

# Expanding Opportunity For Middle Class Jobs in New York City:

MINORITY YOUTH EMPLOYMENT  
IN THE BUILDING AND CONSTRUCTION TRADES



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# Expanding Opportunity For Middle Class Jobs in New York City:

## MINORITY YOUTH EMPLOYMENT IN THE BUILDING AND CONSTRUCTION TRADES

### Case Study: Edward J. Malloy Construction Skills Pre-Apprenticeship Program

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## Executive Summary

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The Edward J. Malloy Initiative for Construction Skills (“Construction Skills”) Pre-Apprenticeship Program is an innovative successful workforce development model that has succeeded in placing minority youth in middle class careers in the construction industry in New York City. It also has contributed to increasing the diversity in the construction trade workforce so that it better reflects the City’s population. The program was established in 2001 by organized labor, union construction contractors, the New York City Department of Education (DOE), New York City School Construction Authority (SCA) and The Port Authority (PA) of New York and New Jersey.

### Key Findings

#### *The Construction Skills Program’s Successful Outcomes*

- Construction Skills successfully targets minority youth and places them in middle class construction jobs, where the average salary is \$67,110.
- From 2001–October 2013, Construction Skills has placed 1,443 graduates into union apprenticeship programs.
- High school students that enter the Construction Skills program have a 75 percent completion rate.
- 82 percent of Construction Skills graduates are placed in union apprenticeship programs.
- Construction Skills graduates have an 80 percent retention rate as union apprentices or journey workers, a remarkable figure considering the low retention rate of apprentices nationwide.
- Almost 90 percent of the Construction Skills graduates are black, Hispanic or Asian.
- Construction Skills participants live in New York City, representing all five boroughs, including 33 percent from Brooklyn, 28 percent from the Bronx, 23 percent from Queens, 10 percent from Manhattan and 6 percent from Staten Island.

- Construction Skills is the most successful construction industry pre-apprenticeship program in the country, based on a review of placement data of pre-apprenticeship programs in other cities.

### **Key Elements of the Successful Construction Skills Model**

- The successful program model relies on strong long-term partnerships with New York City Department of Education Career and Technical Education (CTE) High Schools, apprenticeship programs jointly sponsored by Building and Construction Trades Council unions and unionized construction contractors, local government agencies and the non-profit workforce development community.
- Key elements of the Construction Skills program model that have contributed to its success include an outreach, eligibility and screening process that is coordinated directly with partner New York City public high schools, where the curriculum prepares students for careers.
- Program eligible students must have a minimum cumulative grade average of 70 percent or higher, a 90 percent attendance record and a demonstrated commitment to pursuing a career in the unionized building and construction trades.
- Partner public high schools and their assigned personnel have developed in-depth knowledge of both eligible students and the program's recruitment goals. This has contributed to Construction Skills' successful screening process.
- A strong working relationship with union apprenticeship programs allows the Construction Skills program to recruit based on an anticipated number of reserved apprenticeship openings, thereby ensuring placements for their graduates.
- Construction Skills links its recruitment of students to the availability of union apprenticeship slots and the demand for construction workers.
- The program received "direct-entry" status from the New York State Department of Labor (DOL) and a commitment from the construction unions that 10 percent of apprenticeship openings would be reserved for public high school graduates that complete the Construction Skills program and meet the apprenticeship requirements.

### ***An Extraordinary Return on Investment for Minority Youth in Construction Skills***

- An investment of \$7,500 per student (the cost of the Construction Skills Pre-Apprenticeship program) produces a very high rate of return. It increases the lifetime earning potential for a minority youth with a high school degree 166 percent compared to other high school graduates working as a fast food cook.
- With the same level of education, a Construction Skills graduate will earn \$1.6 million more over a lifetime of earnings compared to a high school graduate working as a fast food cook.
- The Construction Skills program provides a road map for successfully training and placing minority public school students in middle class jobs.

### ***Middle Class Jobs for Minority Youth in the Unionized Construction Trades***

- Union apprenticeship programs offer a rare, and in most cases free-of-charge, opportunity to “earn and learn”, providing wages and benefits to workers while they simultaneously learn job-related skills.
- With an average annual wage of approximately \$67,110 for union and non-union members, health and retirement benefits for union members and a low educational barrier to entry, unionized jobs in the construction industry provide an important opportunity for low-income youth and adults to enter the middle class.
- Construction Skills is placing its graduates in middle class jobs with higher pay and benefits when compared to the top ten high growth jobs for high school graduates.
- The New York Building Congress predicts construction spending to reach \$31.5 billion for 2013, a 14 percent increase from the prior year.
- Employment projections for 2014-2015 are expected to reach the industry’s second and third highest employment totals in the past thirty years.
- From 2010 – 2020, an anticipated 14,200 additional workers in New York City will be added in fields classified by the U.S. Department of Commerce as construction-related.

- According to the Regional Plan Association, union construction represented more than 85 percent of the private sector market in the 1970s, but today it has decreased to 60 percent.
- The Construction Skills program has the capacity for expansion with increased employment opportunities and funding, according to Paul Fernandes, the program's president.
- Middle class jobs are vital to the City's growth and stability, yet the City's middle class constitutes a smaller percentage of its working age population than the nation as a whole or even that of the City's suburbs.

### ***Recommendations***

- Since the New York City construction market is projected to grow through 2020, these middle class jobs should be prioritized for graduates of New York City's public schools.
- Construction Skills should be expanded by tripling the percentage of apprenticeship openings reserved for high school graduates from 10 percent to 30 percent. Funding for this expansion should be provided from every level of government, the construction industry and private philanthropy.
- Expanding the pre-apprenticeship program will require an increase in unionized construction jobs. The construction labor unions and their employers must work together to implement cost-saving measures in order to increase the number of union construction jobs.
- **The Mayor should convene a high-level Good Jobs Summit that brings together leaders from the Building and Construction Trade Council unions, Building Trades Employers' Association union contractors, and real estate industries – including residential, commercial, healthcare and higher education – in order to find ways to expand the number of union construction jobs in New York City and increase minority youth access to these jobs through pre-apprenticeship programs.**
- The Construction Skills pre-apprenticeship program should be adopted as a national model for training minority youth for middle class careers in the construction industry.



## Introduction

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Every city in this country must deal with the challenge of economic viability. One indicator of the health of any city's economy is the number of private sector jobs being created. Job growth alone cannot support city economic viability if residents are not educated or trained for the jobs being created. Economic development must be linked to education and workforce development if a city is to be economically viable.

As New York City continues to attract high-tech jobs and jobs which require advanced degrees, there has been a general acknowledgment that our public school system must raise its standards and achievement levels so that our youth can successfully compete for these new high-skilled twenty-first century jobs. There is no disagreement that education is the way for our youth to compete effectively for these jobs. However, not all high school students will attend college and in the short-term we have a very specific employment challenge among our youth. Twenty percent of New York City youth ages 18-24 are out of school and out of work.<sup>1</sup> Moreover, most of the jobs that are being created offer salaries that are barely above the poverty level without real opportunity for training or a pathway to the middle class. Nine out of the top ten projected high-growth jobs in New York City from 2010-2020 are low wage jobs (see Table 3).<sup>2</sup> Nearly eight out of ten employed youth, ages 18 to 20, are currently in low-wage jobs. These youth generally receive the minimum wage, which was recently increased in New York State from \$7.25 to \$8.00 per hour,<sup>3</sup> which amounts to a yearly salary of \$16,640 for a 40-hour work week. This yearly salary is barely above the federal poverty level of \$15,510 for a family of two.<sup>4</sup>

One of the sectors in New York City's economy that continues to grow and create middle class jobs, even for those with only a high school degree or equivalency diploma, is the unionized building trades. There is one program in place that has worked to ensure that minority public school youth are trained and have access to these jobs. The Edward J. Malloy Initiative for Construction Skills ("Construction Skills") is a pre-apprenticeship program that prepares graduating public school students to enter the unionized apprenticeship programs in the construction trades. The overwhelming majority of Construction Skills graduates entering union apprenticeships are black, Hispanic and Asian students. Over its thirteen year history, the program has achieved

One of the only sectors in New York City's economy that continues to grow and creates middle class jobs, even for those with only a high school degree, is the unionized building trades.

great success with a 75 percent completion rate and an 80 percent retention rate in union jobs. Construction Skills has become an important tool in diversifying the unionized construction industry and creating a middle class career path for minority students in New York City's public schools. Significantly, Construction Skills operates as a partnership with the Building and Construction Trades Council, the Building Trades Employers Association, NYC public career and technical high schools, the Consortium for Worker Education and local government agencies. This partnership has contributed to its success. Understanding the Construction Skills model has important implications for New York City's economic competitiveness and our ability to develop public policy which meets the needs of the construction industry, while ensuring our core democratic value of equal opportunity for all New Yorkers.

This report provides a detailed account of Construction Skills' history; documents and evaluates the program design; analyzes program challenges; and highlights best practices. It also considers the broader implication of the Construction Skills model for New York City's economic future. Specifically, the report considers whether the model can be expanded to increase opportunities for minority public school youth in the unionized construction industry and whether it can be used to create additional union construction jobs. The report also considers whether the Construction Skills pre-apprenticeship model could be adapted to other industries. Finally, the report provides recommendations for City government and the construction industry on how to work together to build upon the Construction Skills program's successes. The report was informed by interviews with key stakeholders, analysis of Construction Skills program data, and primary research on comparable programs in other cities.

## Why Unionized Construction Jobs are Important to the Economic Future of New York City

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### Background

The construction industry plays a critical role in New York City's economy. The construction industry accounted for an average of 114,875 jobs<sup>5</sup> and \$30 billion in spending<sup>6</sup> in 2012. With an average annual wage of approximately \$67,110,<sup>7</sup> health and retirement benefits for union members and a low educational barrier to entry, the construction industry provides an important opportunity for low-income youth and adults to enter the middle class. According to 2011 U.S. Census data, almost 72 percent of construction workers in New York City made over \$50,000, close to the City's median household income of \$50,711,<sup>8</sup> and 53 percent earned over \$75,000 per year (see Table 1). In some trades, construction workers can earn up to \$150,000 per year (see Appendix C).

**Table 1 Household Income of Construction Workers in NYC 2011\***

HOUSEHOLD INCOME	PERCENT OF ALL CONSTRUCTION WORKERS		
	TOTAL	MALE	FEMALE
< \$10,000	1.2%	1.2%	0.0%
\$10,000-\$24,999	8.8%	8.3%	0.6%
\$25,000-\$49,999	18.3%	17.2%	1.0%
\$50,000-\$74,999	18.5%	17.0%	1.5%
\$75,000-\$99,999	15.4%	13.3%	2.0%
\$100,000-\$124,999	13.0%	12.3%	0.7%
\$125,000-\$149,999	8.1%	7.5%	0.6%
\$150,000-\$199,999	9.7%	8.9%	0.8%
\$200,000+	6.9%	6.3%	0.5%
NA	0.1%	0.1%	0.0%
TOTAL	100%	92.2%	7.8%

Source: U.S. Census Data 2011 American Community Survey

\*includes union and non-union construction workers

Unionized construction workers, in addition to a solid middle class wage, have extensive benefits. A journey worker with the New York City District Council of Carpenters is paid \$46.15 per hour, and the total value of their benefit package is \$38.88 per hour. These benefits include health care, disability coverage, life insurance, a scholarship program for their child's education, retirement contributions, a vacation fund and a pension fund.<sup>9</sup> Together, these wages and benefits provide security and stability, an essential part of how our nation defines being part of the middle class.

When asked what type of jobs the mayor should focus most on growing, 58 percent of New Yorkers across all income groups, responded middle-income jobs.<sup>10</sup> In the past decade, the City has lost middle class jobs, particularly in administrative support and manufacturing.<sup>11</sup> Job growth has been at the high end and low end of the wage scale, mirroring larger trends in the national economy.<sup>12</sup> The largest job growth was in predominantly low-skill, low-wage jobs in the wholesale, retail and healthcare industries.<sup>13</sup> Middle class jobs are vital to the City's growth and stability, yet the City's middle class constitutes a smaller percentage of its working age population than the nation as a whole or even that of the City's suburbs. The City's middle class accounts for approximately 42 percent of the adult working age population, while the suburban middle class is 53 percent and in the United States it is 47 percent of the adult working population.<sup>14</sup> There are many explanations for the decline of middle class jobs in New York City. The most commonly cited is globalization of the economy, where businesses have access to less expensive energy, land and labor in developing countries. Whatever the explanation, there is no question that technological advances have allowed companies to reduce the size of their workforce in the City or move jobs to other lower cost locations. This trend has made construction work an even more significant part of the City's economy. Construction jobs, for the most part, are place-bound and must be done on-site.<sup>15</sup>

## ***Why Focus on the Construction Industry***

In order to better understand how the pre-apprenticeship program might impact the availability of middle class jobs in New York City, some background on the construction industry and the union apprenticeship programs is necessary.

### ***The construction industry and the unions***

The construction industry is a unique segment of the City's economy. Construction jobs are project-based and workers tend to move from job to job. Employment with a contractor lasts only the lifetime of a specific project. In the unionized sector, construction workers consider their union their employer, not the contractor on the specific job. Once a general contractor successfully bids on a specific job, they typically do not maintain a workforce sufficient for the project. Instead the general contractors hire subcontractors who specialize in a specific trade, such as carpentry or electrical, and they rely on union hiring halls or referring systems to provide the skilled labor for each project.<sup>16</sup>

Union workers have a majority of the market share in the New York City construction industry, though non-union workers are gradually increasing their presence. Public sector construction, especially infrastructure and large scale commercial development, are more likely to employ unionized workers compared to residential construction. According to the RPA, union construction represented more than 85 percent of the private sector market in the 1970s, while it is less than 60 percent today.<sup>17</sup> At the same time, public sector construction work, which accounts for about half the market, is nearly 90 percent unionized.<sup>18</sup> Nearly all the firms on an annual *Crain's New York Business* list ranking construction contractors by revenue are unionized, another indicator that large scale commercial construction is using union labor.<sup>19</sup> According to the Building and Construction Trades Council, the volume of work in both the union and non-union sectors has increased in the past fifteen years. They maintain that union market share has increased due to major development projects, such as the World Trade Center, Hudson Yards and the Columbia University expansion. At the same time non-union work has expanded in the hotel construction and smaller residential developments in the outer

“You walk around with a construction worker in New York and they will say ‘we did that’— they feel a personal pride. It does something to your sense of self. In my own family, this has been the way up for us and it can be for the next wave.”  
- Raymond McGuire,  
Construction Skills Board  
Member

boroughs. There also have been some larger residential developments that are now hiring non-union workers.<sup>20</sup>

Construction costs in New York City continue to increase and outpace other large cities. According to a 2008 New York Building Congress report, construction in New York City was over 60 percent more expensive than comparable construction in Dallas, and 20 percent more expensive than Los Angeles. New York's total construction costs for high rise office towers exceeded \$400 per square foot, compared to \$180 per square foot in Chicago. Union labor costs are also higher in New York City than other large cities in the United States. A union carpenter in New York City earns \$74.81 in wages and benefits per hour, while in neighboring Boston and Philadelphia they earn \$61.97 and \$61.45 per hour respectively.<sup>21</sup>

Union apprenticeship programs have been important for meeting the construction industry's need for recruiting, training and educating skilled labor. The apprenticeship training programs are funded by construction contractors through the Joint Apprenticeship and Training Committee (JATC), a labor/management partnership supported and sustained by the collective bargaining system. This cost-sharing partnership is essential to both labor and management for ensuring a highly skilled workforce without placing an undue burden on either the industry or labor.<sup>22</sup> Union apprenticeship programs offer a rare, and in most cases free-of-charge, opportunity to "earn and learn," providing wages and benefits to workers while they learn job-related skills. Upon completing an apprenticeship program, which may last anywhere from two to five years, graduates earn a certificate and can achieve journey worker<sup>23</sup> status and increased earning opportunities. Robert Medlock, Deputy Executive Director of the Consortium for Worker Education, described the apprenticeship certificate as "tantamount to a \$40,000-50,000 technical education program. Workers complete the apprenticeship program with a lifelong credential that they can carry to any other unionized construction industry in the United States and obtain a middle class job with benefits."<sup>24</sup>

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## ***Construction Industry Outlook is Positive***

A pre-apprenticeship program's success depends on the availability of unionized construction jobs, which in turn depends on the economic vitality of the construction industry.

The construction industry is cyclical and mirrors the growth and decline in New York City's overall economy. From 2000-2010, the industry in New York City first gained 12,980 jobs and then lost 20,803.<sup>25</sup> When the Great Recession hit in 2008 and credit became scarce, in New York City and the rest of the country, building starts decreased and construction work declined as well. Today, the unemployment rate in construction is declining in New York City, but employment has not returned to the levels seen during the building boom of 2000-2008.<sup>26</sup>

Economic and labor projections indicate that demand for workers with construction skills will increase through 2020. The NYSDOL's long-term outlook for the construction industry is strong, as the credit markets improve and several large universities have major expansion plans. From 2010-2020, an anticipated 14,200 additional workers in New York City will be added in fields classified by the U.S. Department of Commerce as construction-related. This 12.6 percent increase places the construction industry sixth out of eighteen sectors in terms of projected overall employment growth.<sup>27</sup>

From 2010 - 2020, an anticipated 14,200 additional workers in New York City will be added in fields classified by the U.S. Department of Commerce as construction-related.

The New York Building Congress predicts construction spending to reach \$31.5 billion for 2013, a 14 percent increase from the prior year. The 2015 estimate of \$37 billion in spending would bring the industry back in line with the volume of work reached during the height of the construction boom in 2007. Additionally, employment projections for 2014-2015 are expected to reach the industry's second and third highest employment totals in the past thirty years. Continued spending growth in the residential and non-residential construction sectors is being forecasted. Residential construction spending is expected to double from \$5.2 billion in 2012 to \$10.7 billion in 2015. Non-residential construction<sup>28</sup> spending is predicted to increase from \$10.3 billion in 2013 to \$13.6 billion in 2015. Government spending on construction projects such as mass transit, public schools, road and bridges, however, is expected to decrease from \$13.4 billion in 2012 to \$12.8 billion in 2015. The predicted drop in government spending on construction, where the work is performed predominantly by union labor, could have a negative impact on the construction labor unions' market share.<sup>29</sup>

## ***Recruitment for Union Jobs: Importance of Pre-apprenticeship Programs***

Unionized construction jobs provide an increasingly rare opportunity for people without a college degree to access jobs paying middle class wages. Yet, entry into the unionized construction trade is challenging for those with little knowledge of or personal connections to the industry. The main point of entry for unionized construction trade jobs is through the apprenticeship system, regulated in New York State by the New York State DOL (NYSDOL). The NYSDOL sets standards for recruitment, education, safety and welfare of apprentices and issues Certificates of Completion.<sup>30</sup>

There are two ways for individuals to apply for admission to apprenticeship programs in New York City: (1) the general recruitment process or (2) “direct-entry” for qualified graduates of pre-apprenticeship and veterans programs. In the general recruitment process, which happens every two to three years, the union publicizes the availability of a specific number of applications for their apprenticeship program. There are frequently more applicants than slots available resulting in a lottery for the applications. In August 2013, the District Council of Carpenters advertised 750 applications for their apprenticeship program and thousands camped out on city streets for days in order to receive an application.<sup>31</sup>

The direct-entry process is a NYSDOL designation that allows candidates from pre-apprenticeship programs an exemption from certain aspects of the recruitment process. These direct-entry candidates must also meet all qualifications required of apprentices. Pre-apprenticeship and veterans organizations in New York City granted direct-entry status by the NYSDOL are: 1) Construction Skills, serving New York City public school youth 2) Helmets to Hardhats, serving honorably discharged members of the US armed services 3) Non-traditional Employment for Women, serving primarily adult women and 4) Building Works, a program housed within the New York City District Council of Carpenters that serves low-income unemployed or under-employed individuals. Nicole Bertran, Vice President of Construction Skills, describes the direct-entry process as a way to fast-track the candidates. “A general recruitment will happen every two to three years but new classes of apprentices are brought in one or two (or more) times a year. So when new classes of apprentices are brought in we are able to refer our candidates as opposed to them waiting for two more years for the next recruitment to happen. This is one of the biggest benefits of being in a pre-apprenticeship program.”



## ***The Need: Why the Pre-apprenticeship Program Originated***

### ***History of Minority Representation in the Construction Industry Workforce***

Construction workers typically have a high school education and learn their trade through on-the-job training. Education or skills are not a barrier to entry yet minorities (particularly blacks and Latinos) historically have had a difficult time breaking into the construction industry. The practice of using informal social networks for both recruitment and training consistently resulted in low minority representation in the construction workforce. In the late 1960s, 92 percent of New York City's construction industry union members were white,<sup>32</sup> while the City's total white population had declined and by 1970 was 77 percent white and by 1980 the white population declined to 61 percent.<sup>33</sup>

In response to legal and political pressure by civil rights advocates in the 1960s, government at all levels attempted to increase diversity in the construction trades through policy changes.<sup>34</sup> In 1964, the NYSDOL prohibited closed apprenticeship programs and required that programs undertake open and publicized recruitment drives with a variety of new criteria such as testing. In 1978, the NYSDOL set a target for minority participation in apprenticeship programs based on the percentage of the minority population within the total population. There was no enforcement mechanism, however, other than a compliance review that regularly showed that the majority of programs were out of compliance. In fact, between 1980 and 1987, even as the minority population expanded in New York City, the percentage of new apprentices who were black or Hispanic actually declined.<sup>35</sup>

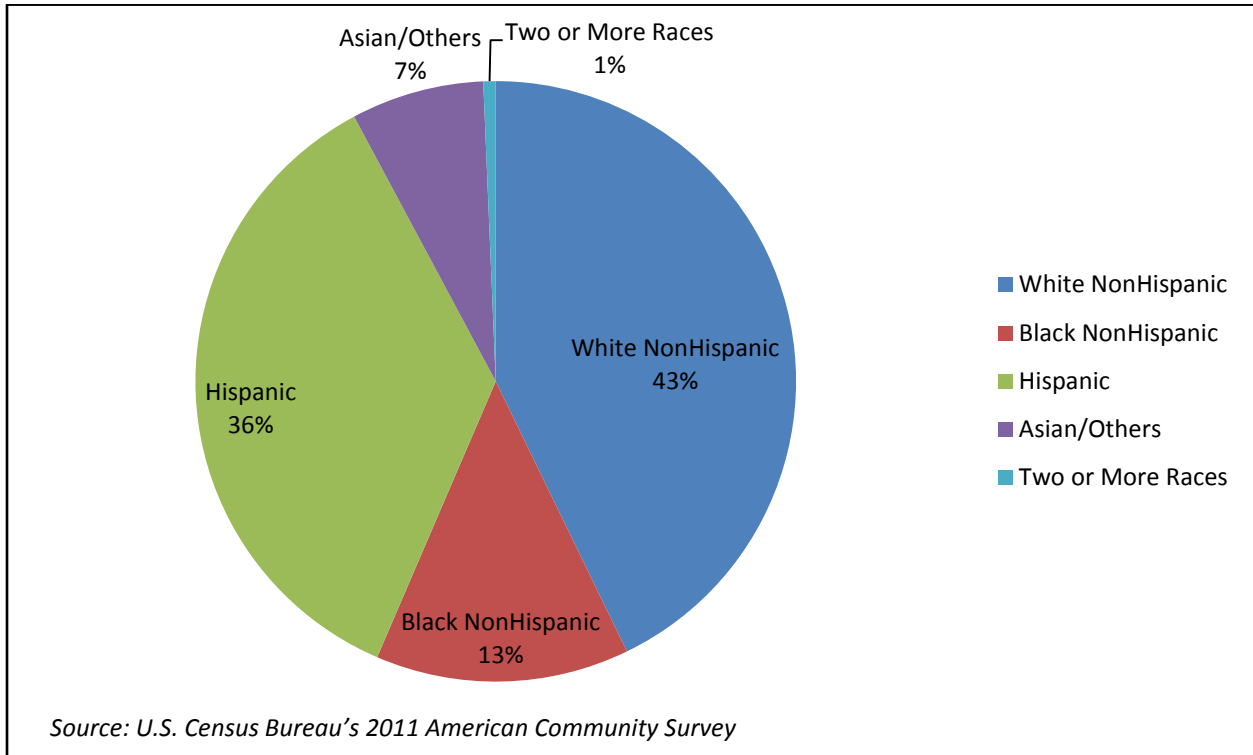
During President Richard Nixon's administration in 1970, the federal government launched the Philadelphia Plan, which required government construction contractors to commit to goals for increasing their minority participation in six trades in which minority representation was extremely low. Following the federally imposed Philadelphia Plan, many other cities followed suit and developed negotiated hiring plans. The New York Plan had a troubled history. Announced in March 1970 by Mayor John Lindsay, the Plan sought to enroll 800 minority workers in a trainee program, with the assistance of the Workers Defense League,<sup>36</sup> to work on government funded projects. The trainee program was funded by the City, State and Building Trade Employers' Association and administered by a committee with appointees from the City, State, unions and employers.<sup>37</sup> The unions were reluctant to comply and after several years of disputes, Mayor Lindsay withdrew his support for the Plan in 1973. He then issued an Executive Order requiring a 1:4 ratio of minorities on all city funded projects with the goal of increasing minority membership in building and construction unions to 25 percent by 1976.<sup>38</sup>

After a series of lawsuits, in 1976 the New York State Court of Appeals ruled that Mayor Lindsay had exceeded his authority in setting goals and targets without legislative consent. In 1980, Mayor Ed Koch reinstated the goal of a 1:4 ratio of minority construction workers on all city-funded projects. However, there was no goal that minority workers become union members. In 1987, the New York State Court of Appeals finally ruled that state law provided no legal basis for a trainee program. The law only recognized two classes of workers: apprentices and journey-level employees, not trainees. As a consequence, the City was only able to require trainees for projects receiving a City tax abatement. In actuality, the long-term impact of the trainee program proved insignificant, since these trainees were rarely accepted into building and construction unions. The New York Plan placed 5,000 trainees on jobs between 1971 and 1988, but only 800 of these trainees were ever accepted into unions.<sup>39</sup>

Louis Coletti, President and CEO of the Building Trades Employers' Association (BTEA), recalled that "contractors would often hire minority trainees onto job sites to get a tax abatement and then fire them after the job finished." The pre-apprenticeship training program model, training high-school students for direct-entry into union apprenticeships, was a radical departure from the unsuccessful minority trainee program.

Despite its troubled past, the construction industry has significantly increased its minority representation in recent years. Labor and contracting officials attribute the increased diversity in the construction industry workforce to several factors, including pre-apprenticeship programs such as Construction Skills, the changing demographics of New York City's population, civil rights lawsuits and a shift in attitude among union members and their leadership. According to 2011 US Census Bureau data, 57 percent of workers in the New York City construction industry, both union and non-union, are minorities.

**Figure 1 Composition of NYC Construction Industry Workforce by Race/Ethnicity 2011**



### **Recent City Policies**

In 2005, Mayor Michael Bloomberg announced the creation of the Commission on Construction Opportunity with the purpose of ensuring that New Yorkers from diverse backgrounds, particularly minorities, women, returning veterans, and new high school graduates of city public schools would be prepared for and have access to careers in the construction industry.<sup>40</sup>

The building and construction trade unions, represented on the Mayor's Commission, agreed to commit 40 percent of apprentice slots for specific demographic groups.<sup>41</sup> In 2009, the City, the Building and Construction Trades Council (BCTC) and the Building Trades Employers' Association (BTEA) entered into a Memorandum of Understanding (MOU) that increased the commitment from 40 percent to 45 percent. Up to 10 percent of apprentice slots were for graduates of public high schools who also graduated the Construction Skills program, 10 percent for veterans, 10 percent for women, 10 percent for New York City Housing Authority and Section 8 residents and economically disadvantaged adults who have also graduated from Construction Skills or Non-traditional Employment for Women, and 5 percent for qualified employees of certified minority- or women-owned business enterprises and other employers.<sup>42</sup>

The New York City Committee on Construction Work Force and Contracting Opportunity was also created by Mayor Bloomberg to assess the implementation of the MOU. The Committee meets at least quarterly and publishes an annual report on the status of the work force and contracting opportunity policy.

After the first year of the MOU's implementation in 2010, 88 percent of 523 new apprentices were New York City residents, almost doubling the original goal of 45 percent. The number of women and graduates of public high schools also exceeded the MOU's targets. Results for veterans and New York City Housing Authority residents, however, fell short by 7 and 5 percent, respectively.<sup>43</sup>

Although the MOU did not set goals for racial and ethnic diversity, the majority, or 69 percent, of the apprentices who were New York City residents were African Americans, Hispanics, Asians, and members of other minority groups, according to data collected by the New York State DOL.<sup>44</sup> Amy Peterson, President of Non-traditional Employment for Women, described the Mayor's Commission as transformative for her program.<sup>45</sup>

At the same time, the City and the BCTC entered into a series of Project Labor Agreements (PLAs) involving \$6 billion in city capital and public school capital projects through FY 2014, where work on these projects would be made available to members of BCTC unions and contractors. A PLA is a comprehensive contract between building trade unions, the City and site contractors that governs terms and conditions of employment for all craft labor on a designated construction project. A PLA is a pre-hire agreement for various trades working on a project that establishes uniform terms and conditions such as wages, hours, and work rules, and grievance, dispute, and arbitration procedures. This agreement allows project owners, contractors and unions to anticipate and avoid problems that increase the costs or slow down a project.<sup>46</sup> The capital projects included in the New York City and BCTC PLA are expected to cover over 30,000 construction jobs, including 1,800 new jobs, by the end of FY 2014.<sup>47</sup>

Another City initiative requires contractors to participate in a New York State registered apprenticeship program that provides an important standard for quality work. The Mayor's Office of Contract Services (MOCS) issued a directive in 2007 that all individual construction contracts and construction-related maintenance contracts over \$3 million must maintain apprenticeship agreements with DOL registered apprenticeship programs. Projects with an overall value of more than \$5 million, which have individual construction contracts over \$1 million, are also covered.<sup>48</sup>

**Table 2 Demographic Composition of First Year New York City Union Apprentices in 2010  
Compared to New York City MOU Goals**

	First-Year Apprentices	Percent First-Year NYC Apprentices	Goal Set by MOU for First-Year NYC Residents Apprentices
<b>Total</b>	594		
<b>NYC Residents</b>	523	88%	45%
<b>NYC Residents African American, Hispanic, Asian, &amp; Other</b>	359	69%	n/a
<b>NYC Resident Women</b>	59	11%	10%
<b>NYC Public High School Graduates</b>	68	13%	10%
<b>NYC Veterans</b>	18	3%	10%
<b>NYCHA Residents</b>	26	5%	10%

Source: Construction Industry Partnership as cited in Figueroa, et al.

### ***Changing Demographics of the Working Population: Focusing on Young Adults***

The key to increasing minority worker representation in the building and construction trades is to focus on young adults. New York City’s 18-24 year old young adult population has grown nearly 10 percent over the past decade. While the number of young adults in school has increased, the number of young adults out of school and out of work remains alarmingly high at almost 20 percent, according to a Fiscal Policy Institute and Community Service Society analysis.<sup>49</sup> These New York City young adults are geographically concentrated in low-income neighborhoods and are more likely to be black, Latino and less educated, and to face major barriers to obtaining employment.

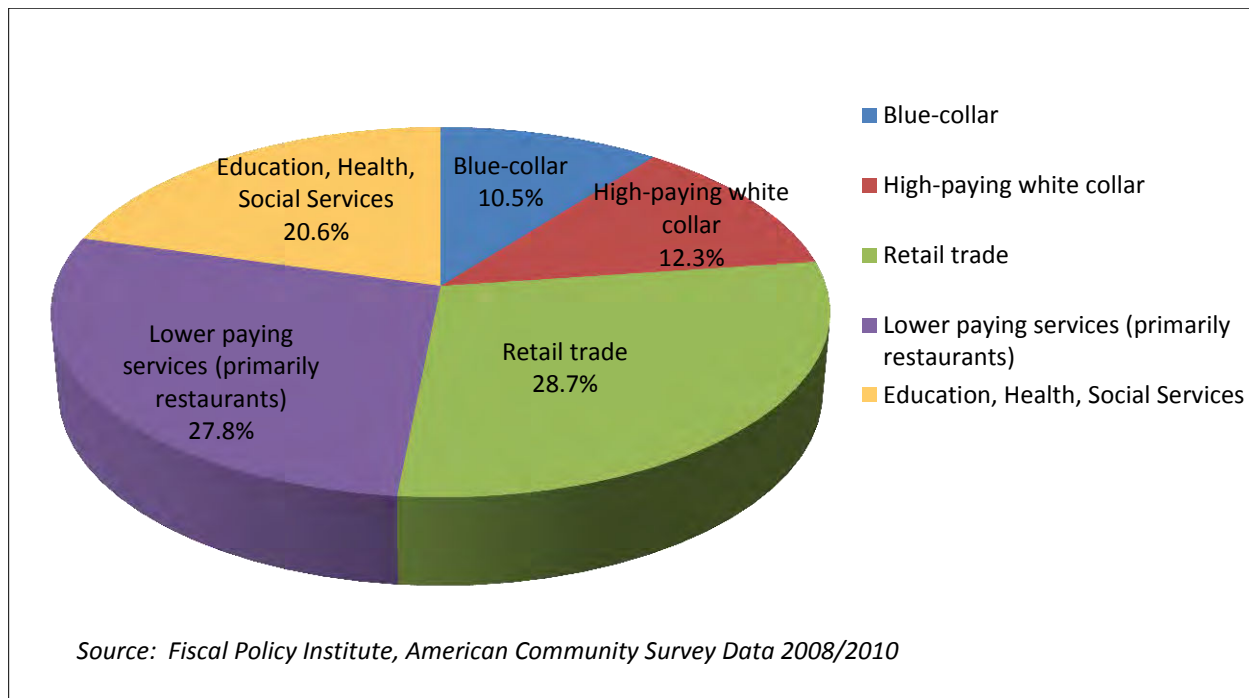
As the New York City young adult population has become increasingly minority, the demand for younger entry-level workers in the construction industry has also been increasing. To competitively bid on projects, contractors need to include young workers, hired at a lower rate than older more skilled workers. There is also a need to replace skilled trades people scheduled to retire. According to the U.S. Census, 53 percent of construction industry workers in New York City are over forty years old.<sup>50</sup> Recruiting directly from New York City public high schools is

a crucial strategy for increasing the number of younger and minority workers in the construction industry workforce.

### **Young adult employment trends**

Almost eight out of ten (78 percent) 18-20 year olds in New York City are employed in low-wage jobs, primarily in retail, restaurants and education/health/social services. Over the past decade, this trend has continued, growing from 65 percent in 2000, to 78 percent in 2008/10. During the same time period, the percentage of 18-20 year olds in New York City in higher-paying white-collar jobs has declined from 21 percent to 12 percent, and for blue-collar jobs from 14 percent to 10 percent.<sup>51</sup>

**Figure 2 NYC Residents 18-20 Years Old Employment by Sector**



Black, Latino and Asian youth are over-represented in the low-wage retail, blue-collar and restaurant sectors, and under-represented in higher-paying white-collar jobs.<sup>52</sup> When we consider the demographic trends and wages across sectors, the data clearly indicate that the growing construction sector provides an important employment opportunity for minority New York City youth at a middle class wage. Our discussion of remedies to this growing employment challenge leads us to consider how the pre-apprenticeship programs, such as Construction Skills, can help meet this challenge.

## Edward J. Malloy Initiative for Construction Skills

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### *Historical Background of the Pre-apprenticeship Program*

The Edward J. Malloy Initiative for Construction Skills (“Construction Skills”) began in 1993 as a pilot program, Project Pathways, run by the New York City School Construction Authority (SCA) and the Building and Construction Trades Council (BCTC). The idea for the program originated with Edward Malloy of BCTC. According to Louis Coletti, President and CEO of the Building Trades Employers’ Association (BTEA), “Ed [Malloy] always believed that the key to a middle class in New York City was a decent paying job.” Malloy proposed that local unions reserve 10 percent of seats in apprenticeship programs for New York City high school graduates.<sup>53</sup> In exchange for reserving seats in apprenticeship programs, the SCA was asked by local unions to partner with them and fund the pre-apprenticeship program. Not only would the unions have to agree to this change, the 10 percent of seats reserved for program graduates also required approval from the NYSDOL. Since the participants would bypass the New York State regulated application process and would receive direct-entry into an apprenticeship program, the NYSDOL would have to approve the City’s program. The pre-apprenticeship program would ensure that the students entering union apprenticeship programs were prepared. This seemingly simple idea was a radical change from the traditional methods of recruitment.

The unions agreed to recruit 10 percent of their new apprentices from graduates of the City’s vocational high schools, made up of mostly black and Hispanic students. To promote employment opportunities for these apprentices, the SCA and later The PA of New York and New Jersey, required contractors on major projects to participate in state approved apprenticeship programs. In its initial years the program was very successful, placing 98 percent of the students in apprenticeships within two years of graduation.<sup>54</sup> However, according to a 2000 New York City Comptroller audit of the program, the program suffered from a lack of oversight and poor management. In 1998, only 38 percent of the students were placed in apprenticeships after completing the program and in 1999, only 3 percent of graduates entered the apprenticeship training.<sup>55</sup> While BCTC was a partner, Project Pathways was actually administered by the SCA. According to the program’s current president, Paul Fernandes, the SCA was rightfully focused on addressing the deteriorating condition of public schools, and running a job training program became less of a priority.<sup>56</sup>

There was no question about the need for this pre-apprenticeship program but the SCA was not the right place for the program. Coletti recalled, “Ed [Malloy] and I decided this was too valuable – let’s create our own non-profit.” Project Pathways was replaced by Construction

Skills 2000,<sup>57</sup> a non-profit run by the BCTC and BTEA, with funding from the SCA and the PA of New York and New Jersey. The mission of the new program was similar; however after analyzing the programmatic issues that led to the decline of Project Pathways at the SCA, several changes were made to the program model. The program's president, Paul Fernandes, explained that the initial goal of the program was to "promote diversity and to restore the connection between the trades and the vocational and technical high schools."

### ***Program Mission and Initial Challenges***

The Construction Skills program is an unusual labor-management partnership whose mission is to provide the local construction industry with a highly-skilled diverse workforce from the New York City public school system and provide those workers with a meaningful career in the unionized building and construction trade.<sup>58</sup>

While the mission of Construction Skills is clear, any successful program requires creative individuals with a vision, but who are also willing to manage the program design to meet the real challenges of implementation. According to program founders, there were several significant challenges in the early stages of program implementation. The first challenge was transitioning from Project Pathways to Construction Skills. After a period of decline at the SCA, Construction Skills had to re-establish support from the unions and employers who had become skeptical about the value of pre-apprenticeship programs. Construction Skills had to produce results in a short period of time. The program was evaluated resulting in new standards for recruitment, such as a minimum 70 percent average and a 90 percent attendance record. The number of students recruited was also modified so that it was solely based on demand from apprenticeship programs. This provided graduates with a more realistic opportunity for placement in an apprenticeship.<sup>59</sup>

The second challenge was improving outreach and recruitment. High school guidance counselors who assisted in recruiting students for the program were primarily encouraging students to go to college. Based on the poor placement results from Project Pathways, they were not convinced that Construction Skills was a positive option for their students. In its initial year, the program re-established its linkage to the building and construction trades and achieved direct-entry status through the NYSDOL, and the placement rate started to increase. Positive results convinced the high school guidance counselors that the program was a legitimate alternative to college that might better fit their students' interests.<sup>60</sup> Educating guidance counselors and students that there was an alternative to college that might better fit



the students' interests and could still lead to a middle class job led to an increase in the applicant pool and was key to Construction Skills successful outreach and recruitment strategy.

An additional challenge for recruitment was overcoming a perception bias in the minority community, given the historic struggle to integrate the unionized building and construction trades. As Construction Skills became more successful those perceptions changed.<sup>61</sup>

## ***Program Structure***

### ***Outreach, Recruitment and Screening***

Participants in the Construction Skills program are recruited through partnerships with fourteen career and technical public high schools throughout the five boroughs of New York City.<sup>62</sup> The guidance counselors at the high schools play a key role in recruiting appropriate students for the program. Staff from Construction Skills and the Consortium for Worker Education, a non-profit workforce development partner, visit the schools several times per year and conduct seminars about working in the construction trades. Interested students complete an application and attend an orientation. To determine the appropriate class size, Construction Skills use industry forecasts from the apprenticeship programs which determine the number of apprenticeship openings. In addition, the program sends out an Apprenticeship Class Notification Form (see Appendix D) three to four months in advance of graduation. The notification requests information from the unions as to when their apprenticeship program is starting a new class and how many openings will be available. Using this information, Construction Skills determines how many applications they will accept and how many students they will admit. This is critically important information that enables Construction Skills to calibrate the size of their classes so that qualified students who complete their program are placed in a union apprenticeship program. It is not enough to have an excellent curriculum in a pre-apprenticeship program. If students who have successfully completed the program are not placed in an apprenticeship program, the pre-apprenticeship program has failed.

While recruitment occurs throughout the school year, students enter the program during the spring of their senior year. Eligible students must have a minimum cumulative grade average of 70 percent or higher, a 90 percent attendance record and a commitment to pursuing a career in the unionized building and construction trades industry. Program staff relies heavily on the recommendations of school liaisons. Most of these liaisons have been with the schools since the inception of Construction Skills and thus know the type of students appropriate for the program.

### ***Curriculum and Training Period***

The curriculum includes both classroom and on-site training. In the spring of their senior year, students attend one three-hour class each week for ten weeks where they receive training in math skills, safety training and an introduction to the building trades in New York City. Classes are taught by senior instructors from the fifteen affiliated building trades. Emphasis is also placed on professionalism and students learn about the importance of motivation, participation, attendance and punctuality. Students tour at least three training facilities during their spring break, where they meet with apprenticeship training coordinators and instructors to learn about the trades. These site visits give students a better understanding of what their future job entails, preparing them for the next phase of the curriculum, which includes hands on training. Robert Medlock, Deputy Executive Director of the Consortium for Worker Education, described this phase of the training as “bringing in young people whose minds have not yet understood how to make life and career decisions” and exposing them to “graduates who are new apprentices, who came through the program one year before and journey workers who completed the program four years before - to tell them where they are working, what kind of money they are making and how it has changed their lives.”

Students are also assigned a Construction Skills career counselor to assist them with their choice of a trade.<sup>63</sup> Students can choose from a number of apprenticeship trades where they will receive classroom and on-the-job training for anywhere from two to five years, depending on the trade.

The second stage of pre-apprenticeship training occurs in the summer after graduation from high school. Students participate in an intensive hands-on training designed to simulate the construction site experience. They rotate through four different job sites over four weeks and work on basic construction projects organized by local non-profit organizations. The simulations are led by a journey worker and each student is assigned a specific role on a construction site, such as a steward or foreman.<sup>64</sup>

Throughout the program, there is an important focus on attendance. Those who miss more than one day without a valid excuse are removed from the program. According to the program’s president, Paul Fernandes, attendance is an important predictor of whether or not a young person is ready for a career in the construction trades. Students are also provided with a small stipend, including a MetroCard, to facilitate their participation.<sup>65</sup>

The pre-apprenticeship training period involves one three-hour class a week for ten weeks, during the last semester of their senior year in high school and four weeks of full-time training

and simulated industry employment during the summer following their graduation from high school.

### ***Placement***

Following completion of the spring and summer sessions of the pre-apprenticeship program, graduates are eligible for entry into union apprenticeship programs through a direct-entry track. As we mentioned earlier, direct-entry means Construction Skills graduates are exempt from the standard recruitment process and can bypass waiting lists. As part of the program model, up to 10 percent of new apprenticeship seats are reserved for qualified graduates of the program.<sup>66</sup> Construction Skills graduates must meet all the entrance requirements of the apprenticeship programs, including aptitude and physical examinations. Each union apprenticeship program has its own entrance requirements. To prepare students, Construction Skills staff provides job interview coaching, resume development services and test preparation.

Program graduates are not all immediately placed in apprenticeships. There may be more interest in a particular trade than available openings, or students may not have turned 18 years old at graduation, a prerequisite for apprenticeships. Those not immediately placed are put on a waiting list. Construction Skills staff regularly counsel graduates on the waiting list until they are placed in an apprenticeship or find a job.

### ***Program Completion Rates, Student Tracking and Retention Rates***

According to program staff, 75 percent of enrolled students complete the pre-apprenticeship program. Each student's progress is tracked not only throughout the pre-apprenticeship, but until they complete their union apprenticeship, which may last up to five years. The retention rate for those who are progressing toward apprenticeship completion or have completed apprenticeships to become journey workers and skilled mechanics is 80 percent. The program staff reports that the extensive tracking system is vital to demonstrate to private industry that they are producing qualified, highly-trained employees. There has not been a formal survey done of student experience during or after the pre-apprenticeship program; however, the Construction Skills staff regularly communicates with pre-apprenticeship program graduates to see how they are faring in their apprenticeships.

### ***Program Partnerships***

The Construction Skills program has a strong partnership model that has been critical to its success. The program brings together labor unions, construction contractors, local government

agencies and the non-profit workforce development communities in a unique partnership. The Board of Directors of the program institutionalized the partnership by including several union leaders and contractors on their Board. An Advisory Committee includes the New York City Mayor's Office, SCA, PA of New York and New Jersey and the New York City DOE.

Each one of these partner organizations has an important role in ensuring that the pre-apprenticeship program works as described below.

The **Building and Construction Trades Council of Greater New York (BCTC)**<sup>67</sup> consists of local affiliates of 15 national and international unions representing 100,000 members in the five boroughs in New York City. Construction Skills' relationship with the BCTC is essential to providing placements for students in the union apprenticeship program after they graduate the pre-apprenticeship program. The relationship also allows Construction Skills to actually assess the real demand for labor and recruit an appropriate number of students to meet demand. The program is housed within the BCTC offices, and Construction Skills' President also serves as the Chief of Staff for the BCTC, further solidifying the partnership.

The **Building Trades Employers Association (BTEA)**<sup>68</sup> consists of 28 associations representing 2,000 union construction managers, general contractors and specialty trade subcontracting construction companies in New York City. The BTEA's current president, Louis Coletti, is one of the founders of the Construction Skills program. Its members employ the 100,000 union apprentices and journeymen and contribute funding to union apprenticeship training through Labor Management Training Funds.

The **Consortium for Worker Education (CWE)**<sup>69</sup> is a private, non-profit agency that provides a wide array of workforce development services, industry specific training and employment services to over 70,000 New York City workers annually, including union members, new Americans and dislocated workers. CWE develops the curriculum and provides teaching staff for the Construction Skills program. Through a grant from the City Council, CWE also provides some of the funding for the program.

The **School Construction Authority (SCA)**<sup>70</sup> is a public agency that manages new school construction and renovation of existing school buildings for the NYC Department of Education. The SCA provides funding for the Construction Skills pre-apprenticeship program and administered the first iteration of the pre-apprenticeship program, Project Pathways. Most importantly, the SCA hires union labor to work on their construction projects and has an interest in ensuring the high quality of the training programs.

**The Port Authority of New York and New Jersey (PA)**<sup>71</sup> is a bi-state public agency that builds, operates and maintains critical public transportation and trade assets. Its network of aviation, rail, surface transportation and seaport facilities annually moves millions of people and transports cargo throughout the New York and New Jersey region. The PA, like the SCA, funds the Construction Skills pre-apprenticeship program and also hires union labor to work on its construction projects.

**The New York City Department of Education (DOE) Career and Technical Education (CTE) High Schools**<sup>72</sup> provide a program of study that is connected to a career pathway and meets business and industry standards in that particular career through their curriculum. Programs are offered in fields ranging from construction trades to aviation technology to emergency management and multimedia production. The Construction Skills program recruits students from the CTE high schools. The outreach done in collaboration with high school liaisons brings in pre-apprenticeship program participants that are educationally, socially and emotionally ready to meet the challenges of the pre-apprenticeship program.

The **New York City Office of the Mayor** sets policy for promoting diversity in training, employment and contracting opportunities for City funded construction work. The Mayor's Office and the Commission on Construction Opportunity have been important catalysts in setting and achieving goals for a diverse construction workforce. The Construction Skills program has been a critical part of the City's recruitment and training strategy for accomplishing this goal.

### ***Program Funding***

The Construction Skills program funding is mainly provided by the New York City SCA and The PA of New York and New Jersey, with additional funding from the CWE (City Council funds) and the Construction Skills annual fundraiser. The funding sources and amounts have remained consistent throughout the program. SCA provides \$300,000 annually, the PA provides \$100,000 annually and the CWE contributes \$100,000 from a New York City Council grant. The program's total expenses for 2012 were approximately \$600,000.<sup>73</sup> Cost per student placed into an apprenticeship is \$7,500.<sup>74</sup> For a relatively small public investment, the program has an impressive record of success.<sup>75</sup> Given this success, the program has great potential to attract new funders.

## Program Evaluation

In order to evaluate how the Construction Skills program was meeting its goal of placing minority youth in middle class jobs we examined outreach and recruitment data, completion rate, number of students placed in union apprenticeships, whether or not the program filled the allotted apprenticeship spaces, the retention rate of program graduates in union apprenticeships, the racial and ethnic makeup of the program graduates, and average wages and lifetime earnings for program graduates as compared to high-growth entry-level jobs. We also compared Construction Skills to pre-apprenticeship programs in other cities identifying the program characteristics that contributed to its success.

*Outreach and recruitment.* The comprehensive outreach process in the high schools attracts more students than there are available openings. In the past several years, Construction Skills has asked schools to submit approximately 250 applications annually, of which 140-150 are accepted, resulting in a 58 percent approximate acceptance rate. Typically, there are two main points of attrition where students leave the program -- in the first few weeks after deciding it is not the right fit or after graduation from high school when some admitted students decide they want to start working immediately or go to college.

*Completion Rate.* From 2001 to October 2013, 1,757 students out of 2,342 completed the program. This constitutes a 75 percent completion rate for enrolled students that complete the program.

*Placement and Retention Rates.* From its inception in 2001 to October 2013, Construction Skills has placed 1,443<sup>76</sup> of its pre-apprenticeship graduates (1,757) into union apprenticeship programs; an 82 percent cumulative placement rate for its graduates.<sup>77</sup> If we compare placement rates with other programs, particularly in union apprenticeships, it is clear that Construction Skills is extremely successful. In an Aspen Institute survey of 236 pre-apprenticeship programs across 40 states, only 18 percent responded that they place over 75 percent of graduates in apprenticeship programs.<sup>78</sup>

### Key Construction Skills Program Statistics

Minority Participants

88%

Acceptance Rate

58%

Completion Rate

75%

Placement Rate

82%

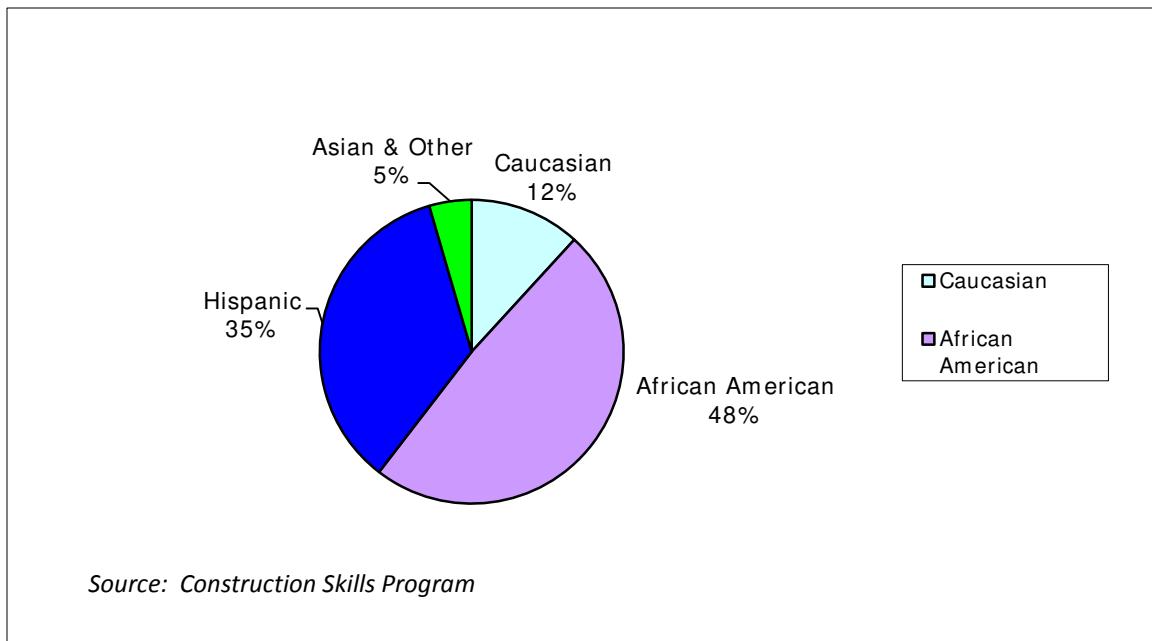
Retention Rate

80%

The graduates of Construction Skills have an 80 percent retention rate as union apprentices or journey workers. All participants begin receiving wages and benefits during the union apprenticeship program which lasts between 2-5 years (see Appendix B). After completing the apprenticeship, they graduate to a higher level journey worker. The retention rate of the Construction Skills program is remarkable when compared to the retention rate for construction apprentices nation-wide. Slightly more than 46 percent of the nearly 121,000 construction apprentice agreements started between 2006 and 2007 across the United States were cancelled by May 2012. The remaining 54 percent were still active apprentices. When compared with the 80 percent of Construction Skills graduates who are active apprentices and journey workers, the success of the program is clear. Further contributing to the impressive track record of the Construction Skills program is the fact that almost all of the graduates are minority. The nationwide retention rate for minority apprentices is 51 percent compared to a 56 percent white retention rate.<sup>79</sup>

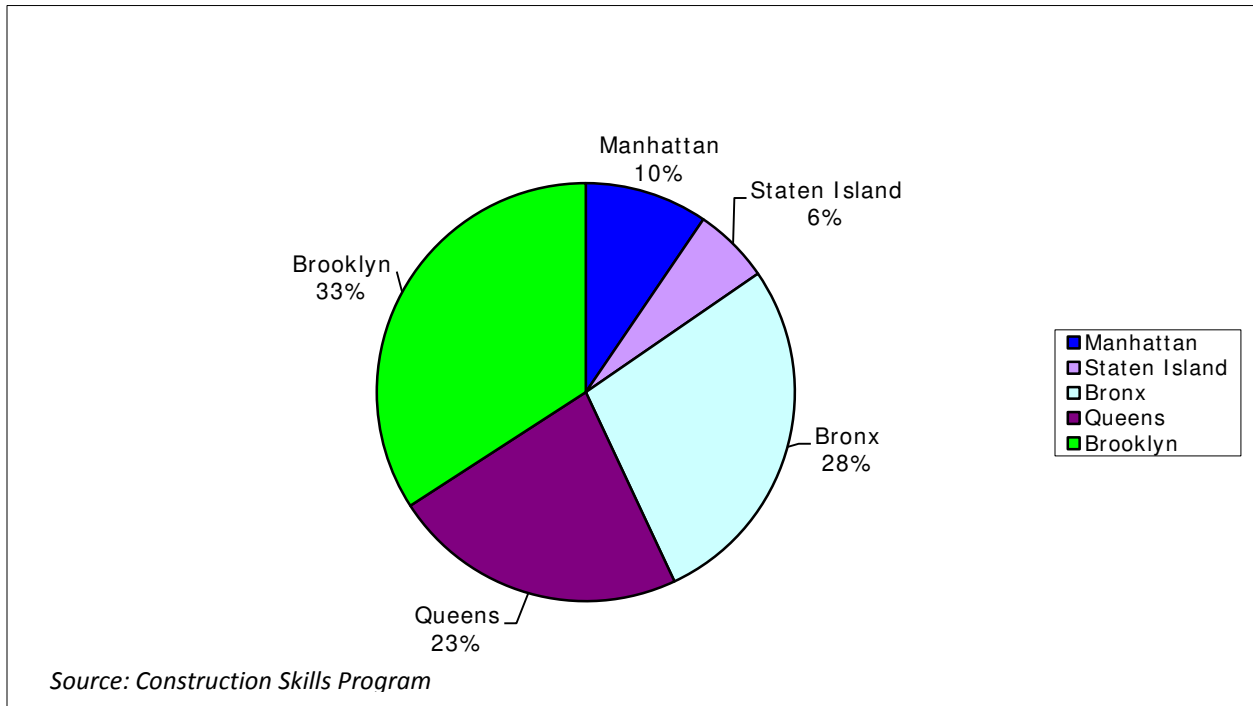
*Targeted Population.* Almost 90 percent of the 1,443 Construction Skills graduates placed in union apprenticeship program are black, Hispanic or Asian (see Figure 3). Construction Skills is clearly accomplishing its goal of promoting diversity in the construction trades.

**Figure 3 Racial Composition of Construction Skills Graduates Placed in Union Apprenticeships, 2001-2013**



All graduates of Construction Skills and all those placed in union apprenticeship programs are residents of New York City, with the majority of placed graduates from Brooklyn, the Bronx and Queens (see Figure. 4).

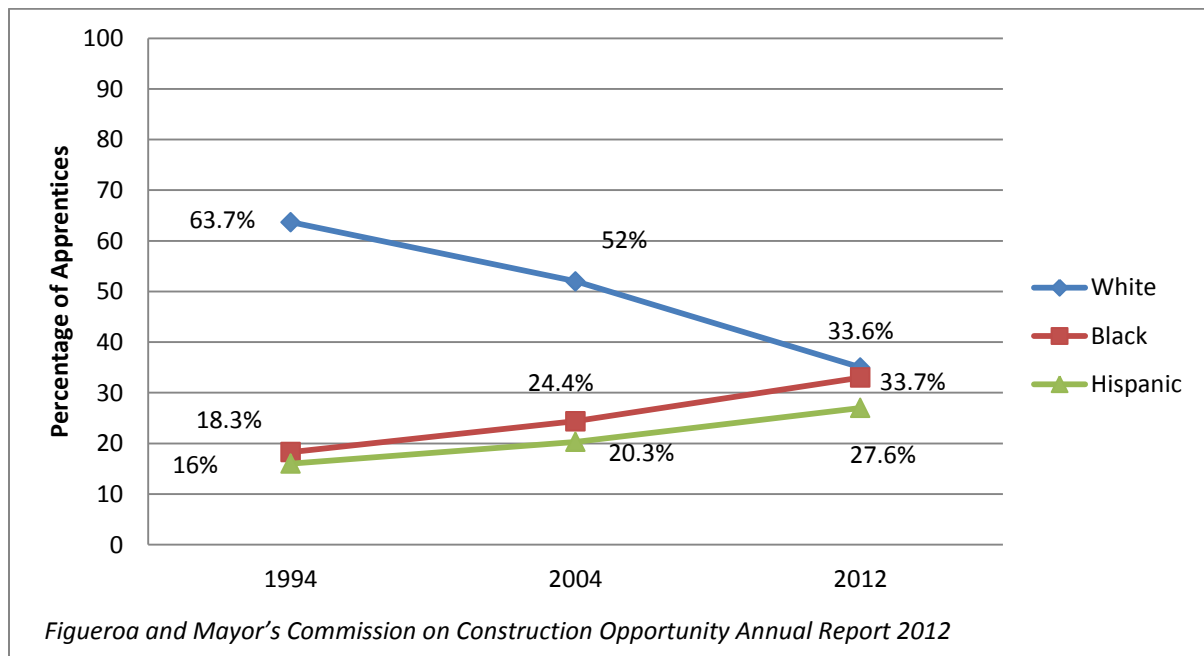
**Figure 4 Residency of Construction Skills Graduates Placed in Union Apprenticeships, 2001-2013**



Between 1994 and 2012, white participation in union apprenticeship programs decreased from 64 percent to 34 percent, while black and Hispanic participation increased by 15 percent and 11 percent respectively (see Figure 5).<sup>80</sup> With its high rate of diversity, as more Construction Skills graduates enter union apprenticeship programs each year, they will have an even greater impact on the trade’s demographic makeup.



**Figure 5 Percent Change in Racial Composition of NYC Registered Apprentices, 1994, 2004, and 2012**



***Program graduate wages compared to other high-growth entry-level jobs in NYC***

One way of measuring the program’s success is to compare construction industry entry-level wages to entry level wages in the City’s projected high-growth jobs. This comparison represents the realistic opportunities most likely to be available for high school graduates during the current decade. While there are significantly fewer construction industry job openings compared to health care and retail job openings, industry projections for growth are still high. From 2010–2020, an anticipated 14,200 additional workers in New York City will be added in fields classified by the U.S. Department of Commerce as construction-related. According to the New York State DOL, occupations in the construction industry generally, offer higher entry-level and mean annual wages than other occupations. With an average entry-level annual salary of \$34,120, the construction sector pays more than nine out of ten high-growth occupations in New York City (see Table 3). Registered nurse is the only top-ten high-growth occupation where the average annual entry-level wage is higher than in the construction industry, but it requires a college degree.<sup>81</sup> All of the other nine high-growth occupations typically employ individuals with a high-school diploma or equivalent in entry-level positions. Construction workers also typically have a high school diploma; however, they earn 36 percent

more than home health aides, the top growth occupation with the highest average annual earnings. Not only is Construction Skills clearly placing its graduates in middle class jobs, but they are doing better than all of the high school graduates going into entry level jobs in the City's high growth sectors.

**Table 3 Projected NYC High-Growth Occupations Average Annual Entry Level Wage Ranked by Total Job Openings, 2010-2020**

Rank	Title	Average Annual Entry-Level Wage	Typical Educational Attainment
1	Home Health Aides	\$21,730	High School Diploma
2	Retail Salespersons	\$16,910	High School Diploma
3	Personal Care Aides	\$19,060	High School Diploma
4	Cashiers	\$17,050	High School Diploma
5	Waiters and Waitresses	\$16,920	High School Diploma
6	Childcare Workers	\$19,360	High School Diploma
7	Office Clerks, General	\$19,240	High School Diploma
8	Janitors and Cleaners <sup>82</sup>	\$20,430	High School Diploma
9	Registered Nurses	\$66,040	Bachelor's Degree
10	Food Prep and Fast Food Workers <sup>83</sup>	\$16,920	High School Diploma
<b>Construction industry average:</b>		<b>\$34,120</b>	<b>High School Diploma</b>

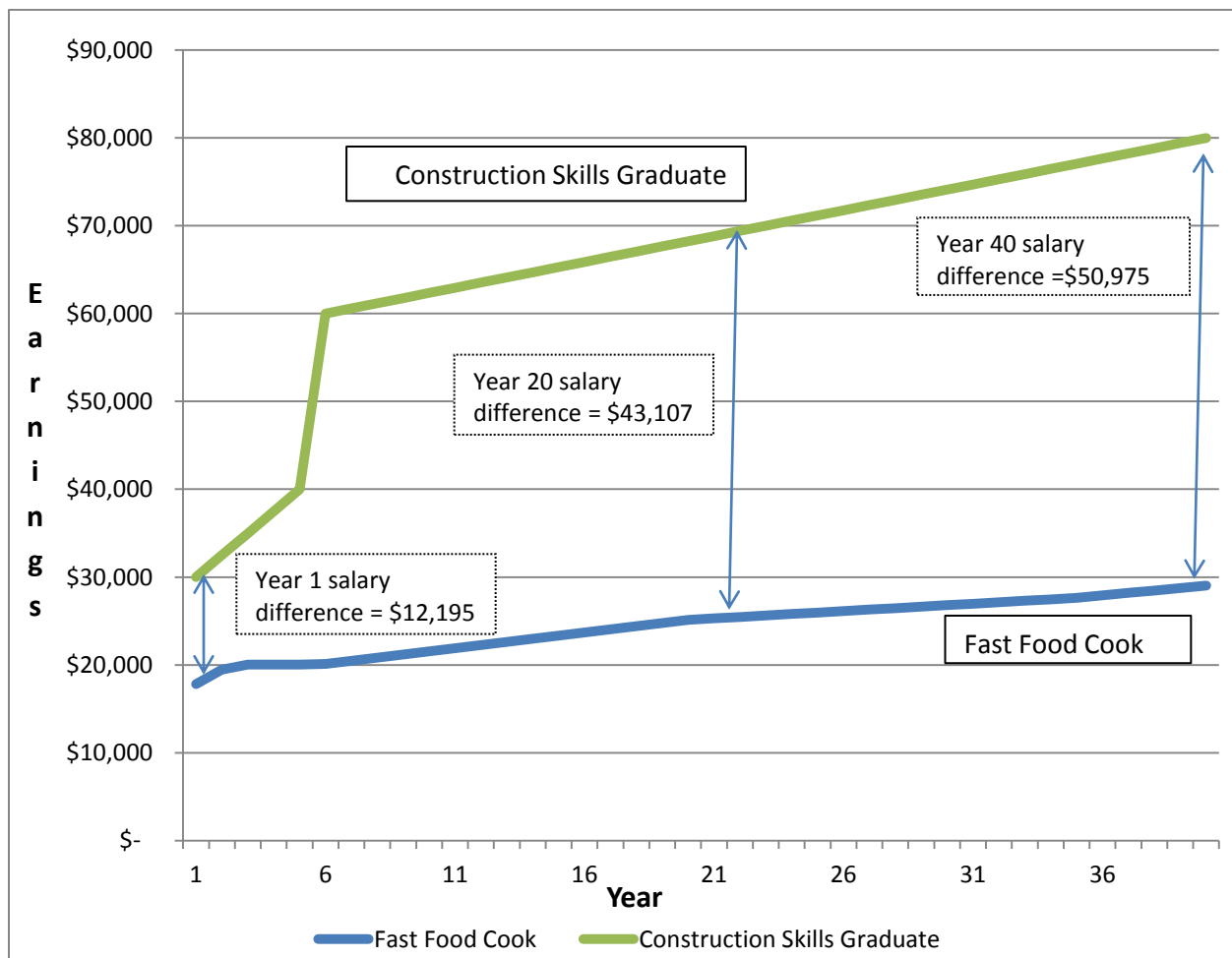
Source: NYSDOL, "Analysis of New York State's 2010-2020 Occupational Projections and Wages by Education Level", Appendix 2; NY State DOL "Long Term Occupational Employment Projections: 2010-2020"; NYSDOL Occupational Wages

### ***Comparing the lifetime earnings of Construction Skills graduates to fast food cooks***

In order to assess the return on investment in the Construction Skills Pre-Apprenticeship program we compared the lifetime earnings (40 years) of a Construction Skills graduate with a high school graduate employed as a fast food cook.<sup>84</sup> We chose a top ten growth occupation that pays a low wage because nearly eight out of ten employed youth, ages 18 to 20, are in low wage jobs. Without the Construction Skills program, this population is likely to be employed in a low-wage job.

The lifetime earnings of a Construction Skills graduate is \$2.6 million and is calculated by combining the low apprenticeship salary with the higher journey worker salary.<sup>85</sup> The lifetime earnings of a fast food cook is \$976,136.<sup>86</sup> Though both have the same high school degree when they begin work, the Construction Skills graduate earns \$1.6 million more over a lifetime of earnings (see Appendix E). An investment of \$7,500 per student (the cost of the Construction Skills Pre-Apprenticeship program) produces a very high rate of return. It increases the lifetime earning potential for a minority youth with a high school degree by 166 percent compared to other high school graduates working as a fast food cook. This income comparison does not include the health and pension benefits of a unionized construction worker, which would increase the already significant differential in lifetime earnings.

**Figure 6 Average Lifetime Earnings of a Construction Skills Program Graduate who Completes Union Apprenticeship Compared to a New York City High School Graduate Employed as a Fast Food Cook**



The difference between the entry-level salary of the fast food cook and the Construction Skills graduate working as an apprentice is \$12,195. In the initial year, the gain in salary for the apprentice is already greater than the investment of \$7,500 spent per Construction Skills student. This earnings disparity only increases over forty years of work. At year twenty, the difference in earnings is \$43,107, and at year forty, the difference in earnings is \$50,975. The return on the \$7,500 investment is a gateway into the middle class and a lifetime of higher earnings for the Construction Skills graduate (see Figure 6).

## Comparing Construction Skills with other Pre-Apprenticeship Programs

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There are many programs around the country that identify themselves as construction industry pre-apprenticeship programs. In actuality, most are simply workforce development programs that claim to train individuals for jobs in the construction industry. Most of these programs are not connected to union apprenticeship programs and do not guarantee their graduates job placements in the construction industry.

The Aspen Institute's Workforce Strategies Initiative surveyed 260 pre-apprenticeship programs across 40 states and found that many of the programs, while reporting apprenticeship placement as a goal, do not place substantial numbers of graduates into apprenticeships.<sup>87</sup> This is due to a variety of factors primarily the lack of availability of apprenticeship openings in certain trades and no real relationship between the pre-apprenticeship program and the union apprenticeship programs. Construction Skills is quite distinctive when compared to initiatives in the Aspen Institute study. It focuses their placements solely on the union apprenticeship system and works closely with union and industry officials to make sure that spaces are available for their graduates.

We further compared pre-apprenticeship programs in large cities to the Construction Skills program using the same evaluation criteria we developed to determine the success of Construction Skills.<sup>88</sup> In the cities where we found programs, all state that their goal is to train local community members for work in the construction industry. Significantly, Construction Skills is the only program that specifically targets public high school youth for training and placement. None of the other programs guarantee placement in a union apprenticeship program. The Los Angeles program trains a larger population, but has a lower placement rate. The Boston program, which has a slightly higher placement rate, only trains 23 individuals per year and is only in its third year of operation. Construction Skills is clearly the most successful construction industry pre-apprenticeship program in the country (see Table 6).

**Table 4 Comparable Pre-apprenticeship Programs in Selected Cities**

City	Program	Target population	Program length	Average number of students per year <sup>89</sup>	Job placement rate
New York	Edward J. Malloy Initiative for Construction Skills	Public high school seniors in career and technical schools	14 weeks	120	82% of graduates 62% of all participants
Los Angeles <sup>90</sup>	We Build – LA Unified School District	Residents in school district <sup>91</sup>	10 weeks	203	63% of all participants
Boston <sup>92</sup>	Building Pathways	Boston residents in low-income communities	7 weeks	23	90% of graduates 86% of all participants
Seattle <sup>93 94</sup>	Seattle Vocational Institute Pre-Apprenticeship Construction Training	Seattle residents in low-income communities, women, people of color and ex-offenders.	6 months	70	50%-80% of graduates
Cleveland <sup>95</sup>	Union Construction Industry Program Apprenticeship Skill Achievement Program	Cleveland area residents, including public high school students	8 weeks	60	49% of graduates

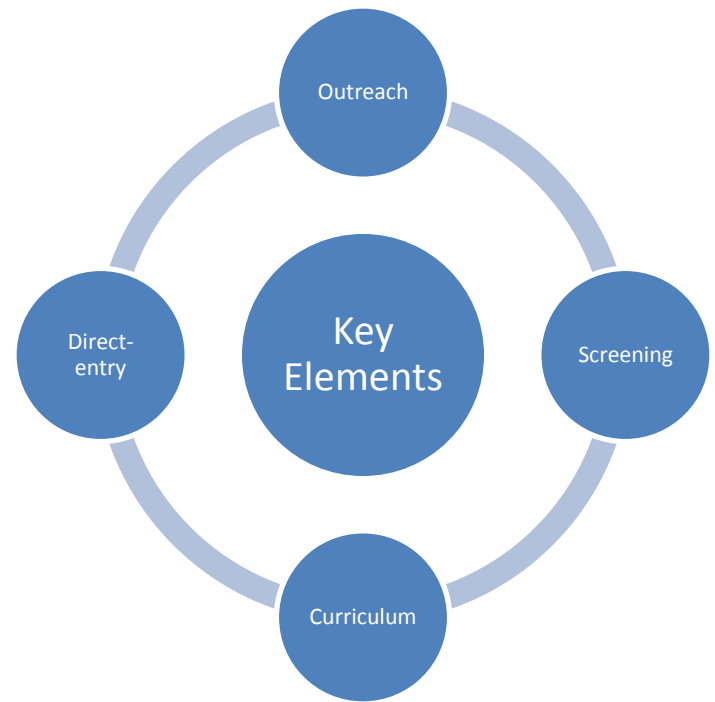
Source: Information was collected from selected city documents and personal interviews.

## Program Model Best Practices

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Limited data from the Construction Skills program makes it difficult to attribute success to any one factor in the program model. We can, however, identify four elements of the program that we found contribute to its success: outreach to students in career and technical public high schools; strong screening process and high standards; job relevant curriculum; and a direct-entry process that allows qualified graduates to bypass the standard recruitment process and avoid waiting lists. The program partners – the unionized building and construction trades, construction contractors, DOE, SCA, PA of New York and New Jersey – are also instrumental in Construction Skills’ successful model.

### Construction Skills Partnership Model



**The pre-apprenticeship-union partnership is essential to Construction Skills’ success. The partnership model allows targeted outreach and recruitment, consultation on curriculum design and guaranteed placement in union apprenticeships.**

Construction Skills’ close working relationship with the construction trades union allows it to recruit based on market demand. Construction Skills does not recruit students to meet a specific quota from a funder or for jobs that may not exist, avoiding the common situation where students successfully complete programs, but are not placed in employment. Through its partnership with the construction unions and direct-entry status, Construction Skills can guarantee their graduates who meet apprenticeship requirements a place in a union apprenticeship program. Without direct-entry status, they would be placed in the general pool of applicants applying for few coveted apprenticeship openings. While the recruitment process is open and regulated by the NYSDOL, as Robert Medlock, a Construction Skills Board member from the Consortium for Worker Education said, “if you don’t know what newspapers to read or if you are not following the NYSDOL website – you are going to be out of luck.” Construction Skills has also earned the commitment and confidence of private industry due to its proven record of training young people who are ready for the union apprenticeship program and ready to work in the construction industry. This partnership is essential to the program’s success.

**The Construction Skills pre-apprenticeship program partnership with the New York City DOE has created long-term relationships within the public high school system making it easier to reach the targeted minority youth population and screen applicants who can successfully complete the program.**

Construction Skills has been operating in the same schools since its inception and many of the same school liaisons have remained engaged. These liaisons know the students and the program well and their recommendations are a critical part of the successful screening process. Personalized recommendations from school officials that know their students and the Construction Skills program is a highly effective screening tool.

**Outreach is connected to New York City Career and Technical Schools, where the high school curriculum prepares students for careers.**

Career and Technical high schools are already serving a population interested in immediate career training. These schools have a mission that is compatible with Construction Skills and a staff that is easy to work with and understands the value of the pre-apprenticeship program.

**The Construction Skills' screening process uses high standards for admission which ensures only the most qualified candidates enter and complete the program.**

Students must self-identify that they are interested in the construction industry, ensuring a personal commitment to the field early in the process. The rigorous attendance and performance standards -- Students must have at least a 70 percent average and a 90 percent attendance record to participate -- contribute to the 80 percent retention rate of candidates completing apprenticeship.

**The Construction Skills program provides extensive support services to prepare students for success in union apprenticeship programs.**

Upon completion of the pre-apprenticeship training, students must qualify for the apprenticeship before placement. Through interview coaching, resume development services and test preparation, Construction Skills staff ensures that graduates are prepared for the entrance requirements as well as the rigorous work in the construction industry. Participants, as recent high school graduates, are young and inexperienced in the working world. Follow-up with graduates contributes to the high retention rate for apprentices and journey workers.



**Predictable funding from government agencies responsible for the City's capital programs has contributed to Construction Skills' stability and long-term success.**

The SCA and the PA of New York and New Jersey have funded the pre-apprenticeship program for over a decade. Both government agencies have large capital budgets for construction projects and are committed to the goals of a well-trained and diverse workforce.

## Recommendations

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**Construction Skills successfully targets minority youth and places them in middle class construction jobs. The program should be expanded and funding should be increased.**

**Continued success of an expanded program requires that the number of unionized construction jobs also expand and that the number of apprenticeship openings reserved for high school graduates increase from 10 percent to 30 percent.**

The capacity for expansion of the Construction Skill program exists with an increase in employment opportunities and funding, according to Paul Fernandes, the program's president. Therefore, our recommendations focus on both ways for improving the program and expanding the number of unionized construction jobs in New York City.

**Mayor de Blasio should convene a high-level Good Jobs Summit on increasing middle class jobs for minority youth in construction.**

The Mayor should convene a high-level Good Jobs Summit that brings together leaders from the BCTC unions, BTEA union contractors, and real estate industry – including residential, commercial, healthcare and higher education construction, developers working on major city projects, NYCHA, the PA of New York and New Jersey, the SCA, the NYC DOE, community organizations, Construction Skills and other pre-apprenticeship programs. Mayor de Blasio has the opportunity to evaluate existing city initiatives and expand the number of construction jobs and opportunities for union apprenticeships available to minority youth in New York City and fulfill a campaign promise.<sup>96</sup>

**Project Labor Agreements, which stipulate cost-saving measures, should be pursued to ensure union market share increases, creating more union jobs for qualified minority youth.**

The New York City construction industry is experiencing growth and is expected to remain strong over the next several years, however, the costs of construction continue to rise. Union labor, while generally considered safer and more highly skilled, is also 20-30 percent more expensive than non-union labor. Many developers and contractors are willing to accept a 10 percent differential between union and non-union construction costs, but do not always have the leverage or the interest to get the unions to change some of the practices that could reduce costs.<sup>97</sup> One solution to achieving cost-savings and increasing union jobs is Project Labor Agreements (PLA). Hill International, Inc., a construction consulting firm, analyzed the 2004-2009 SCA PLA with the building trades that covered \$5.4 billion of repair and renovation to city

schools, and found that labor cost savings over the project's duration were over \$221 million. The success of this PLA was one of the factors that led the City to enter into four PLAs for public infrastructure projects in 2009. There is general consensus that PLA's are an important tool, though not all parties agree that PLA's have achieved their projected cost-savings. Any PLA should have all relevant parties at the table to negotiate the most effective terms.

**Survey students who complete the program as well as those who do not finish to better evaluate program recruitment strategies, curriculum and retention rates.**

The completion rate for Construction Skills is very high at 75 percent. Surveying students would provide Construction Skills with data on specific aspects of the curriculum and support services that are working for students and what aspects of the program that need to be improved.

**The New York City Department of Education should track pre-apprenticeship students and create a metric that reports successful completion as a positive outcome for a high school graduate.**

CTE schools are evaluated using the same metrics as all other high schools, despite the fact that their purpose is to prepare students for a particular career. The Department of Education should recognize completion of apprenticeships as a positive outcome, particularly when students are entering from a CTE school. Apprenticeship placement should be tracked as its own category for evaluation, rather than combining it with employment. By placing value on an apprenticeship placement, principals and administrators are likely to provide more support for this type of outcome.

**The number of CTE schools should be increased.**

Students from CTE schools are more likely to graduate than comparable students in non-CTE schools. Black and Latino males also have higher graduation rates from CTE schools, at 63 and 66 percent respectively, than in non-CTE schools at 52 percent. Yet there are too few CTE schools to meet student demand according to high school rankings.<sup>98</sup> An increase in CTE schools would enable the Construction Skills program to draw from a larger pool of students who have chosen an education connected to a career in the construction trades.

**The pre-apprenticeship model can also consider expanding to other comparable sectors.**

The pre-apprenticeship partnership model is very successful in the unionized construction industry. This model, where employers and industry stakeholders partner with public high

schools and invest in student training, has the potential to be replicated for other industries in New York City, where demand for skilled labor is high. The New York City DOE has started this process through the creation of several commissions linking employers and key industry leaders from growth sectors, such as health care, information technology and construction and sustainability to CTE schools. While there are other promising partnership models, such as the Pathways in Technology Early College High School (P-Tech) and the Health Education and Research Occupations High School (HERO), Construction Skills has a successful track record connecting students in the classroom to the demands of the workplace.

**The Construction Skills program should be used as a national model for training high school youth for middle class jobs in the unionized construction industry.**

The Construction Skills program is unique among other pre-apprenticeship programs across the country in that it targets high school youth and through a strong partnership with the unionized construction industry links recruitment to demand for union apprentices. The result has been strong placement and retention outcomes in union construction jobs. This model should be used for other youth pre-apprenticeship programs throughout the country.

## Sources

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<sup>1</sup> Parrott, James and Treschan, Lazar. "Barriers to Entry: The Increasing Challenges Faced by Young Adults in the New York City Labor Market", Jobs First NYC, Fiscal Policy Institute and The Community Service Society. May 2013. The out of school out of work population includes the unemployed, and those not in the labor force for other reasons than being in school. The jobless rate for the young adult population is 49%, however, that includes those who are in school and not actively seeking work.

<sup>2</sup> Low-wage jobs are defined by the U.S. Population Reference Bureau as jobs with annual wages of less than \$26,818. As cited in Center for an Urban Future. April 2013. <http://nycfuture.org/data/info/low-wage-jobs-2012#ii>

<sup>3</sup> New York State minimum wage increased to \$8.00 per hour on December 31, 2013. It will increase to \$8.75 on December 31, 2014 and \$9.00 per hour on December 31, 2015.

<http://www.labor.ny.gov/workerprotection/laborstandards/workprot/minwage.shtm>.

<sup>4</sup> 2013 Poverty Guidelines. <http://aspe.hhs.gov/poverty/13poverty.cfm#thresholds>

<sup>5</sup> New York Building Congress, *New York City Construction Outlook Update*, "NYC Construction Employment Inches Upward While Wages Hold Steady", April 29, 2013 <http://www.buildingcongress.com/outlook/042913.html>

<sup>6</sup> New York Building Congress, *New York City Construction Outlook Update*, "New York Building Congress Analysis Foresees Renewed Building Boom by 2014" <http://www.buildingcongress.com/outlook/062413.html>

<sup>7</sup> State Department of Labor Occupational Employment Statistics Survey 2009-2013

<http://labor.ny.gov/stats/lswage2.asp>

<sup>8</sup> U.S. Census Data 2010-2012 estimates

<sup>9</sup> Tinari, Frank and Betz, Kenneth, "Valuing Non-Wage Compensation of Private Sector Labor Union Workers in the Construction Trades", *Journal of Forensic Economics*. Volume 24, Issue 2, 2013.

<sup>10</sup> Community Service Society Survey: <http://www.cssny.org/news/entry/new-yorkers-weigh-in-on-top-priorities-for-the-new-mayor>

<sup>11</sup> Abel, Jaison R. and Richard Deitz, "Job Polarization and Rising Inequality in the Nation and the New York-Northern New Jersey Region", *Current Issues in Economics and Finance*, Federal Reserve Bank of New York, vol. 18, no7, 2012. [http://www.newyorkfed.org/research/current\\_issues/ci18-7.pdf](http://www.newyorkfed.org/research/current_issues/ci18-7.pdf)

<sup>12</sup> National Employment Law Project, *The Low-Wage Recovery and Growing Inequality*, 2012, [http://www.nelp.org/page/-/Job\\_Creation/LowWageRecovery2012.pdf?nocdn=1](http://www.nelp.org/page/-/Job_Creation/LowWageRecovery2012.pdf?nocdn=1)

<sup>13</sup> Partnership for New York City, *NYC Jobs Blueprint*, 2013. <http://www.nycjobsblueprint.org/report/?report=1>

<sup>14</sup> "The Middle Class Squeeze." The Council of the City of New York. February 2013.

[http://council.nyc.gov/html/action/acpdfs/middle\\_class\\_squeeze.pdf](http://council.nyc.gov/html/action/acpdfs/middle_class_squeeze.pdf)

<sup>15</sup> Modular building which is fabricated off-site will present a new challenge to keeping construction jobs local

<sup>16</sup> Bertran, Nicole. "Meeting the Challenge of Increasing Diversity in the Unionized Construction Industry: CSKILLS and the Role of Pre-Apprenticeship," May 2011.

<sup>17</sup> Vitullo-Martin, Julia and Hope Cohen. "Construction Labor Costs in New York City: A Moment of Opportunity", Center for Urban Innovation, Regional Plan Association, June 9, 2011. 60 percent union market share represents only the private sector, as confirmed by Julia Vitullo-Martin in a February 2014 e-mail.

<sup>18</sup> According to New York City's FY2010 Annual Report to the Construction Industry Partnership, over 90 percent of public works contracts were subject to Project Labor Agreements for which participation in state-approved apprenticeship programs is required or procured in non-PLA contracts for which apprenticeship participation was also mandated. These state-approved apprenticeship programs are nearly all union.

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<sup>20</sup> Interview with Paul Fernandes, Chief of Staff, Building and Construction Trades Council of Greater New York, and President, Edward J. Malloy Initiative for Construction Skills. November 2013.

<sup>21</sup> 2010 3<sup>rd</sup> Quarterly Cost Report, *Engineering News Record*, September 27, 2010 (Note: includes base rate plus unspecified fringe benefits)

<sup>22</sup> Bertran

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- <sup>37</sup> "Building Barriers: Discrimination in New York City's Construction Trades." A report by the New York City Commission on Human Rights. December 1993. [http://www.nyc.gov/html/cchr/downloads/pdf/publications/selected-reports/building\\_barriers-discrimination\\_in\\_new\\_york\\_citys\\_construction\\_trades.pdf](http://www.nyc.gov/html/cchr/downloads/pdf/publications/selected-reports/building_barriers-discrimination_in_new_york_citys_construction_trades.pdf)
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- <sup>39</sup> Waldinger, et al.
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- <sup>42</sup> Figueroa, Maria, Grabelsky, Jeff and Lamare, Ryan. "Community Workforce Agreements: A Tool to Grow the Union Market and to Expand Access to Lifetime Careers in the Unionized Building Trades" *Labor Studies Journal*. March 2013. Vol. 38. <http://lsj.sagepub.com/content/38/1/7.full.pdf+html>
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<sup>50</sup> New York Building Congress. New York City Construction Outlook Update. December 17, 2012.

<sup>51</sup> Parrot, et al.

<sup>52</sup> Parrot, et al.

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<sup>54</sup> "Unstated Goal of Jobs Plan: Open Unions", Ronald Sullivan, *New York Times*, December 26, 1992.

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<sup>56</sup> Interview with Paul Fernandes, Chief of Staff, Building and Construction Trades Council of Greater New York, and President, Edward J. Malloy Initiative for Construction Skills

<sup>57</sup> The program was renamed the Edward J. Malloy Initiative for Construction Skills in 2007 to honor the founder of Construction Skills 2000 and president of the Building and Construction Trades Council from 1992 – 2008, who passed away in 2012.

<sup>58</sup> <http://www.constructionskills.org/cskills.pdf>

<sup>59</sup> Interview with Paul Fernandes, Chief of Staff, Building and Construction Trades Council of Greater New York, and President, Edward J. Malloy Initiative for Construction Skills.

<sup>60</sup> Interview with Diane Springer, former Program Director for Construction Skills, March 2014.

<sup>61</sup> Interview with Louis Coletti, President, Building Trades Employers' Association, October 2013.

<sup>62</sup> Participating high schools include Bronx International High School, Eagle Academy for Young Men and Samuel Gompers High School in the Bronx, William E. Grady High School, George Westinghouse High School and East New York High School for Transit Technology in Brooklyn, School of Cooperative Technical Education, Urban Assembly School for Green Careers and KIPP NYC in Manhattan, Queens Vocational and Technical High School, Thomas A. Edison Career and Technical Education High School, High School for Construction Trades, Engineering and Architecture in Queens, and Ralph McKee High School in Staten Island.

<sup>63</sup> Aspen Institute Workforce Strategies Initiative <http://dev.aspenwsi.org/wordpress/wp-content/uploads/Malloy.pdf>

<sup>64</sup> Ibid.

<sup>65</sup> Interview with Paul Fernandes, Chief of Staff, Building and Construction Trades Council of Greater New York, and President, Edward J. Malloy Initiative for Construction Skills.

<sup>66</sup> From 2006 through 2009, Construction Skills had a contract with the New York City Housing Authority (NYCHA) to provide pre-apprenticeship training to NYCHA, Section 8 residents and economically disadvantaged adults. An additional 10 percent of direct-entry apprenticeship openings were reserved for this population during the contract period.

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<sup>69</sup> CWE website: <http://www.cwe.org/index.php>

<sup>70</sup> SCA website: <http://www.nycsca.org/AboutUs/Pages/default.aspx>

<sup>71</sup> PA website: <http://www.panynj.gov/about/facilities-services.html>

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- <sup>74</sup> Conversation with Nicole Bertran, Vice President, Construction Skills, December 23, 2013.
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- <sup>76</sup> 228 placements were adults from NYCHA or Section 8 housing as per a 2006-2009 Construction Skills contract with NYCHA.
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- <sup>82</sup> The full name of the Department of Labor category is Janitors and Cleaners, Except Maids and Housekeeping Cleaners.
- <sup>83</sup> The full name of the Department of Labor category is Combined Food Preparation and Serving Workers, Including Fast Food.
- <sup>84</sup> This profession is categorized by DOL as Combined Food Preparation and Serving Workers, Including Fast Food.
- <sup>85</sup> To calculate the lifetime earnings of a Construction Skills graduate, we used the apprenticeship wages of \$15-20 and journeyman wages of \$30-40. <http://www.constructionskills.org/pages/at.html> We used 2,000 hours per year to calculate the yearly earnings, as per the advice of Jeffrey Grabelsky, Director, Construction Industry Program, Cornell University ILR School, in a January 10, 2014 e-mail.
- <sup>86</sup> <http://labor.ny.gov/stats/lswage2.asp>
- <sup>87</sup> Construction Pre-apprenticeship Programs: Results from a National Survey <http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/09-007.pdf>
- <sup>88</sup> Cities that were contacted include Chicago, Los Angeles, Boston, Cleveland, Seattle and Portland.
- <sup>89</sup> Number of students may vary from year-to-year depending on the economy.
- <sup>90</sup> Los Angeles Unified School District press release <http://lausdpress.tumblr.com/post/28934173123/pre-apprenticeship-construction-training-program>
- <sup>91</sup> Residents are trained for work on a \$19 billion school construction and renovation program.
- <sup>92</sup> Conversation with Brett Thomason, Program Coordinator, Action for Boston Community Development, January 15, 2014.
- <sup>93</sup> Seattle: The Construction Careers Handbook. Partnership for Working Families. [http://www.forworkingfamilies.org/sites/pwf/files/publications/0413%20Constr%20Careers%20HBook\\_f\\_web.pdf](http://www.forworkingfamilies.org/sites/pwf/files/publications/0413%20Constr%20Careers%20HBook_f_web.pdf)
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## Appendix A: Interview List

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Nicole Bertran, Vice President, Construction Skills

Louis Coletti, President and CEO, Building Trades Employers' Association

Diane Davies, Program Administrator, Seattle Vocational Institute Pre-Apprenticeship  
Construction Training

Paul Fernandes, President, Construction Skills, Chief of Staff to Building and Construction Trades  
Council President

Ross Holden, General Counsel and Executive Vice President, New York School Construction  
Authority

Cas Holloway, Deputy Mayor for Operations, New York City Mayor's Office

Edwin Lopez, New York Chapter Manager, National Electrical Contractors Association,  
Construction Skills Board Member

Raymond McGuire, Managing Director, Contractors Association of Greater New York,  
Construction Skills Board Member

Robert Medlock, Deputy Executive Director, Consortium for Workers Education, Construction  
Skills Board Member

Amy Peterson, President, Non-traditional Employment for Women

Anne Rascon, Deputy Commissioner, Division of Economic and Financial Opportunity, New York  
City Department of Small Business Services

Elly Spicer, Director, District Council of Carpenters Labor Technical College

Diane Springer, former Program Director, Construction Skills

Brett Thomason, Program Coordinator, Action for Boston Community Development

## **Appendix B: Building and Construction Trades: Union Apprenticeship Programs in NYC**

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### **NYC District Council of Carpenters**

The New York City District Council of Carpenters and Joiners of America is a representative body comprised of ten individual Locals and 25,000 union members. The District Council functions as the voice for thousands of New York City's Carpenters, Millwrights, Dockbuilders, Timberman, Cabinetmakers and Floor coverers.

*Length of program: 4 years / 5 years for Cabinetmakers*

### **Electrical Workers Local 3**

Construction and residential electricians work in all phases of the electrical construction and service industry. Electrical workers install and maintain conduits, switches and converters, wire lighting as well as complex systems incorporating computerization and high technology.

Electricians work on the installation of fiber optics and voice/data/video equipment.

*Length of program: 5 1/2 years*

### **Plumbers Local 1**

Plumbers assemble, install and repair a variety of piping systems that carry water, waste, natural gas and medical gas in homes, schools, wastewater treatment plants, hospitals, and other commercial and public buildings.

*Length of program: 5 years*

### **Steamfitters Local 638**

A steamfitter installs equipment and piping that produces and/or transmits heat by means of steam or hot water; hydraulics; compressed air and pneumatic tube; and process and general pipe fitting. Piping is installed in residential and office buildings, schools, hospitals, factories, sewage treatment and disposal plants, water treatment plants, and co-generating facilities.

*Length of program: 5 years*

### **Concrete Workers District Council Local 16**

Concrete workers are responsible for handling and wheeling unmixed or dry concrete material, mixing, wheeling, spreading, leveling, placing and ramming concrete and cement mortar and placing concrete on buildings and foundations. They deal with all types of form lumber or forms in connection with buildings and reinforcing steel. Concrete Workers are responsible for erecting and dismantling all cranes in connection with the work, and all hand and radio signaling of the cranes.

*Length of program: 3 years*

**Ornamental Iron Workers Local 580**

Ironworkers assemble and erect steel framework and other metal parts in buildings, on bridges, dams, and other steel structures. Ornamental ironworkers install elevator shafts, stairs, curtain walls and other decorative pieces after the primary structure of the building has been completed.

*Length of program: 3 years*

**Structural Iron Workers & Riggers Locals 40/361**

Structural ironworkers erect the framework for high-rise buildings, bridges, power plants, and towers. They raise, place, and join steel girders and columns to form these structural frameworks, including the welding of metal decking. They also erect and install pre-cast beams, columns and panels as well as rigging of heavy machinery and erect, dismantle and jump cranes and derricks.

*Length of program: 3 years*

**Operating Engineers Local 14**

Hoisting and Portable Operating Engineers work on high, operating construction cranes, as well as in deep excavations with earth moving equipment. Operating Engineers also working the sand and gravel, cement and asphalt industries; in the shipyards; on water dredges, oil refineries and oil pipelines; in sewer and water construction; in ports of major cities and in many other industries.

*Length of program: 4 years*

**Operating Engineers Local 15**

Operating engineers are workers who operate and maintain construction site equipment used to move materials, earth, and other heavy materials, and to apply asphalt and concrete to roads and other structures. They operate heavy graders, cranes, bulldozers, pavers, rollers, trench excavators, and front end loaders.

*Length of program: 4 years*

**Mason Tenders (Laborers Locals 78 & 79)**

General Building Laborers provide the demanding labor at construction projects, tunnel and shaft excavations, environmental remediation projects, and demolition sites. They clean and prepare sites, dig trenches, erect scaffolding, perform torch cutting as well as set braces. Laborers assist other skilled trades such as brick masons and carpenters.

*Length of program: 3 years*

**Cement Masons Local 780**

Cement masons place and finish concrete; they also level (screed), shape, and smooth surfaces. The majority of their work is in industrial and commercial buildings. Cement masons must know the working characteristics of various cement and concrete mixes.

*Length of program: 3 years*

**Tile, Marble & Terrazzo Local 7**

These craft workers lay marble and ceramic tiles and marble panels. They also mix, lay, and grind terrazzo (floor covering made of concrete and colored marble chips). Tile, marble, and terrazzo workers do new work as well as repair and remodel schools, hospitals, banks, office buildings, NYC subway stations, and retail shopping centers.

*Length of program: 4 years*

**Derrickmen & Riggers Local 197**

These workers place and operate all derricks, power equipment, and rigging in connection with cut stone, pre-cast stone or concrete, and mosaic and rubble on all buildings, structures, bridges, and viaducts during construction, alteration, addition or repair.

*Length of program: 3 years*

**Roofers & Waterproofers Local 8**

Roofers remove roofs, prepare roof surfaces and install new roofs. They work on various types of buildings, protecting these facilities from water leaks and damage. Waterproofing is a specialty aspect of the roofing trade but is no less important than a roof in protecting a building against moisture intrusion.

*Length of program: 4 years*

**Metal Lathers & Reinforcing Iron Workers Local 46**

Lathers install rebar in all reinforcing where needed, such as bridges, roads and buildings. They also provide support for all suspended ceilings. They erect walls that will receive lath and plaster. Lathers also make trees and rock structures for zoos and aquariums, and make all kinds of free forms that cannot be made using standard forms.

*Length of program: 3 years*

**Sheet Metal Workers Local 28**

Sheet metal workers design, fabricate, assemble, install, and repair fittings and ductwork used in construction or industry for heating, ventilation and air conditioning systems in residential, commercial, and industrial applications.

*Length of program: 4 years*

**Painters and Allied Trades District Council 9**

The District Council represents painters (paperhangers and decorators), drywall tapers, glaziers, metal polishers, and structural bridge painters. Painters remove and apply protective and decorative coatings to NYC office buildings, hospitals, schools, and other commercial and industrial structures. Drywallers prepare walls to be painted or have decorative finishes or materials applied. Bridge painters remove and apply protective coatings to bridges, ships, factories, and other structures. Glaziers fabricate and install aluminum and glass storefronts, doors, and windows.

*Length of program: 4 years*

**Elevator Constructors Local 1**

Elevator constructors assemble, install, operate, inspect, test, maintain, alter, repair and replace elevators, platform lifts, stairway chair lifts, escalators, dumbwaiters, moving walkways and similar equipment in new and old buildings.

*Length of program: 4 years*

**Heat & Frost Insulators and Asbestos Workers Local 12**

Installation workers install different types of insulating materials for five basic purposes: to prevent heat transfer; to conserve energy; to retard freezing; to protect personnel from burns; and to control mildew, mold and fire hazards. Work is done in hospitals, schools, commercial buildings, refineries, ships and industrial plants.

*Length of program: 4 years*

**Bricklayers and Allied Craftworkers, BAC Local 1**

Bricklayer craft workers build, repair and renovate structures, and portions of structures that are made of brick and other clay products and artificial masonry units made of any material. The skilled crafts represented by the BAC, often called the trowel trades, are Bricklaying and Block Laying, Pointing, Caulking and Restoration.

*Length of program: 4 years*

**Sheet Metal Workers Local 137****Sign Fabricators and Erectors**

Local Union 137 fabricates and erects all types of signage including spectaculars, billboards, sign structures and custom signs from layout to rigging. All installations are performed under the highest safety standards with licensed and insured Master Riggers, Master Sign Hangers and Special Sign Hangers. The apprenticeship program trains each member in every facet of the sign industry.

*Length of program: 5 years*

## Appendix C: Construction Occupational Employment and Wages for NYC

OCCUPATION TITLE	NUMBER EMPLOYED	MEAN WAGES	ENTRY LEVEL WAGE	EXPERIENCED WAGE
Construction and Extraction Occupations	104,000	\$67,110	\$34,120	\$83,600
Supervisors of Construction and Extraction Workers	8,250	\$88,230	\$54,930	\$104,880
Brickmasons and Blockmasons	2,210	\$72,580	\$41,570	\$88,090
Stonemasons	n/a	\$70,750	\$61,700	\$75,280
Carpenters	14,980	\$66,180	\$37,070	\$80,740
Carpet Installers	n/a	\$34,850	\$22,770	\$40,890
Floor Layers, Except Carpet, Wood, and Hard Tiles	n/a	\$31,890	\$26,220	\$34,720
Tile and Marble Setters	980	\$71,140	\$37,130	\$88,150
Cement Masons and Concrete Finishers	1,480	\$61,770	\$24,180	\$80,570
Terrazzo Workers and Finishers	n/a	\$54,260	\$30,520	\$66,130
Construction Laborers	18,620	\$59,470	\$29,060	\$74,680
Paving, Surfacing, and Tamping Equipment Operators	740	\$75,310	\$56,040	\$84,940
Pile-Driver Operators	n/a	\$121,100	\$58,050	\$152,630
Operating Engineers and Other Construction Equipment Operators	2,670	\$102,970	\$69,670	\$119,610
Drywall and Ceiling Tile Installers	860	\$49,140	\$28,230	\$59,590
Tapers	450	\$85,480	\$71,990	\$92,230
Electricians	15,560	\$82,700	\$49,550	\$99,270
Glaziers	1,460	\$41,380	\$26,390	\$48,870
Insulation Workers, Mechanical	340	\$65,720	\$26,700	\$85,230
Painters, Construction and Maintenance	5,090	\$52,870	\$30,060	\$64,270
Paperhangers	n/a	\$43,990	\$26,170	\$52,890
Pipelayers	n/a	\$33,120	\$22,280	\$38,530
Plumbers, Pipefitters, and Steamfitters	7,900	\$70,030	\$41,650	\$84,220
Plasterers and Stucco Masons	370	\$73,390	\$52,290	\$83,940

<b>OCCUPATION TITLE</b>	<b>NUMBER EMPLOYED</b>	<b>MEAN WAGES</b>	<b>ENTRY LEVEL WAGE</b>	<b>EXPERIENCED WAGE</b>
Reinforcing Iron and Rebar Workers	n/a	\$93,300	\$76,880	\$101,510
Roofers	750	\$55,360	\$25,590	\$70,250
Sheet Metal Workers	2,040	\$62,400	\$37,250	\$74,970
Structural Iron and Steel Workers	1,600	\$85,870	\$70,100	\$93,750
Solar Photovoltaic Installers	n/a	\$41,290	\$17,080	\$53,390
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	690	\$41,010	\$31,680	\$45,670
Helpers--Carpenters	650	\$29,410	\$20,700	\$33,770
Helpers--Electricians	2,620	\$37,420	\$26,320	\$42,970
Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	n/a	\$29,160	\$25,890	\$30,800
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	1,970	\$31,040	\$21,060	\$36,040
Helpers, Construction Trades, All Other	n/a	\$22,020	\$17,470	\$24,300
Construction and Building Inspectors	2,210	\$65,340	\$43,830	\$76,090
Elevator Installers and Repairers	2,210	\$77,250	\$52,840	\$89,460
Fence Erectors	n/a	\$35,340	\$24,430	\$40,790
Hazardous Materials Removal Workers	1,580	\$59,950	\$37,380	\$71,240
Construction and Related Workers, All Other	n/a	\$65,760	\$27,590	\$84,850
Earth Drillers, Except Oil and Gas	n/a	\$80,740	\$58,560	\$91,830

Source: New York State DOL Occupational Employment Statistics (OES) survey 2009-2013

## Appendix D: Apprenticeship Class Notification Form

### BUILDING AND CONSTRUCTION TRADES COUNCIL OF GREATER NEW YORK APPRENTICESHIP CLASS NOTIFICATION

Name of JAC \_\_\_\_\_

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_ Email \_\_\_\_\_

Please provide the following information for all incoming apprenticeship classes scheduled to begin from January 1 to April 30, 2013.

START DATE(S)	NUMBER OF NEW APPRENTICES
____ / ____ / ____	_____
____ / ____ / ____	_____
____ / ____ / ____	_____
____ / ____ / ____	_____

Please indicate whether the following criteria will be used to screen apprenticeship candidates:

Interview YES  NO

Aptitude Exam YES  NO

Physical Exam YES  NO

Drug Screening YES  NO

Other Requirements Please specify: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please return this form to:

Nicole Bertrán  
Vice President  
The Edward J. Malloy Initiative for Construction Skills (CSKILLS)  
71 West 23<sup>rd</sup> Street, Suite 501-03  
New York, NY 10010  
nbertran@constructionskills.org

Anne Trenkle  
New York State Field Director  
Helmets to Hardhats (H2H)  
71 West 23<sup>rd</sup> Street, Suite 501  
New York, NY 10010  
anne@helmetstohardhats.org

Amy Peterson  
President  
Nontraditional Employment for Women (NEW)  
243 West 20<sup>th</sup> Street  
New York, NY 10011  
apeterson@new-nyc.org

**ALL QUALIFIED REFERRALS FROM THE EDWARD J. MALLOY INITIATIVE FOR CONSTRUCTION SKILLS, HELMETS TO HARDHATS, AND NONTRADITIONAL EMPLOYMENT FOR WOMEN ARE EXEMPT FROM RECRUITMENTS BUT MUST MEET ALL OTHER REQUIREMENTS FOR ENTRY.**



## Appendix E: Earnings Analysis: Fast Food Cook vs. Construction Skills Graduate

To estimate yearly earnings for a fast food cook and a construction skills graduate who completes a union apprenticeship, the following assumptions were made:

- A career lasts 40 years
- An apprentice construction worker earns between \$15.00 and \$20.00 over five years<sup>1</sup>
- A journeyman construction worker earns between \$30.00 and \$40.00 per hour<sup>2</sup>
- The average yearly number of hours worked in construction is 2,000<sup>3</sup>
- The alternative to the Construction Skills program is a lifetime of earnings as a New York City high school graduate, in this case employed as a fast food cook
- To estimate yearly earnings for the high school graduate, we applied the above assumptions about wage increases to NYSDOL Occupational Employment Statistics (OES) survey estimates for a Fast Food Cook<sup>4</sup>, and proportionally increased each year's earnings to match the 2012 Office of the Comptroller estimate of the average lifetime earnings of a New York City high school graduate (\$976,136)<sup>5</sup>

### Earnings for a High School Graduate Working as a Fast Food Cook and a Construction Skills Graduate who Completes Union Apprenticeship

	Fast Food Cook	Construction Skills Program Graduate
<i>Year</i>	<i>Earnings</i>	<i>Earnings</i>
1	\$17,805	\$30,000
2	\$19,475	\$32,500
3	\$20,031	\$35,000
4	\$20,031	\$37,500
5	\$20,031	\$40,000
6	\$20,120	\$60,000
7	\$20,478	\$60,588
8	\$20,836	\$61,176
9	\$21,193	\$61,765
10	\$21,551	\$62,353
11	\$21,909	\$62,941
12	\$22,266	\$63,529
13	\$22,624	\$64,118
14	\$22,982	\$64,706
15	\$23,339	\$65,294
16	\$23,697	\$65,882

17	\$24,055	\$66,471
18	\$24,413	\$67,059
19	\$24,770	\$67,647
20	\$25,128	\$68,235
21	\$25,296	\$68,824
22	\$25,463	\$69,412
23	\$25,631	\$70,000
24	\$25,799	\$70,588
25	\$25,966	\$71,176
26	\$26,134	\$71,765
27	\$26,302	\$72,353
28	\$26,469	\$72,941
29	\$26,637	\$73,529
30	\$26,805	\$74,118
31	\$26,972	\$74,706
32	\$27,140	\$75,294
33	\$27,308	\$75,882
34	\$27,475	\$76,471
35	\$27,643	\$77,059
36	\$27,919	\$77,647
37	\$28,196	\$78,235
38	\$28,472	\$78,824
39	\$28,749	\$79,412
40	\$29,025	\$80,000
<b>TOTAL</b>	<b>\$976,135</b>	<b>\$2,625,000</b>

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<sup>1</sup> <http://www.constructionskills.org/pages/at.html>

<sup>2</sup> <http://www.constructionskills.org/pages/at.html>

<sup>3</sup> Recommended by Jeff Grabelsky, Director, Construction Industry Program, Cornell University ILR school, in an e-mail from January 2014.

<sup>4</sup> <http://labor.ny.gov/stats/lswage2.asp#35-0000>

<sup>5</sup> <http://comptroller.nyc.com/bureaus/opm/reports/2012/Higher-Education-Report-FINAL.pdf>

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