	4,680	5,480	800	17.1%	1.7%	80	170	250			
41-2011	Cashiers	1,910	2,170	270	13.9%	1.4%	30	90	110	< HS	None	ST OJT
41-2021	Counter & Rental Clerks	200	250	50	26.9%	2.7%	10	**	10	< HS	None	ST OJT
41-2022	Parts Salespersons	60	80	10	21.9%	2.2%	**	**	**	< HS	None	MT OJT
41-2031	Retail Salespersons	2,510	2,980	470	18.6%	1.9%	50	70	120	< HS	None	ST OJT
41-3000	Sales Representatives, Services	520	590	70	13.8%	1.4%	10	10	20			
41-3011	Advertising Sales Agents	60	60	0	7.3%	0.7%	0	**	**	HS or Eqv	None	MT OJT
41-3021	Insurance Sales Agents	110	120	20	13.8%	1.4%	**	**	**	HS or Eqv	None	MT OJT
41-3031	Securities, Commodities, & Financial Services Sales Agents	100	110	10	14.1%	1.4%	**	**	**	Bachelors	None	MT OJT
41-3041	Travel Agents	30	40	10	20.7%	2.1%	**	0	**	HS or Eqv	None	MT OJT
41-3099	Sales Representatives, Services, All Other	230	260	30	14.4%	1.4%	**	10	10	HS or Eqv	None	ST OJT
41-4000	Sales Representatives, Wholesale & Manufacturing	430	500	80	17.5%	1.8%	10	10	20			
41-4011	Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	60	60	0	5.4%	0.5%	0	**	**	Bachelors	None	MT OJT
41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	370	440	70	19.4%	1.9%	10	10	20	HS or Eqv	None	MT OJT
41-9000	Other Sales & Related Workers	280	320	40	16.0%	1.6%	**	10	10			
41-9011	Demonstrators & Product Promoters	30	30	0	10.3%	1.0%	0	**	**	HS or Eqv	None	ST OJT
41-9021	Real Estate Brokers	70	80	10	9.6%	1.0%	**	**	**	HS or Eqv	1-5 years	None

Table 4. Long-term Occupational Projections, Hawaii County, 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
41-9022	Real Estate Sales Agents	90	100	20	20.0%	2.0%	**	**	**	HS or Eqv	None	LT OJT
41-9799	Sales & Related Workers, All Other	90	100	20	20.0%	2.0%	**	**	**	HS or Eqv	None	MT OJT
43-0000	Office & Administrative Support Occupations	9,650	10,760	1,120	11.6%	1.2%	120	210	330			
43-1000	Supervisors, Office & Administrative Support Workers	740	860	120	16.7%	1.7%	10	20	30			
43-2000	Communications Equipment Operators	100	70	-20	-25.0%	-2.5%	0	**	**			
43-3000	Financial Clerks	1,430	1,610	180	12.6%	1.3%	20	30	50			
43-3011	Bill & Account Collectors	90	100	10	10.8%	1.1%	**	**	**	HS or Eqv	None	MT OJT
43-3021	Billing & Posting Clerks & Machine Operators	110	120	10	12.7%	1.3%	**	**	**	HS or Eqv	None	ST OJT
43-3031	Bookkeeping, Accounting, & Auditing Clerks	780	900	120	15.2%	1.5%	10	10	20	HS or Eqv	None	MT OJT
43-3051	Payroll & Timekeeping Clerks	100	120	10	13.6%	1.4%	**	**	**	HS or Eqv	None	MT OJT
43-4000	Information & Record Clerks	2,130	2,510	370	17.4%	1.7%	40	60	100			
43-4031	Court, Municipal, & License Clerks	130	140	10	7.8%	0.8%	**	**	10	HS or Eqv	None	MT OJT
43-4051	Customer Service Representatives	520	610	90	17.7%	1.8%	10	20	20	HS or Eqv	None	ST OJT
43-4061	Eligibility Interviewers, Government Programs	90	100	0	4.3%	0.4%	0	**	**	Associates	None	MT OJT
43-4071	File Clerks	70	70	0	4.6%	0.5%	0	**	**	HS or Eqv	None	ST OJT
43-4081	Hotel, Motel, & Resort Desk Clerks	360	400	40	11.9%	1.2%	**	10	20	HS or Eqv	None	ST OJT
43-4111	Interviewers, Except Eligibility & Loan	60	60	10	10.7%	1.1%	**	**	**	HS or Eqv	None	ST OJT
43-4121	Library Assistants, Clerical	30	30	0	6.3%	0.6%	0	**	**	HS or Eqv	None	ST OJT
43-4131	Loan Interviewers & Clerks	30	30	0	-3.2%	-0.3%	0	**	**	HS or Eqv	None	ST OJT
43-4141	New Accounts Clerks	40	40	0	5.3%	0.5%	0	**	**	HS or Eqv	None	ST OJT
43-4151	Order Clerks	20	20	0	5.3%	0.5%	0	0	0	HS or Eqv	None	ST OJT
43-4161	Human Resources Assistants, Except Payroll & Timekeeping	80	90	10	9.8%	1.0%	**	**	**	HS or Eqv	None	ST OJT
43-4171	Receptionists & Information Clerks	270	320	40	15.0%	1.5%	**	10	10	HS or Eqv	None	ST OJT
43-4181	Reservation & Transportation Ticket Agents & Travel Clerks	360	530	170	45.6%	4.6%	20	10	20	HS or Eqv	None	ST OJT
43-4199	Information & Record Clerks, All Other	70	70	0	-5.5%	-0.5%	0	**	**	HS or Eqv	None	ST OJT
43-5000	Material Recording, Scheduling, Dispatching, & Distributing Workers	1,810	1,870	60	3.2%	0.3%	10	50	50			
43-5011	Cargo & Freight Agents	20	20	10	50.0%	5.0%	**	0	**	HS or Eqv	None	ST OJT
43-5032	Dispatchers, Except Police, Fire, & Ambulance	70	90	20	24.3%	2.4%	**	**	**	HS or Eqv	None	MT OJT
43-5051	Postal Service Clerks	80	50	-30	-35.4%	-3.5%	0	**	**	HS or Eqv	None	ST OJT
43-5052	Postal Service Mail Carriers	110	120	10	11.0%	1.1%	**	**	10	HS or Eqv	None	ST OJT
43-5053	Postal Service Mail Sorters, Processors, & Processing Machine Operators	20	10	-10	-35.0%	-3.5%	0	0	0	HS or Eqv	None	ST OJT
43-5061	Production, Planning, & Expediting Clerks	30	40	0	12.9%	1.3%	0	**	**	HS or Eqv	None	MT OJT
43-5071	Shipping, Receiving, & Traffic Clerks	140	150	10	4.3%	0.4%	**	**	10	HS or Eqv	None	ST OJT
43-5081	Stock Clerks & Order Fillers	1,250	1,290	40	2.8%	0.3%	**	30	40	< HS	None	ST OJT

Table 4. Long-term Occupational Projections, Hawaii County, 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
43-6000	Secretaries & Administrative Assistants	1,420	1,560	140	9.7%	1.0%	10	20	30			
43-6011	Executive Secretaries & Administrative Assistants	290	320	40	13.3%	1.3%	**	**	10	HS or Eqv	1-5 years	None
43-6012	Legal Secretaries	70	70	0	-1.4%	-0.1%	0	**	**	HS or Eqv	None	MT OJT
43-6013	Medical Secretaries	190	240	40	21.8%	2.2%	**	**	10	HS or Eqv	None	MT OJT
43-6014	Secretaries, Except Legal, Medical, & Executive	870	930	60	6.8%	0.7%	10	10	20	HS or Eqv	None	ST OJT
43-9000	Other Office & Administrative Support Workers	2,020	2,290	270	13.5%	1.3%	30	40	60			
43-9021	Data Entry Keyers	40	40	0	0.0%	0.0%	0	**	**	HS or Eqv	None	MT OJT
43-9022	Word Processors & Typists	170	150	-10	-8.4%	-0.8%	0	**	**	HS or Eqv	None	ST OJT
43-9061	Office Clerks, General	1,460	1,710	250	16.8%	1.7%	30	30	50	HS or Eqv	None	ST OJT
43-9799	Office & Administrative Support Workers, All Other	280	310	30	10.6%	1.1%	**	10	10	HS or Eqv	None	ST OJT
45-0000	Farming, Fishing, & Forestry Occupations	1,200	1,360	170	13.8%	1.4%	20	40	50			
45-1000	Supervisors, Farming, Fishing, & Forestry Workers	90	100	10	16.1%	1.6%	**	**	**			
45-1011	First-Line Supervisors/Mgrs. of Farming, Fishing, & Forestry Workers	90	100	10	16.1%	1.6%	**	**	**	HS or Eqv	1-5 years	None
45-2000	Agricultural Workers	1,090	1,230	150	13.7%	1.4%	20	30	50			
45-2091	Agricultural Equipment Operators	60	90	30	54.2%	5.4%	**	**	10	< HS	< 1 year	ST OJT
45-2092	Farmworkers & Laborers, Crop, Nursery, & Greenhouse	840	940	100	12.1%	1.2%	10	30	40	< HS	None	ST OJT
45-2093	Farmworkers, Farm & Ranch Animals	140	160	10	9.0%	0.9%	**	**	10	< HS	None	ST OJT
45-4000	Forest, Conservation, & Logging Workers	20	30	0	8.7%	0.9%	0	**	**			
45-4011	Forest & Conservation Workers	20	30	0	8.7%	0.9%	0	**	**	HS or Eqv	None	MT OJT
47-0000	Construction & Extraction Occupations	3,550	4,380	830	23.2%	2.3%	80	80	160			
47-1000	Supervisors, Construction & Extraction Workers	210	260	50	24.1%	2.4%	10	10	10			
47-1011	First-Line Supervisors/Mgrs. of Construction Trades & Extraction Workers	210	260	50	24.1%	2.4%	10	10	10	HS or Eqv	5+ years	None
47-2000	Construction Trades Workers	3,070	3,760	700	22.7%	2.3%	70	60	130			
47-2021	Brickmasons & Blockmasons	20	30	0	18.2%	1.8%	0	0	0	HS or Eqv	None	Appren
47-2022	Stonemasons	120	160	40	38.3%	3.8%	**	**	10	HS or Eqv	None	Appren
47-2031	Carpenters	810	1,010	190	23.8%	2.4%	20	20	40	HS or Eqv	None	Appren
47-2041	Carpet Installers	30	30	0	14.8%	1.5%	0	**	**	< HS	None	ST OJT
47-2044	Tile & Marble Setters	40	50	10	22.7%	2.3%	**	**	**	< HS	None	LT OJT
47-2051	Cement Masons & Concrete Finishers	40	50	10	32.4%	3.2%	**	**	**	< HS	None	MT OJT
47-2061	Construction Laborers	520	620	100	20.2%	2.0%	10	**	10	< HS	None	ST OJT
47-2071	Paving, Surfacing, & Tamping Equipment Operators	70	80	10	14.7%	1.5%	**	**	**	HS or Eqv	None	MT OJT
47-2073	Operating Engineers & Other Construction Equipment Operators	280	330	50	19.6%	2.0%	10	10	10	HS or Eqv	None	MT OJT
47-2081	Drywall & Ceiling Tile Installers	80	100	20	24.4%	2.4%	**	**	**	< HS	None	MT OJT

Table 4. Long-term Occupational Projections, Hawaii County, 2010 - 2020

SOC Code	Occupation Title	Employment		Growth		Average Annual Openings			Education and Training			
		2010	2020	# Chg.	% Chg.	Avg. Ann. Growth	Due to Growth	Due to Replace-ments	Total Open-ings	Education Value	Work Experience Value	Job Training Value
47-2082	Tapers	30	40	10	33.3%	3.3%	**	**	**	< HS	None	MT OJT
47-2111	Electricians	280	350	60	21.9%	2.2%	10	10	10	HS or Eqv	None	Appren
47-2121	Glaziers	20	20	10	43.8%	4.4%	**	**	**	HS or Eqv	None	Appren
47-2141	Painters, Construction & Maintenance	330	400	60	18.9%	1.9%	10	10	10	< HS	None	MT OJT
47-2151	Pipelayers	40	40	10	22.2%	2.2%	**	**	**	HS or Eqv	None	ST OJT
47-2152	Plumbers, Pipefitters, & Steamfitters	300	370	80	25.8%	2.6%	10	10	20	HS or Eqv	None	Appren
47-2161	Plasterers & Stucco Masons	20	20	0	15.0%	1.5%	0	0	0	< HS	None	LT OJT
47-2181	Roofers	40	40	10	17.1%	1.7%	**	**	**	< HS	None	MT OJT
47-3000	Helpers, Construction Trades	90	120	30	37.2%	3.7%	**	**	10			
47-3012	Helpers--Carpenters	30	50	20	71.4%	7.1%	**	**	**	< HS	None	ST OJT
47-3013	Helpers--Electricians	20	20	10	31.3%	3.1%	0	0	0	HS or Eqv	None	ST OJT
47-3014	Helpers--Painters, Paperhangers, Plasterers, & Stucco Masons	40	50	10	16.7%	1.7%	**	**	**	< HS	None	ST OJT
47-4000	Other Construction & Related Workers	170	210	50	27.1%	2.7%	**	10	10			
47-4011	Construction & Building Inspectors	80	90	10	14.5%	1.4%	**	**	**	HS or Eqv	5+ years	MT OJT
47-4031	Fence Erectors	50	70	10	22.2%	2.2%	**	**	**	HS or Eqv	None	MT OJT
47-4041	Hazardous Materials Removal Workers	30	40	20	72.0%	7.2%	**	**	**	HS or Eqv	None	MT OJT
47-5000	Extraction Workers	20	20	0	9.1%	0.9%	0	0	0			
47-5021	Earth Drillers, Except Oil & Gas	20	20	0	9.1%	0.9%	0	0	0	HS or Eqv	None	MT OJT
49-0000	Installation, Maintenance, & Repair Occupations	2,570	3,000	430	16.8%	1.7%	40	60	100			
49-1000	Supervisors of Installation, Maintenance, & Repair Workers	270	310	40	13.9%	1.4%	**	10	10			
49-1011	First-Line Supervisors/Mgrs.of Mechanics, Installers, & Repairers	270	310	40	13.9%	1.4%	**	10	10	HS or Eqv	1-5 years	None
49-2000	Electrical & Electronic Equipment Mechanics, Installers, & Repairers	180	220	40	22.4%	2.2%	**	**	10			
49-2011	Computer, Automated Teller, & Office Machine Repairers	20	20	0	0.0%	0.0%	0	0	0	PS Non-Deg	None	None
49-2022	Telecommunications Equipment Installers & Repairers, Except Line Installers	90	130	30	36.6%	3.7%	**	**	10	PS Non-Deg	None	MT OJT
49-3000	Vehicle & Mobile Equipment Mechanics, Installers	740	890	140	19.1%	1.9%	10	20	30			
49-3011	Aircraft Mechanics & Service Technicians	70	90	20	33.9%	3.4%	**	**	**	PS Non-Deg	None	None
49-3021	Automotive Body & Related Repairers	40	50	10	15.9%	1.6%	**	**	**	HS or Eqv	None	MT OJT
49-3023	Automotive Service Technicians & Mechanics	380	440	60	16.0%	1.6%	10	10	20	HS or Eqv	None	LT OJT
49-3031	Bus & Truck Mechanics & Diesel Engine Specialists	60	70	10	17.9%	1.8%	**	**	**	HS or Eqv	None	LT OJT
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	70	80	10	16.7%	1.7%	**	**	**	HS or Eqv	None	LT OJT
49-3053	Outdoor Power Equipment & Other Small Engine Mechanics	30	40	10	33.3%	3.3%	**	**	**	HS or Eqv	None	MT OJT
49-3093	Tire Repairers & Changers	80	100	20	21.4%	2.1%	**	**	**	HS or Eqv	None	MT OJT

Table 4. Long-term Occupational Projections, Hawaii County, 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
49-9000	Other Installation, Maintenance, & Repair Occupations	1,370	1,580	210	15.4%	1.5%	20	30	50			
49-9021	Heating, Air Conditioning, & Refrigeration Mechanics & Installers	30	40	10	24.2%	2.4%	**	**	**	PS Non-Deg	None	LT OJT
49-9031	Home Appliance Repairers											
49-9041	Industrial Machinery Mechanics	50	60	10	26.1%	2.6%	**	**	**	HS or Eqv	None	LT OJT
49-9051	Electrical Power-Line Installers & Repairers	150	160	10	4.0%	0.4%	**	10	10	HS or Eqv	None	LT OJT
49-9062	Medical Equipment Repairers	20	20	0	14.3%	1.4%	0	**	**	Associates	None	MT OJT
49-9071	Maintenance & Repair Workers, General	910	1,060	150	15.9%	1.6%	10	20	30	HS or Eqv	None	MT OJT
49-9098	Helpers--Installation, Maintenance, & Repair Workers	80	90	20	19.5%	1.9%	**	**	10	HS or Eqv	None	MT OJT
49-9799	Installation, Maintenance, & Repair Workers, All Other	30	30	0	3.9%	0.4%	0	0	0	HS or Eqv	None	MT OJT
51-0000	Production Occupations	1,610	1,830	220	13.5%	1.4%	20	40	60			
51-1000	Supervisors, Production Workers	100	120	20	16.0%	1.6%	**	**	**			
51-1011	First-Line Supervisors/Mgrs.of Production & Operating Workers	100	120	20	16.0%	1.6%	**	**	**	PS Non-Deg	1-5 years	None
51-2000	Assemblers & Fabricators	110	160	50	51.4%	5.1%	10	**	10			
51-2092	Team Assemblers	80	120	40	56.6%	5.7%	**	**	10	HS or Eqv	None	MT OJT
51-2099	Assemblers & Fabricators, All Other	20	30	10	39.1%	3.9%	**	0	**	HS or Eqv	None	MT OJT
51-3000	Food Processing Workers	620	660	30	5.5%	0.5%	**	20	20			
51-3011	Bakers	210	220	10	2.9%	0.3%	**	10	10	< HS	None	LT OJT
51-3021	Butchers & Meat Cutters	80	90	10	9.8%	1.0%	**	**	**	< HS	None	LT OJT
51-3022	Meat, Poultry, & Fish Cutters & Trimmers	130	150	20	16.5%	1.7%	**	**	10	< HS	None	ST OJT
51-3092	Food Batchmakers	110	110	-10	-7.9%	-0.8%	0	**	**	HS or Eqv	< 1 year	ST OJT
51-3093	Food Cooking Machine Operators & Tenders	70	80	10	8.5%	0.8%	**	**	**	HS or Eqv	< 1 year	ST OJT
51-4000	Metal Workers & Plastic Workers	40	50	10	18.2%	1.8%	**	**	**			
51-4121	Welders, Cutters, Solderers, & Brazers	30	30	0	14.8%	1.5%	0	**	**	HS or Eqv	< 1 year	MT OJT
51-5000	Printing Workers	20	20	0	-9.1%	-0.9%	0	0	0			
51-5112	Printing Press Operators & Job Printers	20	20	0	-5.6%	-0.6%	0	0	0	HS or Eqv	None	MT OJT
51-6000	Textile, Apparel, & Furnishings Workers	270	300	30	9.5%	0.9%	**	**	10			
51-6011	Laundry & Dry-Cleaning Workers	190	210	20	10.0%	1.0%	**	**	10	< HS	None	ST OJT
51-6021	Pressers, Textile, Garment, & Related Materials	70	70	10	8.8%	0.9%	**	0	**	< HS	None	ST OJT
51-7000	Woodworkers	60	70	20	28.6%	2.9%	**	**	**			
51-7011	Cabinetmakers & Bench Carpenters	30	50	10	40.6%	4.1%	**	**	**	HS or Eqv	None	MT OJT
51-8000	Plant & System Operators	110	140	20	21.4%	2.1%	**	**	10			
51-8031	Water & Liquid Waste Treatment Plant & System Operators	80	100	20	30.8%	3.1%	**	**	**	HS or Eqv	None	LT OJT
51-9000	Other Production Occupations	280	320	40	15.2%	1.5%	**	10	10			
51-9061	Inspectors, Testers, Sorters, Samplers, & Weighers	30	40	10	18.8%	1.9%	**	**	**	HS or Eqv	None	MT OJT

Table 4. Long-term Occupational Projections, Hawaii County, 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
51-9071	Jewelers & Precious Stone & Metal Workers	20	20	0	12.5%	1.3%	0	0	0	HS or Eqv	None	LT OJT
51-9111	Packaging & Filling Machine Operators & Tenders	90	100	10	9.9%	1.0%	**	**	**	HS or Eqv	None	MT OJT
51-9151	Photographic Process Workers & Processing Machine Operators	30	30	0	-7.4%	-0.7%	0	**	**	HS or Eqv	None	ST OJT
51-9198	Helpers--Production Workers	20	20	10	29.4%	2.9%	0	0	0	< HS	None	ST OJT
51-9399	Production Workers, All Other	30	30	10	18.5%	1.9%	0	**	**	HS or Eqv	None	MT OJT
53-0000	Transportation & Material Moving Occupations	4,200	5,060	860	20.5%	2.1%	90	100	190			
53-1000	Supervisors, Transportation & Material Moving Workers	210	260	50	23.0%	2.3%	10	**	10			
53-1021	First-Line Supervisors/Mgrs.of Helpers, Laborers, & Material Movers, H&	30	40	10	24.2%	2.4%	**	**	**	HS or Eqv	1-5 years	None
53-1031	First-Line Supervisors/Mgrs.of Transportation & Material-Moving Machine & Vehicle Operators	180	220	40	22.7%	2.3%	**	**	10	HS or Eqv	1-5 years	None
53-2000	Air Transportation Workers	90	120	30	30.9%	3.1%	**	**	10			
53-2011	Airline Pilots, Copilots, & Flight Engineers	20	40	10	56.5%	5.7%	**	**	**	Bachelors	1-5 years	MT OJT
53-2012	Commercial Pilots	30	40	10	20.7%	2.1%	**	**	**	PS Non-Deg	None	None
53-2021	Air Traffic Controllers	30	30	0	0.0%	0.0%	0	**	**	Associates	None	LT OJT
53-3000	Motor Vehicle Operators	1,850	2,280	430	23.5%	2.3%	40	30	80			
53-3021	Bus Drivers, Transit & Intercity	210	270	60	27.3%	2.7%	10	**	10	HS or Eqv	None	MT OJT
53-3022	Bus Drivers, School	130	180	50	38.9%	3.9%	10	**	10	HS or Eqv	None	MT OJT
53-3031	Driver/Sales Workers	110	130	20	15.2%	1.5%	**	**	**	HS or Eqv	None	ST OJT
53-3032	Truck Drivers, Heavy & Tractor-Trailer	620	760	140	22.3%	2.2%	10	10	30	HS or Eqv	1-5 years	ST OJT
53-3033	Truck Drivers, Light or Delivery Services	390	480	90	23.1%	2.3%	10	10	20	HS or Eqv	None	ST OJT
53-3041	Taxi Drivers & Chauffeurs	340	400	70	20.6%	2.1%	10	**	10	< HS	None	ST OJT
53-5000	Water Transportation Workers	120	160	40	33.6%	3.4%	**	10	10			
53-5021	Captains, Mates, & Pilots of Water Vessels	90	120	30	31.8%	3.2%	**	**	10	Bachelors	None	None
53-6000	Other Transportation Workers	340	390	40	12.9%	1.3%	10	10	20			
53-6021	Parking Lot Attendants	60	60	0	-3.4%	-0.3%	0	**	**	< HS	None	ST OJT
53-6031	Service Station Attendants	180	190	10	5.5%	0.6%	**	10	10	< HS	None	ST OJT
53-7000	Material Moving Workers	1,590	1,850	270	16.8%	1.7%	30	50	80			
53-7051	Industrial Truck & Tractor Operators	190	220	30	16.8%	1.7%	**	10	10	< HS	< 1 year	ST OJT
53-7061	Cleaners of Vehicles & Equipment	180	210	30	18.6%	1.9%	**	10	10	< HS	None	ST OJT
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	720	870	150	20.8%	2.1%	20	20	40	< HS	None	ST OJT
53-7064	Packers & Packagers, Hand	400	430	30	6.2%	0.6%	**	10	10	< HS	None	ST OJT
53-7081	Refuse & Recyclable Material Collectors	80	110	20	29.6%	3.0%	**	**	**	< 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.