

# CTE LABOR MARKET TOOL

This resource provides data snapshots and insights about the overall construction and sustainability labor market, and a closer focus on the Carpenters, Electricians, and Plumbers, Pipefitters, and Steamfitters occupations as those are popular areas for CTE construction and sustainability programs. It also includes some guiding questions to help apply the data to your school's CTE program.

Careers in construction and sustainability include many different kinds of jobs, some that involve working outside using tools or machines to assist in building structures, while other jobs involve working inside of buildings making sure their infrastructure is sound and functioning properly. The three largest construction and sustainability occupations in New York City are Construction Laborers, Electricians, and Carpenters. Chart 1 below shows the many different kinds of NYC organizations hiring construction and sustainability professionals.

## Why use this resource?

- Use as a critical tool with your school's self study group to guide program planning and improvement aligned to labor market data
- Use as a critical tool to prepare students for postsecondary planning towards high-demand careers
- Feel prepared and confident when responding to NYSED questions about incorporating labor market data into your work

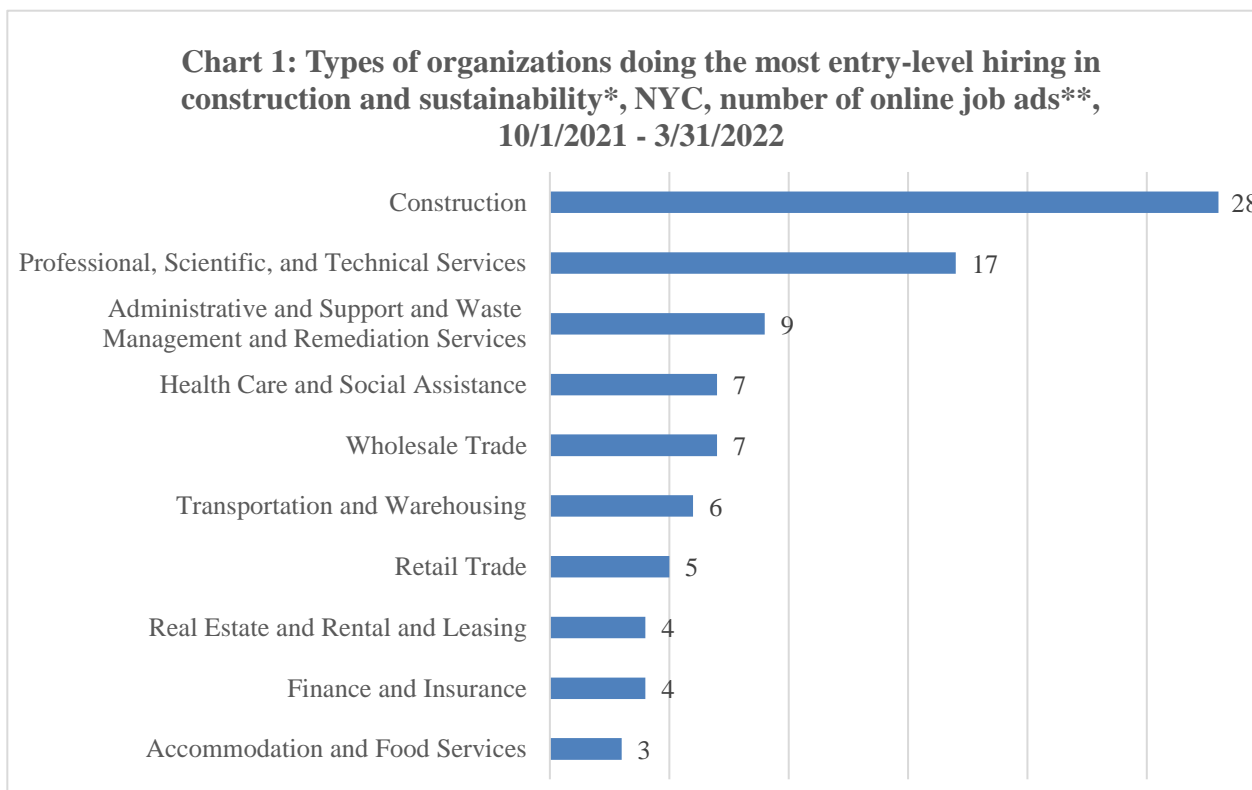


Chart 2 provides an overview of New York City employment in each of the three focus occupations. As you can see, the number of jobs in each of the occupations is expected to grow by 2028, with the *percentage increase* the largest for the plumbers, pipefitters, and steamfitters occupation (12.6%), and the predicted *size* of the occupation the largest for carpenters (26,340 jobs). It's important to keep in mind that even though these predictions help us understand the labor market's trajectory, things like new technologies or innovations, shifts in the economy, or major unexpected shocks like the COVID-19 pandemic can impact their accuracy.



**Chart 2: Current & projected employment for 3 focus occupations, NYC, 2018 - 2028**

	# Employed in NYC****	Projected NYC Employment***		Change Over Time (2018-2028)	
	2020	2018	2028	Net	Percent
Carpenters	16,890	24,800	26,340	1,540	6.2%
Electricians	17,040	21,330	23,180	1,850	8.7%
Plumbers, Pipefitters, and Steamfitters	10,690	15,380	17,320	1,940	12.6%

## IN THIS RESOURCE...

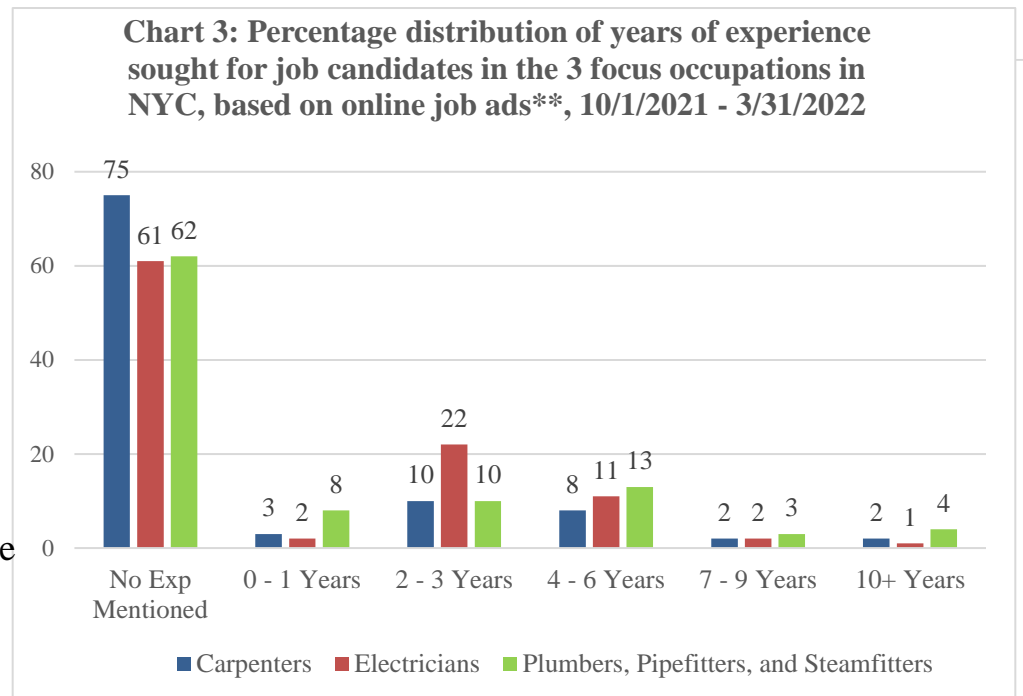
**LOOKING DEEPER: WHO'S BEING HIRED IN THIS FIELD? (P.2)**

**POST-SECONDARY PLANNING (P.3-4)**

**WHAT NEXT? GUIDING QUESTIONS & WEB RESOURCES (P.5)**

## Looking Deeper: Who's Being Hired in This Field?

- The majority of job ads for each of the three focus occupations did not specify years of experience or level of education sought. This suggests that other criteria, such as skills and certifications, may be more important to employers in making hiring decisions.
- There is significant overlap in the employability skills that organizations look for in job candidates, with communication skills in-demand for all three focus occupations, while troubleshooting is in-demand for two of the three. A valid driver's license is also an important certification across all three occupations.
- Entry-level wages for each of the three focus occupations are below the living wage for a single adult in NYC (\$48,320\*\*\*\*\*), although the value for electricians is very close to the living wage.



The chart below reflects entry-level wages\*\*\*\*, as well as the most in-demand (i.e., among the five most frequently requested and in at least 10% of online job ads\*\*\*\*\* ) employability skills, technical skills, and certifications\*\* for the three focus occupations from 10/1/2021 – 3/31/2022. Values in parentheses reflect the percentage of online job ads in which each skill is mentioned.

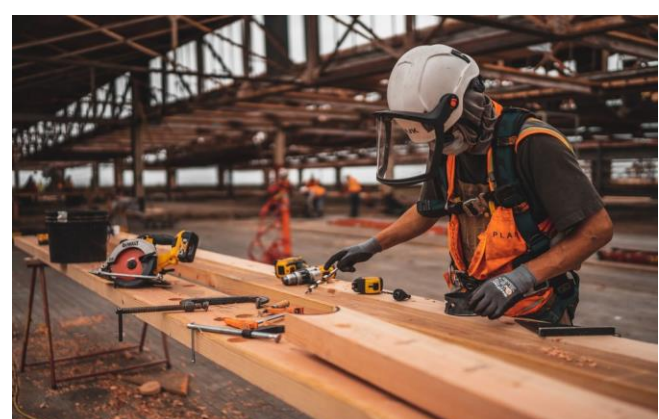
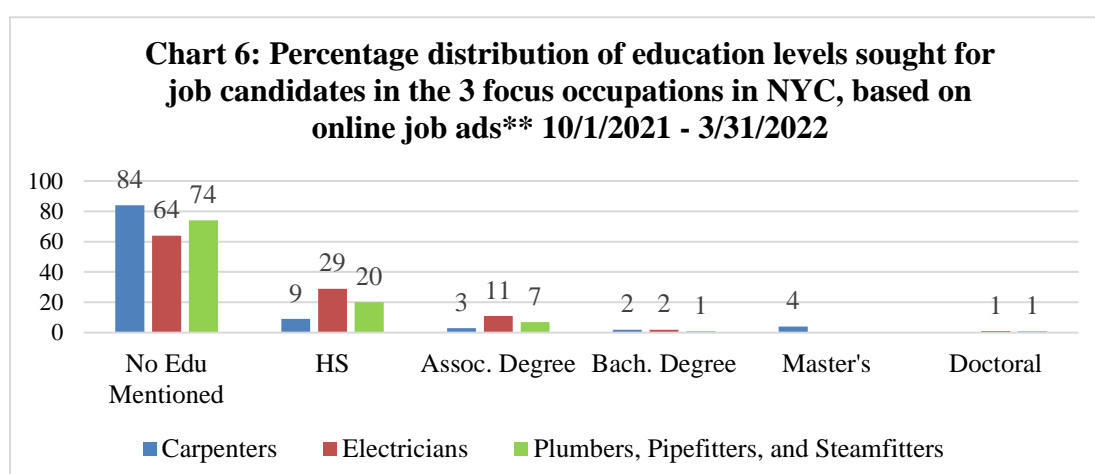
**Chart 4: Entry-level wages & in-demand skills for 3 focus occupations**

Occupation	Entry-level Wage	In-demand Employability Skills	In-demand Technical Skills	In-demand Certifications*****
Carpenters	\$39,710	Communications (10%)	Carpentry (77%), Construction (28%), Renovation (13%), and Painting (12%)	Driver's License, Occupational Safety and Health Administration (OSHA) and Site Safety Training (SST)
Electricians	\$47,570	Troubleshooting (Problem Solving) (30%), Communications (27%), Operations (16%), Management (15%), and Customer Service (13%)	Electrical Wiring (26%), Electrical Systems (26%), Blueprinting (24%), Electrical Equipment (17%), and Hand Tools (14%)	Master Electrician and Special Electrician Licenses, Driver's License, Occupational Safety and Health Administration (OSHA) and Site Safety Training (SST)
Plumbers, Pipefitters, and Steamfitters	\$41,100	Troubleshooting (Problem Solving) (18%) and Communications (16%)	Plumbing (57%), Pipe (Fluid Conveyance) (19%), Brazing (Metal Work) (16%), Pipe Threading (15%), and Power Tool Operation (14%)	Registration for Journeyman Plumber, Master Plumber License, Master Fire Suppression Piping Contractors License, Driver's License, Occupational Safety and Health Administration (OSHA) and Site Safety Training (SST)

Chart 5 shows the ethnicity and sex of people who work in the three focus occupations in NYC\*\*\*\*. As you can see, these jobs are overwhelmingly held by males, while there is greater diversity across ethnicities.

**Chart 5: Sex and ethnicity distributions for 3 focus occupations**

Occupation	Ethnicity %						Sex %	
	American Indian/Alaska Native	Asian/Pacific Islander	Black	Hispanic	White	Multi-ethnic/Other	Female	Male
Carpenters	0.68	3.44	17.93	40.92	34.61	2.42	1.72	98.28
Electricians	0.51	5.27	20.17	25.46	46.29	2.30	1.78	98.22
Plumbers, Pipefitters, and Steamfitters	0.00	4.50	19.67	25.64	48.12	2.07	1.34	98.66



## Post-secondary Planning

CTE students are encouraged to pursue education and training after graduation from high school in order to enter into an in-demand career with family-sustaining wages in NYC. The following is a list of CUNY degree programs aligned with the construction and sustainability industry as well as non-degree programs that result in an industry-endorsed certification and/or college credits. Some CTE programs have robust partnerships with CUNY programs that are codified by an articulation agreement. These agreements provide a range of student benefits such as advanced standing, early college credit, and preferential placement. CTE school leaders, teachers, and work-based learning coordinators are encouraged to connect with the school counseling teams at their school to determine strong postsecondary options for their students. Please reach out to your Industry Engagement Manager for more information about the articulation agreements.

- Chart 7 is a sample of the over 20 CUNY programs focused on construction and sustainability available at colleges across the five boroughs. Programs range from certificate programs up through PhD degree opportunities.
- Chart 8, on the following page, provides a list of over 25 non-degree construction and sustainability occupation-focused training opportunities available through a variety of different NYC-based organizations.

**Chart 7: CUNY post-secondary programs related to construction and sustainability**

Borough	School	Academic program	Credential*****	Existing articulation agreements: benefits
Bronx	Lehman College	Environmental Science	BS	
Brooklyn	Brooklyn College	Earth and Environmental Sciences	BA and BS/ MA and MS	
Brooklyn	Kingsborough CC	Environmental Health and Science	AS	
Brooklyn	Medgar Evers College	Environmental Science	BS	
Brooklyn	NYC College of Tech	Construction Management and Sustainable Technology	Certificate	
Brooklyn	NYC College of Tech	Construction Management Technology and Environmental Control Technology	AAS	
Brooklyn	NYC College of Tech	Construction Engineering Technology and Facilities Management	BTECH	
Manhattan	City College of New York	Environmental and Earth Systems Science	BS	
Manhattan	City College of New York	Earth Systems & Environmental Engineering and Sustainability in the Urban Environment	MS	
Manhattan	Graduate Center	Earth & Environmental Science	PhD	
Manhattan	Hunter College	Environmental Studies	BA	
Queens	LaGuardia CC	Energy Technician	AAS	
Queens	LaGuardia CC	Environmental Science	AS	
Queens	Queens College	Environmental Sciences and Environmental Studies	BA	
Queens	Queens College	Environmental Sciences	BS	
Queens	Queens College	Geological & Environmental Science	MA	
Queens	Queensborough CC	Environmental Health and Environmental Science	AS	
Queens	York College	Environmental Health Science	BS	
Staten Island	College of Staten Island	Environmental Science	MS	

## *Post-secondary Planning*

**Chart 8: Non-degree construction and sustainability training opportunities**

Administration for Children’s Services’ V-CRED program for Electrician’s Helper and Building Trades
Building Skills NY
BuildingWorks' Pre-apprenticeship Training Program
Brooklyn Workforce Innovation's Brooklyn Woods
Brooklyn Workforce Innovation's Brooklyn Networks
Career Discovery NYC's Construction Worker Program
CHLDC's Construction Advanced Training
COOP Tech's Building Trades Programs
Construction Skills
CUNY's Continuing and Professional Education
Department of Labor Apprenticeships
FedCap's Facilities Management Training Program
Green-Wood Cemetery's Masonry Restoration Technician Training
The Hope Program's Intervine and HOPEworks
International Association of Heat and Frost Insulators Local 12's Apprenticeship Program
International Union of Operating Engineers Local 14's Apprenticeship Program
MTA NYCT Electrical Apprenticeship Program
Nontraditional Employment for Women's (NEW) Programs
NYC District Council of Carpenters (Locals 20, 45, 157, 212, 740, 926, 1556, 2287, 2790)/BuildingWorks
NYC CoolRoofs
S.M.A.R.T. Local 137's Apprenticeship Program
United Union of Roofers, Waterproofers, and Allied Workers' Apprenticeship Program
United Association of Plumbers Local 1's Apprenticeship Program
Willdan Clean Energy Academy
Workforce1 Career Center System
Woodlawn Landscaping Restoration Program

## What Next? Guiding Questions & Web Resources

**“Describe how current labor market data has informed program design and choice of technical assessment.”**

The prompts below are designed to promote discussion and ideas for program planning, and to help you answer the question above from the CTS self study tab and the NYSED CTE application (Part 2, Section C).

How can we incorporate this report’s data insights into our...	Data points to consider:
...program focus?	Introductory paragraph overview. Charts 1, 2, 3, 4
...technical and employability skills?	Chart 4
...articulation agreement?	Charts 6, 7
...technical assessments?	Chart 4
... career pathway options?	Charts 1, 2, 7, 8

**Consider the questions below keeping in mind the labor market data points you’ve explored in this report and the questions that you’ve answered above.**

**Select three ways that you might adjust your program in response to labor market data:**

- Program focus     
  Articulation agreement     
  Technical assessments     
  Career pathway options  
 Technical and employability skills     
  Other:

**Which one of these three adjustments could most easily be implemented this school year?**

**Which one of the three would make the biggest difference for the quality of your program? Why?**

***Curious to explore more? Check out these web resources:***

- CTE NYC website: [www.cte.nyc](http://www.cte.nyc)
- CTE Industry Commission resources: [bitly.com/CTEIndustryEngagement](http://bitly.com/CTEIndustryEngagement)
- CTE College and Career Planning Team's postsecondary milestones toolkit: <https://bit.ly/35uglcc>
- CareerOneStop labor market data explorer: [www.careeronestop.org](http://www.careeronestop.org)

---

## *Technical Notes & Data Sources:*

---

\* “Construction and sustainability” occupations have been operationalized as occupations with a 2010 Standard Occupation Classification (SOC) code starting with the two-digit "47-XXXX", “Construction and Extraction Occupations”.

\*\* These analyses were conducted using the EMSI Burning Glass Analyst proprietary web-based research platform. Please note that some intra-occupation percentage totals may equal >100% if the employer indicated a range of minimum/preferred years of experience or education-attainment level. “Entry-level” jobs are considered to be those with job advertisements that specified 0-1 year of experience.

\*\*\* New York City 2018-2028 long-term employment projections are determined by New York State Department of Labor (NYSDOL). Please note that these estimates include self-employed workers, which is not always true of other estimates such as the OEWS estimates.

\*\*\*\* NYSDOL, Occupational Employment and Wage Statistics (OEWS) estimates for New York City (July 2021 release). NYSDOL adjusted wages to reflect levels in the first quarter of 2021. NYSDOL operationalizes “Entry Wage” as the average of the bottom third of wages.

\*\*\*\*\* Demographics based on U.S. Census, American Community Survey (ACS) estimates, NYC 2015-2019 5-year sample, IPUMS release February 2021. Please note that the ACS does not ask for respondents’ gender, only biological sex. As a result, there are only results available for male and female categories. To learn more about this, please see here: <https://www.census.gov/acs/www/about/why-we-ask-each-question/sex/>

\*\*\*\*\* AAS denotes Associate in Applied Science; AS denotes Associate in Science; BA denotes Bachelor of Arts; BS denotes Bachelor of Science; BTECH denotes Bachelor of Technology; MA denotes Master of Arts; PhD denotes Doctor of Philosophy

\*\*\*\*\* Massachusetts Institute of Technology’s (MIT) Living Wage calculator, 2020 estimate for the five counties of New York City, NY (<https://livingwage.mit.edu/metros/35620>; data accessed April 2022), adjusted to the first quarter of 2021 using the U.S. Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (New York-Newark-Jersey City metropolitan area, not seasonally adjusted).

\*\*\*\*\* Additional skills that are in-demand as measured by being mentioned in at least 10% of online job ads for entry-level workers but not among the top 5 most frequently requested are:

Electricians: Additional in-demand employability skills include lifting ability. Additional in-demand technical skills include wiring diagram, electrical codes, transformers (electrical), network switches, HVAC, and power tool operation.

Plumbers, Pipefitters, and Steamfitters: Additional in-demand technical skills include soldering, construction, valves (piping), plumbing fixtures, mechanics, and plumbing systems.

\*\*\*\*\* The source data for in-demand certifications includes both EMSI Burning Glass Analyst and New York City licensing requirements.