

ASSESSMENT OF JOB IMPACTS OF THE GREEN JOBS – GREEN NEW YORK PROGRAM

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EXECUTIVE SUMMARY

The key focus of this study was to estimate the number of jobs generated in 2014 and 2015 as a result of Green Jobs – Green New York (GJGNY)-funded program activities and to determine other job-related impacts, particularly on hourly wage levels. This information served as inputs to an economic impact analysis performed by ICF. Objectives of the study included the following:

- Estimate the number of New jobs,¹ Retained jobs,² 2013 Up-skilled and Up-waged jobs,³ and Direct jobs⁴ generated in 2014 and 2015 as a direct result of GJGNY-funded program activities.
- Determine other job-related impacts, particularly on hourly wage levels.
- Identify the Direct jobs created in New York State overall and in disadvantaged communities in the state in 2014 and 2015.⁵

In order to assess the job-related impacts of the GJGNY Program, NMR drew upon both primary and secondary data sources. Primary data collection consisted of in-depth interviews and surveys of several groups associated with GJGNY activities that were likely to have had an impact on the workforce. These included program partners associated with NYSERDA programs that received GJGNY funding, trade ally groups that provided services for such programs, and firms and organizations involved in the other GJGNY-related activities (e.g., marketing, training, and financing). Secondary data sources included program records provided by NYSERDA, the New York State Department of Labor (DOL) and NYSERDA program databases.

¹ New jobs are the total number of new full-time jobs added because of GJGNY activities.

² Retained jobs are the total number of full-time jobs retained that would otherwise have been let go.

³ Up-skilled and Up-waged jobs are the total number of existing full-time jobs that have had an increase in responsibilities and also had an increase in wage level because of the GJGNY activities.

⁴ Direct jobs are the sum of New jobs and Retained jobs.

⁵ NMR determined disadvantaged community status by comparing the county unemployment rate with the state average. Cities and towns in counties with unemployment rates higher than that of the state average were classified as disadvantaged. County unemployment levels were determined based on data from the New York State Department of Labor (Website:

<http://labor.ny.gov/stats/LSLAUS.shtm>).

KEY FINDINGS

In 2014 and 2015, NYSERDA's GJGNY program resulted in a total of 2,627 Direct jobs, 98% of which were generated as a result of three programs. With 1,236.8 Direct jobs, the Workforce Development and Training program accounted for slightly under one-half of the total GJGNY Direct jobs. The NY-Sun Initiative had 863.1 Direct jobs, representing one-third of the total GJGNY Direct jobs. The Home Performance with ENERGY STAR program had 471.1 Direct jobs, representing close to one-fifth of the total GJGNY Direct jobs (Table 1).

Table 1: 2014 and 2015 Total Direct Jobs by Program Initiative

Program Initiatives	2014 -2015 Direct Jobs	
	Number	% Total
Workforce Development and Training	1,236.8	47.1%
NY-Sun Initiative	863.1	32.9%
Home Performance with ENERGY STAR Program	471.1	17.9%
Outreach	37.5	1.4%
Small Commercial Energy Efficiency Program	11.0	0.4%
Financial Services	7.5	0.3%
Total Green Jobs – Green New York Program	2,627.0	100.0%

Of the total 2,627 Direct jobs stimulated by GJGNY program activities in 2014 and 2015, 78% occurred in five New York State regions (Table 2). The region with the greatest number of 2014 and 2015 Direct jobs was Long Island, with 678.3 Direct jobs or 26% of total 2014 and 2015 Direct jobs. Other regions with substantial numbers of 2014 and 2015 Direct jobs included the North Country (385.4 Direct jobs, 15% of total), Capital (366.8 Direct jobs, 14% of total), Mid-Hudson and Westchester (332.2 Direct jobs, 13% of total), and New York⁶ (287.4 Direct jobs, 11% of total).

In 2014 and 2015, the GJGNY program stimulated the creation of 833.7 New jobs in a disadvantaged community, representing nearly one-third of all Direct jobs created by the program. About two out of three GJGNY Direct jobs in disadvantaged communities were in just two New York regions: the North Country (384.7 Direct jobs, 46% of jobs created in a disadvantaged community) and the Western region (194.5 Direct jobs, 23% of jobs created in a disadvantaged community).

Table 2: 2014 and 2015 Direct Jobs by Region – Total GJGNY

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
North Country	385.4	14.7%	384.7	14.6%
Bronx	10.9	0.4%	10.9	0.4%
Kings and Richmond	11.4	0.4%	11.4	0.4%
Queens	5.6	0.2%	0.0	0.0%
Central	79.7	3.0%	42.7	1.6%
New York	287.4	10.9%	0.0	0.0%
Southern Tier	134.8	5.1%	33	1.3%
Western	194.5	7.4%	194.5	7.4%
Finger Lakes	140.1	5.3%	114.5	4.4%
Mid-Hudson and Westchester	332.2	12.6%	39.4	1.5%
Long Island	678.3	25.8%	0.0	0.0%
Capital	366.8	14.0%	2.7	0.1%
2014 and 2015 Direct Jobs	2,627.0	100.0%	833.7	31.7%

⁶ Although businesses and agencies serving all of New York City may have their offices located in Manhattan, their projects, jobs, and employees may be located in the other boroughs.

Section 1

INTRODUCTION

This report presents the results of a study to support the assessment of economic impacts of the Green Jobs - Green New York (GJGNY) Program for activities occurring in program years 2014 and 2015. The primary purpose of this research was to update the analysis completed in 2013, which estimated the number of Direct jobs generated as a result of GJGNY-funded program activities occurring between 2011 and 2013 and determined other job-related impacts, particularly related to wage levels and worker skills. This update estimated the number of Direct jobs generated in program years 2014 and 2015, including New and Retained jobs, and determined other job-related impacts, particularly on wage levels and job retention. This information provided inputs to an economic impact analysis to be performed by ICF Resources. The study was a targeted effort focused on assessing the direct job impacts as a result of the GJGNY program, with particular emphasis on quantifying these impacts in disadvantaged communities and disenfranchised populations. The survey research included collection and analysis of secondary data, revisions of relevant primary data collection efforts conducted by NMR and others in the previous program evaluations, and in-depth interviews and surveys with program partners and trade allies.

PROGRAM DESCRIPTION

The Green Jobs - Green New York Act of 2009 directs NYSERDA to establish and administer the Green Jobs - Green New York (GJGNY) Program, which is a statewide program to promote energy efficiency and the installation of clean technologies to reduce energy costs and reduce greenhouse gas emissions. The program provides access to no-cost and reduced-cost energy audits; installation services; low-cost, innovative financing through revolving load funds; workforce development; job placement; and outreach by constituency-based organizations serving targeted disadvantaged communities. The GJGNY program components have been integrated into the following NYSERDA efforts: Workforce Development, Home Performance with ENERGY STAR Program (HPwES), Small Commercial Energy Efficiency Program (SCEE), Outreach and Marketing through Constituency-based Organizations (CBOs), and the NY-Sun Initiative (a solar photovoltaic [PV] program).

SUMMARY OF OBJECTIVES AND METHODS

The key focus of this study was to estimate the number of jobs generated or retained between 2014 and 2015 as a result of GJGNY-funded program activities and to determine other job-related impacts, particularly job impacts in disadvantaged communities and on wage levels for all positions. The major objectives of the study and associated methodology are shown below in Table 3.

Table 3: Major Study Objectives and Methods

Objectives	Methods	
Estimate the number of Direct jobs generated and retained between 2014 and 2015 as a direct result of GJGNY-funded program activities.	<ul style="list-style-type: none"> • In-depth interviews and surveys of trade allies and contractors for GJGNY Outreach, Home Performance with ENERGY STAR (HPwES), Small Commercial Energy Efficiency Program, Solar PV, and Workforce Development (WFD) • Analysis of data from NY State DOL and NYSERDA records, e.g., CRIS database, WFD records. 	
Determine other job-related impacts, particularly on wage levels.		
Identify the direct job-related impacts in disadvantaged communities in the state.		

STUDY LIMITATIONS

Although the study employed evaluation methods that are widely used, it is important to note that this type of analysis has certain limitations, as well as key points of context within which to interpret the results. Job impacts are point-in-time estimates and are for the 2014 and 2015 calendar years. These jobs are assumed to continue to the extent that the program funding continues. Survey research carefully addressed attribution. The evaluation team and NYSERDA staff made many attempts to reach those who were not responsive to the surveys and in-depth interviews, but lower than desired response rates were achieved for some groups (e.g. the Workforce Development Training Partners) despite the best efforts by all. When respondents represented a sample of the entire population of a particular group, the study estimated job-related impacts for non-respondents using simple extrapolation methods when possible, and more robust extrapolation methods when necessary. Due to differences in analytical approaches, results should not be added or compared to results from jobs studies on other programs or portfolios.

The Workforce Development trainees who found new jobs or were able to retain their jobs due to the Green Jobs – Green New York training they received were likely to have found work as Home Performance with ENERGY STAR contractors or as solar PV contractors. Given this fact, there is likely some overlap in the estimates of jobs created and retained between the Workforce Development trainees and the Home Performance with ENERGY STAR and the NY-Sun contractors. This limitation to the study was also recognized in the 2013 Green Jobs – Green New York jobs assessment performed by NMR. As in that report, this report also recommends better tracking of Workforce Development trainee employers before and after trainings.

Section 2

RESULTS, FINDINGS, AND RECOMMENDATIONS

The GJGNY Program has used a multifaceted approach to stimulate the creation of green jobs. To accomplish this, many different entities were involved, such as green job trainers, program implementation contractors, and marketers. Jobs were created, retained, and up-skilled and up-waged for participants who received training, as well as within companies involved with program delivery, recruiting, marketing, and training. GJGNY activities included five primary initiative areas:

- Home Performance with ENERGY STAR (HPwES) Program
- Workforce Development (WFD) and Training Activities
- NY-Sun Initiative
- Small Commercial Energy Efficiency (SCEE) Program
- Outreach Activities

This research collected relevant job and wage data for respondent groups within each of these initiative areas. Respondent groups varied by program. For example, key respondent groups for Outreach Activities included the staff at participating CBOs, CBO Training and Implementation Contractors, and other positions that were created as a result of CBO activities.

The primary types of information reported by all respondents included 2014 and 2015 Added jobs⁷ and associated hourly wage levels, 2014 and 2015 Retained jobs⁸ and associated hourly wage levels, and 2014 and 2015 Up-skilled and Up-waged jobs and associated hourly wage levels. The Added and Retained jobs together are termed “Direct” jobs. The study also collected data to estimate 2014 and 2015 Direct jobs by region and total Direct jobs in disadvantaged communities.

RESULTS

High-level results are presented in the sub-sections below. More detailed results are presented in [Appendix B](#). The interview guides and survey instruments used to conduct the in-depth interviews and CATI surveys used to collect respondent data for the GJGNY Program initiative analysis are included in a separate document titled GJGNY Jobs Assessment – Survey Instruments and In-Depth Interviews.

⁷ New jobs added because of GJGNY-related work.

⁸ Retained jobs are jobs that would have been let go without GJGNY-related work, but were retained because of that work.

2.1.1 Green Jobs – Green New York Program

The tables in this section show the total Direct jobs (New plus Retained jobs) in 2014 and 2015 for all reported GJGNY program activities including the following:

- Direct jobs for each associated NYSERDA initiative
- Direct jobs by New York State regions
- For the NAICS categories with the largest number of Direct jobs

In 2014 and 2015, NYSERDA’s GJGNY program resulted in a total of 2,627 Direct jobs (Table 4). With 1,236.8 Direct jobs, the Workforce Development and Training program accounted for slightly under one-half of the total GJGNY Direct jobs. The NY-Sun Initiative had 863.1 Direct jobs, representing one-third of the total GJGNY Direct jobs. The Home Performance with ENERGY STAR program had 471.1 Direct jobs, representing close to one-fifth of the total GJGNY Direct jobs.

Table 4: 2014 and 2015 Total Direct Jobs by Program Initiative

Program Initiatives	2014 -2015 Direct Jobs	
	Number	% Total
Workforce Development and Training	1,236.8	47.1%
NY-Sun Initiative	863.1	32.9%
Home Performance with ENERGY STAR Program	471.1	17.9%
Outreach	37.5	1.4%
Small Commercial Energy Efficiency Program	11.0	0.4%
Financial Services	7.5	0.3%
Total Green Jobs – Green New York Program	2,627.0	100.0%

The region with the greatest number of 2014 and 2015 Direct jobs was Long Island, with 678.3 Direct jobs or 26% of total 2014 and 2015 Direct jobs (Table 5). Other regions with substantial numbers of 2014 and 2015 Direct jobs included the North Country (385.4 Direct jobs, 15% of total), Capital (366.8 Direct jobs, 14% of total), Mid-Hudson and Westchester (332.2 Direct jobs, 13% of total), and New York⁹ (287.4 Direct jobs, 11% of total).

Nearly one-third of all Direct jobs from 2014 and 2015 GJGNY program activities were in a disadvantaged community (833.7 Direct jobs). About two out of three GJGNY Direct jobs in disadvantaged communities were in just two New York regions: the North Country (384.7 Direct jobs, 46% of total disadvantaged community jobs) and the Western region (194.5 Direct jobs, 23% of total disadvantaged community jobs).

Table 5: 2014 and 2015 Direct Jobs by Region – Total GJGNY

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
North Country	385.4	14.7%	384.7	14.6%
Bronx	10.9	0.4%	10.9	0.4%
Kings and Richmond	11.4	0.4%	11.4	0.4%
Queens	5.6	0.2%	0.0	0.0%
Central	79.7	3.0%	42.7	1.6%
New York	287.4	10.9%	0.0	0.0%
Southern Tier	134.8	5.1%	33	1.3%
Western	194.5	7.4%	194.5	7.4%
Finger Lakes	140.1	5.3%	114.5	4.4%
Mid-Hudson and Westchester	332.2	12.6%	39.4	1.5%
Long Island	678.3	25.8%	0.0	0.0%
Capital	366.8	14.0%	2.67	0.1%
2014 and 2015 Direct Jobs	2,627.0	100.0%	833.7	31.7%

⁹ Although businesses and agencies serving all of New York City may have their offices located in Manhattan, their projects, jobs, and employees may be located in the other boroughs.

Plumbing, Heating and Air-Conditioning Contractors (1,307.6 Direct jobs) accounted for 50% of all Direct jobs from 2014 and 2015 GJGNY program activities (Table 6). The NAICS category with the next largest number of Direct jobs was Drywall and Insulation Contractors (571.8 Direct jobs), representing another 22% of the total Direct jobs. Across all Direct jobs from 2014 and 2015 GJGNY program activities, the average hourly wage was \$19.14. The average hourly wage for Plumbing, Heating and Air-Conditioning Contractors was \$20.65, while the average hourly wage for Drywall and Insulation Contractors was \$15.70.

Table 6: 2014 and 2015 Direct Jobs for Top Five NAICS Category

NAICS CODE	NAICS Description	2014-15 Direct Jobs	
		Jobs	Average Wage
238220	Plumbing, Heating and Air-Conditioning Contractors	1,307.6	\$20.65
238310	Drywall and Insulation Contractors	571.8	\$15.70
541330	Engineering Services	236.2	\$20.40
236118	Residential Remodelers	167.5	\$19.60
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	133.5	\$13.98
TOP FIVE NAICS CATEGORY Jobs		2,416.5	NA
TOTAL JOBS (all NAICS Categories)		2,627.0	NA
TOTAL WEIGHTED AVERAGE HOURLY WAGE (all NAICS Categories)		NA	\$19.14

2.1.2 Home Performance with ENERGY STAR Program

HPwES Contractors reported a total of 471 Direct jobs in 2014 and 2015 (Table 7). The region with the greatest number of 2014 and 2015 Direct jobs was Long Island, with 151.8 Direct jobs or 32% of total 2014 and 2015 Direct jobs. The Finger Lakes (64 Direct jobs, 14% of total) and Central (52.9 Direct jobs, 11% of total) regions also had substantial numbers of Direct jobs. Of the 471 total 2014 and 2015 Direct jobs among HPwES Contractors, 208 (or 44%) were in disadvantaged communities. All of the Direct jobs in the Finger Lakes region and three-fourths of the Direct jobs in the Central region were in a disadvantaged community.

Table 7: 2014 and 2015 Direct Jobs by Region – HPwES Contractors

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
North Country	26.3	5.6%	25.7	5.5%
Bronx	0.9	0.2%	0.9	0.2%
Kings and Richmond	6.6	1.4%	6.6	1.4%
Queens	0.9	0.2%	0.0	0.0%
Central	52.9	11.2%	39.9	8.5%
New York	0.7	0.2%	0.0	0.0%
Southern Tier	37.5	8.0%	25.7	5.5%
Western	40.4	8.6%	40.4	8.6%
Finger Lakes	64.0	13.6%	64.0	13.6%
Mid-Hudson and Westchester	71.2	15.1%	2.4	0.5%
Long Island	151.8	32.2%	0.0	0.0%
Capital	17.8	3.8%	2.7	0.6%
2014 and 2015 Direct Jobs	471.1	100.0%	208.2	44.2%

2.1.3 Workforce Development and Training

The tables below show the total jobs added and retained in 2014 and 2015 for all reported Workforce Development and Training activities, including the Workforce Development and Training Partner Staff as well as the Workforce Development Trainees. The key groups for which job information was collected are as follows:

- Workforce Development and Training Partner staff
- Workforce Development Trainees
 - On-the-Job Training (OJT) trainees
 - All other trainees

2.1.3.1 Overall Workforce Development and Training

In 2014 and 2015, the WFD program resulted in a total of 1,236.8 Direct jobs, one-third (34%) of which were in a disadvantaged community (Table 8). The region with the greatest number of 2014 and 2015 Direct jobs was North Country, with 357.2 Direct jobs or 29% of total 2014 and 2015 Direct jobs. The

Capital (290.2 Direct jobs, 24% of total) and New York¹⁰ (285.5 Direct jobs, 23% of total) regions also had substantial numbers of Direct jobs. All of the 2014 and 2015 Direct jobs in the North Country region were in a disadvantaged community, which accounted for 85% of WFD Direct jobs in disadvantaged communities.

Table 8: 2014 and 2015 Direct Jobs by Region – Total Workforce Development and Training

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
North Country	357.2	28.9%	357.2	28.9%
Bronx	7.0	0.6%	7.0	0.6%
Queens	1.8	0.1%	0.0	0.0%
Central	14.0	1.1%	2.5	0.2%
New York	285.5	23.1%	0.0	0.0%
Southern Tier	93.7	7.6%	4.5	0.4%
Western	42.0	3.4%	42.0	3.4%
Finger Lakes	5.0	0.4%	5.0	0.4%
Mid-Hudson & Westchester	121.9	9.9%	0.0	0.0%
Long Island	18.5	1.5%	0.0	0.0%
Capital	290.2	23.5%	0.0	0.0%
2014 and 2015 Direct Jobs	1,236.8	100.0%	418.2	33.8%

2.1.3.2 Workforce Development and Training Partner Staff

In 2014 and 2015, GJGNY funding for WFDs resulted in 19.4 Direct jobs among WFD and Training Partner staff, of which about one-tenth (11%) were in disadvantaged communities (Table 9). The Capital, New York, and Queens regions had 11.1 Direct jobs (57%), and the North Country, Central, and Southern Tier regions had 8.3 Direct jobs (43%). All of the WFD and Training Partner staff jobs in disadvantaged communities were in the Capital, New York, and Queens regions.

¹⁰ Although businesses and agencies serving all of New York City may have their offices located in Manhattan, their projects, jobs, and employees may be located in the other boroughs.

Table 9: 2014 and 2015 Direct Jobs by Region – Workforce Development and Training Partner Staff*

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
North Country, Central, Southern Tier	8.3	42.9%	2.2	11.1%
Capital, New York, Queens	11.1	57.1%	0.0	0.0%
2014 and 2015 Direct Jobs	19.4	100.0%	2.2	11.1%

* To maintain respondent confidentiality, data from some contiguous regions have been combined.

2.1.3.3 Workforce Development Trainees

In 2014 and 2015, the WFD program resulted in a total of 1,217.5 Direct jobs among trainees, one-third (34%) of which were in a disadvantaged community (Table 10). The region with the greatest number of 2014 and 2015 Direct jobs was North Country, with 355.1 Direct jobs or 29% of total 2014 and 2015 Direct jobs. The Capital (283.1 Direct jobs, 23% of total) and New York (283.3 Direct jobs, 23% of total) regions also had substantial numbers of Direct Jobs. All of the 2014 and 2015 Direct jobs in the North Country region were in a disadvantaged community, which accounted for 85% of WFD Direct jobs in disadvantaged communities.

Table 10: 2014 and 2015 Direct Jobs by Region – Total Workforce Development Trainees

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
Bronx	7.0	0.6%	7.0	0.6%
Capital	283.1	23.3%	0.0	0.0%
Central	10.0	0.8%	2.5	0.2%
Finger Lakes	5.0	0.4%	5.0	0.4%
Long Island	18.5	1.5%	0.0	0.0%
Mid-Hudson & Westchester	121.9	10.0%	0.0	0.0%
New York	283.3	23.3%	0.0	0.0%
North Country	355.1	29.2%	355.1	29.2%
Southern Tier	91.6	7.5%	4.5	0.4%
Western	42.0	3.4%	42.0	3.4%
2014 and 2015 Direct Jobs	1,217.5	100.0%	416.1	34.2%

2.1.4 NY-Sun Initiative

In 2014 and 2015, NYSERDA's NY-Sun initiative program resulted in a total of 863.1 Direct jobs among Solar PV contractors, one-fifth (21%) of which were in a disadvantaged community (Table 11). The region with the greatest number of 2014 and 2015 Direct jobs was Long Island, with 498.6 Direct jobs or 58% of total 2014 and 2015 Direct jobs. The Mid-Hudson and Westchester region had 134.1 Direct jobs (16%). The Western region (103.1 Direct jobs, 12% of total) experienced the largest number of 2014 and 2015 Direct jobs in a disadvantaged community.

Table 11: 2014 and 2015 Direct Jobs by Region – NY Sun Initiative

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
Central	12.5	1.4%	0.0	0.0%
Western	103.1	11.9%	103.1	11.9%
Finger Lakes	67.6	7.8%	42.0	4.9%
Mid-Hudson and Westchester	134.1	15.5%	37.0	4.3%
Long Island	498.6	57.8%	0.0	0.0%
Capital	47.2	5.5%	0.0	0.0%
2014 and 2015 Direct Jobs	863.1	100.0%	182.1	21.1%

2.1.5 Outreach

The tables below show the total jobs added and retained in 2014 and 2015 for all of the positions involved with Outreach activities. The key groups for which job information was collected are as follows:

- Constituency-Based Organization (CBO) Staff
- CBO Training and Implementation Partner

2.1.5.1 Overall Outreach

In 2014 and 2015, GJGNY funding for Outreach activities resulted in a total of 37.5 Direct jobs, over one-half (55%) of which were in disadvantaged communities (Table 12). Over two-fifths (44%) of the jobs were in the Bronx, Kings & Richmond, Queens, and Long Island regions. Nearly one-third (31%) of the jobs were in the Finger Lakes, Southern Tier, and Western regions. All of the jobs in the Finger Lakes, Southern Tier, and Western regions were in a disadvantaged community.

Table 12: 2014 and 2015 Direct Jobs by Region – Total Outreach*

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
Bronx, Kings & Richmond, Queens, Long Island	16.7	44.4%	7.8	20.6%
Capital, Mid-Hudson & Westchester, North Country	9.4	25.0%	1.5	4.0%
Finger Lakes, Southern Tier, Western	11.5	30.6%	11.5	30.6%
2014 and 2015 Direct Jobs	37.5	100.0%	20.8	55.3%

* To maintain respondent confidentiality, data from some contiguous regions have been combined.

2.1.5.2 Constituency-Based Organization Staff

In 2014 and 2015, GJGNY funding for CBOs resulted in 34.8 Direct jobs among CBO staff, over one-half (58%) of which were in disadvantaged communities (Table 13). Over two-fifths (46%) of the jobs were in the Bronx, Kings & Richmond, Queens, and Long Island regions; one-third (33%) of the jobs were in the Finger Lakes, Southern Tier, and Western regions. All of the jobs in the Finger Lakes, Southern Tier, and Western regions were in a disadvantaged community.

Table 13: 2014 and 2015 Direct Jobs by Region – CBO Staff*

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
Bronx, Kings & Richmond, Queens, Long Island	15.9	45.7%	7.0	20.1%
Capital, Mid-Hudson & Westchester, North Country	7.4	21.2%	1.5	4.3%
Finger Lakes, Southern Tier, Western	11.5	33.1%	11.5	33.1%
2014 and 2015 Direct Jobs	34.8	100.0%	20.0	57.5%

* To maintain respondent confidentiality, data from some contiguous regions have been combined.

2.1.6 Small Commercial Energy Efficient Program

In 2014 and 2015, GJGNY funding for the SCEE Program resulted in 11 Direct jobs among SCEE Assessment Contractors, of which slightly over one-quarter (26%) were in disadvantaged communities (Table 14). Two-thirds (67%) of the jobs were in the New York, Mid-Hudson & Westchester, and Capital regions; one-third (33%) of the jobs were in the North Country, Central, Southern Tier, and Western regions. All of the disadvantaged community jobs were in the North Country, Central, Southern Tier, and Western regions.

Table 14: 2014 and 2015 Direct Jobs by Region – SCEE Assessment Contractors*

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
New York, Mid-Hudson & Westchester, Capital	7.4	67.3%	0.0	0.0%
North Country, Central, Southern Tier, Western	3.6	32.7%	2.9	26.4%
2014 and 2015 Direct Jobs	11.0	100.0%	2.9	26.4%

* To maintain respondent confidentiality, data from some contiguous regions have been combined.

2.1.7 Financial Services Providers

NYSERDA has contracted financial services processors and providers for services including loan servicing, title searches, and origination fee processing, as well as legal financial advisory services. In 2014 and 2015, GJGNY funding resulted in these companies adding 7.5 Direct jobs, of which one-fifth (20%) were created in disadvantaged communities (Table 15). All of the jobs were created in the Finger Lakes, Capital, and Long Island regions.

Table 15: 2014 and 2015 Direct Jobs by Region – Financial Services*

Regions	Total Direct Jobs		Disadvantaged Community Direct Jobs	
	Number	% Total	Number	% Total
Finger Lakes, Capital, Long Island	7.5	100.0%	1.5	19.9%
2014 and 2015 Direct Jobs	7.5	100.0%	1.5	19.9%

* To maintain respondent confidentiality, data from some contiguous regions have been combined.

FINDINGS

GJGNY-related work via NYSERDA programs resulted in a total of 2,627 Direct jobs in 2014 and 2015. Direct jobs include New jobs added because of GJGNY-related work and Retained jobs that would have been let go without GJGNY-related work but were retained because of that work. Approximately three-fourths (73%) of Direct jobs were New jobs and one-fourth (27%) were Retained jobs.

Of the total 2,627 Direct jobs, 1,237 (47%) occurred through the Workforce Development and Training program. Another 863 jobs (33%) were added or retained in various positions in 2014 and 2015 because of GJGNY-funded activities of the NY-Sun Initiative, and 471 jobs (18%) were added or retained because of the Home Performance with ENERGY STAR program.

Direct jobs resulting from GJGNY-related work occurred across twelve New York regions. The regions with largest numbers of New or Retained Direct jobs were Long Island (678.3 Direct jobs, 26% of total), North Country (385.4 Direct jobs, 15% of total), Capital (366.8 Direct jobs, 14% of total), Mid-Hudson and Westchester (332.2 Direct jobs, 13% of total), and New York (287.4 Direct jobs, 11% of total).

Of the total 2,627 GJGNY-related Direct jobs, 833.7 jobs, or 32%, were located in disadvantaged communities, defined as counties where the unemployment rate is greater than the New York state average. About two out of three GJGNY Direct jobs in disadvantaged communities were in just two New York regions: the North Country (384.7 Direct jobs, 46% of total disadvantaged community jobs) and the Western regions (194.5 Direct jobs, 23% of total disadvantaged community jobs).

The industry groups with the largest numbers of jobs added or retained because of GJGNY include Plumbing, Heating and Air-Conditioning Contractors¹¹ and Drywall and Insulation Contractors. Together, these two NAICS industry groups accounted for 72% of the total Direct jobs attributable to GJGNY. The overall weighted average hourly wage of all Direct jobs with associated wage information was \$19.14.

RECOMMENDATIONS

Recommendation 1: Track trainee employers before and after trainings. As noted in the 2013 study findings, there may be some overlap in the trainee jobs reported by WFD training partners and other GJGNY program partners such as HPwES contractors or NY-Sun Initiative contractors. NMR recommends tracking trainee employers before and after training to allow cross-checking against program partner companies. Carefully tracking trainee placements and job retention results across programs will better allow NYSERDA to estimate jobs impacts as needed in the future.

Recommendation 2: Track pre- and post-training wage data. As we found in the 2013 study, wage data was difficult to obtain from respondents during interviews and surveys. We recommend improved tracking of pre- and post-training wage data to produce a more reliable analysis of the wage impact of GJGNY training efforts.

¹¹ This sector comprises a wide range of companies, including engineers and building auditors.

Section 3

METHODOLOGY

As noted above, in order to assess the job-related impacts of the GJGNY Program, NMR drew upon both primary and secondary data sources. Primary data collection consisted of in-depth interviews and surveys of several groups associated with GJGNY activities that were likely to have had an impact on the workforce. These included program partners associated with NYSERDA programs that received GJGNY funding, trade ally groups that provided services for such programs, and firms and organizations involved in the other GJGNY-related activities (e.g., training, and financing). Secondary data sources included program records provided by NYSERDA. Refer to [Appendix A](#) for a detailed description of the methodology.

Primary and secondary data sources were used to do the following:

- Estimate the number of 2014 and 2015 New jobs, which are the total number of New jobs added because of GJGNY activities, from January 2014 through December 2015.
- Estimate the number of 2014 and 2015 Retained jobs, which are the total number of jobs retained that would otherwise have been let go, from January 2014 through December 2015.
- Estimate the number of 2014 and 2015 Up-skilled and Up-waged jobs, which are the total number of existing jobs that have had an increase in responsibilities and also had an increase in wage level because of the GJGNY activities, from January 2014 through December of 2015.
- Estimate the number of 2014 and 2015 Direct jobs, which are equal to 2014 and 2015 New jobs plus 2014 and 2015 Retained jobs.
- Determine other job-related impacts, particularly on hourly wage levels.
- Identify the 2014 and 2015 Direct jobs created in disadvantaged communities in the state.

Although NMR used state-of-the-art methods to determine program job impacts, it is important to note that this type of analysis has certain challenges and limitations, as well as key points of context within which to interpret the results. Direct jobs are point-in-time estimates by survey respondents. Jobs reported are for the 2014 and 2015 calendar years. These jobs are assumed to continue to the extent that the GJGNY funding continues. Given the close linkage of GJGNY with ratepayer-funded programs, NMR survey research carefully addressed attribution and worked to isolate the GJGNY impacts. Due to differences in analytical approaches, results should not be added or compared to results from jobs studies on other NYSERDA programs or portfolios.

NMR was able to interview or survey all the members of several of the trade allies and partner groups. In these cases, the interviewees represented a census of the group, and the job-related impacts determined for

these groups were complete. For the groups for which the survey respondents/interviewees represented a sample of the entire population (of Home Performance with ENERGY STAR contractors, for example) in the program, NMR estimated the job-related impacts for the non-respondents in the group using simple extrapolation methods when possible, and more robust extrapolation methods when necessary. Hourly wages were reported based only on respondent survey estimates and were not extrapolated to group populations in any way.

Appendix A

DETAILED METHODOLOGY

As noted above, in order to assess the job-related impacts of the GJGNY Program, NMR drew upon both primary and secondary data sources. Primary data collection consisted of in-depth interviews and surveys of several groups associated with GJGNY activities that were likely to have had an impact on the workforce. These included program partners associated with NYSERDA programs that received GJGNY funding, trade ally groups that provided services for such programs, and firms and organizations involved in the other GJGNY-related activities (e.g., training, and financing). Secondary data sources included program records provided by NYSERDA.

PRIMARY DATA

NMR independently conducted primary data collection. The Team drew upon interviews and surveys with a variety of groups associated with GJGNY-funded activities. The groups that were interviewed are listed below.

- Workforce Development (WFD) Training Partners
- Workforce Development On-the-Job Training (OJT) Partners
- NY-Sun Initiative Contractors
- Home Performance with ENERGY STAR (HPwES) Contractors
- Constituency-based organizations (CBOs)
- CBO Implementation and Training Contractors
- Small Commercial Energy Efficiency Program Assessment Contractors
- Small Commercial Energy Efficiency Program Lenders
- Financial Service Providers (On-bill Recovery Firms)

The primary data sources of the GJGNY jobs and wage data are summarized in Table 16. In total, 118 different respondents were surveyed.

Table 16: Primary GJGNY Jobs and Wages Data Sources

GJGNY Program/Activity	Respondent Group	Number Surveyed
Workforce Development	WFD Training Partners/OJT	6
Workforce Development	WFD Training Partners	5
NY-Sun Initiative	Contractors	13
Home Performance with ENERGY STAR Program	Contractors	70
GJGNY Outreach	CBO Training & Implementation Contractor	2
GJGNY Outreach	CBOs	11
Small Commercial Energy Efficiency Program	Assessment Contractors	5
Small Commercial Energy Efficiency Program	Lenders	3
GJGNY Financial Service	On-Bill Recovery Title Companies	3
Total		118

Except for the largest group (HPwES contractors) and a group with few expected job impacts (SCEE lenders), NMR attempted to interview all the group members. We conducted surveys of random samples of HPwES contractors. In order to increase the likelihood of interviewing HPwES contractors who had increased their hiring because of GJGNY work, we ranked the HPwES contractor sample by level of activity and sought to survey the more active contractors.

Through these interviews and surveys, we collected the following information from each of the respondents regarding job-related impacts within their company from the GJGNY Program:

- Number of 2014 and 2015 New jobs¹² and 2014 and 2015 Retained jobs¹³ by their firm or organization in part-time and full-time positions that could be attributed to the GJGNY Program or GJGNY-supported work

¹² 2014 and 2015 New jobs are equal to the total number of New jobs added because of GJGNY activities from January 2014 through December 2015.

¹³ 2014 and 2015 Retained jobs are equal to the total number of job retained that would otherwise have been let go from January 2014 through December 2015.

- Number of jobs that experienced hourly wage increases due to increased responsibility associated with GJGNY training or GJGNY-supported work (i.e., 2014 and 2015 Up-skilled and Up-waged jobs)¹⁴
- Primary business function, reported in North American Industry Classification System (NAICS) code categories
- Hourly wage levels of 2014 and 2015 New jobs and 2014 and 2015 Retained jobs, as well as hourly wage increases for 2014 and 2015 Up-skilled and Up-waged jobs
- Cities and towns where job-related impacts occurred

As noted above, the primary business function of respondents was categorized by NAICS code categories. Note that the job activities within NAICS code categories may vary across companies and regions.

In addition, we collected the same job and hourly wage information from respondents involved with workforce development (i.e., WFD Training Partners) about the job placements of their trainees.

A.1.1 ICF Reporting Templates

When developing the initial survey instruments for the prior study in 2013, NMR had worked closely with ICF to develop the survey instruments such that the resulting data would best inform ICF's economic impact analysis. Nearly identical survey instruments were used for this new study, with some improvements made to question wording that did not impact the data collected.

The job and wage data were organized into two ICF Reporting Templates, titled "Jobs & Wages" and "Regions." These tables were approved by ICF as input to the Phase 2 economic impact analysis. All job and wage results were organized by NAICS code category. The ICF Reporting Templates can be viewed in [Appendix C](#). Please note that while the Jobs & Wages table is reproduced in the Appendix in its entirety, the Regions table was reproduced in three separate tables given its width.

In the ICF Reporting Templates, we reported the total number of 2014 and 2015 New jobs, 2014 and 2015 Retained jobs, and 2014 and 2015 Up-skilled and Up-waged Jobs that were attributable to the GJGNY Program. These jobs were determined based on interviewee responses and extrapolated to the full population if a sample from a particular group was surveyed. We also reported the number of 2014 and 2015 Direct jobs¹⁵ in this template.

¹⁴ 2014 and 2015 Up-skilled and Up-waged jobs are equal to the total number of existing jobs that have had an increase in responsibilities and also had an increase in wage level because of the GJGNY activities, from January 2014 through December 2015.

¹⁵2014 and 2015 Direct jobs are equal to 2014 and 2015 New jobs plus 2014 and 2015 Retained jobs.

The GJGNY Jobs Data for ICF Templates show the total number of 2014 and 2015 Direct jobs for each NAICS code category distributed into the 12 CBO Outreach regions in which the jobs were located. Respondents were asked which cities or town any jobs were added, retained, or up-skilled and up-waged in from January 2014 through December 2015 because of GJGNY Program activity. The number of reported 2014 and 2015 Direct jobs in each CBO region located in disadvantaged communities¹⁶ was also reported in the GJGNY Jobs Data for ICF Template.

A.1.2 2014 and 2015 New Jobs

NMR estimated the number of 2014 and 2015 New jobs based on the survey and interview responses. As noted above, 2014 and 2015 New jobs are the total number of jobs added because of GJGNY activities from January 2014 through December 2015. We asked all survey respondents and interviewees to estimate the total 2014 and 2015 New jobs added because of GJGNY-related work. WFD Training Partners also provided estimates of the number of previously unemployed trainees who found or were placed in jobs after GJGNY-funded training. These job estimates were adjusted by a GJGNY attribution factor and extrapolated to the full population where appropriate.

A.1.3 2014 and 2015 Retained Jobs

As noted above, 2014 and 2015 Retained jobs are the total number of jobs retained that would otherwise have been let go from January 2014 through December 2015. The total number of 2014 and 2015 Retained jobs was calculated using a parallel method as that used for the 2014 and 2015 New jobs calculation. Survey respondents and interviewees estimated the total number of jobs that would have been let go in absence of GJGNY-related work, but were retained because of the program. Since WFD Training Partners (not OJT) were not the direct employers of trainees who were already employed while in training, they were not in a position to say if these trainees would have lost their jobs if not for training; therefore, 2014 and 2015 Retained jobs could not be estimated for WFD non-OJT trainees. Similarly, CBO staff were not asked to report on 2014 and 2015 Retained jobs at other organizations at which they were influential in stimulating jobs because of their GJGNY activities. CBOs were not the direct employers of staff at these other organizations and therefore were not in the position to know whether staff at those organizations were retained because of the program.

¹⁶ NMR determined disadvantaged community status by comparing the county unemployment rate with the state average. Cities and towns in counties with unemployment rates higher than that of the state average were classified as disadvantaged. County unemployment levels were determined based on data from the New York State Department of Labor (Website: <http://labor.ny.gov/stats/LSLAUS.shtm>).

A.1.4 2014 and 2015 Up-Skilled and Up-Waged Jobs

Survey respondents and interviewees estimated the total number of 2014 and 2015 Up-skilled and Up-waged jobs. As noted above, 2014 and 2015 Up-skilled and Up-waged jobs are the total number of existing jobs that have had an increase in responsibilities and also had an increase in wage level because of GJGNY activities from January 2014 through December 2015. The increased responsibility could have been due to a promotion or specialized training or knowledge acquired. As with 2014 and 2015 New and Retained jobs, the numbers of 2014 and 2015 Up-skilled and Up-waged jobs was adjusted by a GJGNY attribution factor and extrapolated to the full population where appropriate. In addition, WFD Training Partners (not OJT) estimated the number of trainees who had jobs prior to participating in training who saw an hourly wage increase in their existing jobs or because of GJGNY-funded training. Note that CBO staff were not asked to report on the existing jobs that were both up-skilled and up-waged at other organizations at which they were influential in stimulating jobs because of their GJGNY activities. CBOs were not the direct employers of staff at these other organizations and therefore were not in the position to know whether existing staff at these other organizations were both up-skilled and up-waged because of the program.

A.1.5 2014 and 2015 Direct Jobs

The category of jobs referred to as 2014 and 2015 Direct jobs reflects the total impact of GJGNY programs on jobs from January 2014 through December 2015. As noted above, Direct jobs equal the sum, across all respondent groups and program initiatives, of 2014 and 2015 New jobs and 2014 and 2015 Retained jobs that are attributable to the GJGNY Program.

The ICF Reporting Templates show total 2014 and 2015 Direct jobs by NAICS code category and by geographic region in which jobs were located. The ICF Reporting Templates also show the number of jobs located in disadvantaged communities. As noted above, we determined disadvantaged community status by comparing the county unemployment rate with the state average. Cities and towns in counties with unemployment rates higher than that of the state average were classified as disadvantaged.

WAGE INFORMATION

NMR collected hourly wage data for 2014 and 2015 New and Retained jobs by asking respondents for the typical hourly wage of each position in which jobs were created or retained. Respondents also reported the previous typical hourly wage of and the increase in hourly wages for 2014 and 2015 Up-skilled and Up-waged jobs. Response choices were hourly wage ranges in increments of \$5, from “Under \$10” to “\$50 or More,” while the ranges for hourly wage increases were in increments of \$2, from “Under \$2” to “Over \$10.”

The average hourly wage for 2014 and 2015 New and Retained jobs reported in the ICF Reporting Templates was calculated by considering the hourly wage for each job to be the mid-point of the reported range for the position in which the job was newly added or retained. NMR estimated an average hourly

wage, weighted by the number of jobs at that hourly wage for each NAICS code category for which respondents reported hourly wages. We used a parallel method for calculating the average previous hourly wage and hourly wage increase for 2014 and 2015 Up-skilled and Up-waged Jobs. Current hourly wages for 2014 and 2015 Up-skilled and Up-waged Jobs were obtained by adding the mid-point of the reported hourly increase to the mid-point of the reported previous hourly wage range. We reported weighted averages for previous hourly wage, hourly wage increase, and current hourly wage in the ICF Reporting Templates.

Very few respondents reported hourly wage ranges of “Under \$10” or “\$50 or More” for any of the jobs reported. In cases where an hourly wage “Under \$10” was reported, NMR conservatively assumed an average hourly wage estimate of \$9.00, the minimum hourly wage as of May 2013 in New York State. If an hourly wage of “\$50 or more” was reported, a conservative hourly wage of \$50 was used for the analysis. In the few cases in which respondents reported an hourly wage increase of “Under \$2” for 2014 and 2015 Up-skilled and Up-waged jobs, a conservative increase of \$1 was assumed, and an increase of “\$12 or more” was conservatively considered to be \$12.

EXTRAPOLATION TO POPULATION

NMR was able to interview or survey all the members of several of the trade allies and partner groups. In these cases, the interviewees represented a census of the group, and the job-related impacts determined for these groups were complete. For the groups for which the survey respondents/interviewees represented a sample of the entire population (of Home Performance with ENERGY STAR contractors, for example) in the program, NMR estimated the job-related impacts for the non-respondents in the group using simple extrapolation methods. Hourly wages were reported based only on respondent survey estimates and were not extrapolated to group populations in any way. NMR assigned the jobs extrapolated as described above to CBO regions and disadvantaged community status in the ICF Reporting Templates using the office location of the non-respondent company. The populations and number of survey completes for the non-census trade allies/partner groups are presented in Table 17.

In most cases, the number of jobs reported by the surveyed group sample were extrapolated to the population by assigning the simple average number of jobs per respondent to each non-respondent. A different extrapolation method was used for the HPwES contractors’ and NY-Sun Initiative contractors’ non-respondent job estimates. NMR estimated the number of non-responding HPwES contractor jobs by calculating the average survey respondents’ jobs per number of audits plus installed projects. For each non-responding contractor, NMR then multiplied respondents’ average jobs per number of audits plus installed projects to the non-responding contractor’s number of audits plus installed projects to estimate the number of non-responding contractor’s jobs. A nearly identical method was used for extrapolating the non-responding contractor job estimates for the NY-Sun Initiative contractors, except only the number of

projects installed by each contractor was used rather than a combination of audits and projects (audits were not reported in the NYSERDA database provided for this group).¹⁷

A different extrapolation method was also used for the WFD Training Partner Trainees. Despite all best attempts to reach every Training Partner (including calls by NYSERDA program staff to encourage survey participation), the evaluation team was able to obtain valid responses from only five out of the nine Training Partners, and only one of those respondents provided estimates of the number of their trainees who found jobs. Because the evaluation team was not comfortable with extrapolating to the population based on the responses of only one respondent, an alternative methodology that utilized two additional data sources was developed. These two additional data sources included the following:

- The 2013 GJGNY Job Impacts survey of WFD non-OJT Training Partners, which completed interviews with valid responses from two training partners
- The NYSERDA program database, which recorded the total number of trainees who received training through each WFD non-OJT Training Partner (referred to below as “trainees managed”)

The evaluation team estimated the total number of WFD non-OJT trainees placed in jobs as follows:

1. For each of the three Training Partners from 2013 (from the second data source above) and 2016 (from the first data source above) who responded to the surveys, the evaluation team calculated the following ratio: number of trainees placed in jobs (from the survey self-report) divided by the number of trainees managed (from the NYSERDA database).
2. Across all three responding Training Partners, the evaluation team calculated the mean ratio as follows: (sum of the number of trainees placed in jobs divided by the number of trainees managed) divided by 3.
3. For each of the 2016 non-responding Training Partners, the evaluation team estimated the number of trainees placed in jobs as follows: mean of ratio of the trainees placed in jobs to trainees managed (from step 2) multiplied by the number of trainees managed (from NYSERDA program database).
4. Sum of the number of trainees placed in jobs by the single 2016 survey respondent plus the estimated number of trainees placed in jobs (from step 3) by the 2016 non-responding Training Partners.

This alternative approach resulted in a substantially higher estimate of the number of WFD non-OJT trainee jobs added in 2016 (1076.5) compared to 2013 (59.9). In 2013, the methodology projected to the population of survey non-respondents based on a simple average of trainees placed, as reported by the

¹⁷ Note that only GJGNY-financed projects were included in the evaluation for all initiative areas other than the Home Performance with ENERGY STAR Program which included a combination of GJGNY funding as well as other funding sources. Refer to Table 18 for further details about the attribution methodology.

survey respondents. If the evaluation team were to apply the same methodology for 2016 (keeping in mind that the extrapolation approach would be based on the responses of only one survey respondent to the eight non-respondents), the total number of WFD non-OJT trainees placed in jobs would be equal to 111.6.

The evaluation team discussed the benefits of each approach with NYSERDA staff, and it was agreed that the alternative methodology used for 2016 is more robust and produces a better estimate of the number of jobs created.

Table 17: Sample Surveys: Population and Sample Sizes

Program	Respondent Group	Population	Survey Completes	Extrapolation Method
Workforce Development	WFD Training Partners -OJT	26	6	<ul style="list-style-type: none"> New jobs: NYSERDA records used when needed and available Retained and Up-skilled and Up-waged jobs: Average Jobs attributed to GJGNY per respondent
Workforce Development	WFD Training Partners -Staff	9	5	Average jobs attributed to GJGNY per respondent
Workforce Development	WFD Training Partners - Trainees			Multiplied each non-respondent number of trainees by average of all respondent ratios of the number of trainees to the number of jobs (both 2013 and 2016 survey respondents)
NY-Sun Initiative	Contractors	21	13	Average jobs attributed to GJGNY per number of installations
Home Performance with ENERGY STAR Program	Contractors	140	70	Average jobs attributed to GJGNY per number of audits plus installations
Small Commercial Energy Efficiency Program	Lenders	13	3	Zero jobs reported

ATTRIBUTION TO GJGNY

NMR determined attribution for all of the respondent groups within each program (Table 18). For those program components completely funded by GJGNY, the attribution factor was 100%. This included every program component other than HPwES contractors.

NMR calculated attribution for HPwES contractors based on their survey responses. We asked contractors responding to the survey to estimate the approximate percentage of audits they would have done had the audits not been available for free or at a reduced cost through GJGNY, as well as the percentage of the installations supported by GJGNY loans they would have done had low-cost GJGNY loans not been

available. We determined individual contractor attribution factors by using these responses to adjust the number of audits and installations they had performed from January of 2014 through December 2015.

Table 18: GJGNY Attribution Methodology

GJGNY Program/Activity	Respondent Group	GJGNY Attribution
Home Performance with ENERGY STAR Program	Contractors	Based on Survey Responses
Workforce Development	WFD Training Partners	100% GJGNY
Workforce Development	WFD Training Partners/OJT	100% GJGNY
NY-Sun Initiative	Contractors	100% GJGNY
GJGNY Outreach	CBO Training & Implementation Contractor	100% GJGNY
GJGNY Outreach	CBOs	100% GJGNY
Small Commercial Energy Efficiency Program	Assessment Contractors	100% GJGNY
Small Commercial Energy Efficiency Program	Lenders	100% GJGNY
GJGNY Financial Service	On-Bill Recovery Title Companies	100% GJGNY

SECONDARY DATA

NMR reviewed a number of secondary data sources to develop an integrated estimate of job-related impacts. These data sources included the following:

- Program tracking databases (e.g., CRIS database, CBO SharePoint site)
- NYSERDA records for WFD OJT positions
- NYSERDA records for WFD Training Partner data

None of the WFD Training Partners provided their own program tracking records. Secondary source data was cross-checked against survey results, and job results were adjusted to reflect secondary source findings where appropriate.

Appendix B

SUPPLEMENTARY FINDINGS

This section provides detailed findings on 2014 and 2015 job-related impacts for the NYSERDA programs that received any GJGNY funding. This includes data for added, retained, and up-skilled and up-waged jobs.

GREEN JOBS – GREEN NEW YORK PROGRAM

In 2014 and 2015, GJGNY funding for NYSERDA program initiatives resulted in the addition of 1,928.1 total New jobs across 18 reported NAICS code categories (Table 19). The average hourly wage level across all of these positions was \$17.80. Plumbing, Heating, and Air-Conditioning Contractors added the most jobs, with 828.9 New jobs at an average hourly wage level of \$19.66.

In 2014 and 2015, GJGNY funding for NYSERDA program initiatives resulted in a total of 698.9 jobs that were retained across 13 reported NAICS code categories. The average hourly wage level across all of these positions was \$21.95. Plumbing, Heating, and Air-Conditioning Contractors retained the largest number of jobs, with 478.6 jobs at an average hourly wage level of \$21.95.

Table 19: 2014 and 2015 New and Retained Jobs – Total GJGNY

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total	Average Wage	Total	Average Wage
236115	New Single-Family Housing Construction	6.5	\$20.46	0.0	\$-
236118	Residential Remodelers	157.2	\$19.34	10.2	\$23.56
238150	Glass and Glazing Contractors, Windows	0.1	\$-	0.0	\$-
238210	Electrical Contractor	133.4	\$-	0.0	\$-
238220	Plumbing, Heating and Air-Conditioning Contractors	828.9	\$19.66	478.6	\$22.36
238310	Drywall and Insulation Contractors	514.7	\$14.79	57.1	\$23.90
333414	Heating Equipment Manufacturing	2.0	\$-	3.0	\$17.50
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	132.5	\$13.99	1.0	\$12.50
524127	Direct Title Insurance Carriers	0.5	\$15.00	7.0	\$20.11
541330	Engineering Services	135.8	\$19.42	100.4	\$21.73
541350	Building Inspection Services	1.0	\$17.50	0.0	\$-
541611	Administrative Management and General Management Consulting Services	0.6	\$-	1.6	\$-
541618	Other Management Consulting Services	0.8	\$30.00	2.0	\$32.70
611310	Colleges, Universities, and Professional Schools	1.8	\$29.74	0.0	\$-
624190	Individual and Family Services	1.0	\$22.50	4.0	\$21.25
813312	Environment, Conservation and Wildlife Organizations	1.1	\$-	3.2	\$-
813319	Social Advocacy Organizations	9.8	\$17.16	25	\$23.67
813910	Business Associations	0.6	\$-	5.6	\$42.50
Total Jobs		1,928.1	NA	698.9	NA
Average Hourly Wage		NA	\$17.80	NA	\$22.59

In 2014 and 2015, GJGNY funding for NYSERDA program initiatives resulted in a total of 401.7 jobs that were up-skilled and up-waged across 11 reported NAICS code categories (Table 20). Prior to their involvement with GJGNY activities, the average hourly wage level for this group was \$18.64. The average hourly wage increase that these positions experienced due to the GJGNY Program was \$3.93, which resulted in an average hourly wage level of \$22.42 for all of these positions combined.¹⁸ Plumbing, Heating, and Air-Conditioning Contractors saw the greatest number of up-skilled and up-waged positions,

¹⁸ Note that the average prior hourly wage, average hourly wage increase, and the total average hourly wage were derived independently, and the resulting values for prior hourly wage and average hourly wage increase will not add up to the total hourly average wage.

with 274.3 jobs. The average hourly wage level for this NAICS code category prior to the hourly wage increase was \$19.85, and the average hourly wage level after the hourly wage increase was \$24.03.

Table 20: 2014 and 2015 Up-skilled and Up-waged Jobs and Wages – Total GJGNY

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
236118	Residential Remodelers	6.2	\$12.50	\$6.13	\$18.63
238150	Glass and Glazing Contractors, Windows	0.0	\$-	\$-	\$-
238220	Plumbing, Heating and Air-Conditioning Contractors	274.3	\$19.85	\$4.40	\$24.03
238310	Drywall and Insulation Contractors	51.4	\$16.20	\$2.14	\$18.34
333414	Heating Equipment Manufacturing	3.0	\$12.50	\$3.00	\$15.50
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	1.0	\$12.50	\$5.00	\$17.50
541330	Engineering Services	50.1	\$15.21	\$3.42	\$18.63
541611	Administrative Management and General Management Consulting Services	0.5	\$-	\$-	\$-
611310	Colleges, Universities, and Professional Schools	0.5	\$25.00	\$5.00	\$30.00
813312	Environment, Conservation and Wildlife Organizations	3.0	\$22.50	\$3.00	\$25.50
813319	Social Advocacy Organizations	11.2	\$19.80	\$2.08	\$21.88
813910	Business Associations	0.5	\$-	\$-	\$-
Total Jobs		401.7	NA	NA	NA
Average Hourly Wage		NA	\$18.64	\$3.93	\$22.42

HOME PERFORMANCE WITH ENERGY STAR PROGRAM

In 2014 and 2015, GJGNY funding for the HPwES Program resulted in the addition of 294.2 total New jobs across seven reported NAICS code categories (Table 21). The average hourly wage level across all of these positions was \$20.53. Engineering Services added the most jobs, with 111.8 New jobs at an average hourly wage level of \$19.42. GJGNY funding for the HPwES Program also resulted in a total of 176.8 jobs that were retained across six reported NAICS code categories. The average hourly wage level across all of these positions was \$21.54. Drywall and Insulation Contractors retained the largest number of jobs, with 54.1 jobs at an average hourly wage level of \$23.90.

Table 21: 2014 and 2015 New and Retained Jobs – HPwES Contractors

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total	Average Wage	Total	Average Wage
236115	New Single-Family Housing Construction	4.5	\$20.46	0.0	\$-
236118	Residential Remodelers	16.8	\$19.34	7.2	\$23.56
238150	Glass and Glazing Contractors, Windows	0.1	\$-	<0.1	\$-
238220	Plumbing, Heating and Air-Conditioning Contractors	85.8	\$23.23	36.5	\$19.06
238310	Drywall and Insulation Contractors	74.3	\$19.46	54.1	\$23.90
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	1.0	\$12.50	1.0	\$12.50
541330	Engineering Services	111.8	\$19.42	77.9	\$20.98
Total Jobs		294.2	NA	176.8	NA
Average Hourly Wage		NA	\$20.53	NA	\$21.54

In 2014 and 2015, GJGNY funding for the HPwES Program resulted in a total of 123.8 jobs that were up-skilled and up-waged across six reported NAICS code categories (Table 22). Prior to their involvement with GJGNY activities, the average hourly wage level for this group was \$16.87. The average hourly wage increase that these positions experienced due to the GJGNY Program was \$2.79, which resulted in an average hourly wage level of \$19.66 for all of these positions combined.¹⁹ Drywall and Insulation Contractors saw the greatest number of up-skilled and up-waged positions with 49.5 jobs. The average hourly wage level for this NAICS code category prior to the hourly wage increase was \$16.20, and the average hourly wage level after the hourly wage increase was \$18.34.

Table 22: 2014 and 2015 Up-skilled and Up-waged Jobs and Wages – HPwES Contractors

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
236118	Residential Remodelers	4.2	\$12.50	\$6.13	\$18.63
238150	Glass and Glazing Contractors, Windows	<0.1	\$-	\$-	\$-

¹⁹ Note that the average prior hourly wage, average hourly wage increase, and the total average hourly wage were derived independently, and the resulting values for prior hourly wage and average hourly wage increase will not add up to the total hourly average wage.

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
238220	Plumbing, Heating and Air-Conditioning Contractors	30.7	\$21.87	\$2.48	\$24.34
238310	Drywall and Insulation Contractors	49.5	\$16.20	\$2.14	\$18.34
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	1.0	\$12.50	\$5.00	\$17.50
541330	Engineering Services	38.4	\$14.32	\$3.45	\$17.77
Total Jobs		123.8	NA	NA	NA
Average Hourly Wage		NA	\$16.87	\$2.79	\$19.66

B.1.1 HPwES Additional Findings

The survey of Home Performance with ENERGY STAR (HPwES) contractors also asked additional questions beyond job and wage-related information. Responses to these questions are discussed below.

B.1.1.1 HPwES Audits Performed

HPwES contractors were asked to estimate the percent of the HPwES Program audits they would have performed had audits not been available for free or at a reduced cost. These contractors estimated that, had the audits not been available for free or at a reduced cost, they would have completed an average of 28.6% of the HPwES audits that they had done. About one-fifth of contractors (18.6%) said that they would have completed 50% of the HPwES Program audits if the audit was not free or offered at reduced-cost, about one-fourth (25.7%) said they would have completed between 1% and 10% of the audits, and slightly under one-fifth (15.7%) said they would not have completed any audits at all (Table 23).

Table 23: Percentage of HPwES Audits that would have been Completed if the GJGNY Free or Reduced-Cost Audit had not been Available

Percentage of Audits	HPwES Contractors (n=70) ²⁰
0%	15.7%
1%	4.3%
2%	1.4%
5%	4.3%
8%	1.4%
10%	14.3%
15%	2.9%
20%	5.7%
25%	10.0%
30%	4.3%
40%	4.3%
50%	18.6%
60%	1.4%
66%	1.4%
75%	1.4%
100%	7.1%
Don't know / Refused	1.4%
Average percentage audits without GJGNY free or reduced cost audit: 28.6%	

HPwES contractors were asked about which GJGNY audit-related activities their company has performed (Table 24). All of the contractors said that they took an inventory of initial home conditions, including blower-door testing for air-infiltration rates; conducted home health and safety testing prior to performing work, including diagnostic testing of combustion appliances; developed a work scope for proposed improvement; and performed home health and safety testing after performing work. Practically all contractors (98.6%) said they developed a cost and energy-savings estimate, promoted the GJGNY loans, and assisted customers in submitting GJGNY loan applications. Slightly over two-fifths (41.4%) of contractors said they assisted in the installation of energy efficiency measures during the audits. Nearly all of the contractors (95.7%) said they installed energy efficiency measures as follow-on work after the audits.

²⁰ Percentages do not sum to 100% due to rounding.

About one-fifth of contractors (21.4%) performed additional audit-related activities including thermal imaging, weatherization, and customer education and assistance.

Table 24: GJGNY Audit-related Activities Performed by HPwES Contractors

(multiple responses)

Activities	HPwES Contractors (n=70)
Inventory of initial home conditions, including blower-door testing for air-infiltration rates	100.0%
Home health and safety testing prior to performing work, including diagnostic testing of combustion appliances	100.0%
Work scope for proposed improvement	100.0%
Home health and safety testing, after performing work	100.0%
Cost and energy-savings estimate	98.6%
Promoted GJGNY loans	98.6%
Assisted customers in submitting GJGNY loan applications	98.6%
Installed energy-efficiency measures after the audits	95.7%
Assisted in installation of energy-efficiency measures during audits	41.4%
Other	21.4%

B.1.1.2 GJGNY Audits for Other NYSERDA Programs

HPwES contractors were asked how many GJGNY-funded audits their company had performed for the other NYSERDA programs since mid-November 2010. A total of 27 contractors, or 39% of the sample, said that they had conducted one or more GJGNY-funded audits for NYSERDA programs other than the HPwES Program (Table 25).

Table 25: Number of Audits Completed for Other NYSERDA Programs

Number of Audits - Other NYSERDA Programs	HPwES Contractors (n=27)
1	1
3	1
5	2
12	2
15	2
20	3
40	1
50	2
54	1
80	1
100	2
200	3
284	1
500	1
845	1
Don't know	3
Average number of audits for other NYSERDA programs: 117.9	

Of the 27 responding contractors, 26 contractors reported also having performed GJGNY-funded audits for only the EmPower Program, and one reported having performed audits for the EmPower Program, Smart Energy Loan Program, and Ongoing Recovery Loan Program. One contractor reported having conducted audits for the Long Island Green Homes program (Table 26).

Table 26: GJGNY Audits Conducted for NYSERDA Programs other than HPwES

NYSERDA Programs	HPwES Contractors (n=27) ²¹
EmPower	26
Smart Energy Loan	1
Ongoing Recovery Loan	1
Long Island Green Homes	1

These contractors were asked to estimate how many of the audits that they had done for other NYSERDA programs would have been performed if they had not been available for free or at a reduced cost. They estimated that they would have completed an average of 10.2% of the other NYSERDA program audits if they had not been available for free or at a reduced cost. Over two-thirds of these contractors (70.4%) said that they would have completed none of the other NYSERDA program audits (Table 27).

Table 27: Percentage of Other NYSERDA Program Audits Completed if the GJGNY Free or Reduced-Cost Audit had not been Available

Percentage of Audits	HPwES Contractors (n=27) ²²
0%	70.4%
1%	3.7%
5%	7.4%
15%	3.7%
50%	11.1%
100%	3.7%
Average percentage of other program audits without GJGNY free or reduced cost audit: 10.2%	

B.1.1.3 CBO Referrals to HPwES Contractors

HPwES contractors were asked if any of the GJGNY audits that their company performed were a result of referrals by CBOs. About three-fifths of the contractors (62.9%) said that at least some of the audits they performed were the result of referrals by CBOs (Table 28).

²¹ Number of audits for other programs is greater than the number of respondents because one contractor reported having conducted audits for multiple programs.

²² Percentages do not sum to 100% due to rounding.

Table 28: GJGNY Audits Conducted through CBO Referrals

Audits Conducted Through CBO Referrals	HPwES Contractors (n=70)
At least some audits conducted because of CBO referrals	62.9%
No audits conducted because CBO referrals	34.3%
Don't Know	2.9%

B.1.1.4 Measures Installations Due to Audits

The HPwES contractors estimated that, on average, over two-fifths of their audits (45.5%) resulted in the installation of recommended energy efficiency measures. About two-fifths of the contractors (38.5%) said that 30% to 50% of their GJGNY audits resulted in their installing recommended energy efficiency measures (Table 29).

Table 29: Percentage of GJGNY Audits Resulting in Installations of Recommended Energy Efficiency Measures

Percentage of Audits Resulting in Installations	HPwES Contractors (44) ²³
10%	4.3%
15%	2.9%
18%	1.4%
20%	7.1%
25%	10.0%
30%	15.7%
35%	7.1%
39%	1.4%
40%	5.7%
45%	2.9%
50%	5.7%
55%	1.4%
60%	4.3%
65%	1.4%
66%	1.4%
70%	2.9%
75%	4.3%
80%	2.9%
85%	1.4%
90%	4.3%
100%	5.7%
Don't know	5.7%
Average percentage of audits resulting in installations: 45.4%	

B.1.1.5 GJGNY Low-Interest Loans

Nine out of ten HPwES contractors (90%) reported that one or more of the GJGNY audit customers for whom they installed energy efficiency measures took out a GJGNY low-interest loan to pay for buying and installing the measures. These contractors were asked the percentage of their audit customers that took out

²³ Percentages do not sum to 100% due to rounding.

a GJGNY loan to install the measures. The contractors reported that an average of over two-fifths of their customers (44.1%) took out a GJGNY loan to install recommended energy efficiency measures. Nearly two-fifths of the contractors (36.5%) reported that 25% or fewer customers took out a GJGNY loan to install recommended energy efficiency measures. Close to one-half of the contractors (49.2%) reported that 50% or more of customers took out a GJGNY loan to install recommended energy efficiency measures (Table 30).

Table 30: Percentage of GJGNY Audit Customers who took out a GJGNY Loan to Install Measures

Percentage of Customers Taking out GJGNY Loans	HPwES Contractors (n=63) ²⁴
<10%	6.4%
10%	9.5%
15%	6.3%
20%	4.8%
25%	9.5%
30%	1.6%
35%	1.6%
40%	9.5%
50%	19.0%
60%	6.3%
70%	1.6%
75%	6.3%
80%	4.8%
85%	1.6%
90%	4.8%
95%	3.2%
98%	1.6%
Don't know	1.6%
Average percentage of customers taking out GJGNY loans: 44.1%	

²⁴ Percentages do not sum to 100% due to rounding.

HPwES contractors who reported at least some customers who took out a GJGNY low-interest loan to install energy efficiency measures were asked the percentage of the installations supported by GJGNY loans that they would have done had the low-cost GJGNY loans not been available. On average, these contractors reported that, in the absence of the GJGNY loan, they would have done over one-fourth (29.3%) of the installations. One-sixth of contractors (16.1%) reported that they would not have done any installations. Slightly less than one-third of contractors (30.7%) reported that they would have done between 5% and 20% of the installations in the absence of the GJGNY loans (Table 31).

Table 31: Percentage of HPwES Installations in the absence of GJGNY Loans

Percentage of Installations without GJGNY Loans	HPwES Contractors (n=62) ²⁵
0%	16.1%
5-10%	13.0%
15%	3.2%
20%	14.5%
25%	8.1%
30%	1.6%
33%	1.6%
35%	4.8%
40%	3.2%
50%	25.8%
70%	1.6%
75%	1.6%
100%	3.2%
Don't know / Refused	1.6%
Average percentage of installations without GJGNY loan: 29.3%	

WORKFORCE DEVELOPMENT AND TRAINING

This section reports 2014 and 2015 job data for both Training Partners and Trainees associated with NYSERDA's Workforce Development and Training Program.

B.1.2 Overall Workforce Development and Trainings

²⁵ Percentages do not sum to 100% due to rounding.

In 2014 and 2015, GJGNY funding for the Workforce Development and Training program resulted in the addition of 1,186.4 total New jobs across 14 reported NAICS code categories (Table 32). The average hourly wage level across all of these positions was \$14.66. Drywall and Insulation Contractors added the most jobs, with 440.4 New jobs at an average hourly wage level of \$14.00. GJGNY funding for the Workforce Development and Training program also resulted in a total of 50.4 jobs that were retained across nine reported NAICS code categories. The average hourly wage level across all of these positions was \$24.64. Plumbing, Heating, and Air-Conditioning Contractors and Engineering Services retained the largest number of jobs with 13.5 jobs each. The Plumbing, Heating, and Air-Conditioning Contractors had an average hourly wage level of \$12.50; wage information for the new and retained Engineering Services jobs is not provided because these jobs represent non-respondents who were extrapolated to the population.

Table 32: 2014 and 2015 New and Retained Jobs – Total Workforce Development and Training

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total	Average Wage	Total	Average Wage
236115	New Single-Family Housing Construction	2.0	\$-	0.0	\$-
236118	Residential Remodelers	140.4	\$-	3.0	\$-
238210	Electrical Contractor	133.4	\$-	0.0	\$-
238220	Plumbing, Heating and Air-Conditioning Contractors	308.7	\$14.61	13.5	\$12.50
238310	Drywall and Insulation Contractors	440.4	\$14.00	3.0	\$-
333414	Heating Equipment Manufacturing	2.0	\$-	3.0	\$17.50
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	131.5	\$14.00	0.0	\$-
541330	Engineering Services	22.0	\$-	13.5	\$-
541350	Building Inspection Services	1.0	\$17.50	0.0	\$-
541611	Administrative Management and General Management Consulting Services	0.6	\$-	1.6	\$-
611310	Colleges, Universities, and Professional Schools	1.8	\$29.74	0.0	\$-
624190	Individual and Family Services	1.0	\$22.50	4.0	\$21.25
813312	Environment, Conservation and Wildlife Organizations	1.1	\$-	3.2	\$-
813910	Business Associations	0.6	\$-	5.6	\$42.50
Total Jobs		1,186.4	NA	50.4	NA
Average Hourly Wage		NA	\$14.66	NA	\$24.64

In 2014 and 2015, GJGNY funding for the Workforce Development and Training program resulted in a total of 25.2 jobs that were up-skilled and up-waged across nine reported NAICS code categories (Table

33). Prior to their involvement with GJGNY activities, the average hourly wage level for this group was \$16.54. The average hourly wage increase that these positions experienced due to the GJGNY Program was \$2.85, which resulted in an average hourly wage level for all of these positions combined of \$19.38.²⁶ Engineering Services saw the greatest number of up-skilled and up-waged positions with 7.5 jobs. Wage information for the new and retained Engineering Services jobs is not provided because these jobs represent non-respondents who were extrapolated to the population.

Table 33: 2014 and 2015 Up-skilled and Up-waged Jobs and Wages – Total Workforce Development and Training

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
236118	Residential Remodelers	1.7	\$-	\$-	\$-
238220	Plumbing, Heating and Air-Conditioning Contractors	6.8	\$12.50	\$1.00	\$13.50
238310	Drywall and Insulation Contractors	1.7	\$-	\$-	\$-
333414	Heating Equipment Manufacturing	3.0	\$12.50	\$3.00	\$15.50
541330	Engineering Services	7.5	\$-	\$-	\$-
541611	Administrative Management and General Management Consulting Services	0.5	\$-	\$-	\$-
611310	Colleges, Universities, and Professional Schools	0.5	\$25.00	\$5.00	\$30.00
813312	Environment, Conservation and Wildlife Organizations	3.0	\$22.50	\$3.00	\$25.50
813910	Business Associations	0.5	\$-	\$-	\$-
Total Jobs		25.2	NA	NA	NA
Average Hourly Wage		NA	\$16.54	\$2.85	\$19.38

B.1.3 Workforce Development and Training Partner Staff

In 2014 and 2015, GJGNY funding for the Workforce Development and Training program resulted in the addition of five total new Training Partner staff jobs across five reported NAICS code categories (Table

²⁶ Note that the average prior hourly wage, average hourly wage increase, and the total average hourly wage were derived independently, and the resulting values for prior hourly wage and average hourly wage increase will not add up to the total hourly average wage.

34). The average hourly wage level across all of these positions was \$27.12. The NAICS code category of Colleges, Universities, and Professional Schools had the largest number of jobs added, with 1.8 New jobs at an average hourly wage level of \$29.74. GJGNY funding for the Workforce Development and Training program also resulted in a total of 14.4 jobs that were retained across four reported NAICS code categories. The average hourly wage level across all of these positions was \$31.88. The NAICS code category of Business Associations had the largest number of Retained jobs, with 5.6 jobs at an average hourly wage level of \$42.50.

**Table 34: 2014 and 2015 New and Retained Jobs – Workforce Development and Training
Partner Staff**

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total	Average Wage	Total	Average Wage
541611	Administrative Management and General Management Consulting Services	0.6	\$-	1.6	\$-
611310	Colleges, Universities, and Professional Schools	1.8	\$29.74	0.0	\$-
624190	Individual and Family Services	1.0	\$22.50	4.0	\$ 21.25
813312	Environment, Conservation and Wildlife Organizations	1.1	\$-	3.2	\$-
813910	Business Associations	0.6	\$-	5.6	\$ 42.50
Total Jobs		5.0	NA	14.4	NA
Average Hourly Wage		NA	\$27.12	NA	\$31.88

In 2014 and 2015, GJGNY funding for the Workforce Development and Training program resulted in a total of 4.5 Training Partner staff jobs that were up-skilled and up-waged across four reported NAICS code categories (Table 35). Prior to their involvement with GJGNY activities, the average hourly wage level for this group was \$23.00. The average hourly wage increase that these positions experienced due to the GJGNY Program was \$4.90, which resulted in an average hourly wage level of \$26.40 for all of these positions combined.²⁷ The NAICS code category of Environment, Conservation, and Wildlife Organizations saw the greatest number of up-skilled and up-waged positions, with three jobs with an average hourly wage of \$25.50.

²⁷ Note that the average prior hourly wage, average hourly wage increase, and the total average hourly wage were derived independently, and the resulting values for prior hourly wage and average hourly wage increase will not add up to the total hourly average wage.

Table 35: 2014 and 2015 Up-skilled and Up-waged Jobs and Wages – Workforce Development and Training Partner Staff

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
541611	Administrative Management and General Management Consulting Services	0.5	\$-	\$-	\$-
611310	Colleges, Universities, and Professional Schools	0.5	\$25.00	\$5.00	\$30.00
813312	Environment, Conservation and Wildlife Organizations	3.0	\$22.50	\$3.00	\$25.50
813910	Business Associations	0.5	\$-	\$-	\$-
Total Jobs		4.5	NA	NA	NA
Average Hourly Wage		NA	\$23.00	\$4.90	\$26.40

B.1.4 Workforce Development Trainees

In 2014 and 2015, GJGNY funding for the Workforce Development and Training program resulted in the addition of 1,181.5 total New jobs for program trainees across nine reported NAICS code categories (Table 36). The average hourly wage level across all of these positions was \$14.18. Drywall and Insulation Contractors added the most jobs, with 440.4 New jobs at an average hourly wage level of \$14.00. GJGNY funding for the Workforce Development and Training program also resulted in a total of 36 program trainee jobs that were retained across five reported NAICS code categories at an average hourly wage level of \$15.00. Plumbing, Heating, and Air-Conditioning Contractors and Engineering Services retained the largest number of jobs with 13.5 jobs each. The Plumbing, Heating, and Air-Conditioning Contractors had an average hourly wage level of \$12.50; wage information for Engineering Services jobs is not provided because these jobs represent non-respondents who were extrapolated to the population.

Table 36: 2014 and 2015 New and Retained Jobs – Workforce Development Trainees

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total	Average Wage	Total	Average Wage
236115	New Single-Family Housing Construction	2.0	\$-	0.0	\$-
236118	Residential Remodelers	140.4	\$-	3.0	\$-
238210	Electrical Contractor	133.4	\$-	0.0	\$-
238220	Plumbing, Heating and Air-Conditioning Contractors	308.7	\$14.61	13.5	\$12.50
238310	Drywall and Insulation Contractors	440.4	\$14.00	3.0	\$-
333414	Heating Equipment Manufacturing	2.0	\$-	3.0	\$17.50
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	131.5	\$14.00	0.0	\$-
541330	Engineering Services	22.0	\$-	13.5	\$-
541350	Building Inspection Services	1.0	\$17.50	0.0	\$-
Total Jobs		1,181.5	NA	36.0	NA
Average Hourly Wage		NA	\$14.18	NA	\$15.00

In 2014 and 2015, GJGNY funding for the Workforce Development and Training program resulted in a total of 20.7 program trainee jobs that were up-skilled and up-waged across five reported NAICS code categories (Table 37). Prior to their involvement with GJGNY activities, the average hourly wage level for this group was \$12.50. The average hourly wage increase that these positions experienced due to the GJGNY Program was \$3.25, which resulted in an average hourly wage level of \$15.00 for all of these positions combined.²⁸ Plumbing, Heating, and Air-Conditioning Contractors saw the greatest number of up-skilled and up-waged positions, with 6.8 jobs with an average wage of \$13.50.

²⁸ Note that the average prior hourly wage, average hourly wage increase, and the total average hourly wage were derived independently, and the resulting values for prior hourly wage and average hourly wage increase will not add up to the total hourly average wage.

Table 37: 2014 and 2015 Up-skilled and Up-waged Jobs and Wages – Workforce Development Trainees

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
236118	Residential Remodelers	1.7	\$-	\$-	\$-
238220	Plumbing, Heating and Air-Conditioning Contractors	6.8	\$12.50	\$1.00	\$13.50
238310	Drywall and Insulation Contractors	1.7	\$-	\$-	\$-
333414	Heating Equipment Manufacturing	3.0	\$12.50	\$3.00	\$15.50
541330	Engineering Services	7.5	\$-	\$-	\$-
Total Jobs		20.7	NA	NA	NA
Average Hourly Wage		NA	\$12.50	\$3.25	\$15.00

NY-SUN INITIATIVE

In 2014 and 2015, GJGNY funding for NYSERDA’s NY-Sun initiative resulted in the addition of 434.5 total New jobs among Plumbing, Heating and Air-Conditioning Contractors (Table 38). The average hourly wage level for these positions was \$22.83. GJGNY funding for the NY-Sun initiative also resulted in a total of 428.6 Plumbing, Heating, and Air-Conditioning Contractor jobs that were retained at an average hourly wage level of \$22.95.

Table 38: 2014 and 2015 New and Retained Jobs – NY Sun Initiative

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total	Average Wage	Total	Average Wage
238220	Plumbing, heating and air - conditioning contractors	434.5	\$22.83	428.6	\$22.95
Total Jobs		434.5	NA	428.6	NA
Average Hourly Wage		NA	\$22.83	NA	\$22.95

In 2014 and 2015, GJGNY funding for NYSERDA’s NY-Sun initiative resulted in a total of 235.7 Plumbing, Heating, and Air-Conditioning Contractor jobs that were up-skilled and up-waged (Table 39). Prior to their involvement with GJGNY activities, the average hourly wage level for this NAICS category

was \$19.84. The average hourly wage increase that these positions experienced due to the GJGNY Program was \$4.76, which resulted in an average hourly wage level of \$24.34.²⁹

Table 39: 2014 and 2015 Up-skilled and Up-waged Jobs and Wages – NY Sun Initiative

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
238220	Plumbing, heating and air -conditioning contractors	235.7	\$19.84	\$4.76	\$24.34
Total Jobs		235.7	NA	NA	NA
Average Hourly Wage		NA	\$19.84	\$4.76	\$24.34

OUTREACH

GJGNY provides community-based outreach, offering one-on-one assistance to homeowners, multifamily building owners, and small business and not-for-profit owners with the process of participating in GJGNY programs. This, combined with statewide marketing, is intended to increase the reach of GJGNY, particularly among disadvantaged populations and those not traditionally participating in energy efficiency programs. Outreach and engagement with these key groups is facilitated through Constituency-based Organizations (CBOs) who reach out to potential program participants. Marketing through the GJGNY Marketing Contractor provides additional outreach and messaging. CBOs are also tasked with engaging potential energy efficiency worker trainees to encourage them to undergo one of the workforce training programs offered by NYSERDA, particularly in disadvantaged communities.

B.1.5 Overall Outreach

The key groups for which job and wage information was collected for GJGNY Outreach activities include the following:

- Constituency-Based Organization (CBO) Staff
- CBO Training and Implementation Partner

New, retained, and up-skilled and up-waged tables are not presented for the overall Outreach activities to protect the confidentiality of the two CBO Training and Implementation Contractor companies involved in

²⁹ Note that the average prior hourly wage, average hourly wage increase, and the total average hourly wage were derived independently, and the resulting values for prior hourly wage and average hourly wage increase will not add up to the total hourly average wage.

Outreach activities. These two companies include Conservation Services Group (CSG) and CSG's subcontractor, Pratt Center for Community Development. The CBO Implementation Contractor New, Retained, and Up-skilled and Up-waged job estimates have been included in aggregate in the overall GJGNY Program tables to protect their confidentiality. Refer to Table 12 in Section 2.1.5.1, which includes both CBO staff and Implementation Contractor direct job estimates aggregated by region and not differentiated by NAICS code.

In contrast to the 2013 study and in order to avoid double counting, the Evaluation Team did not ask CBO staff who helped recruit trainees for NYSERDA Workforce Development trainings to provide estimates of how many trainees have been placed in or found jobs as a result of their recruiting efforts. Instead, the Evaluation Team asked CBO staff if they had participated in any recruiting efforts for NYSERDA *other than* for the Workforce Development trainings, but no CBOs mentioned conducting any recruiting of this kind.

Also in contrast to the 2013 study, the Evaluation Team did not interview a GJGNY Marketing Contractor because there was no GJGNY funding available for these efforts during the 2014 through 2015 period.

Similar to the 2013 study, the Evaluation Team asked CBOs whether any New jobs were created in their communities as a result of work they have performed for NYSERDA other than contractor referrals and training, but no CBOs mentioned any job creation of this kind.

B.1.6 Constituency-Based Organizations – Staff

The tables below show the total jobs in 2014 and 2015 for New jobs, Retained jobs, and Up-skilled and Up-waged jobs for the 11 participating CBOs. The tables also show average hourly wage levels for 2014 and 2015 New jobs, 2014 and 2015 Retained jobs, and 2014 and 2015 Up-skilled and Up-waged jobs. The tables break out results by only one NAICS code category—Social Advocacy Organizations.

B.1.6.1 New and Retained Jobs

In 2014 and 2015, GJGNY funding for CBOs resulted in the addition of 9.8 New jobs for CBO staff in the Social Advocacy Organizations NAICS code category (Table 40). The average hourly wage level was \$17.16. During 2014 and 2015, GJGNY funding for CBOs resulted in a total of 25 Retained jobs for all CBO staff. The average hourly wage level was \$23.67.

Table 40: 2014 and 2015 New and Retained Jobs - CBO Staff

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total New Jobs	Average Wage	Total Retained Jobs	Average Wage
813319	Social Advocacy Organizations	9.8	\$17.16	25.0	\$23.67
Total Jobs		9.8	NA	25.0	NA
Average Hourly Wage		NA	\$17.16	NA	\$23.67

B.1.6.2 Up-skilled and Up-waged Jobs

In 2014 and 2015, GJGNY funding for CBOs resulted in a total of 11.2 up-skilled and up-waged CBO staff jobs (Table 41). These jobs fell within the Social Advocacy Organizations NAICS code category. The average hourly wage level for this NAICS code category prior to the hourly wage increase was \$19.80, and the average hourly wage level after the hourly wage increase was \$21.88.

GJGNY funding for CBOs also resulted in a total of three existing staff positions that received an increase in responsibilities or were up-skilled but did not receive an increase in hourly wage levels.

Table 41: Up-skilled and Up-waged Jobs – CBO Staff

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
813319	Social Advocacy Organizations	11.2	\$19.80	\$2.08	\$21.88
Total Jobs		11.2	NA	NA	NA
Average Hourly Wage		NA	\$19.80	\$2.08	\$21.88

SMALL COMMERCIAL ENERGY EFFICIENCY PROGRAM (SCEE)

In 2014 and 2015, GJGNY funding for the SCEE program resulted in the addition of two new Engineering Services jobs (Table 42). The respondents did not provide wage information for the added Engineering Services jobs. GJGNY funding for the SCEE program also resulted in a total of nine Engineering Services jobs that were retained at an average hourly wage of \$28.17.

Table 42: 2014 and 2015 New and Retained Jobs - SCEE Assessment Contractors

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total New Jobs	Average Wage	Total Retained Jobs	Average Wage
541330	Engineering Services	2.0	\$-	9.0	\$28.17
Total Jobs		2.0	NA	9.0	NA
Average Hourly Wage		NA	\$-	NA	\$28.17

In 2014 and 2015, GJGNY funding for the SCEE program resulted in a total of 2.9 Engineering Services jobs that were up-skilled and up-waged (Table 43). Prior to their involvement with GJGNY activities, the average hourly wage level for this group was \$27.00. The average hourly wage increase that these positions experienced due to the GJGNY Program was \$3.00, which resulted in an average hourly wage level of \$30.00 for all of these positions combined.

Table 43: Up-skilled and Up-waged Jobs – SCEE Assessment Contractors

NAICS CODE	NAICS Description	2014-15 Up-skilled and Up-Waged Jobs			
		Total Jobs	Previous Wage	Average Wage Increase	Average Wage
541330	Engineering Services	2.9	\$27.00	\$3.00	\$30.00
Total Jobs		2.9	NA	NA	NA
Average Hourly Wage		NA	\$27.00	\$3.00	\$30.00

FINANCIAL SERVICE PROVIDERS

In 2014 and 2015, GJGNY funding for NYSERDA program initiatives resulted in the addition of 0.5 New jobs in the Direct Title Insurance Carriers NAICS code category at an average hourly wage of \$15.00 (Table 44). GJGNY funding also resulted in seven jobs that were retained in the Direct Title Insurance Carriers NAICS code category at an average hourly wage of \$20.11.

Table 44: 2014 and 2015 New and Retained Jobs - Financial Services

NAICS CODE	NAICS Description	2014-15 New Jobs		2014-15 Retained Jobs	
		Total New Jobs	Average Wage	Total Retained Jobs	Average Wage
524127	Direct Title Insurance Carriers	0.5	\$15.00	7.0	\$20.11
Total Jobs		0.5	NA	7.0	NA
Average Hourly Wage		NA	\$15.00	NA	\$20.11

The Financial Services providers interviewed for this study did not report any Up-skilled and Up-waged jobs.

Appendix C

ICF REPORTING TEMPLATES

NMR worked closely with ICF to develop the survey instruments such that the resulting data would best inform ICF's economic impact analysis. Job and wage data were organized into the two ICF Reporting Templates below. These tables were approved by ICF as input to the Phase 2 economic impact analysis. All job and wage results were organized by NAICS code category. Please note that while the Jobs & Wages table is reproduced in the appendix in its entirety, the Regions table was reproduced in three separate tables given its width.

Table 45 below presents job and wage data by NAICS code category for the entire GJGNY program.

Table 45: Jobs and Wages – Total GJGNY Program

NAICS Code	NAICS Description	2014 & 2015 New Employment		2014 & 2015 Retained Employment		2014 & 2015 Up-skilled Employment			
		Total New Jobs	Current Wage	Total Retained Jobs	Current Wage	Total Existing Jobs	Previous wage	Average Wage Increase	Current Wage
236115	New Single-Family Housing Construction	6.5	\$ 20.46	-	-	-	-	-	-
236118	Residential Remodelers	157.2	\$ 19.34	10.2	\$ 23.56	6.2	\$ 12.50	\$ 6.13	\$ 18.63
238150	Glass and Glazing Contractors, Windows	0.1	-	0.0	-	0.0	-	-	-
238210	Electrical Contractor	133.4	-	-	-	-	-	-	-
238220	Plumbing, Heating and Air-Conditioning Contractors	828.9	\$ 19.66	478.6	\$ 22.36	274.3	\$ 19.85	\$ 4.40	\$ 24.03
238310	Drywall and Insulation Contractors	514.7	\$ 14.79	57.1	\$ 23.90	51.4	\$ 16.20	\$ 2.14	\$ 18.34
333414	Heating Equipment Manufacturing	2.0	-	3.0	\$ 17.50	3.0	\$ 12.50	\$ 3.00	\$ 15.50
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	132.5	\$ 13.99	1.0	\$ 12.50	1.0	\$ 12.50	\$ 5.00	\$ 17.50
522390	Loan servicing	-	-	-	-	-	-	-	-
524127	Direct Title Insurance Carriers	0.5	\$ 15.00	7.0	\$ 20.11	-	-	-	-
541330	Engineering Services	135.8	\$ 19.42	100.4	\$ 21.73	50.1	\$ 15.21	\$ 3.42	\$ 18.63
541350	Building Inspection Services	1.0	\$ 17.50	-	-	-	-	-	-
541611	Administrative Management and General Management Consulting Services	0.6	-	1.6	-	0.5	-	-	-
541618	Other Management Consulting Services	0.8	\$ 30.00	2.0	\$ 32.70	-	-	-	-
611310	Colleges, Universities, and Professional Schools	1.8	\$ 29.74	-	-	0.5	\$ 25.00	\$ 5.00	\$ 30.00
624190	Individual and Family Services	1.0	\$ 22.50	4.0	\$ 21.25	-	-	-	-
813312	Environment, Conservation and Wildlife Organizations	1.1	-	3.2	-	3.0	\$ 22.50	\$ 3.00	\$ 25.50

NAICS Code	NAICS Description	2014 & 2015 New Employment		2014 & 2015 Retained Employment		2014 & 2015 Up-skilled Employment			
		Total New Jobs	Current Wage	Total Retained Jobs	Current Wage	Total Existing Jobs	Previous wage	Average Wage Increase	Current Wage
813319	Social Advocacy Organizations	9.8	\$ 17.16	25.0	\$ 23.67	11.2	\$ 19.80	\$ 2.08	\$ 21.88
813910	Business Associations	0.6	-	5.6	\$ 42.50	0.5	-	-	-
TOTAL JOBS		1,928.1		698.9	-	401.7	-	-	-
SIMPLE AVERAGE WAGE			\$ 19.96		\$ 23.80		\$ 17.34	\$ 3.80	\$ 21.11
WEIGHTED AVERAGE WAGE			\$ 17.80		\$ 22.59		\$ 18.64	\$ 3.93	\$ 22.42

Table 46 presents total 2014 and 2015 Direct jobs by NAICS Code. It also presents the number of 2014 and 2015 Direct jobs in disadvantaged communities.

Table 46: 2014 and 2015 Direct Jobs and Disadvantaged Communities – Total GJGNY
Program

NAICS Code	NAICS Description	2014 and 2015 Direct Employment	
		Direct Jobs	Disadvantaged Community Jobs
236115	New Single-Family Housing Construction	6.5	-
236118	Residential Remodelers	167.5	50.9
238150	Glass and Glazing Contractors, Windows	0.1	-
238210	Electrical Contractor	133.4	43.7
238220	Plumbing, Heating and Air-Conditioning Contractors	1,307.6	387.2
238310	Drywall and Insulation Contractors	571.8	213.0
333414	Heating Equipment Manufacturing	5.0	-
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	133.5	38.9
522390	Loan servicing	-	-
524127	Direct Title Insurance Carriers	7.5	1.5
541330	Engineering Services	236.2	74.7
541350	Building Inspection Services	1.0	1.0
541611	Administrative Management and General Management Consulting Services	2.2	-
541618	Other Management Consulting Services	2.8	0.8
611310	Colleges, Universities, and Professional Schools	1.8	-
624190	Individual and Family Services	5.0	-
813312	Environment, Conservation and Wildlife Organizations	4.3	2.2
813319	Social Advocacy Organizations	34.8	20
813910	Business Associations	6.2	-
TOTAL JOBS		2,627.0	833.7

Table 47 presents total 2014 and 2015 Direct Job data and 2014 and 2015 Direct Job data for disadvantaged communities (titled as “D.C.” in the table below) for six of the twelve CBO regions.

Table 47: Regions 1 – Total GJGNY Program

NAICS Code	NAICS Description	North Country		Bronx		Kings and Richmond		Queens		Central		New York	
		Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs
236115	New Single-Family Housing Construction	-	-	-	-	-	-	-	-	-	-	-	-
236118	Residential Remodelers	43.7	43.7	-	-	0.1	0.1	-	-	7.8	0.1	36.3	-
238150	Glass and Glazing Contractors, Windows	-	-	-	-	-	-	-	-	-	-	-	-
238210	Electrical Contractor	43.7	43.7	-	-	-	-	-	-	-	-	36.3	-
238220	Plumbing, Heating and Air-Conditioning Contractors	116.6	116.0	7.0	7.0	-	-	-	-	17.8	4.0	70.6	-
238310	Drywall and Insulation Contractors	133.7	133.7	-	-	1.2	1.2	-	-	41.1	33.7	107.8	-
333414	Heating Equipment Manufacturing	-	-	-	-	-	-	-	-	-	-	-	-
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	38.9	38.9	-	-	-	-	-	-	-	-	32.3	-
522390	Loan servicing	-	-	-	-	-	-	-	-	-	-	-	-
524127	Direct Title Insurance Carriers	-	-	-	-	-	-	-	-	-	-	-	-
541330	Engineering Services	5.0	5.0	0.9	0.9	5.3	5.3	0.9	-	8.9	4.8	1.8	-

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NAICS Code	NAICS Description	North Country		Bronx		Kings and Richmond		Queens		Central		New York	
		Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs	Direct Jobs	D.C. Jobs
541350	Building Inspection Services	-	-	-	-	-	-	-	-	-	-	-	-
541611	Administrative Management and General Management Consulting Services	-	-	-	-	-	-	-	-	-	-	-	-
541618	Other Management Consulting Services	-	-	-	-	0.8	0.8	-	-	-	-	-	-
611310	Colleges, Universities, and Professional Schools	-	-	-	-	-	-	1.8	-	-	-	-	-
624190	Individual and Family Services	-	-	-	-	-	-	-	-	-	-	-	-
813312	Environment, Conservation and Wildlife Organizations	2.2	2.2	-	-	-	-	-	-	-	-	2.2	-
813319	Social Advocacy Organizations	1.5	1.5	3.0	3.0	4.0	4.0	3.0	-	-	-	-	-
813910	Business Associations	-	-	-	-	-	-	-	-	4.0	-	-	-
TOTAL JOBS		385.4	384.7	10.9	10.9	11.4	11.4	5.6	-	79.7	42.7	287.4	-

Table 48 presents total 2013 Direct FTE data and 2013 Direct FTEs for disadvantaged communities (titled as “D.C.” in the table below) for the six CBO regions not listed in Table 46 above.

Table 48: Regions 2 – Total GJGNY Program

NAICS Code	NAICS Description	Southern Tier		Western		Finger Lakes		Mid-Hudson and Westchester		Long Island		Capital	
		Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs
236115	New Single-Family Housing Construction	-	-	-	-	-	-	2.0	-	-	-	4.5	-
236118	Residential Remodelers	11.0	-	3.9	3.9	2.9	2.9	28.6	-	2.9	-	30.2	-
238150	Glass and Glazing Contractors, Windows	-	-	-	-	-	-	0.1	-	-	-	-	-
238210	Electrical Contractor	11.0	-	-	-	-	-	14.7	-	-	-	27.7	-
238220	Plumbing, Heating and Air-Conditioning Contractors	23.1	2.3	147.1	147.1	99.3	73.6	175.7	37.0	540.2	-	110.1	0.04
238310	Drywall and Insulation Contractors	59.4	22.8	21.0	21.0	0.5	0.5	56.8	-	23.8	-	126.5	-
333414	Heating Equipment Manufacturing	-	-	-	-	-	-	-	-	-	-	5.0	-
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers	9.8	-	-	-	-	-	13.0	-	-	-	39.5	-
522390	Loan servicing	-	-	-	-	-	-	-	-	-	-	-	-
524127	Direct Title Insurance Carriers	-	-	-	-	1.5	1.5	-	-	3.5	-	2.5	-
541330	Engineering Services	14.8	4.4	15.4	15.4	33.9	33.8	37.2	2.4	102.0	-	10.0	2.6
541350	Building Inspection Services	1.0	1.0	-	-	-	-	-	-	-	-	-	-
541611	Administrative Management and General Management Consulting Services	-	-	-	-	-	-	-	-	-	-	2.2	-
541618	Other Management Consulting Services	-	-	-	-	-	-	-	-	-	-	2.0	-

NAICS Code	NAICS Description	Southern Tier		Western		Finger Lakes		Mid-Hudson and Westchester		Long Island		Capital	
		Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs	Direct Jobs	D.C Jobs
611310	Colleges, Universities, and Professional Schools	-	-	-	-	-	-	-	-	-	-	-	-
624190	Individual and Family Services	-	-	-	-	-	-	-	-	-	-	5.0	-
813312	Environment, Conservation and Wildlife Organizations							-	-	-	-		-
813319	Social Advocacy Organizations	2.5	2.5	7.0	7.0	2.0	2.0	4.1	-	5.9	-	1.8	-
813910	Business Associations	2.2	-	-	-	-	-	-	-	-	-	-	-
TOTAL JOBS		134.8	33	194.5	194.5	140.1	114.5	332.2	39.4	678.3	-	366.8	2.7