

Connecticut Department of Labor
Report to the Joint Committee of Labor, Education and Higher Education
Economic Outlook and Prospects for Vocational-Technical Related Occupations

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I. SUMMARY

Connecticut is in the final stages of its economic recovery from the recession of 2008 – 2010. Employment growth, which has been moderate and steady since 2010, appears to be quickening its pace. All economic sectors except Information have shown at least some employment growth in the last 12 months. Our short-term forecast for employment growth through 2016 calls for a modest annual growth rate of 0.7 percent annually; however, more recent data indicates the economy is creating jobs at a faster pace. Incomes have been slow to recover since the recession. Some of this is due to the natural demographic phenomena of retirees being replaced by younger age cohorts early in their earnings path. However, the problem of income growth is also impacted by the fact that some of the fastest growing segments in the economy since the recession have been in traditionally low-paying fields.

The Department of Labor undertakes an annual examination of occupations served by education programs provided by the vocational high school system. We examine growth patterns in those occupations in the state which require a high school diploma as a minimum entry requirement. We also look at the balance the number of graduates from education programs provided by the vocational education system and the demand for new entrants into the occupations these programs are designed to serve. Finally, we look at a broader spectrum of occupations which require a high school diploma as a minimum requirement for entry, but for which there is no current high school level training available. These occupations may be future opportunities for expansion of vocational high school education programs.

In general, this analysis indicates that the educational programs offered by the vocational high school system are in good alignment with the apparent demand for new entrants into the occupations they are designed to service. There are a very few cases where vocational programs appear to be producing candidates for jobs that do not exist. We have recommended that further research be done onto the demand for CAD/CADD and automotive technology programs to assure that the fields are not being “over supplied.” We also recommend that the construction trades be looked at as an opportunity for expansion. We caution that the TEPS program used to identify supply and demand imbalances should be used as a preliminary indicator only. There are other possible explanations for apparent imbalances that our current data can’t address.

II. Introduction

According to Sec 10-95h of the General Statutes:

“The Labor Commissioner shall submit the following to the joint standing committees of the General Assembly having cognizance of matters relating to education, higher education and employment advancement and labor: (A) Information identifying general economic trends in the state; (B) occupational information regarding the public and private sectors, such as continuous data on occupational movements; and (C) information identifying emerging regional, state and national workforce needs over the next thirty years.”

This report seeks to address these requirements.

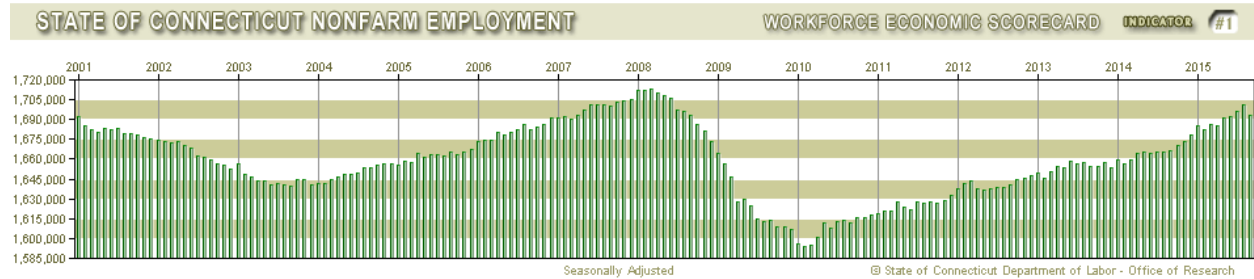
It should be noted that limitations on the data collected by the Department of Labor make full compliance with parts B) and C) above problematic. CTDOL conducts long-term occupational projections every two years with funding from the U.S. Department of Labor Education and Training Administration (USDOL / ETA). Our contracted deliverable mandates that we follow the methods used by all states. We currently have occupational projections for the 2012 – 2022 ten-year period. Our next round of projections will be by July 1, 2016, covering the period 2014 – 2024. Given long-term changes in technology, consumer tastes and economic conditions, thirty-year occupational projections would not generate meaningful results.

The foundation of our occupational projections is our Occupational Employment Statistics program where we produce annual estimates of employment and wages earned by occupation in Connecticut. As currently designed by the USDOL Bureau of Labor Statistics, the sample design for the OES program does not permit its use as a “time-series,” i.e. the comparisons of employment by occupation from one year to the next are not statistically valid. The data are best interpreted as “snapshots” in time. As a result, meeting the part B) condition to present “continuous data” on movements in occupational demand is not strictly possible.

III. Current Outlook for CT Economy and Labor Markets

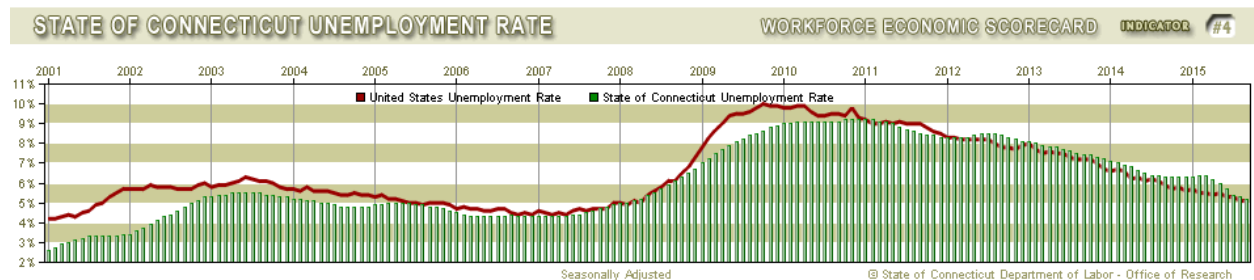
Until recently, Connecticut’s recovery from the recession of 2008 – 2010 has been relatively slow as compared to U.S. averages. However, since the 3rd quarter of 2015, the pace of job growth has increased.

FIGURE 1:



As of September 2015, we have recovered about 99.5 thousand, or 84%, of the jobs lost since the trough of the recession in the 1st quarter of 2010. This recent rate of growth has driven down our unemployment rate to where we have historically been: at or near the U.S. average.

FIGURE 2:

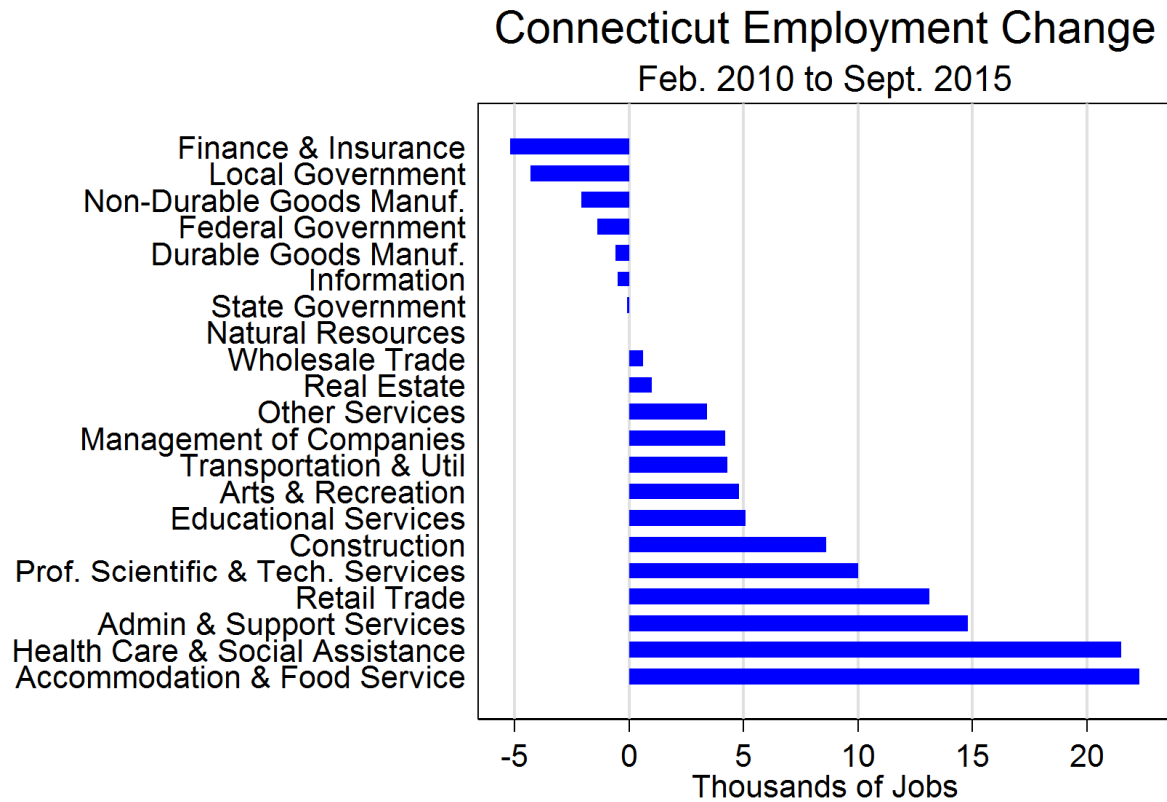


WHAT DOES THE RECOVERY LOOK LIKE? WHERE ARE WE GAINING AND LOSING?

The jobs recovery in Connecticut has occurred across most industries with some important exceptions. Job growth in the public sector, particularly at the local level, continues to drag on growth in the State. Since the withdrawal of Federal stimulus funds, state and local governments have little choice but to retard hiring and continue to shrink. Manufacturing employment continues to decline, but in this case, bad news may be good. The rate of decline in manufacturing employment is the lowest it has been in several decades. Manufacturing employment has declined in Connecticut, more as a factor of productivity and a shift towards advanced manufacturing, rather than a decline in the importance of this industry in the state. A growing challenge and opportunity in Connecticut, manufacturing is the aging of the skilled manufacturing workforce. Even in an environment where we predict little net growth in total

manufacturing employment, we do forecast reasonably strong annual demand to replace retiring workers.

FIGURE 3:



Perhaps of most concern is the continuing loss of financial sector jobs, both in banking and in our historically important insurance industry. The banking industry has been hit hard by declines in both hedge funds and banking. The insurance industry continues to suffer from a decline in profitability (excepting health care) and continued restructuring.

More recently, the job growth picture has improved even in those sectors which have been stubbornly slow to recover. In the twelve months ending in September 2015, only the information sector (publishing, telecommunications, and broadcasting) is failing to show employment growth.

Table 1: Connecticut Industry Sector Employment Growth 2014 – 2015

Source: CTDOL Current Employment Statistics Program

	Year to Year			
	Sep 2015	Sep 2014	Change	Rate %
Follow link below for more charts & data				
Connecticut Nonfarm Employment	1,693,500	1,666,500	27,000	1.6%
Private Sector	1,454,100	1,428,100	26,000	1.8%
Follow link below for more charts & data				
Construction	57,500	56,400	1,100	2.0%
Manufacturing	161,400	158,900	2,500	1.6%
Follow link below for more charts & data				
Transportation and Public Utilities	305,000	300,900	4,100	1.4%
Information	31,400	31,800	-400	-1.3%
Financial Activities	130,700	128,800	1,900	1.5%
Professional and Business Services	216,400	211,500	4,900	2.3%
Educational and Health Services	330,000	326,200	3,800	1.2%
Leisure and Hospitality	157,500	150,000	7,500	5.0%
Other Services	63,600	63,000	600	1.0%
Government	239,400	238,400	1,000	0.4%

SHORT-TERM EMPLOYMENT OUTLOOK

Connecticut is expected to continue on its rebound from the recent recession over the forecast period. The average annual growth rate is expected to be .7%. This will potentially bring the employment level to 1,823,049 by the third quarter of 2016 from its base of 1,799,082.

The goods producing industries are expected to contract at an annual average rate of .6%. The largest contributor to this is the manufacturing industry. Over the two year period, it is expected to drop by 5,454 jobs. Construction has a brighter outlook, as it is projected to grow on average 2.2% annually.

The much larger service providing industries are forecasted to grow .9% on an annual average basis. The projected growth is largely aided by education and health services. The industry is expected to grow 1.4% annually, keeping on trend with how it has performed over recent years. Other significant contributions to the anticipated employment growth are the trade, transportation, and utilities, professional and business services, and leisure and hospitality sectors. Information, financial activities, and government are all likely to shrink over the next two years.

It should be noted that employment growth in Connecticut since the issuance of this forecast has been greater than expected and the forecast for 2016 may be overly conservative.

Table 2: Short Term Industry Employment Forecast – Connecticut Payroll Jobs Q4 2014 – Q4 2016

Industry	2014 Employment	2016 Projected Employment	Avg. Annual Growth Rate (%)
Total All Industries	1,799,082	1,823,049	0.7
Goods Producing	226,341	223,520	-0.6
Natural Resources and Mining	7,098	7,100	0.0
Construction	59,611	62,242	2.2
Manufacturing	159,632	154,178	-1.7
Service Providing	1,455,087	1,481,366	0.9
Trade, Transportation, and Utilities	296,252	299,374	0.5
Information	32,050	31,959	-0.1
Financial Activities	129,566	128,322	-0.5
Professional and Business Services	214,718	220,389	1.3
Education and Health Services	446,494	458,814	1.4
Leisure and Hospitality	171,027	177,329	1.8
Other Services (except Government)	76,000	76,419	0.3
Government	88,980	88,760	-0.1

IV. Demand for Occupations Relevant to the Vocational Education System (requiring High School or postsecondary education)

LONG-TERM INDUSTRY/OCCUPATIONAL-EMPLOYMENT FORECAST PROCESS

The long-term projections are produced on a two-year cycle and look forward 10 years. The most recent 10-year projections are for the period 2012-2022 and were completed in the summer of 2014. The 2014-2024 projections are scheduled to be completed by June 30, 2016.

Every quarter, Connecticut employers report employment levels and wages to the Connecticut Department of Labor as part of the Unemployment Insurance system. This data allows the Office of Research to accurately calculate employment levels for every industry in the state over time. For most industries, we have complete and consistent data back to 1990. This data is used as a foundation to produce the long-term projections of Connecticut employment by industry, based on trends in the data and other factors. These other factors include the national projections for employment by industry, independent demographic forecasts and independent forecasts of other factors that could affect employment in Connecticut (for example, there are independent forecasts of capital investment by the U.S. Dept. of Defense. They are used to develop employment projections for those Connecticut industries affected by changes in defense capital spending).

The long-term industry projections are produced with the assumption that the economy will have full employment at the end of the projection period. The “full employment” assumption is made because predicting the timing of the business cycle over a ten-year period is difficult, if not impossible.

LONG-TERM OCCUPATIONAL FORECASTS

The Occupational Employment Statistics (OES) program conducted in partnership with the USDOL Bureau of Labor Statistics develops staffing patterns for each industry based on a survey of 21,000 establishments. These staffing patterns are combined with the industry data to produce the estimates of employment by occupation for the base year. Occupational employment projections are based on both the industry projections and change factors which estimate the portion of employment each occupation is expected to gain or lose within each industry. Finally, the number of projected openings is computed based on the change in the level of employment plus an occupation-specific measure of expected turnover.

Growth in employment for an industry or occupation can occur for two reasons. First, the demand for labor can increase because the industry itself is expanding, requiring more labor. Second, there can be demand for new positions in an industry or occupation for demographic reasons, i.e. to replace retiring workers or replace workers who leave a position to take a new job – leaving a vacancy behind. This kind of annual demand is called replacement demand. Because of the need for replacements, there can be significant demand for new workers even in cases where the industry itself is not growing. In addition, we would expect high replacement demand in industries and occupations that have traditionally high turnover or “churn.” For example, we can expect a reasonably high annual demand for skilled replacement manufacturing occupations even though manufacturing is not projected to see an increase in overall employment levels over the next ten years. The average age of manufacturing workers in Connecticut is considerably higher than the all worker average and many are close to retirement.

Our occupational projections distinguish between the annual projected demand for openings due to growth from those due to replacement needs.

The tables below present the estimated annual occupational demand for new job openings over the period 2012 – 2022. *To be of greater use to the Vocational Education system, these tables focus on those occupations that require either a High School education or Postsecondary certificate as minimum level entry requirements.* Occupations which require either less than a high school degree level of education or college preparation are not included. Vocational high school training may not be relevant to all these occupations. Rankings are presented by all projected annual openings and separately by those occupations projected to be fastest growing. For contrast purposes, those occupations in greatest decline are also presented.

TABLE 3: Top 100 CT Occupations which Require a High School Degree or Postsecondary Award (Ranked by Annual Projected Openings due to Growth through 2020)

SOURCE: CTDOL Occupational Projections program 2012-2022

Occupational Title	Projected 2022 Employment	Annual Openings due to Growth	Total Annual Openings	2014 Hourly Wage	2014 Annual Wage	Minimum Education	Work Experience	On Job Training
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	38,644	412	828	18.97	39,450	HS	None	ST
Childcare Workers	21,167	287	825	10.55	21,947	HS	None	ST
First-Line Supervisors of Office and Administrative Support Workers	28,895	254	879	27.51	57,221	HS	< 5 Yrs	N
Customer Service Representatives	31,056	217	1,003	17.80	37,030	HS	None	ST
Bookkeeping, Accounting, and Auditing Clerks	23,383	209	405	20.56	42,761	HS	None	MT
Medical Assistants	9,315	200	340	16.09	33,464	PS	None	N
Social and Human Service Assistants	10,836	179	415	17.42	36,230	HS	None	ST
Licensed Practical and Licensed Vocational Nurses	10,422	158	374	26.64	55,412	PS	None	N
Carpenters	10,878	153	268	23.60	49,089	HS	None	APP
Medical Secretaries	5,731	135	188	17.74	36,898	HS	None	MT
Receptionists and Information Clerks	14,153	134	479	15.41	32,058	HS	None	ST
Heavy and Tractor-Trailer Truck Drivers	14,370	134	342	21.09	43,851	PS	None	ST
Electricians	7,276	128	241	27.20	56,577	HS	None	APP
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	15,957	122	409	30.58	63,596	HS	None	MT
Nursing Assistants	23,921	114	547	15.03	31,267	PS	None	N
First-Line Supervisors of Food Preparation and Serving Workers	9,579	110	349	15.99	33,273	HS	< 5 Yrs	N
First-Line Supervisors of Construction Trades and Extraction Workers	5,868	101	153	33.10	68,852	HS	5 Yrs +	N
Plumbers, Pipefitters, and Steamfitters	4,910	101	150	28.39	59,067	HS	None	APP
Bus Drivers, School or Special Client	9,790	99	261	15.51	32,266	HS	None	ST
Emergency Medical Technicians and Paramedics	4,172	98	185	19.79	41,157	PS	None	N
Billing and Posting Clerks	7,284	95	212	19.21	39,956	HS	None	ST
Office Clerks, General	29,930	94	703	16.26	33,830	HS	None	ST
Machinists	9,762	86	290	21.08	43,860	HS	None	LT
Maintenance and Repair Workers, General	11,949	84	297	20.63	42,920	HS	None	LT
Security Guards	12,609	81	262	12.95	26,924	HS	None	ST
Sales Representatives, Services, All Other	9,485	76	314	28.24	58,738	HS	None	ST
Inspectors, Testers, Sorters, Samplers, and Weighers	8,551	71	243	20.54	42,721	HS	None	MT
Substance Abuse and Behavioral Disorder Counselors	3,009	65	115	22.12	46,013	HS	None	MT
Fitness Trainers and Aerobics Instructors	5,098	64	117	20.37	42,382	HS	None	ST
Managers, All Other	13,706	55	343	52.36	108,916	HS	< 5 Yrs	N
Pharmacy Technicians	4,004	55	89	15.02	31,252	HS	None	MT
Hairdressers, Hairstylists, and Cosmetologists	10,570	54	289	11.53	23,972	PS	None	N
Operating Engineers and Other Construction Equipment Operators	3,077	48	106	29.37	61,091	HS	None	MT
First-Line Supervisors of Retail Sales Workers	21,694	47	509	20.13	41,856	HS	< 5 Yrs	N
Industrial Machinery Mechanics	2,474	46	104	25.76	53,577	HS	None	LT
Office and Administrative Support Workers, All Other	6,740	45	221	10.11	21,021	HS	None	ST
First-Line Supervisors of Mechanics, Installers, and Repairers	5,518	45	182	33.15	68,946	HS	< 5 Yrs	N
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	3,784	44	129	26.72	55,562	PS	None	LT
Computer-Controlled Machine Tool Operators, Metal and Plastic	2,982	42	114	19.54	40,638	HS	None	MT
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	4,344	41	86	25.14	52,297	HS	< 5 Yrs	N
Residential Advisors	2,585	40	135	14.25	29,635	HS	None	ST
Bill and Account Collectors	4,104	40	144	20.15	41,910	HS	None	MT
Automotive Service Technicians and Mechanics	9,631	40	274	19.51	40,590	HS	None	LT
Driver/Sales Workers	4,329	37	100	13.05	27,144	HS	None	ST
Dental Assistants	4,534	35	122	19.79	41,163	PS	None	N
Property, Real Estate, and Community Association Managers	4,127	30	116	27.23	56,654	HS	< 5 Yrs	N
Surgical Technologists	1,458	30	41	26.27	54,653	PS	None	N
Police and Sheriff's Patrol Officers	6,891	30	237	31.71	65,951	HS	None	MT
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	2,487	30	65	30.31	63,040	HS	None	MT
Assemblers and Fabricators, All Other	2,826	30	70	13.58	28,247	HS	None	MT

TABLE 3: (Continued)

Occupational Title	Projected 2022 Employment	Annual Openings due to Growth	Total Annual Openings	2014 Hourly Wage	2014 Annual Wage	Minimum Education	Work Experience	On Job Training
Electrical Power-Line Installers and Repairers	1,259	29	62	39.79	82,757	HS	None	LT
Self-Enrichment Education Teachers	3,441	28	82	19.56	40,681	HS	< 5 Yrs	N
Massage Therapists	1,786	28	44	20.30	42,221	PS	None	N
First-Line Supervisors of Housekeeping and Janitorial Workers	3,483	28	104	22.19	46,151	HS	< 5 Yrs	N
Medical Records and Health Information Technicians	1,653	25	62	19.77	41,116	PS	None	N
Health Technologists and Technicians, All Other	1,274	25	35	26.08	54,258	HS	None	N
Light Truck or Delivery Services Drivers	11,728	25	209	15.63	32,499	HS	None	ST
Demonstrators and Product Promoters	1,512	24	60	16.42	34,156	HS	None	ST
Correctional Officers and Jailers	3,232	23	103	25.73	53,506	HS	None	MT
Skincare Specialists	995	23	29	12.37	25,735	PS	None	N
Phlebotomists	1,856	22	53	17.40	36,195	PS	None	N
Computer Numerically Controlled Machine Tool Programmers, Physical Therapist Aides	932	22	42	22.70	47,214	HS	None	LT
Production, Planning, and Expediting Clerks	833	21	35	13.39	27,862	HS	None	ST
Sheet Metal Workers	4,074	21	117	23.48	48,847	HS	None	MT
Lifeguards, Ski Patrol, and Other Recreational Protective Services	1,953	21	54	24.62	51,214	HS	None	APP
Payroll and Timekeeping Clerks	2,025	20	144	10.51	21,866	HS	None	ST
Installation, Maintenance, and Repair Workers, All Other	2,313	20	66	21.95	45,657	HS	None	MT
Bus Drivers, Transit and Intercity	2,600	20	60	19.58	40,732	HS	None	MT
Bus and Truck Mechanics and Diesel Engine Specialists	1,720	20	48	18.61	38,709	HS	None	MT
Audio and Video Equipment Technicians	2,652	19	71	25.60	53,241	HS	None	LT
Eligibility Interviewers, Government Programs	1,301	18	38	20.18	41,976	PS	None	ST
Hotel, Motel, and Resort Desk Clerks	1,038	18	35	25.06	52,127	HS	None	MT
Hazardous Materials Removal Workers	1,801	18	95	11.01	22,904	HS	None	ST
Team Assemblers	891	18	34	17.42	36,227	HS	None	MT
Musicians and Singers	10,597	18	183	13.80	28,705	HS	None	MT
Automotive Body and Related Repairers	3,786	17	115			HS	None	LT
First-Line Supervisors of Transportation and Material-Moving Machine Operators	2,125	17	55	20.74	43,155	HS	None	MT
Community Health Workers	2,245	17	74	30.37	63,159	HS	< 5 Yrs	N
Opticians, Dispensing	781	15	31	18.11	37,666	HS	None	ST
Manicurists and Pedicurists	913	15	37	23.44	48,755	HS	None	LT
Dispatchers, Except Police, Fire, and Ambulance	2,458	15	34	9.20	19,135	PS	None	N
Shipping, Receiving, and Traffic Clerks	2,046	15	70	20.83	43,318	HS	None	MT
Brickmasons and Blockmasons	8,070	15	223	15.50	32,250	HS	None	ST
Ophthalmic Medical Technicians	830	15	22	28.35	58,976	HS	None	APP
Insulation Workers, Mechanical	827	14	21	19.56	40,691	PS	None	N
Library Assistants, Clerical	351	14	17	20.20	42,005	HS	None	APP
Psychiatric Aides	1,638	13	79	12.07	25,112	HS	None	ST
Real Estate Sales Agents	971	12	28	16.02	33,333	HS	None	ST
Highway Maintenance Workers	1,809	12	28	24.93	51,864	HS	None	LT
Security and Fire Alarm Systems Installers	2,574	12	49	23.90	49,716	HS	None	MT
Medical Equipment Preparers	956	12	29	22.82	47,460	HS	None	MT
Chefs and Head Cooks	663	11	22	17.64	36,689	HS	None	MT
Court, Municipal, and License Clerks	2,473	11	49	22.07	45,899	HS	5 Yrs +	N
Helpers--Electricians	1,218	11	28	22.62	47,054	HS	None	MT
Control and Valve Installers and Repairers, Except Mechanical	375	11	15	16.25	33,809	HS	None	ST
Helpers--Installation, Maintenance, and Repair Workers	550	11	26	33.00	68,620	HS	None	MT
Electrical and Electronic Equipment Assemblers	1,099	11	41	15.88	33,017	HS	None	MT
First-Line Supervisors of Helpers, Laborers, and Material Movers	3,637	11	54	13.94	28,989	HS	None	ST
Business Operations Specialists, All Other	2,225	11	69	25.24	52,509	HS	< 5 Yrs	N
Police, Fire, and Ambulance Dispatchers	7,414	10	110	34.49	71,747	HS	None	N
	1,475	10	50	23.22	48,300	HS	None	MT

Abbreviation Key

HS = High school diploma, PS = Post-secondary award

ST = Short-term on-the-job training (OJT), MT = medium-term OJT, LT = Long-term OJT, APP = Apprenticeship

Table 4: Bottom 50 CT Occupations which Require a High School Degree or Postsecondary Award (Ranked by Total Projected Annual Openings Through 2022)

SOURCE: CTDOL Occupational Projections program 2012- 2022

Occupational Title	Projected 2022 Employment	Annual Openings due to Growth	Total Annual Openings	2014 Hourly Wage	2014 Annual Wage	Minimum Education
Floor Sanders and Finishers	68	0	1	18.49	38,454	HS
Pourers and Casters, Metal	60	0	1	20.42	42,467	HS
Shoe and Leather Workers and Repairers	70	0	1	9.40	19,556	HS
Textile Cutting Machine Setters, Operators, and Tenders	54	0	1	15.10	31,418	HS
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	84	0	1			HS
Textile, Apparel, and Furnishings Workers, All Other	153	0	1	11.62	24,171	HS
Transportation Attendants, Except Flight Attendants	81	1	2	9.74	20,254	HS
Title Examiners, Abstractors, and Searchers	94	0	2	26.45	55,007	HS
Gaming Surveillance Officers and Gaming Investigators	113	0	2			HS
Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	162	0	2			HS
Word Processors and Typists	463	0	2	18.92	39,369	HS
Electrical and Electronics Installers and Repairers, Transportation Equipment	101	0	2	26.16	54,401	PS
Motorcycle Mechanics	108	0	2	17.99	37,435	HS
Coil Winders, Tapers, and Finishers	177	0	2	15.20	31,612	HS
Furniture Finishers	129	0	2	17.82	37,060	HS
Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	75	0	2	20.28	42,183	HS
Adhesive Bonding Machine Operators and Tenders	87	0	2	15.78	32,821	HS
Artists and Related Workers, All Other	86	1	3	26.03	54,137	HS
Pesticide Handlers, Sprayers, and Applicators, Vegetation	110	1	3	18.23	37,908	HS
Tree Trimmers and Pruners	95	1	3	23.38	48,619	HS
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	94	1	3	39.95	83,093	PS
Precision Instrument and Equipment Repairers, All Other	100	1	3	19.05	39,623	HS
Parking Enforcement Workers	110	0	3	18.33	38,120	HS
Correspondence Clerks	117	0	3	19.38	40,321	HS
Credit Authorizers, Checkers, and Clerks	275	0	3	20.96	43,601	HS
Electronic Equipment Installers and Repairers, Motor Vehicles	296	0	3	16.00	33,282	PS
Musical Instrument Repairers and Tuners	101	0	3	17.77	36,966	HS
Tool Grinders, Filers, and Sharpeners	153	0	3	23.31	48,475	HS
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operator	77	0	3	20.50	42,640	HS
Airfield Operations Specialists	68	0	3	18.24	37,946	HS
Media and Communication Equipment Workers, All Other	147	2	4	32.54	67,684	HS
Cooks, Private Household	120	2	4			PS
Commercial Divers	114	2	4	22.28	46,340	PS
Buyers and Purchasing Agents, Farm Products	152	1	4	16.88	35,093	HS
Legal Support Workers, All Other	213	1	4	28.04	58,325	HS
Fish and Game Wardens	120	1	4	24.70	51,360	HS
Metal Workers and Plastic Workers, All Other	323	1	4	19.80	41,187	HS
Postmasters and Mail Superintendents	158	0	4	35.94	74,740	HS
Insurance Appraisers, Auto Damage	127	0	4	30.46	63,364	PS
Craft Artists	160	0	4	14.31	29,744	HS
Dancers	118	0	4	9.41		HS
Slot Supervisors	153	0	4			HS
New Accounts Clerks	135	0	4	18.26	37,972	HS
Meter Readers, Utilities	150	0	4	30.07	62,557	HS
Electric Motor, Power Tool, and Related Repairers	185	0	4	24.33	50,605	PS
Coin, Vending, and Amusement Machine Servicers and Repairers	336	0	4	15.88	33,017	HS
Model Makers, Metal and Plastic	197	0	4	25.18	52,368	HS
Etchers and Engravers	125	0	4	19.82	41,217	HS
Occupational Therapy Aides	98	3	5	12.75	26,521	HS
Court Reporters	207	2	5	25.55	53,125	PS

V. Workforce Alignment between Vocational Education System (requiring High School or postsecondary education) and Projected Occupational Demand

The CTDOL TEPS program (Training and Education Planning System) tool attempts to compare the “pipeline” of education program completers in Connecticut to the estimated demand for new entrants in to those occupations for which completers are being trained. TEPS uses program completer information from IPEDS and local education institutions and compares these values to CTDOL’s long-term estimates of annual demand for new entrants into an occupation. The results can be informative, but the limitations of the data and Labor Markets must be understood in order to properly use the information. These limitations include:

- The ONET crosswalk which relates education programs (classified by CIP) to occupations (classified by SOC) is “one to many” in both directions. This means an educational program may train an individual for a number of occupations and an occupation may draw qualified entrants from a number of education programs. There is no reliable data available to apportion completers to available occupations. TEPS assumes that all completers of an education program could enter any of the occupations for which they qualify.
- TEPS (or any state-based measure of labor supply and demand) assumes that Labor Markets begin and end at the State border. In fact, entrants to a new position could come across state or international borders. Similarly, someone trained in Connecticut could seek a position elsewhere.
- The TEPS procedure recognizes, but can’t measure, those who complete an education program may not be directly entering the workforce. A particular education program may be a useful stepping stone toward further education and career choices.

As a result of these limitations, TEP results that show a significant under or over supply of trained individuals for entry into an occupation should be taken as a preliminary indicator only. More analysis from those who are close to these professions is necessary to determine if too many or too few individuals are being trained for a particular occupation.

For the case of vocational/technical education, TEPS filters out those completers of Bachelor’s and advanced degrees as well as those occupations which require higher levels of training. For high school education programs for which there are also Certificate and Associate degree programs, the completers are included, but accounted for separately. This is done because the high school program may be the first step in a career pathway that requires higher levels of training.

Table 5: Educational Programs provided by Connecticut High Schools and the Average Annual Openings for the Occupations they “Supply.”

Source: CTDOL TEPS Program

Educational Programs (CIP Title) => SOC Occupations (in Blue)	Post				Total	Projected Annual Openings	Projected Surplus or Deficit	% Surplus or Deficit
	High School Graduates	Secondary Certificate Awards	Associate Degree Graduates	Max of Bach				
Architectural Drafting and Architectural CAD/CADD.	11	57	8	0	76	10	-66	-660%
Architectural and Civil Drafters	11	57	8	0	76	10		
Autobody/Collision and Repair Technology/Technician.	29	65	0	0	94	83	-11	-13%
Automotive Body and Related Repairers	29	65	0	0	94	55		
Automotive Glass Installers and Repairers	29	65	0	0	94	7		
Insurance Appraisers, Auto Damage	29	65	0	0	94	4		
Painters, Transportation Equipment	29	65	0	0	94	17		
Automobile/Automotive Mechanics Technology/Technician.	73	630	23	0	726	279	-447	-160%
Automotive Service Technicians and Mechanics	73	630	23	0	726	274		
Electrical and Electronics Installers and Repairers, Transporta	73	630	23	0	726	2		
Electronic Equipment Installers and Repairers, Motor Vehicle	73	630	23	0	726	3		
Baking and Pastry Arts/Baker/Pastry Chef.	1	96	0	0	97	49	-48	-98%
Chefs and Head Cooks	1	96	0	0	97	49		
Carpentry/Carpenter.	81	0	0	0	81	421	340	81%
Carpenters	81	0	0	0	81	268		
First-Line Supervisors of Construction Trades and Extraction \	81	0	0	0	81	153		
Child Care Provider/Assistant.	1	15	5	0	21	825	804	97%
Childcare Workers	1	15	5	0	21	825		
Civil Drafting and Civil Engineering CAD/CADD.	20	0	0	0	20	10	-10	-100%
Architectural and Civil Drafters	20	0	0	0	20	10		
Cosmetology, Barber/Styling, and Nail Instructor.	68	0	0	0	68	329	261	79%
Barbers	68	0	0	0	68	40		
Hairdressers, Hairstylists, and Cosmetologists	68	0	0	0	68	289		
Culinary Arts/Chef Training.	49	261	17	0	327	402	75	19%
Chefs and Head Cooks	49	261	17	0	327	49		
Cooks, Private Household	49	261	17	0	327	4		
First-Line Supervisors of Food Preparation and Serving Worki	49	261	17	0	327	349		
Diesel Mechanics Technology/Technician.	8	0	0	0	8	71	63	89%
Bus and Truck Mechanics and Diesel Engine Specialists	8	0	0	0	8	71		
Electrical/Electronics Equipment Installation and Repair, Gen	31	48	0	0	79	64	-15	-23%
Electric Motor, Power Tool, and Related Repairers	31	48	0	0	79	4		
Installation, Maintenance, and Repair Workers, All Other	31	48	0	0	79	60		
Electrician.	116	429	0	0	545	428	-117	-27%
Electricians	116	429	0	0	545	241		
First-Line Supervisors of Construction Trades and Extraction \	116	429	0	0	545	153		
Security and Fire Alarm Systems Installers	116	429	0	0	545	29		
Signal and Track Switch Repairers	116	429	0	0	545	5		
Electromechanical Technology/Electromechanical Engineerir	9	2	0	0	11	4	-7	-175%
Electro-Mechanical Technicians	9	2	0	0	11	4		
Fashion Merchandising.	6	2	7	0	15	448	433	97%
Sales Representatives, Wholesale and Manufacturing, Excep	6	2	7	0	15	409		
Wholesale and Retail Buyers, Except Farm Products	6	2	7	0	15	39		
Graphic and Printing Equipment Operator, General Productic	11	0	0	0	11	69	58	84%
Data Entry Keyers	11	0	0	0	11	21		
Prepress Technicians and Workers	11	0	0	0	11	9		
Printing Press Operators	11	0	0	0	11	39		

Interpret Table 5 above as follows. In **bold black** are the instructional programs offered by vocational high schools in Connecticut in CIP format (Classification of Instructional Programs). For each program, the number of 2014 program completers is listed along with the number of completers of Certificate programs and Associate Degree Programs in the same CIP category. In **blue**, below each CIP program are the occupations for which candidates should be qualified. A positive value in the “Projected Surplus

or Deficit” column indicates there are more annual openings anticipated than trained program completers. A negative value indicates there are more candidates than estimated openings.

Table 6 shows existing educational programs and their estimated occupational demand where there is apparent demand in excess of supply for occupations that require only a high school diploma as a minimum level entry requirement. In addition, there appears to be no current high school level training programs available.

Table 6: Vocational Education Program Potential

Source: CTDOL TEPS program

Educational Programs (CIP Title) => SOC Occupations (in Blue)	High School	Post Secondary	Associate	Max of	Total	Projected	Projected	%
	Graduates	Certificate Awards	Degree Graduates	Bach	Awards	Annual Openings	Surplus or Deficit	Surplus or Deficit
Accounting Technology/Technician and Bookkeeping.	0	83	225	0	308	541	233	43%
Bookkeeping, Accounting, and Auditing Clerks	0	83	225	0	308	405		
Brokerage Clerks	0	83	225	0	308	43		
Payroll and Timekeeping Clerks	0	83	225	0	308	66		
Tax Preparers	0	83	225	0	308	27		
Administrative Assistant and Secretarial Science, General.	0	58	58	0	116	954	838	88%
Executive Secretaries and Executive Administrative Assistant	0	58	58	0	116	126		
Secretaries and Administrative Assistants, Except Legal, Med	0	58	58	0	116	828		
Aeronautics/Aviation/Aerospace Science and Technology, G	0	26	4	0	30	40	10	25%
Transportation, Storage, and Distribution Managers	0	26	4	0	30	40		
Skincare Specialists	0	173	0	0	173	29		
Aircraft Powerplant Technology/Technician.	0	28	0	0	28	111	83	75%
Aircraft Mechanics and Service Technicians	0	28	0	0	28	46		
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	0	28	0	0	28	65		
Business/Office Automation/Technology/Data Entry.	0	1	0	0	1	21	20	95%
Data Entry Keyers	0	1	0	0	1	21		
Child Care and Support Services Management.	0	80	72	0	152	290	138	48%
Preschool Teachers, Except Special Education	0	80	72	0	152	290		
Community Organization and Advocacy.	0	2	0	0	2	35	33	94%
Eligibility Interviewers, Government Programs	0	2	0	0	2	35		
Computer and Information Systems Security/Information As	0	6	3	0	9	27	18	67%
Computer Network Support Specialists	0	6	3	0	9	27		
Computer Programming/Programmer, General.	0	17	2	0	19	89	70	79%
Computer Network Support Specialists	0	17	2	0	19	27		
Web Developers	0	17	2	0	19	62		
Computer Science.	0	11	46	0	57	89	32	36%
Computer Network Support Specialists	0	11	46	0	57	27		
Web Developers	0	11	46	0	57	62		
Computer Support Specialist.	0	8	0	0	8	310	302	97%
Computer Network Support Specialists	0	8	0	0	8	27		
Computer User Support Specialists	0	8	0	0	8	283		
Computer Network Support Specialists	0	52	9	0	61	27		
Computer Technology/Computer Systems Technology.	0	5	10	0	15	39	24	62%
Electrical and Electronics Engineering Technicians	0	5	10	0	15	39		
Cooking and Related Culinary Arts, General.	0	5	0	0	5	398	393	99%
Chefs and Head Cooks	0	5	0	0	5	49		
First-Line Supervisors of Food Preparation and Serving Work	0	5	0	0	5	349		
Corrections and Criminal Justice, Other.	0	11	0	0	11	103	92	89%
Correctional Officers and Jailers	0	11	0	0	11	103		
Data Entry/Microcomputer Applications, General.	0	1	0	0	1	21	20	95%
Data Entry Keyers	0	1	0	0	1	21		
Developmental Services Worker.	0	7	5	0	12	415	403	97%
Social and Human Service Assistants	0	7	5	0	12	415		
Diagnostic Medical Sonography/Sonographer and Ultrasound	0	14	8	0	22	52	30	58%
Diagnostic Medical Sonographers	0	14	8	0	22	52		
Digital Arts.	0	8	0	0	8	19	11	58%
Artists and Related Workers, All Other	0	8	0	0	8	3		
Photographers	0	8	0	0	8	16		

Table 6: (Continued)

Educational Programs (CIP Title) => SOC Occupations (in Blue)	Post				Total Awards	Projected Annual Openings	Projected Surplus or Deficit	% Surplus or Deficit
	High School Graduates	Secondary Certificate Awards	Associate Degree Graduates	Max of Bach				
Digital Communication and Media/Multimedia.	0	7	44	0	51	348	297	85%
Managers, All Other	0	7	44	0	51	343		
Media and Communication Workers, All Other	0	7	44	0	51	5		
Preschool Teachers, Except Special Education	0	135	201	0	336	290		
Emergency Medical Technology/Technician (EMT Paramedic)	0	38	1	0	39	185	146	79%
Emergency Medical Technicians and Paramedics	0	38	1	0	39	185		
Energy Management and Systems Technology/Technician.	0	8	0	0	8	13	5	38%
Engineering Technicians, Except Drafters, All Other	0	8	0	0	8	13		
Entrepreneurship/Entrepreneurial Studies.	0	9	3	0	12	343	331	97%
Managers, All Other	0	9	3	0	12	343		
Foodservice Systems Administration/Management.	0	4	2	0	6	412	406	99%
First-Line Supervisors of Food Preparation and Serving Work	0	4	2	0	6	349		
Food Service Managers	0	4	2	0	6	63		
Heating, Ventilation, Air Conditioning and Refrigeration Engi	0	96	0	0	96	142	46	32%
Engineering Technicians, Except Drafters, All Other	0	96	0	0	96	13		
Heating, Air Conditioning, and Refrigeration Mechanics and I	0	96	0	0	96	129		
Histologic Technician.	0	21	5	0	26	73	47	64%
Medical and Clinical Laboratory Technicians	0	21	5	0	26	73		
Hospitality Administration/Management, General.	0	2	15	0	17	75	58	77%
Food Service Managers	0	2	15	0	17	63		
Lodging Managers	0	2	15	0	17	12		
Hotel/Motel Administration/Management.	0	2	25	0	27	75	48	64%
Food Service Managers	0	2	25	0	27	63		
Lodging Managers	0	2	25	0	27	12		
Human Services, General.	0	1	27	0	28	415	387	93%
Social and Human Service Assistants	0	1	27	0	28	415		
Industrial Electronics Technology/Technician.	0	2	0	0	2	19	17	89%
Electrical and Electronics Repairers, Commercial and Industri	0	2	0	0	2	19		
Legal Administrative Assistant/Secretary.	0	14	0	0	14	29	15	52%
Legal Secretaries	0	14	0	0	14	29		
Legal Support Workers, All Other	0	184	44	0	228	4		
Paralegals and Legal Assistants	0	184	44	0	228	150		
Title Examiners, Abstractors, and Searchers	0	184	44	0	228	2		
Library and Archives Assisting.	0	5	0	0	5	106	101	95%
Library Technicians	0	5	0	0	5	106		
Medical Administrative/Executive Assistant and Medical Sec	0	80	0	0	80	528	448	85%
Medical Assistants	0	80	0	0	80	340		
Medical Secretaries	0	80	0	0	80	188		
Medical Insurance Coding Specialist/Coder.	0	241	0	0	241	402	161	40%
Medical Assistants	0	241	0	0	241	340		
Medical Records and Health Information Technicians	0	241	0	0	241	62		
Medical Insurance Specialist/Medical Biller.	0	134	0	0	134	188	54	29%
Medical Secretaries	0	134	0	0	134	188		
Medical Office Assistant/Specialist.	0	7	0	0	7	528	521	99%
Medical Assistants	0	7	0	0	7	340		
Medical Secretaries	0	7	0	0	7	188		
Medium/Heavy Vehicle and Truck Technology/Technician.	0	129	0	0	129	345	216	63%
Automotive Service Technicians and Mechanics	0	129	0	0	129	274		
Bus and Truck Mechanics and Diesel Engine Specialists	0	129	0	0	129	71		
Nursing Assistant/Aide and Patient Care Assistant/Aide.	0	294	0	0	294	547	253	46%

Table 6: (Continued)

Educational Programs (CIP Title) => SOC Occupations (in Blue)	Post				Total Awards	Projected Annual Openings	Projected Surplus or Deficit	% Surplus or Deficit
	High School Graduates	Secondary Certificate Awards	Associate Degree Graduates	Max of Bach				
Nursing Assistant/Aide and Patient Care Assistant/Aide.	0	294	0	0	294	547	253	46%
Nursing Assistants	0	294	0	0	294	547		
Solar Energy Technology/Technician.	0	5	0	0	5	13	8	62%
Engineering Technicians, Except Drafters, All Other	0	5	0	0	5	13		
Speech-Language Pathology Assistant.	0	5	0	0	5	23	18	78%
Healthcare Support Workers, All Other	0	5	0	0	5	23		
Substance Abuse/Addiction Counseling.	0	46	47	0	93	115	22	19%
Substance Abuse and Behavioral Disorder Counselors	0	46	47	0	93	115		
Surgical Technologists	0	59	18	0	77	41		
Water Quality and Wastewater Treatment Management and	0	18	0	0	18	46	28	61%
Water and Wastewater Treatment Plant and System Operato	0	18	0	0	18	46		
Web Page, Digital/Multimedia and Information Resources D	0	27	3	0	30	62	32	52%
Web Developers	0	27	3	0	30	62		
Welding Engineering Technology/Technician.	0	58	0	0	58	75	17	23%
Engineering Technicians, Except Drafters, All Other	0	58	0	0	58	75		
Welders, Cutters, Solderers, and Brazers	0	58	0	0	58	75		