Labor Market Analysis of San Francisco Construction Industry

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Prepared by

L. Luster & Associates

in association with:
Michael Bernick, Esq., Cordoba Corporation
Michael Potepan, Ph.D. and
TechScribe Communications

Final Report
October 15, 2013

L. Luster & Associates

October 15, 2013

Mr. Patrick Mulligan, CityBuild Director
Office of Economic and Workforce Development
One South Van Ness Avenue, 5th Floor
San Francisco, CA 94103

Re: Labor Market Analysis for the San Francisco Construction Industry 2010-2012

Dear Mr. Mulligan:

L. Luster & Associates and its partners, Michael Bernick, Esq., Cordoba Corporation, Dr. Michael Potepan, and TechScribe Communications, are pleased to deliver this Final Report of the Labor Market Analysis of the San Francisco Construction Industry 2010-2012.

In 2010, the L. Luster & Associates team prepared the first Labor Market Analysis of the San Francisco Construction Industry. In January 2013, the Office of Economic and Workforce Development (OEWD) asked my firm to complete an updated Labor Market Analysis to inform the appraisal of the implementation of San Francisco's Local Hiring Policy for Construction by the Mayor's Construction Workforce Advisory Committee, the Office of Economic and Workforce Development and other interested stakeholders. The Labor Market Analysis was also prepared to contribute to the City Economist's Third Year Review of the policy.

The pace of the study was rapid and, as always, we wished for more time in which to collect, analyze and comment on the data. To maintain alignment with the OEWD's Local Hiring Annual Report to the Board of Supervisors and the Third Year Review, the Labor Market Analysis was completed within approximately 10 weeks. On February 22, 2013, the Team presented preliminary findings to the Mayor's Construction Workforce Advisory Committee. Committee members provided very useful feedback and guidance to the Labor Market Analysis team.

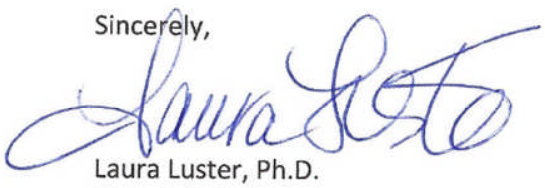
This updated Labor Market Analysis of the San Francisco Construction Industry examines the industry from the perspectives of workforce demand and supply. It presents data and findings that will be useful to City policy makers and stakeholders in considering the progress of the Local Hiring Policy for Construction. The report contains information about the changing economic backdrop to the local industry, updates the characteristics of the San Francisco skilled-trades workforce, and looks at the data

emerging from the Policy's first and second years of implementation. Secondly, it takes a look at the demand side, providing updated workforce projections through fiscal year 2019-2020. In addition, the Labor Market Analysis Report examines the existing pipeline of local skilled tradespeople. Finally, it contains a discussion of the findings and implications for the ongoing implementation of the Local Hiring Policy for Construction that includes an assessment of the match between construction employment, the local skilled labor supply and the demands of upcoming construction activity.

The data, findings and considerations put forth in the Labor Market Analysis Report will contribute to an informed discussion and debate on the achievements and challenges of the City and County's Local Hiring Policy for Construction. The construction sector behaves in unique ways and embodies a myriad of nuances that are challenging for both experts and novices to understand. As we indicated in our previous study, the team hopes that this work will be useful in helping the City to generate policy and workforce activities that meet local worker needs, are responsive to actual sector conditions and align with the dynamic nature of the construction sector.

The L. Luster Team thanks the Office of Economic and Workforce Development, the members of the Mayor's Construction Advisory Committee and the City Economist for the opportunity to complete this report and contribute to the public discourse on local hire.

Sincerely,



Laura Luster, Ph.D.
Principal

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Executive Summary

EXECUTIVE SUMMARY

The Labor Market Analysis of the San Francisco Construction Industry 2010 –2012 (LMA) is an update and expansion of the labor market analysis completed in 2010. The report is intended to contribute to City and stakeholder reviews of the City and County's Local Hiring Policy for Construction implemented in March 2011. The report contains information about the changing economic backdrop to the local industry, updates the characteristics of the San Francisco construction workforce, and looks at the data emerging from the Policy's first and second years of implementation. Additionally, it presents updated workforce projections for the skilled-trades through fiscal year 2019-2020, and examines the existing pipeline for local skilled tradespeople. Finally, we have included a discussion of the findings and their implications for the ongoing implementation of the Local Hiring Policy for Construction.

The LMA prepared by L. Luster & Associates in partnership with Michael Bernick, Esq., Cordoba Corporation, Michael Potepan, Ph.D., and TechScribe Communications draws upon a wide range of data sources. Data were collected and analyzed within a three and a half month period between January and April 2013. The report is organized into six sections along with appendices. Following are the summaries of the findings for each section.

Summary of Findings

I. Construction Employment Overall between 2010 and Late 2012 State, Regional and County Levels

At the time of our original report, construction employment in California was in free fall, going from a high of 966,300 construction payroll jobs in August 2006, to 545,500 construction payroll jobs in July 2010. Construction employment statewide has picked up slightly since 2011, rising to 578,900 construction jobs statewide by November 2012—still far below the 2006 numbers. Construction employment in the three-county San Francisco/San Mateo/Marin Metropolitan District (MD) also declined starting in June 2008, reaching 31,200 construction jobs in May 2010. Since May 2010, construction employment in the three-county area has rebounded, reaching 34,600 jobs in November 2012. On the San Francisco County level, construction employment has followed a slightly different trajectory actually growing from 2006 through the second quarter of 2008 when it reached 19,372 payroll jobs before starting its free fall. Since 2011 construction employment has shown a growth pattern, reaching 14,328 payroll jobs in the second quarter of 2012.

The construction employment picture in San Francisco has improved significantly since 2010 but is still well below pre-Great Recession levels. Since its initiation, the Local Hiring Policy for Construction has operated within one of the City's most economically challenging construction environments.

II. Characteristics of Construction Workers Employed in San Francisco

The San Francisco construction workforce can usefully be divided into two sub-categories:

A. Workers whose primary worksite is in San Francisco, regardless of where they live
B. Workers who live in San Francisco, regardless of their primary worksite

Among the construction workers whose primary worksite is in San Francisco, the five trades that dominated construction employment in San Francisco in 2010 continue to do so in the latest quarter for which data are available, the second quarter of 2012:

- Construction Laborers (4,108)
- Carpenters (2,377)
- Painters (2,139)
- Electricians (1,290)
- Plumbers and Pipe Layers (985)

About 44% of these workers live in San Francisco with San Mateo, Alameda, Contra Costa, Sonoma and Marin Counties contributing another 50%.

While construction employment has risen since 2010, we found that a significant number of workers employed in San Francisco (36%) reported earnings of less than $30,000 annually in 2012. We examined several explanations for this large percentage of low earnings and concluded that it reflects a higher concentration of low earner workers in occupations that pay less than average wages and a lack of steady work. Further, among the construction workforce employed in San Francisco, the ethnic distributions remained steady although the female construction workforce declined from 3% in 2010 to 2% in 2012.

III. Characteristics of Construction Workers Residing in San Francisco

Turning to the construction workforce resident in San Francisco, the number of San Francisco resident construction workers in 2012 increased significantly from June 2010 from 7,855 workers to 9,941 workers. However, a significant number of these San Francisco resident workers with experience in construction reported they were either unemployed or had left the labor force entirely. Moreover, largely due to underemployment, many San Francisco construction workers earned below the city's per capita income. As compared to the entire construction workforce employed in San Francisco, 60% rather than 36% of San Francisco resident construction workers earned less than $30,000 in 2012.

The San Francisco resident construction workforce is aging, and a relatively large number of construction workers are likely to retire during the next ten years. Fewer than 30% of all San Francisco construction workers were under age 35 in 2012, whereas over 40% were 45 years and older, with 13% 55 years or older. The workforce remains ethnically diverse. However, the older construction workers are disproportionately White and Asian, whereas younger construction workers are disproportionately Hispanic.

IV. Hours Worked on City Projects by San Francisco Resident Journey and Apprentice Workers

The data drawn from projects required to report certified payroll into the City's Project Reporting System (Elation Systems) indicate that the hours for San Francisco-resident journeymen and apprentices climbed significantly between 2010 and 2012. The hours for journey workers climbed for both San Francisco residents and non-residents, though the former climbed by 79%, compared to 54% for the latter. For apprentices, San Francisco resident apprentices showed an increase in hours of 76% compared to 31% of non-residents. When the percentage of all hours worked on City and County projects by San Francisco residents during the period prior to the implementation of the Local Hire Ordinance (November 2006 – March 24, 2011) was compared with those worked for the period after local hire (March 25, 2011 – December 31, 2012), we found that the San Francisco resident hours had increased by 2% overall.

However, this picture changed when hours on projects covered by the Ordinance were compared with those on projects not covered by the Ordinance. During the year after the implementation of Local Hire, San Francisco residents had 29% of hours on projects covered by Local Hire, compared to 20% of hours on City projects not covered by Local Hire. During the second year after implementation, the differential was greater; 28% on projects covered by Local Hire compared to 18% on projects not covered by Local Hire. For apprentice hours, the differential was even greater with significantly more hours going to San Francisco apprentices on projects covered by the Ordinance.

Important to note, however, is that the project hours covered by the Local Hire Ordinance represent only 8% of hours for all projects required to report into Elation Systems since the Ordinance went into effect. The number of projects (and hours) that will be subject to the Ordinance is expected to rise dramatically over the next seven years. While contractors and unions have been able to meet the Ordinance's initial 20% resident participation requirement, the certified payroll data is insufficient to identify a saturation level or signify availability for San Francisco resident construction workers across all trades.

V. Updated San Francisco Workforce Demand

We examined the San Francisco 10-Year Capital Plan for Fiscal Years 2012-2021 issued in March 2010 that recommended construction work totaling $24.8 billion dollars. The Plan confirms City and County of San Francisco plans to continue investing substantial dollars to improve and expand the City's infrastructure over the next seven to eight years. These investments will generate a significant number of skilled-trades jobs. Moreover, construction for these Capital Plan projects will coincide with a significant number of private sector, state and federal projects. This combined construction activity will generate sizeable numbers of construction skilled trade jobs, placing a tremendous demand on the existing construction workforce, particularly in the highest demand trades. OEWD estimates that for fiscal year 2012-2013 alone approximately $5.7 billion dollars of such construction work was performed in San Francisco in addition to the work identified in the City's Capital Plan.

At this time the majority of resident construction workers are working on projects not covered by the Local Hire Ordinance. However, as more City projects come under its purview, there will be pressure to migrate these workers to City projects. Simultaneously, there will be similar pressure to meet workforce goals on projects subject to the City's First Source Policy. OWED estimates that the work subject to the City's Local Hire Ordinance and the First Source Policy will generate 123,150,000 work hours between July 2012 and June 2020. This translates roughly into approximately 61,575 full-time equivalent positions.

As in 2010, the trades in highest demand in San Francisco will be Laborers, Carpenters, Painters, Electricians and Plumbers. For the City's infrastructure projects, Operating Engineers and Pile Drivers join this highest demand category as well. To meet the growing demand of San Francisco's construction activity a plentiful supply of local resident workers will be required, particularly in the trades in highest demand.

VI. Pipeline of San Francisco Resident Journey and Apprentice Workers

The Department of Industrial Relations/Division of Apprenticeship Standards supplied data indicating that the number of San Francisco resident active apprentices has grown only slightly between 2010 and 2012, from 1087 active apprentices in 2010 to 1102 active apprentices in 2012. The annual intake for 2012 did show a greater percentage increase from 199 San Francisco resident new apprentices in 2010 to 398 San Francisco resident new apprentices in 2012. We suspect that many San Francisco resident apprentices dropped out of their programs during the Great Recession, accounting for these slight changes in overall numbers despite the 2012 influx of new intakes. Likewise, between 2010 and 2012, enrollments and completions in the City's pre-apprenticeship program, CityBuild Academy, were scaled back in response to the poor job market.

The ethnic distribution for these apprentices has not changed significantly over the last two years. In 2012, 9% of the San Francisco apprentices were women as compared with 10% in 2010. Data received directly from Joint Apprenticeship Training Centers that train most of the union apprentices in Northern California further highlighted the modest numbers of San Francisco residents currently enrolled in apprenticeship programs. Likewise, the Centers currently training workers for trades that are in the highest demand on City and County projects -- Carpenters, Pile Drivers, Electricians, Laborers and Operating Engineers --reported equally modest projections for San Francisco resident enrollment over the next three to five years.

VII. Implications for Review of Local Hire Ordinance

***Worker Demand**:* The combined factors of substantial construction activity and an aging construction workforce will create an ongoing and steady demand for construction workers across all craft areas in San Francisco. Additionally, the joint mandates of the Local Hiring and First Source Ordinances will create a heightened demand for San Francisco resident construction workers in all trades. Most crafts will need to substantially increase their pool of resident workers over the course of the next three to five years to respond to these dual calls for local workers.

***Worker Supply**:* The data are inconclusive and it is not possible to pinpoint the availability of San Francisco resident construction workforce on a trade by trade basis. While the certified payroll data contributes to our understanding of the San Francisco resident construction workforce, without information from union locals about their San Francisco resident membership, we do not have sufficient information to point to a San Francisco resident saturation level at this time.

Pipeline of San Francisco Resident Workers: The pipeline for San Francisco workers into skilled trades and onto City and County sponsored projects is constrained by the low number of currently-enrolled apprentices, significant drop out rates and less than desirable completion rates of current apprentices. Without unusual movement of experienced incumbent construction workers into union locals serving San Francisco, it is unlikely that there will be a sufficient number of San Francisco resident construction workers to meet escalation rates up to 50% for all trades over the next four years. Moreover, the existing pipeline is not adequate to prepare enough resident workers within a satisfactory timeframe to meet the demand of the annual escalations.

There are a number of steps that the City might consider to address pipeline issues:

- Establish educational/training partnerships with San Francisco Unified School District
- Create mentoring programs to enhance retention of apprentices
- Negotiate direct entry programs with union training centers for San Francisco residents
- Build a pathway for incumbent workers into the higher paid unionized workforce

***Gender Imbalance*:** Gender equity remains a major issue in the skilled trades and within the San Francisco construction workforce. The Local Hire Ordinance does not address this currently. One potential step the City could take would be to adopt female participation goals in alignment with those for federally funded projects, now set at 6.9%.

Regionalism: Construction operates as a regional rather than City or county specific employment sector. Training, hiring, working and union bargaining agreements reflect that regionalism. Other jurisdictions and agencies have enacted local hire programs and the City and its Bay Area counterparts must remain cognizant of the needs of contractors and construction workers to be employed in multiple counties and venues to ensure sustainable employment and economic viability within the sector. Local hiring requirements have not only county-wide but also regional impacts.

The construction sector behaves in unique ways and embodies a myriad of nuances that are challenging for both experts and novices to understand. We have highlighted key factors that policy makers should consider in evaluating the implementation of local hire. The team hopes that this work will be useful in helping the City and its partners to generate policy and workforce activities that meet local worker needs, are responsive to actual industry conditions and align with the dynamic nature of the construction sector.

SECTION 1: Current Economic Overview of the Construction Industry

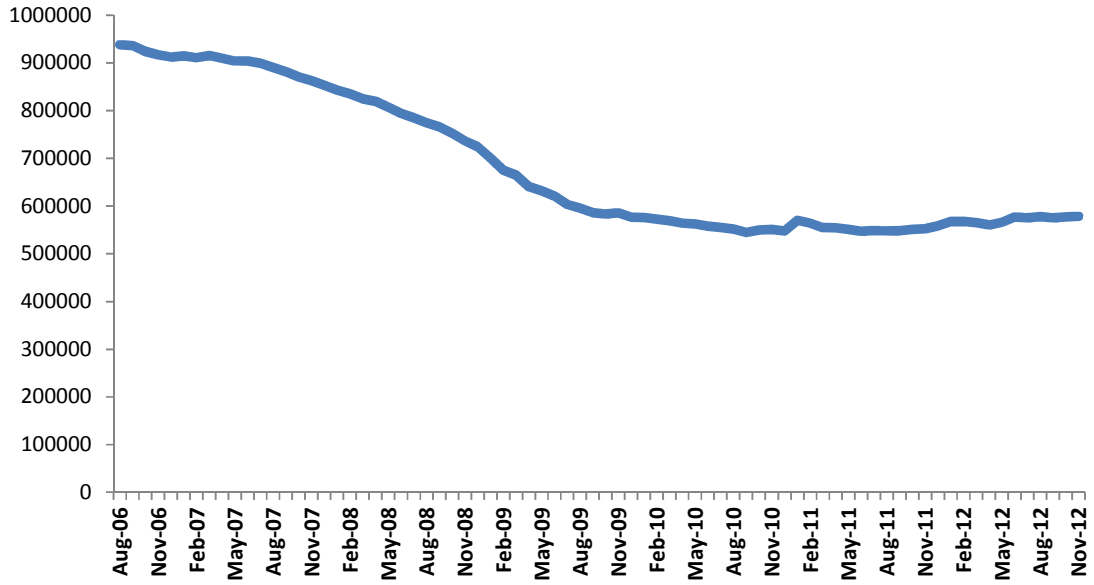
SECTION 1: Current Economic Overview of the Construction Industry: California, San Francisco Metropolitan District and the County of San Francisco

I. Construction Employment in California

At the time of our original Labor Market Analysis report in 2010, construction employment in California was still in free fall. Construction employment had reached 966,300 jobs statewide in August 2006, and projections were slated for growth to reach over one million by 2010. Instead, the construction industry started a very sharp employment decline and had fallen to 545,500 jobs statewide by July 2010.

In the past 28 months, construction employment has for the most part stabilized in California, though it has not increased by much, as shown on Chart 1. As of November 2012, construction employment stood at 578,900 jobs, up 1,700 jobs from October 2012 and up a modest 26,400 jobs from November 2011.

Chart 1: Construction Payroll Employment in California: 2006-2012

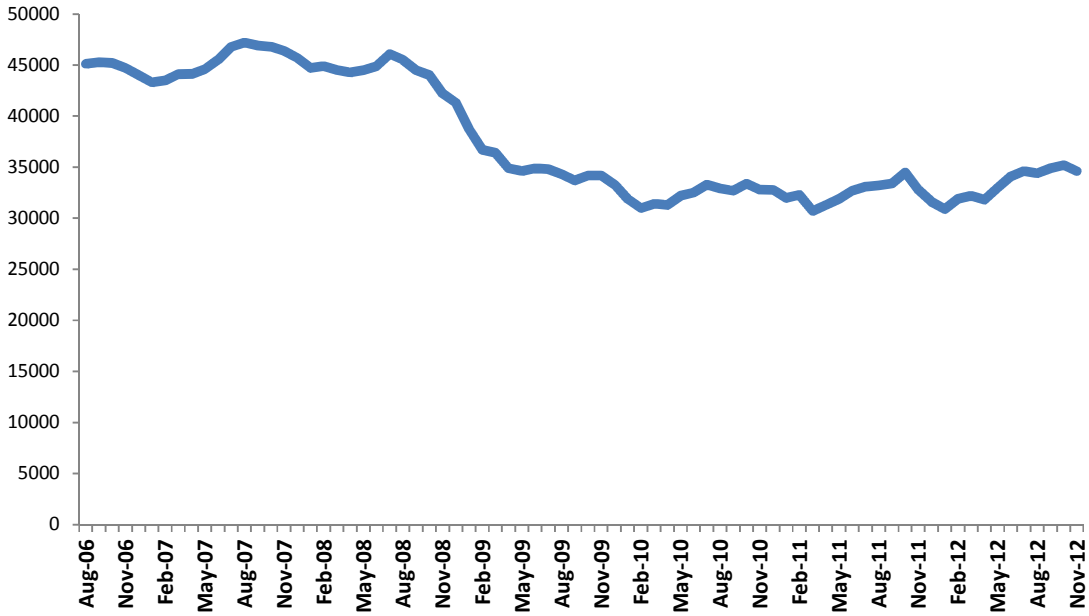


Source: CA Employment Development Department, February 2013

II. Construction Employment in the San Francisco Metropolitan District (San Mateo, San Francisco, Marin)

The California Employment Development Department (EDD) utilizes a monthly employer survey of California employers to identify numbers of payroll jobs. The jobs are listed by job location, rather than location of the job holder. San Francisco is part of the three-county MD that also includes San Mateo and Marin counties. At the time of the original Labor Market Analysis in 2010, construction employment in this three-county area had seen major declines, though not as major as those of the state overall. Between August 2006 and May 2010, construction employment in the MD fell from 45,100 construction jobs to 31,200 construction jobs. Chart 2 shows the rebound in construction employment since mid-2010. As of November 2012, construction employment in the MD had increased to 34,600 jobs, up from 32,800 in November 2010.

Chart 2: Construction Payroll Employment in San Francisco/San Mateo/Marin Metropolitan District: 2006-2012



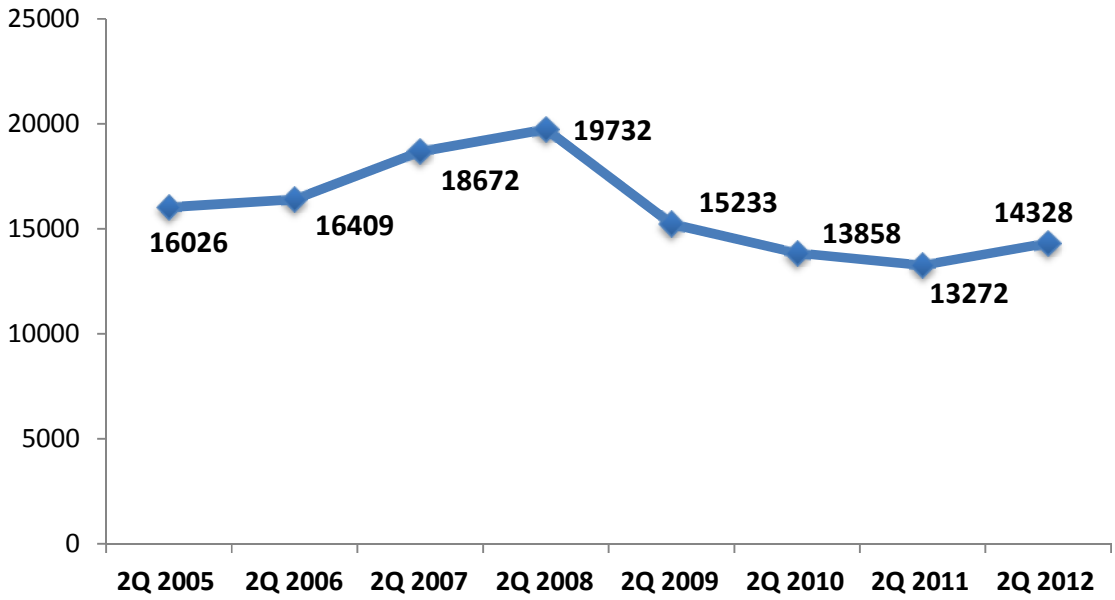
Source: CA Employment Development Department, February 2013

III. Construction Employment in San Francisco County

As well as its monthly employer survey, EDD also reports payroll jobs in California using quarterly payroll data submitted by employers. Because this report is based on actual reported data, it lags in time behind the monthly payroll survey. However, it provides a distribution of payroll jobs at the county level, which is helpful regarding our analysis.

The San Francisco county data is now available through the second quarter of 2012. Chart 3 shows the San Francisco construction payroll employment (quarterly averages for each of the second quarters) from the second quarter of 2005 through the second quarter of 2012.

Chart 3: Second Quarter Construction Employment in San Francisco County: 2005-2012



Source: EDD Quarterly Census of Employment and Wages, February 2013

As with the state and region, San Francisco's construction employment has gone up over the past year, but still is well below the quarterly averages for the years prior to 2010. The second quarter average of 14,328 is well below the high of 19,372 for the second quarter of 2008. However, it is above the second quarter average of our previous report in 2010 of 13,858, and increased from the second quarter average of 13,272 in 2011.

IV. Distribution of Construction Employment in San Francisco County by Sub-Sector and the Majority of Employment Outside of Public Works Projects

The EDD quarterly payroll data allows us to see not only the construction workforce by county but also breaks down this workforce by sub-sector, chiefly among four main sub-sectors:

- Heavy and Civil Engineering (which includes public works projects)
- Residential Building Construction,
- Nonresidential Building Construction and
- Specialty Trade Contractors

The results are set out in Chart 4 and Table 1 below.

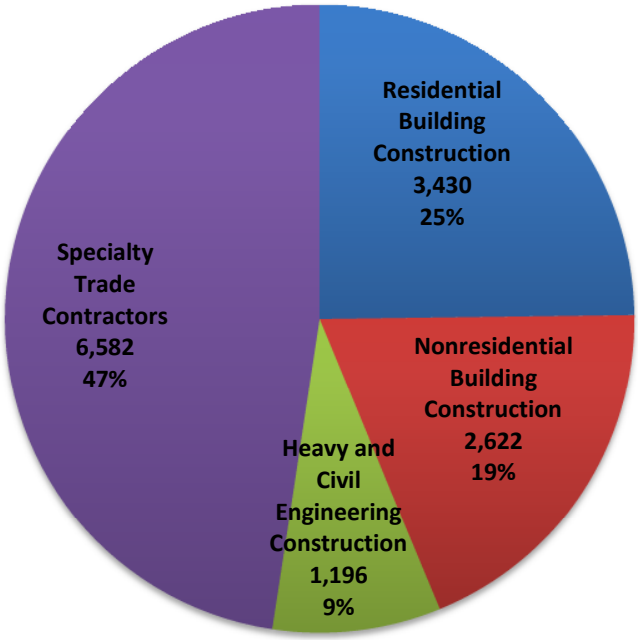
This distribution by sub-sector has its limitations. The main one is that Specialty Trade Contractors as can be seen on Chart 4, is not an exclusive category. This category includes a range of contractors whose employees may work among the other three sub-sectors. A good deal of the work of Specialty Trade Contractors is on residential and commercial repairs, apart from the three other sub-sectors. Specialty Trade Contractors, though, do work on projects in these other three sub-sectors. This is true especially of the Specialty Trade Contractors who are the Building Foundation/Exterior Contractors (1,255 payroll jobs), including the Steel and Precast Concrete Contractors (285 payroll jobs), Pour Concrete Structure Contractors (121 payroll jobs) and Masonry Contractors (148 payroll jobs).[1]

Yet, these charts reveal an important point. We have found that policy makers often think that Heavy and Civil Engineering makes up the bulk of construction employment. In fact, as indicated on Chart 4 and Table 1 below, Heavy and Civil Engineering makes up a smaller part of the construction work in San Francisco in comparison to residential building construction, nonresidential building construction, and residential/commercial repairs.

Not that this is unique to San Francisco construction. A similar distribution among sub-sectors is evident by the California statewide data. The bulk of construction employment in California is apart from the Heavy and Civil Engineering projects.

[1] A further limitation of this sub-sector data is that the coding is done mainly by the firms themselves, who can miscode among sub-sectors, particularly as their work is not limited to one sub-sector.

Chart 4: Distribution of San Francisco Construction Payroll Employment among Sub-Sectors: 2012



Source: EDD Quarterly Census of Employment and Wages, February 2013

Table 1: Construction Employment in San Francisco County by Sub-Sector: Second Quarter 2012

NAICS Code	Detailed Industry Title	Number of Establishments	Average Monthly Employment	Total Quarterly Payroll (in thousands)	Average Weekly Pay
1012	**Construction - All**	**1,529**	**14,328**	**$270,408**	**$1,452**
236	**Construction of Buildings**	**709**	**6,371**	**$128,126**	**$1,547**
2361	Residential Building Construction (includes new single and multi-family housing, residential remodelers)	602	3,505	$58,483	$1,283
2362	Nonresidential Building (includes industrial, and commercial building)	107	2,866	$69,643	$1,869
237	Heavy and Civil Engineering (includes utility system, water and sewer system, land subdivision, highway, street and bridge work and "other heavy" construction)	81	1,280	$29,818	$1,792
238	Specialty Trade Contractors (includes combination of residential and nonresidential foundation, concrete, steel, framing, masonry, glazing/glass, roofing, siding, building equipment, electrical, plumbing/HVAC, building finishing, drywall, painting & wall covering, flooring, tile and Terrazzo, finish carpentry, other building finish, site prep, and other specialty trade contractors).	739	6,676	$112,464	$1,296

Source: EDD Quarterly Census of Employment and Wages, San Francisco County, February 2013

V. Section 1: Summary of Findings

Since our original Labor Market Analysis, construction employment has rebounded slightly in California to 578,900 in November 2012, but remains a far distance from the high-water mark of 966,300 construction jobs during August 2006. Construction employment in San Francisco has followed a slightly different trajectory in the past seven years, reaching its high-water mark in 2008 rather than 2006. But it too took a sharp drop from its high water mark of 19,372 construction payroll jobs in 2008. It went down to 13,272 construction payroll jobs in 2011, before rebounding over the 2011-2012 year to 14,328 payroll jobs in the second quarter of 2012. The expectation, based on the construction data for the three-county region through the end of 2012, is that the second quarter of 2013 will show continued increases in construction employment, while still below the 2008 heights.

A growth in public works projects is part of the increase in construction employment in San Francisco. However, a sub-sector analysis of construction employment in San Francisco reveals that employment in public works projects is a relatively small part of construction employment. The San Francisco construction industry continues to find the great majority of employment in the private sector construction of buildings, residential and commercial, and the hundreds of companies engaged primarily in home repairs and repairs of existing commercial buildings.

SECTION 2: Characteristics of the San Francisco Construction Workforce

SECTION 2: Characteristics of the San Francisco Construction Workforce

The construction workforce in San Francisco can usefully be divided into two sub-categories:

- Those workers whose primary worksite is in San Francisco County, regardless of where they happen to live
- Those workers who live in San Francisco County, regardless of where their primary worksite is located

In this section, we highlight the general employment and demographic characteristics of workers in each of these sub-categories. In addition, we include demographic information about the City and County of San Francisco's craft union employees who comprise a sub-set of each of the two sub-categories.

I. Characteristics of Construction Workers Whose Primary Workplace is in San Francisco (14,328 Workers)

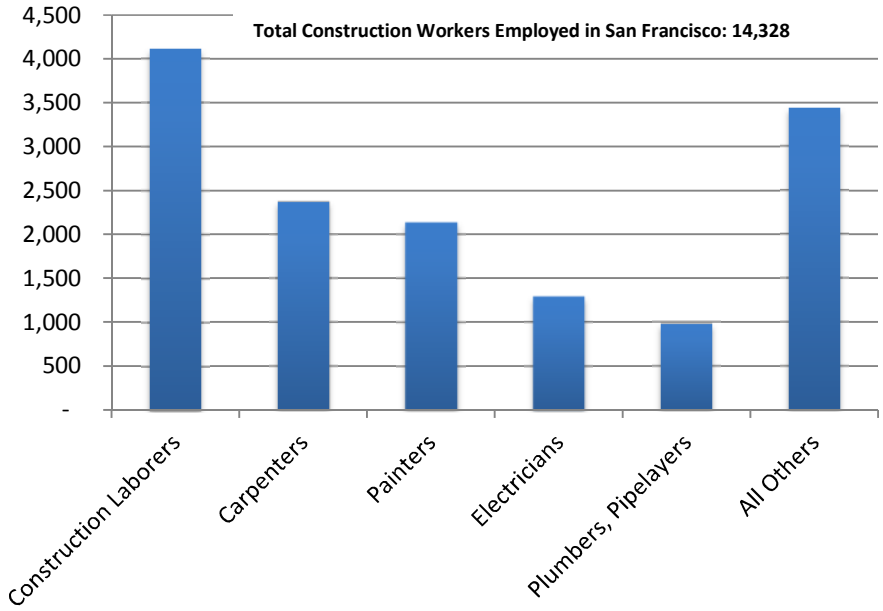
As explained in Section 1, payroll survey data from EDD indicated there were 14,328 persons employed on construction worksites in San Francisco County during the second quarter of 2012. Beyond counts, however, the payroll survey does not provide any additional information about the employment and demographic characteristics of the workers employed. A separate survey conducted by the U.S. Census Bureau, the American Community Survey, does collect this information for a smaller sample of 426 workers who were employed on construction worksites in San Francisco County between 2009 and 2011. For the purposes of this study, we overlaid the percentages from this Census survey to the EDD employment counts to provide an overall profile of employment and demographic characteristics regarding workers in this sub-category.

A. Distribution by Trade

The same five trades that dominated construction employment in San Francisco in 2010 continue to do so today, constituting about 76% of all construction workers employed in the city. As can be seen in Chart 5, these are:

- Construction Laborers (4,108)
- Carpenters (2,377)
- Painters (2,139)
- Electricians (1,290)
- Plumbers and Pipelayers (985)

Chart 5: Construction Workers Employed in San Francisco by Trade

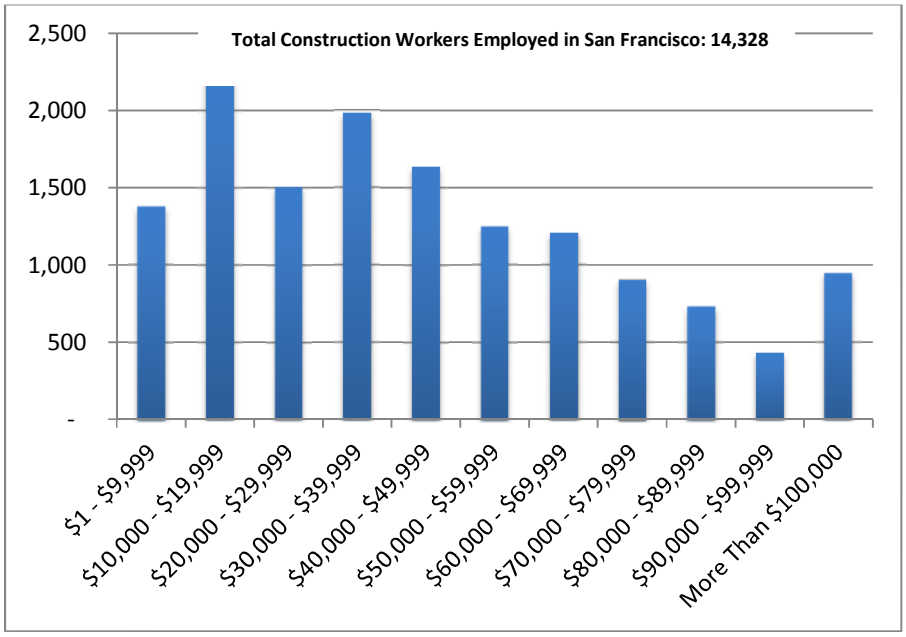


Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

B. Distribution by Earnings

Chart 6 shows the distribution of annual earnings for construction workers employed in San Francisco estimated from the EDD and Census survey data. The average annual earnings for these workers as a whole was $48,204, but as can be seen in the chart, the distribution of these earnings was highly uneven. Of particular note, an estimated 5,092 (36%) construction workers employed in San Francisco earn less than $30,000 annually. If these earnings appear low, it should be noted that the universe of construction workers in both surveys includes all workers in both construction occupations and in the construction industry. This can include non-union and union workers, as well as workers in residential construction and in the specialty trades.

Chart 6: Distribution of Annual Earnings of Construction Workers Employed in San Francisco



Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

Unfortunately, the Census American Community Survey does not collect information about union membership. So it is not possible to overlay percentages regarding union membership from this data onto the EDD employment counts, similar to what was done for other characteristics. Another Census survey, the Current Population Survey, is like the American Community Survey but has a much smaller overall sample size. This survey does collect information of union membership. However, the sample size from this survey for those working in construction occupations and in the construction industry in the ten Bay Area counties between 2008 and 2012 was only 31 persons. Of these, 9 were members of unions (29%), but in our opinion this sample size is much too small to extrapolate unionization rates for the San Francisco construction workforce.

C. Wages, Occupations and Hours Worked During the Year

Considering the relatively high number of workers employed in San Francisco estimated to have earned less than $30,000, we checked these earnings estimates against other measures to see if the Census survey estimates produced similar figures. The U.S. Bureau of Labor Statistics (BLS), through its Occupational Employment Statistics program, conducts periodic employer surveys to collect hourly wage information by occupation. Its most recent May 2011 survey conducted for the San Francisco-San Mateo-Redwood City Metropolitan Division (San Francisco, San Mateo, and Marin Counties) showed an annual hourly wage of $29.59 for workers across all construction occupations. This translates to $61,550 in annual earnings for a full time worker working 52 weeks in the year, or a $1,184 weekly wage for a full time worker working 40 hours per week.

We compared the wage and earnings estimates from this BLS survey to our estimates from the Census survey for similar workers. Our findings indicate that the BLS wage and earnings estimates were about 7.7% higher than the Census survey estimates. Because the weekly wage and annual earnings estimates from the BLS survey assumed workers worked 40 hours a week, 52 weeks per year for a total of 2,080 annual hours, whereas the 363 workers in the Census survey worked an average of only 1,757 annual hours, we adjusted the Census estimates up to a 2,080 annual hour basis to make a meaningful comparison with the BLS figures. Table 2 shows the difference in the wage and earnings estimates from the two surveys.

Table 2: Comparison of Construction Wages—BLS v. Census Data

Average Estimates	BLS Survey	Census Survey*
Annual Earnings	$61,550	$57,096
Weekly Wage	$1,184	$1,097
Hourly Wage	$29.59	$27.45

*Adjusted to a 40-hour week, 52-week year.

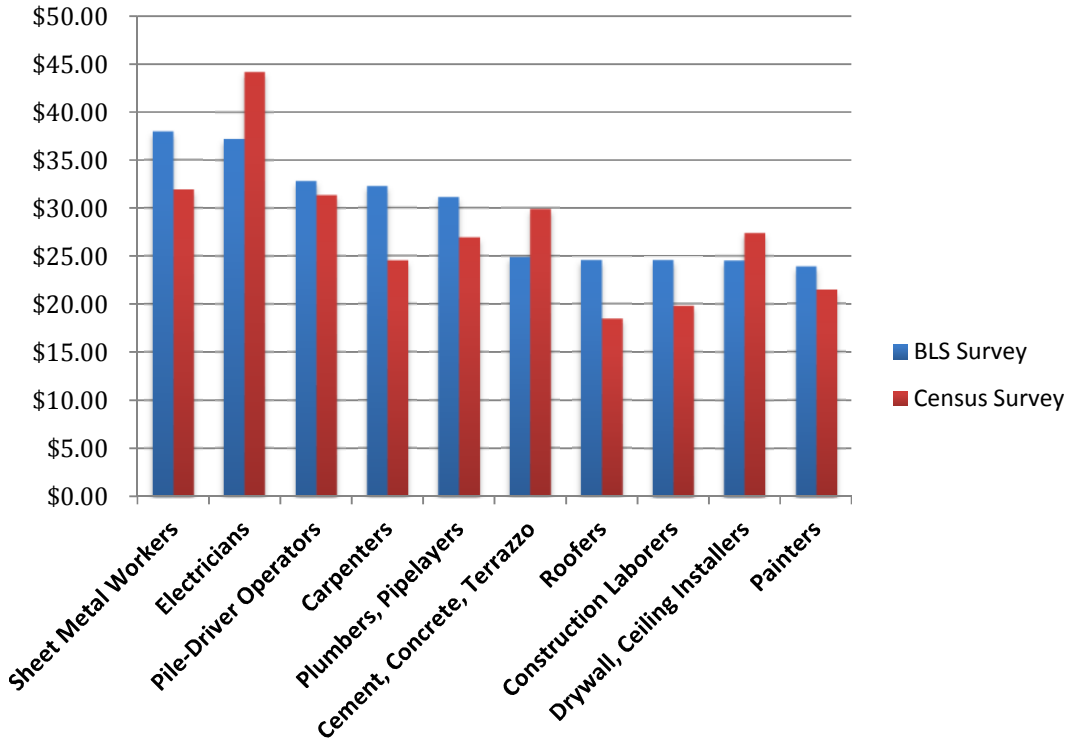
Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, U.S. Census Bureau, American Community Survey, February 2013

We can speculate on reasons why the Census earnings estimates are slightly lower than the BLS estimates. For one thing, the sample size for the BLS survey was much larger, including information on 26,530 workers in three counties. The sample size for the Census survey was just 363 workers in San Francisco County. So, the sampling error is likely to be much larger from the smaller survey. Additionally, the BLS data comes from an employer survey of contractors. In comparison, the Census survey data is collected from individuals who are contacted at home. Census respondents must rely on memory to answer the survey, and they may have a tendency to overestimate the number of hours and weeks that they worked during the year, given that construction work is less regular than other types of employment. If people did unintentionally inflate their hours and weeks when responding to the survey, it would result in lower hourly

wage estimates given our estimation method. Another possibility has to do with under-the-table wages, which are more prevalent in the construction industry than in other industrial sectors. If survey respondents were hesitant to show unreported wage income, this too would result in lower hourly wage estimates given our estimation method.

Chart 7 shows the difference in estimated hourly wages between the BLS survey and Census survey for construction workers in the ten largest trades. As can be seen, for most trades the Census estimates are somewhat lower than the BLS estimates and this is consistent with the overall estimates being lower for the Census survey. Note that for the Census survey, the sample of workers in each trade was often less than 30 and would consequently be expected to have a very large sampling error.

Chart 7: Hourly Wage Estimates by Trade for Construction Workers Employed in San Francisco from Two Surveys

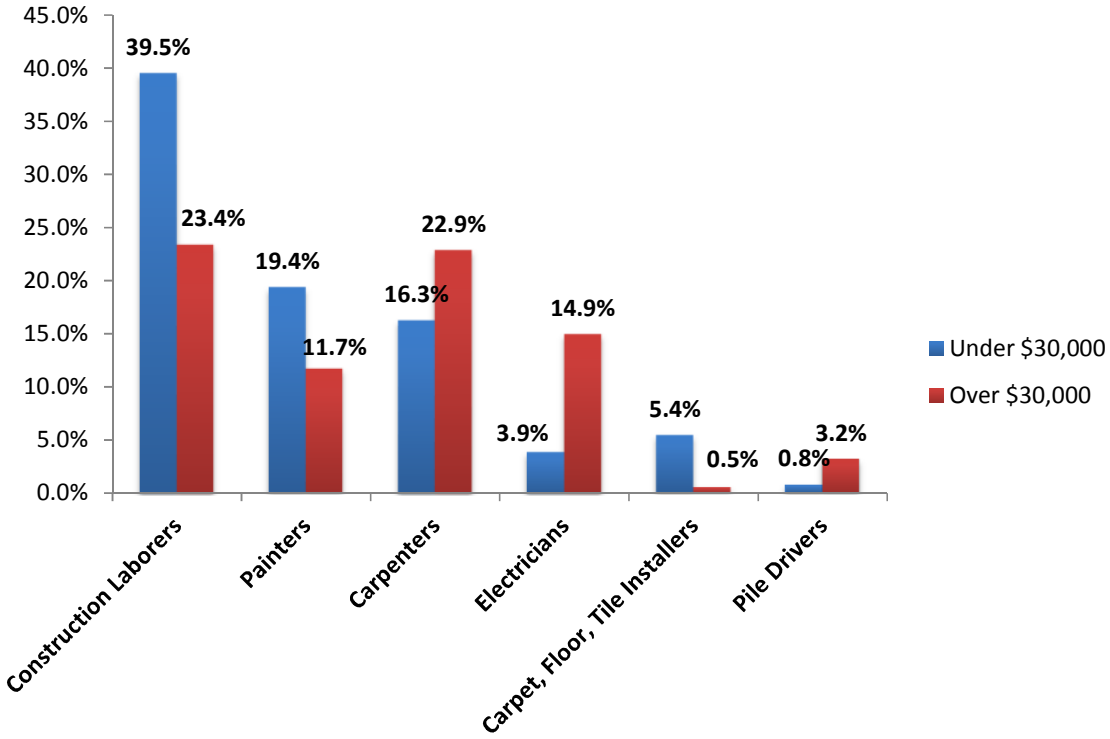


Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, U.S. Census Bureau, American Community Survey, February 2013

Since the Census survey wage and earnings estimates were only slightly lower than those from the more comprehensive BSL survey, we concluded there must be reasons other than measurement error, as to why about 36% of construction workers in the Census sample earned less than $30,000 in annual earnings. We explored two possible explanations for this. First, were workers who earned less than $30,000 disproportionately concentrated in trades that paid lower than average wages? And second, were workers who earned less than $30,000 underemployed and not working enough hours during the year to generate higher earnings?

Chart 8 shows the percentage of construction workers in San Francisco earning less than or more than $30,000 according to some of the larger occupational categories.

Chart 8: Percentage of Construction Workers Employed in San Francisco with Annual Earnings Above and Below $30,000 by Trade



Source: U.S. Census Bureau, American Community Survey, February 2013

As can be seen, there is some bunching of workers with low earnings in occupations that pay relatively low hourly wages. For instance, 39.5% of all workers earning less than $30,000 were Construction Laborers, as compared to only 23.4% of those Construction Laborers earning more than $30,000. Construction Laborers earned a lower hourly wage ($24.54) according to the BLS survey than San Francisco construction workers in general ($29.59). Painters are also disproportionately represented amongst workers earning under $30,000, where 19.4% of workers with low earnings were Painters, whereas 11.7% of the workers with high earnings were Painters. Based on the BLS survey, Painters earned an even lower average hourly wage ($23.88) compared to San Francisco construction workers in general ($29.59). While a smaller category, the same pattern holds for Carpet, Floor, and Tile Installers, who earned an hourly wage of just $21.90.

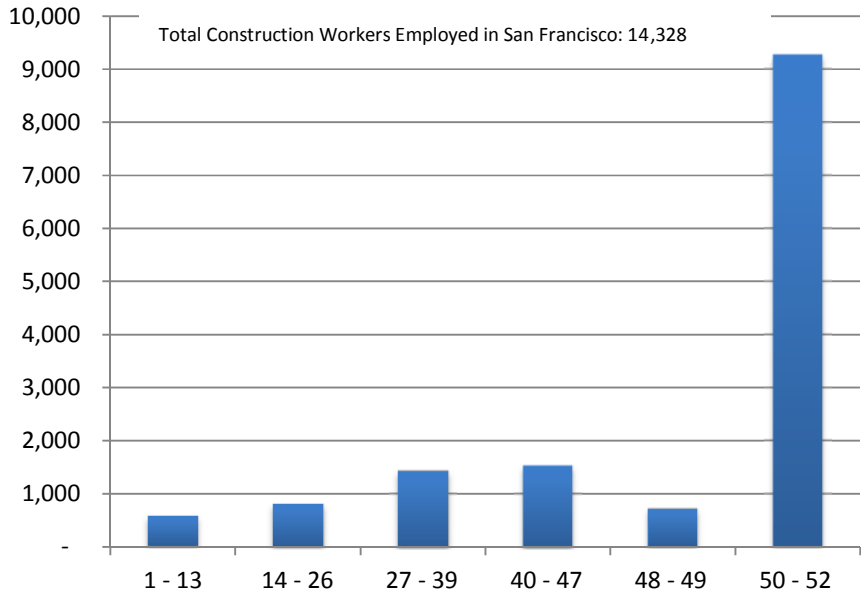
Chart 8 also shows that occupations that paid higher than average hourly wages – Carpenters ($32.26), Electricians ($37.23), and Pile Drivers ($30.96) – had a disproportionately high percentage of workers who earned more than $30,000 in annual earnings. Therefore, part of the explanation as to why over one-third of construction workers employed in San Francisco earned less than $30,000 annually, is because these workers were disproportionately concentrated in low-wage trades.

However, an even more important reason why so many construction workers employed in San Francisco earned less than $30,000 is because many of them did not work regularly throughout

the year. Since construction is a seasonal activity, and because contract work is more sporadic than other types of employment, we found that some workers go through sizable stretches during the year when they are not continuously employed.

Chart 9 shows the distribution of construction workers employed in San Francisco according to the weeks they worked during the year. As can be seen, most workers do work nearly a full year. An estimated 9,277 (64.7%) worked 50 weeks or more. Although, 2,796 (19.5%) work fewer than 40 weeks. While not shown in a separate chart, we also saw a similar pattern in the number of hours workers worked during a typical week when employed. While most workers reported working full time during a typical week, around 9% reported working fewer than 30 hours during a typical week. The mean number of hours worked by these workers was just 18 hours. On the other hand, the 91% of workers who typically worked more than 30 hours per week, reported working an average of 40.32 hours.

Chart 9: Distribution of Weeks Worked per Year of Construction Workers Employed in San Francisco

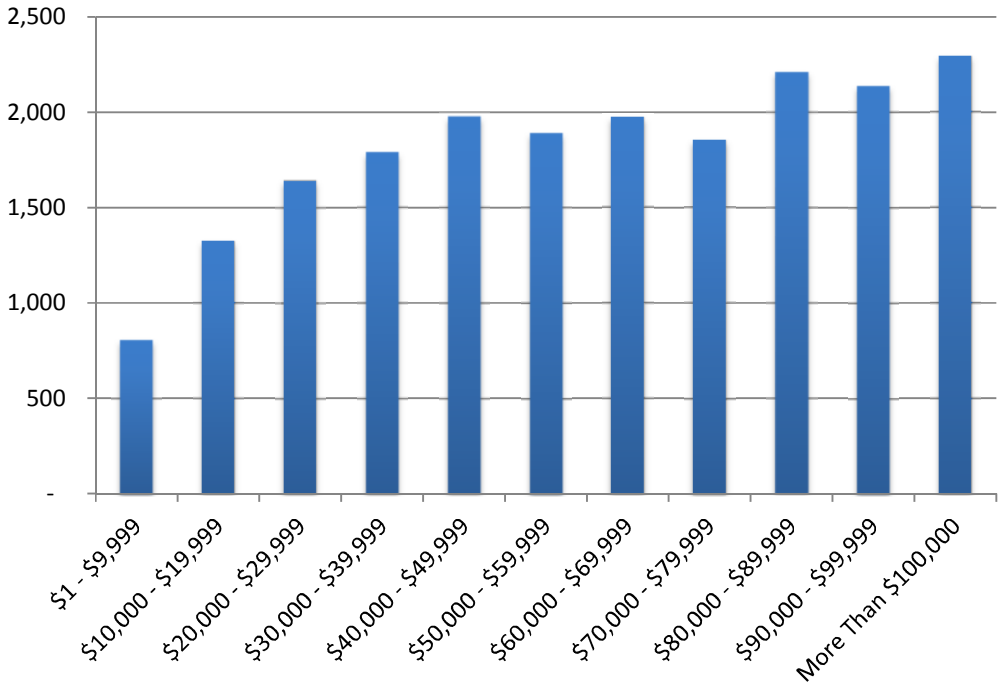


Source: CA Employment Development Department and U.S. Census Bureau, American Community Survey, February 2013

To further explore the relationship between annual earnings below $30,000, the number of hours worked within a typical week and the number of weeks worked during the year, we calculated the number of annual hours worked for each worker in the sample by multiplying their weekly hours by their number of weeks worked. As noted before, a full time worker who worked 40 hours a week for 52 weeks would have worked a total of 2,080 hours during the year.

Chart 10 shows the relationship between the estimated numbers of annual hours worked and annual earnings. For example, the estimated 1,302 workers who earned between $1 and $9,999 during the year worked an average of only 876 hours. On the other hand, the estimated 1,263 workers who earned between $60,000 and $69,999 during the year worked an average of 2,030 hours. As can be seen, those who earned below $30,000 per year worked considerably fewer hours during the year than those who earned more than that. For example, those with annual earnings below $30,000 worked an average of just 1,356 hours, whereas those with annual earnings above $30,000 worked an average of 1,978 hours a year.

Chart 10: Hours Worked Per Year by Annual Earnings for Construction Workers Employed in San Francisco



Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

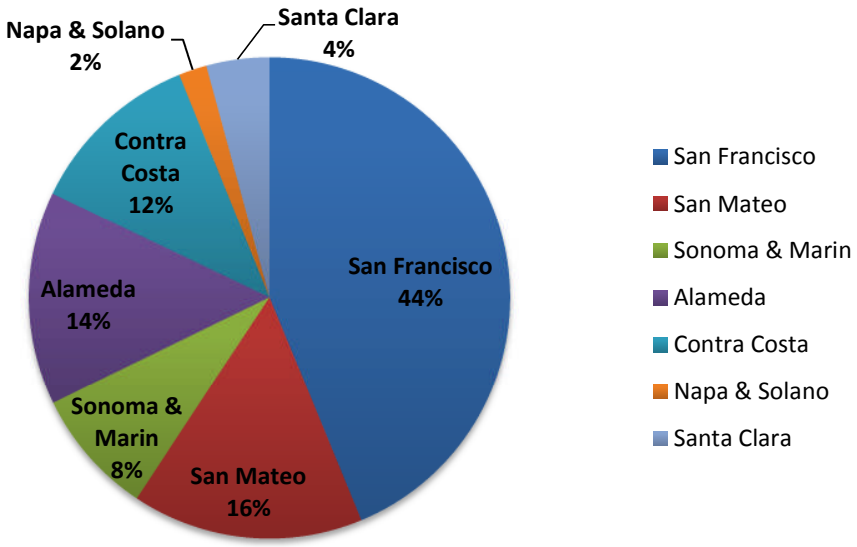
We have found that an estimated 36% of construction workers employed in San Francisco earned less than $30,000 during the year. Our analysis concluded that two major factors contributed. First, there was a higher concentration of low-earning workers in occupations that paid less than average wages, such as Construction Laborers, and Painters. Even more importantly, we found that those earning less than $30,000 simply did not work enough during the year to generate higher levels of earnings.

D. Distribution by County of Residence

Construction workers employed in San Francisco reside throughout the Bay Area, but as Chart 11 indicates, the largest number by far, 6,256 (43.7%) live in San Francisco County itself. The next most represented counties of residence are those closest to San Francisco: San Mateo

(2,220), and Alameda (2,052); counties further away, Contra Costa (1,682), and Sonoma and Marin (1,211) follow.

Chart 11: County of Residence for Construction Workers Employed in San Francisco



Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

In some respects, San Francisco can be thought of as a regional center of employment for Bay Area construction. It draws many more workers from other counties for jobs in San Francisco, than these counties draw residents from San Francisco. Table 3 below shows the difference between the number of construction workers who live in other counties and work in San Francisco versus the number of them that live in San Francisco and work in other counties. As can be seen, there is an estimated positive net inflow of 6,389 workers.

Table 3: Bay Area Construction Workers: County of Residence Compared with County of Employment

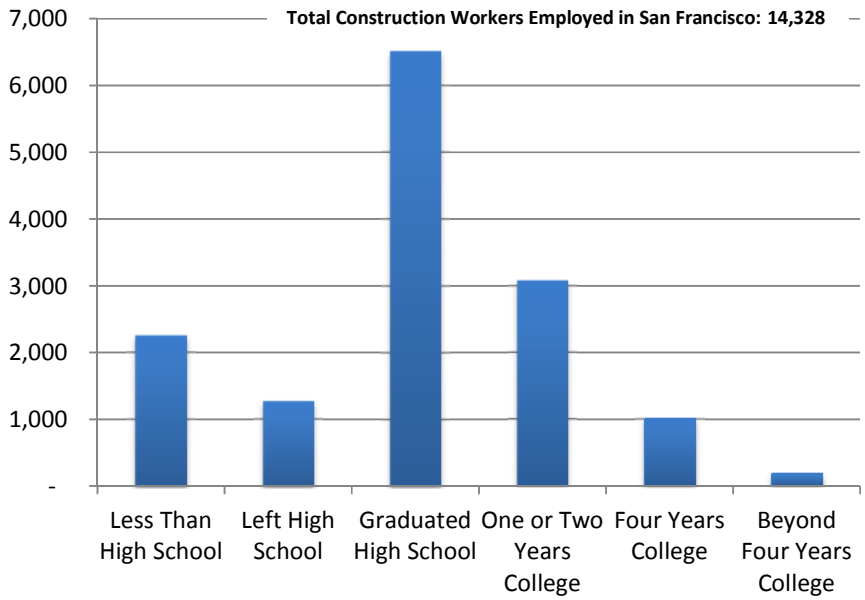
County	Workers Residing in Another County and Working in San Francisco	Workers Residing in San Francisco Working in Another County	Net Flow of Workers into San Francisco County
San Mateo	2,220	635	1,585
Sonoma & Marin	1,211	296	915
Alameda	2,052	381	1,671
Contra Costa	1,682	169	1,512
Napa & Solano	269	85	184
Santa Clara	605	85	521
Total			**6,389**

Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

E. Distribution by Educational Attainment

Construction workers employed in San Francisco have less education on average than other workers. For example, fewer than 30% of construction workers employed in San Francisco have advanced beyond high school. Comparatively 77.7% of all workers in general in San Francisco have education beyond high school. By another measure, only 7.1% of San Francisco construction workers have a 4-year bachelor's degree, whereas 34.7% of San Francisco workers in general have a degree. Chart 12 shows the educational attainment levels of construction workers employed in San Francisco. As indicated, nearly half (6,513), have graduated from high school and have not gone further. A substantial 15.7% (2,256) left school before even entering high school.

Chart 12: Educational Attainment of Construction Workers Employed in San Francisco



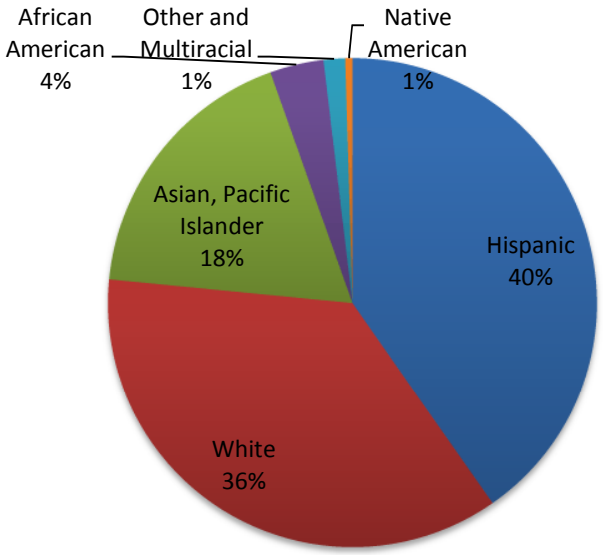
Source: CA Employment Development Department, and U.S Census Bureau, American Community Survey, February 2013

F. Distribution by Gender, Race and Ethnicity

In our 2010 report, we noted that only 3% of all construction workers employed in San Francisco, were female. Unfortunately, this has in fact declined to just 2% (305) in our latest estimates. Note that the universe of construction workers employed in San Francisco used here includes only persons working in construction occupations for contractors in the construction industry. So this does not include women employed in construction occupations who work for the State of California or the City and County of San Francisco.

As we found in our 2010 report, racial and ethnic minorities remain well represented amongst construction workers employed in San Francisco. Chart 13 indicates that Hispanics slightly outnumber Non-Hispanic Whites (5,772 vs. 5,195). Non-Hispanic Asian and Pacific Islanders are the next largest group (2,580). Altogether, Non-Hispanic African Americans, Native Americans, along with Multiracials constitute just 6% (781) of this workforce.

Chart 13: Race & Ethnicity of Construction Workers Employed in San Francisco



Race & Ethnicity	Employment Estimate
Hispanic	5,772
White	5,195
Asian, Pacific Islander	2,580
African American	509
Other and Multiracial	204
Native American	68
Total	14,328

Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

II. Characteristics of Construction Workers Who Live in San Francisco (9,941 Employed Workers)

We now turn to the second sub-category of the San Francisco construction workforce to profile those workers who live in San Francisco County, regardless of where their primary worksite is located. EDD payroll survey data only collects information as to the number of workers according to the location of employment, not according to where they live. Therefore, we again used the U.S. Census, American Community Survey data to estimate the number of construction workers who live in San Francisco County. This data source provided both the resident location and the employment location for each Bay Area construction worker in the sample. From this, we were able to obtain an estimated percentage of the total Bay Area construction workforce that resided in San Francisco County. We then applied this percentage to EDD's aggregate count of all construction workers in the Bay Area to obtain our estimate of 9,941 employed construction workers residing in San Francisco County during the 2nd quarter of 2012.

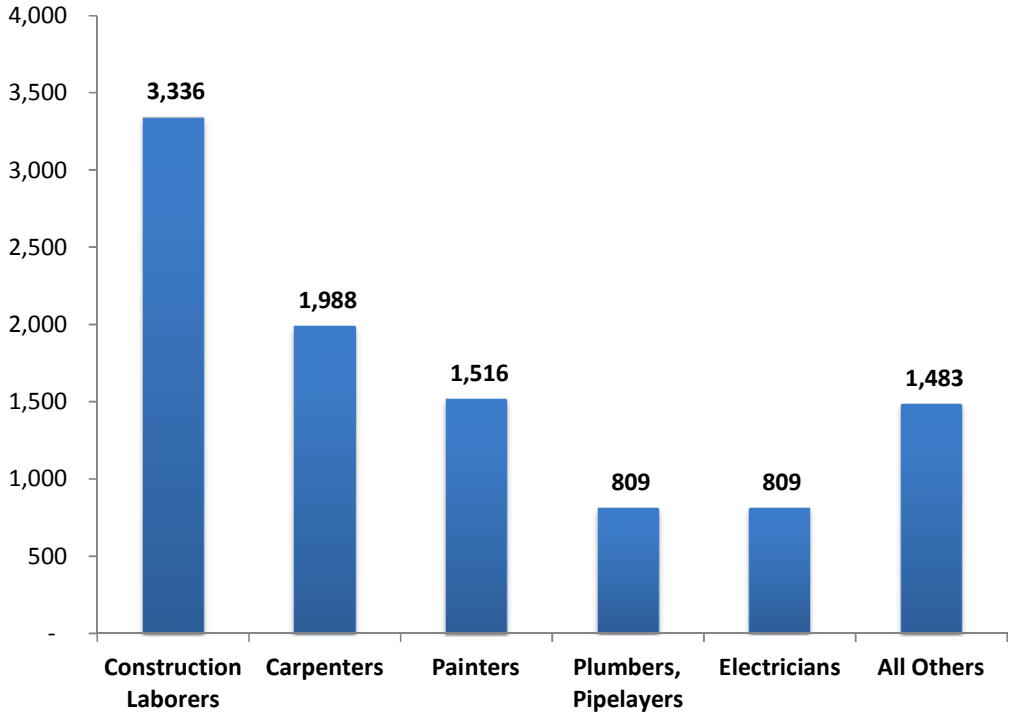
In what follows, we provide estimates for the general employment and demographic characteristics of these 9,941 employed workers. We applied the same method to obtain these figures as was used for the first sub-category. We obtained percentages for each characteristic from the Census survey sample of 295 construction workers who lived in San Francisco County. We then applied these percentages to the estimate of 9,941 total workers to obtain estimates for the totals for each characteristic.

A. Distribution by Trade

As can be seen in Chart 14, the distribution of trades for San Francisco resident construction workers follows a similar pattern as that for workers employed in San Francisco. Just as for that group, we see that the same five trades that dominated construction employment in San Francisco in 2010 continued to do so in 2012. In this case, 80% of all construction workers who live in San Francisco are concentrated in these five trades. Chart 14 shows these to be:

- Construction Laborers (3,336)
- Carpenters (1,988)
- Painters (1,516)
- Electricians (809)
- Plumbers and Pipelayers (809)

Chart 14: San Francisco Resident Construction Workers by Trade (9,941)



Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

B. Employment and Unemployment

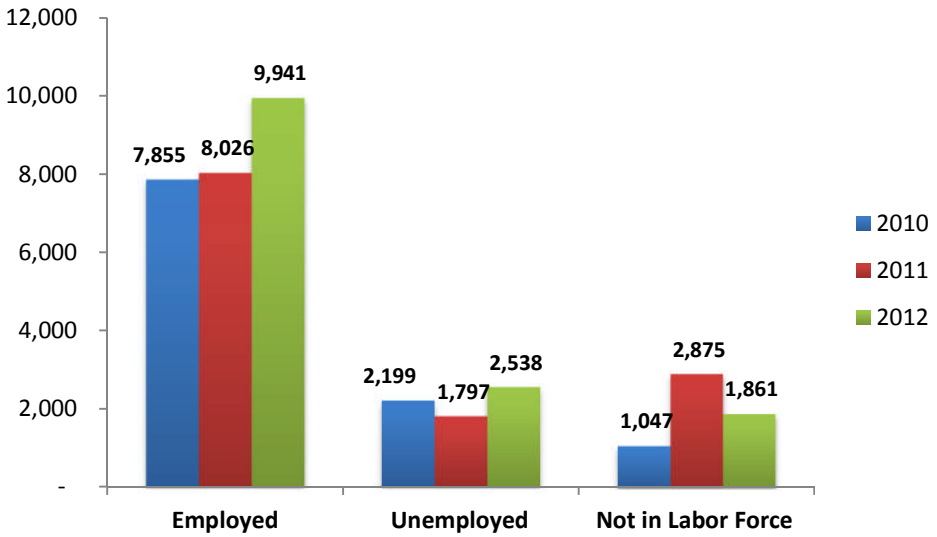
The Bureau of Labor Statistics does not provide unemployment figures categorized by occupation and industry for geographical units as small as metropolitan areas or counties. So we do not have official figures for these criteria. We were, however, able to use the Census survey to come up with our own estimates of the number of San Francisco resident construction workers that were employed, unemployed or had exited the labor force, revealing an estimated 14,340 workers that consider themselves a part of the construction industry in 2012.

The Census survey is conducted in March of each year, and among other items, it asks respondents whether they were employed during the preceding week, and if not, whether they were actively seeking work. To be considered as officially unemployed, a person who is not working must be actively looking for work. If they are not actively seeking work, they are considered to be "not in the labor force", even if they would like to work. In a bad economy, many workers who have lost their jobs and cannot find new ones become discouraged and stop looking, and then exit the labor market. So, a broader measure of employment status would not only consider employed and unemployed workers, but also those who are no longer in the labor force.

In another part of the Census survey, respondents are asked their primary occupation and industry in the previous calendar year, regardless of whether they were working or not in the preceding week. Using these two pieces of information from the survey, we were able to determine whether workers who lived in San Francisco and had been employed in construction during the previous year were presently employed, unemployed, or not in the labor force.

Chart 15 shows the employment status of San Francisco resident construction workers for the years 2010, 2011, and 2012. As can be seen, total employment improved somewhat since our last report, with a gain of 2,086 jobs (9,941 vs. 7,855) between 2010 and 2012. We can also see that before this pickup in jobs, between 2010 and 2011, the number who left the labor force increased by over 1,800 (1,047 to 2,875).

Chart 15: Employment Status of San Francisco Resident Construction Workers
(Total Estimated Number of Workers in 2012: 14,340)



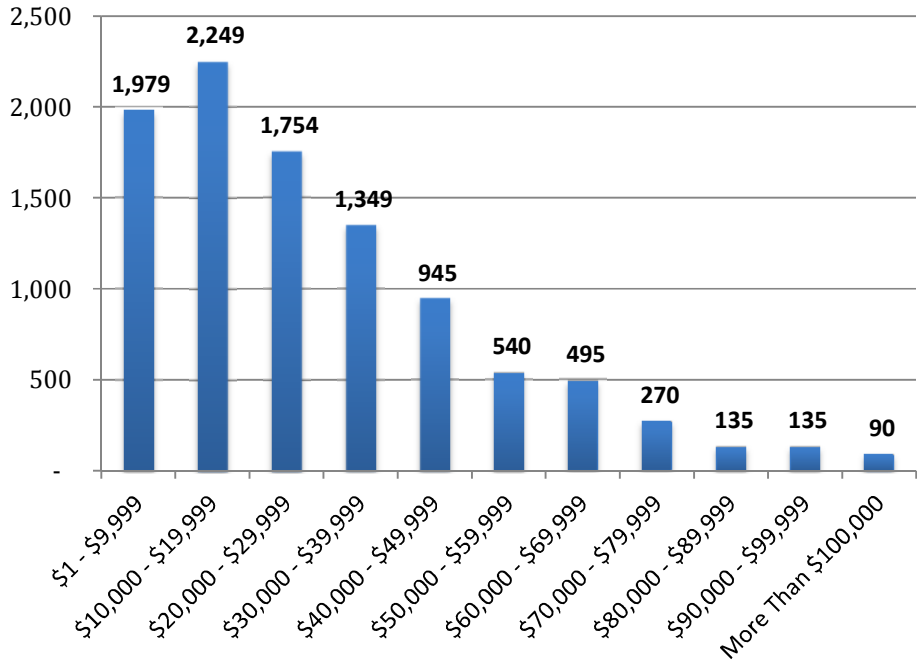
Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

There were so many workers who left the labor market that the number of unemployed actually decreased (by 403) from 2010 to 2011 because discouraged workers stopped looking for work. Once the employment situation began to improve between 2011 and 2012, many of these discouraged workers began to look for work again. Some of them found jobs and some of them did not, and this caused both the levels of employment and unemployment to rise between 2011 and 2012.

C. Distribution by Earnings

Chart 16 shows the distribution of annual earnings for employed San Francisco resident construction workers in 2012. Compared to the group of construction workers employed in San Francisco that we had looked at earlier, average annual earnings for those living in San Francisco was lower, an estimated $29,059 for all workers. This compares to the $48,204 earned per year by construction workers employed in San Francisco. Chart 16 shows there were 5,982 San Francisco resident construction workers who earned less than $30,000 annually, which was a considerably higher percentage than those who were employed in San Francisco (60% vs. 36%).

Chart 16: Distribution of Annual Earnings of Employed San Francisco Resident Construction Workers (Total Employed Workers: 9,941)



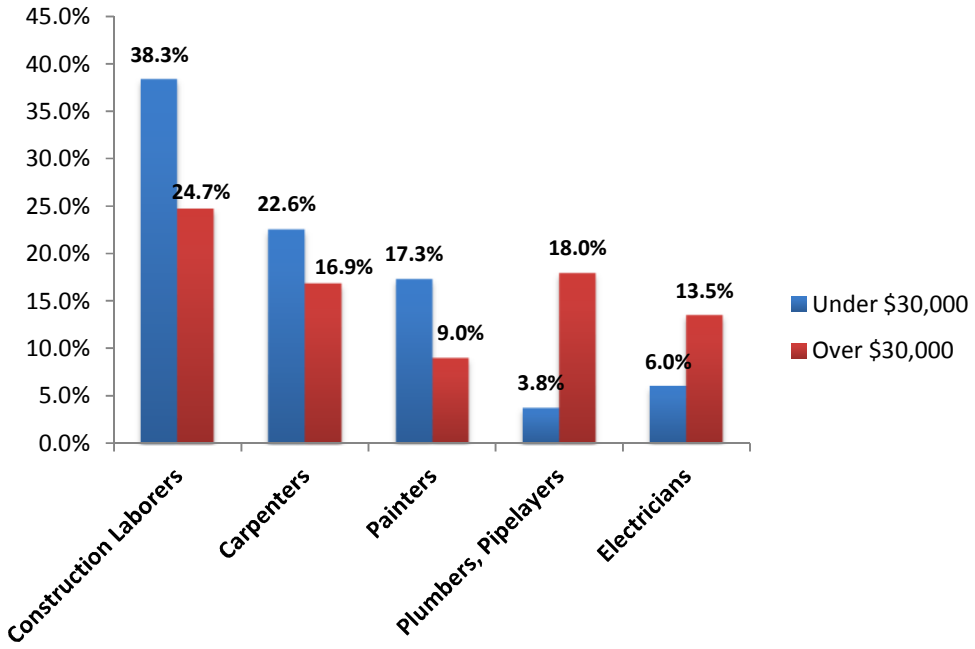
Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

D. Wages, Occupations and Hours Worked During the Year

We saw earlier that low earning construction workers employed in San Francisco who earned less than $30,000 did so for two principal reasons. First, they were disproportionately clustered in occupations that paid below average hourly wages. Second, these low earning workers were underemployed, working considerably fewer hours during the year than did higher earning workers. We were interested in knowing whether the same two factors were true for low earning construction workers residing in San Francisco.

Chart 17 shows the percentage of San Francisco resident construction workers earning less than or more than $30,000 according to five of the larger occupational categories. To some extent, there was some clustering into occupations that for the most part pay low hourly wages, which we saw with the earlier group of those working in San Francisco. For example, according to the BLS survey, the hourly wage of Construction Laborers was $24.54 as compared to $29.59 for San Francisco construction workers. Chart 17 shows that 38.3% of low earning San Francisco resident construction workers were Construction Laborers, compared to just 24.7% of the higher earning workers. The average hourly wage of Painters was $23.88 according to the BLS survey, and low earning workers who were Painters constituted 19.4% of all low earning workers as compared to 11.7% of higher-earning workers.

Chart 17: Percentage of San Francisco Resident Construction Workers with Annual Earnings Above and Below $30,000 (Total Employed Workers: 9,941)



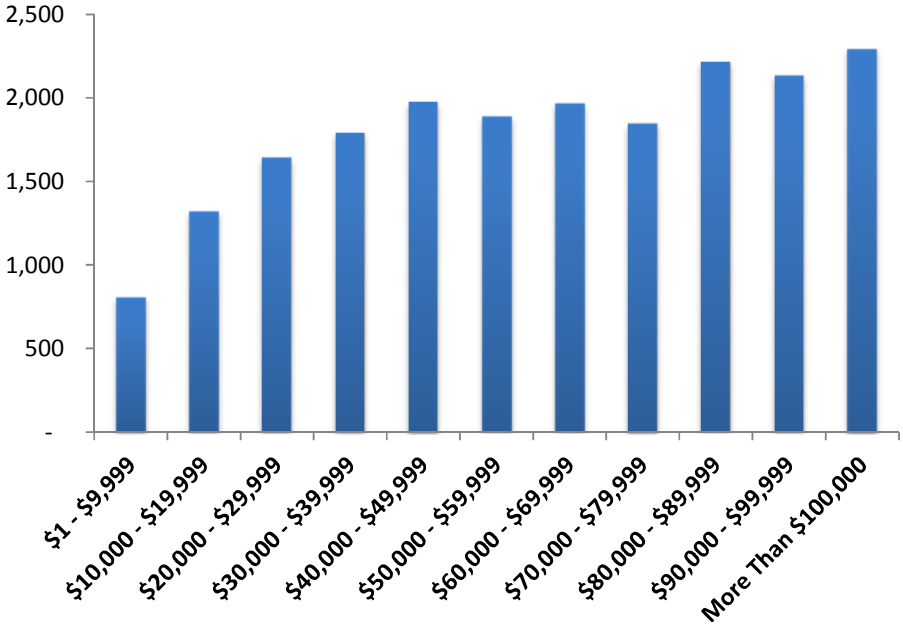
Source: U.S. Census Bureau, American Community Survey, February 2013

On the other hand, both Plumbers and Pipelayers, and Electricians were paid, according to the BLS survey, well above the $29.59 average for all construction workers, and each of these trades was more highly represented amongst workers earning more than $30,000 annually. But Chart 17 also indicates that Carpenters, who are paid a higher than average hourly wage ($32.26 vs. $29.59), are more highly represented amongst low earning workers (22.6%) than high earning workers (16.9%). This was the only occupational category where workers with higher than average wage were more concentrated amongst workers with lower annual earnings.

Thus, we can conclude that occupational clustering into related lower wage occupational categories was nearly as strong an explanation for the high percentage of San Francisco resident construction workers who earn under $30,000. We turn now to an analysis of the annual number of hours worked.

San Francisco resident construction workers as a whole worked nearly 240 fewer hours during the year than construction workers who worked in San Francisco (1,514 vs. 1,757 hours), and this fact alone goes a long way towards explaining why so many more construction workers living in San Francisco earned less than $30,000 per year. For example, the average number of annual hours of those with annual earning under $30,000 was just 1,246 hours. The average annual hours of those earning more than $30,000, on the other hand, was 1,916 hours.

Chart 18: Hours Worked per Year by Annual Earnings for San Francisco Resident Construction Workers (Total Employed Workers: 9,941)



Source: U.S. Census Bureau, American Community Survey, February 2013

Chart 18 shows the relationship between hours worked per year and annual earnings. For example, we estimated there were 1,979 workers who earned between $1 and $9,999 during the year, and they worked an average of only 803 hours. On the other hand, we estimated there were 495 workers who earned between $60,000 and $69,999 during the year, and they worked an average of 1,970 hours. As was true for construction workers employed in San Francisco, those who earned below $30,000 annually worked considerably fewer hours during the year than those who earned more than that.

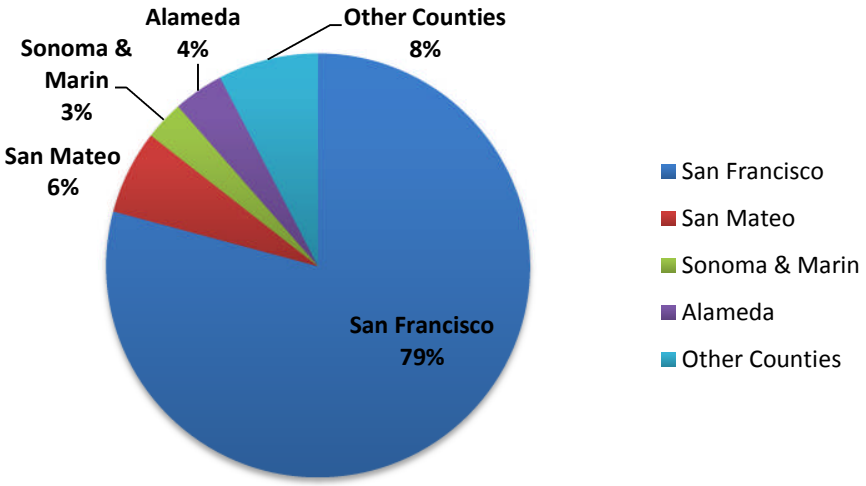
Therefore, we conclude that the most important factor explaining why 60% of San Francisco resident construction workers earned less than $30,000 annually was their underemployment. There were larger numbers and percentages of these workers who spent significant portions of the year not working, and this factor was more important than the occupational wage structure of the jobs in which they were employed when they did work.

E. Distribution by County of Employment

Construction workers residing in San Francisco County were also employed in San Francisco County, as Chart 19 indicates. It shows that nearly 79% of workers living in San Francisco were employed there. Amongst Bay Area counties, San Francisco led the way in having the highest proportion of its resident construction workers also working in its county. The comparable percentages for other Bay Area workers living and working in their home counties were:

- Alameda (66.1%)
- San Mateo (61.2%)
- Napa and Solano (55.9%)
- Contra Costa (47.5%)
- Napa (44.2%)
- Sonoma (43.1%)

Chart 19: County Where Employed, San Francisco Resident Construction Workers
(Total Employed Workers: 9,941)

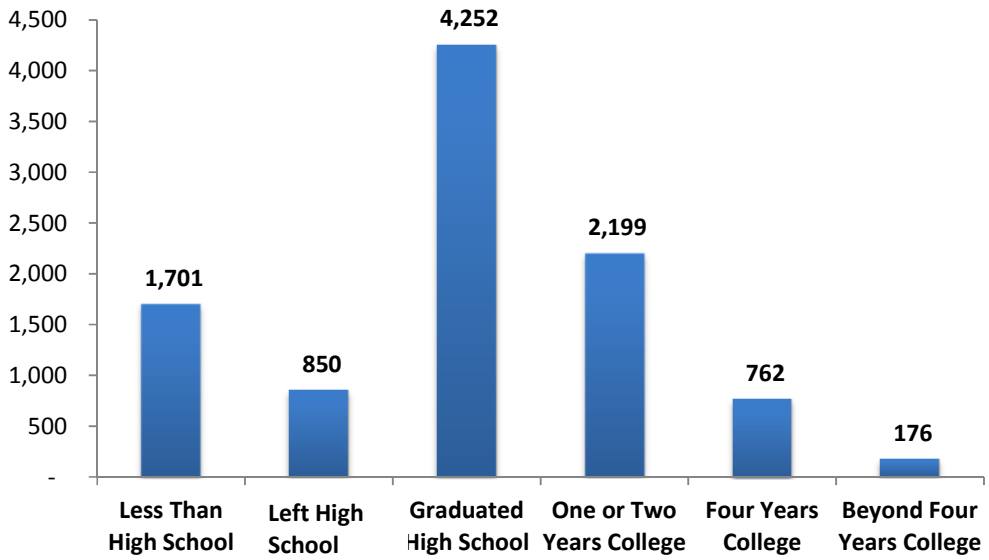


Source: U.S. Census Bureau, American Community Survey, February 2013

F. Distribution by Educational Attainment

San Francisco resident construction workers have less education on average than other San Francisco residents. Only about 31% of construction workers living in San Francisco have an education level beyond high school, as compared to about 59% of San Francisco residents who have progressed beyond high school. By another measure, only 9.4% of San Francisco resident construction workers have a 4-year bachelor's degree, whereas 43% of all city residents have one. Chart 20 shows the educational attainment levels of San Francisco resident construction workers. In terms of overall distribution, this sub-category of the construction workforce is similar to that of the construction workers employed at San Francisco worksites that we discussed earlier.

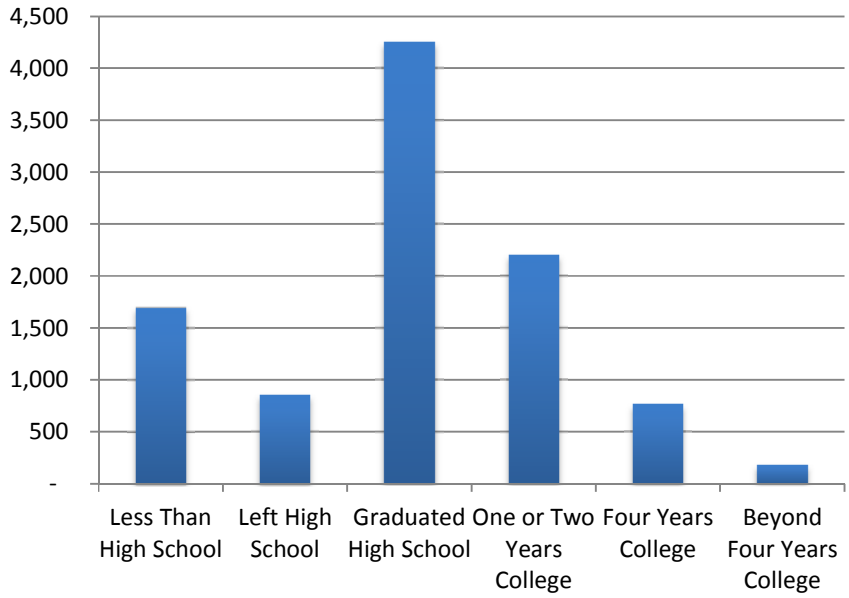
Chart 20: Educational Attainment of San Francisco Resident Construction Workers
(Total Employed Workers: 9,941)



Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

We were also interested in learning whether workers who earned less than $30,000 had lower educational attainment than workers earning more than $30,000. Chart 21 indicates that San Francisco resident construction workers who earned more than $30,000 tended to have graduated from high school and gone on to college in higher numbers than those who earned less than $30,000.

Chart 21: Educational Attainment of San Francisco Resident Construction Workers with Annual Earnings Above and Below $30,000 (Total Employed Workers: 9,941)



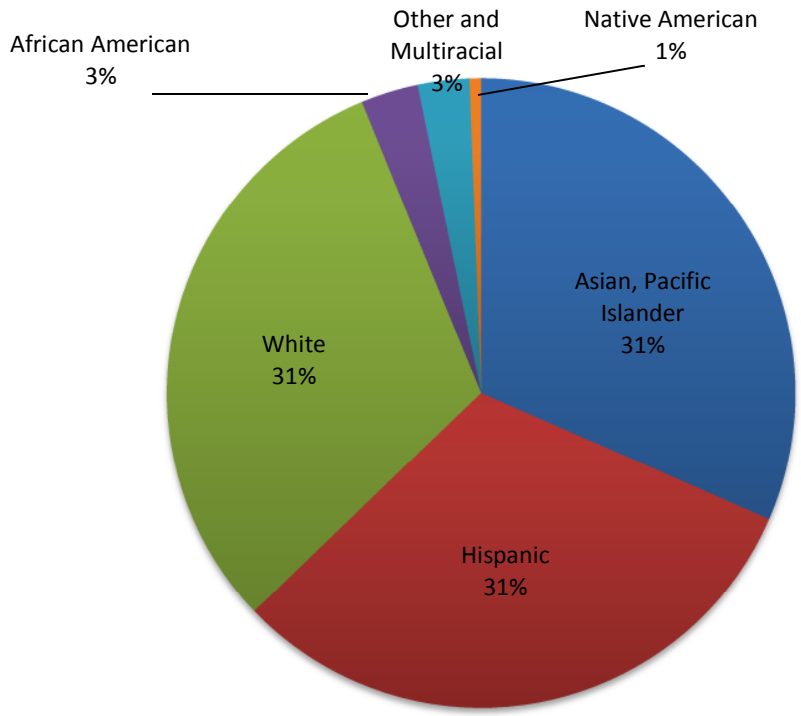
Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

G. Distribution by Gender, Race and Ethnicity

As was true for construction workers employed in San Francisco, there are relatively few women amongst construction workers living in San Francisco, just 2% (202). This figure is down from 3% (242) that we estimated in our 2010 report.

On the other hand, the racial and ethnic breakdown of San Francisco resident construction workers is different in one respect from that of construction workers employed in San Francisco. There is a noticeably higher percentage of Asian and Pacific Islanders in the residential workforce (32% vs. 18%). Chart 22 indicates that for San Francisco resident construction workers, Asian Pacific Islanders (with 32%), Whites (with 31%), and Hispanics (also with 31%) are all about equal in size, and all three are much more prevalent in the workforce than African Americans (3%), or anyone else (also 3%).

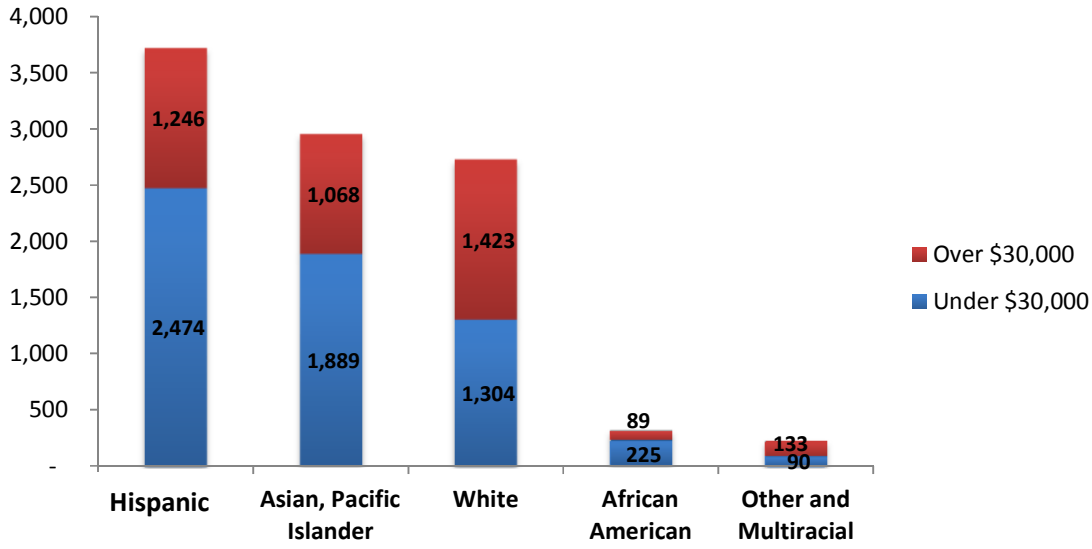
Chart 22: Race & Ethnicity of San Francisco Resident Construction Workers



Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

Also of interest was whether workers with annual earnings below $30,000 had a different racial and ethnic profile than those with earnings above $30,000. Chart 23 indicates that over half of all Hispanics, Asian Pacific Islanders, and African Americans earned less than $30,000, whereas less than half of all Whites earned less than $30,000.

Chart 23: Race and Ethnicity of San Francisco Resident Construction Workers with Annual Earnings

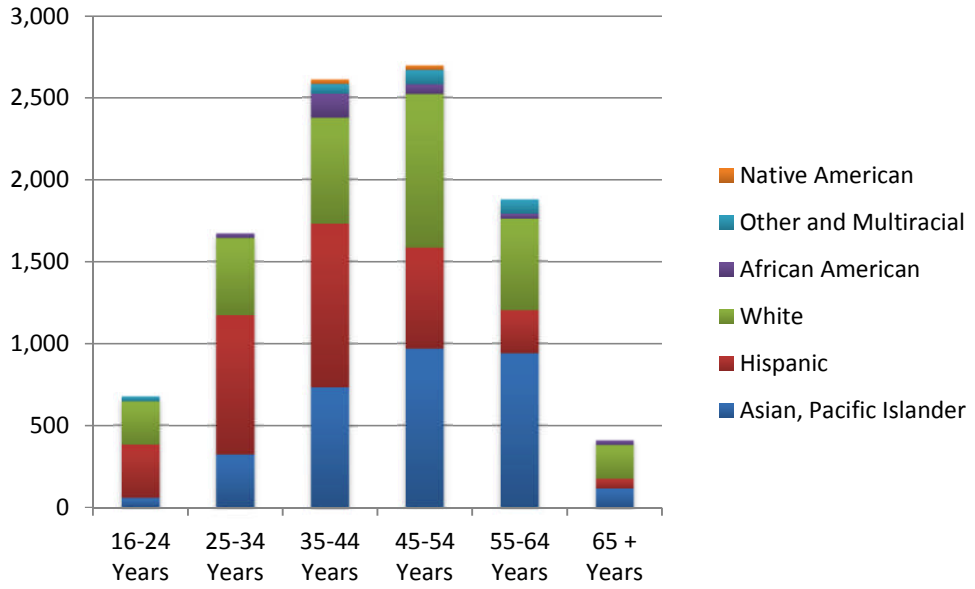


Source: CA Development Department, and U.S. Census Bureau, American Community Survey, February 2013

H. Distribution by Age, Race and Ethnicity

While the racial and ethnic proportions of Asians, Hispanics, and Whites are about equal in the San Francisco resident construction workforce, there is a distinct variation in the age distribution of these racial and ethnic categories. Chart 24 shows the distribution of resident construction workers by age, race and ethnicity. As we noted in our 2010 report, the White resident construction workforce, though sizable at 31%, is skewed toward the older age groups, particularly the over 45 age cohorts. This is true to an even greater extent for the Asian resident construction workforce where nearly 65% are over the age of 45. By contrast, the Hispanic workforce is concentrated among the younger age groups. Only 30% of Hispanic workers are over the age of 45. Of note, about 50% of the resident San Francisco construction workforce is now over the age of 45. Moreover, 23% is already 55 years and older. Currently, the number of workers aged 55 - 64 is 1,877 and declines to 411 for workers aged 65 or older, dropping from 19% of the workforce to 4%. If construction workers continue to leave the sector in the same proportions, by the time they reach age 64, a sizeable number of new openings will be created.

Chart 24: Distribution by Age and Race & Ethnicity of San Francisco Resident Construction Workers



Source: CA Employment Development Department, and U.S. Census Bureau, American Community Survey, February 2013

III. City and County of San Francisco Employees

As of August 17, 2012, the City and County of San Francisco employed 2,336 skilled tradespeople, making it one of the largest employers of construction workers in San Francisco. Data from the San Francisco Department of Human Resources provides a general snapshot of this workforce (Table 4 below).

A. Trade Distribution

Of these City and County employees, the Laborers constitute the largest number, 876. They are followed by the Electrical workers with 736, the Plumbers with 311, the Painters with 125 and the Carpenters with 96 members. This trade distribution fairly closely matches the distribution for all construction workers employed in San Francisco discussed previously. The Laborers represent the largest proportion of workers for both. However, Electrical workers and Plumbers, rather than Carpenters and Painters, comprise the next largest segment of the City's construction workforce.

Table 4: City and County Construction Trades Employees by Residence

Union	Total Employees	SF Resident	Percent	Non-SF Resident	Percent	Alameda	Contra Costa	Marin	Napa	San Mateo	Santa Clara	Santa Cruz	Solano	Sonoma	Other
BrickLayers, Local 3	7	3	42.86%	4	57.14%	0	0	0	0	4	0	0	0	0	0
Carpenters, Local 22	96	32	33.33%	64	66.67%	4	8	3	0	34	0	0	2	5	8
Carpet, Linoleum & Soft Tile	6	1	16.67%	5	83.33%	1	0	0	0	2	1	1	0	0	1
Cement Masons, Local 300 (580)	33	9	27.27%	24	72.73%	5	5	0	0	7	1	1	1	0	5
Electrical Workers, Local 6	736	216	29.35%	520	70.65%	76	87	13	7	207	9	9	34	15	71
Glaziers, Local 718	11	3	27.27%	8	72.73%	0	2	0	0	6	0	0	0	0	0
Hod Carriers, Local 36	5	3	60.00%	2	40.00%	0	0	0	0	2	0	0	0	0	0
Iron Workers, Local 377	14	5	35.71%	9	64.29%	1	2	0	0	4	0	0	0	0	2
Laborers, Local 261	876	421	48.06%	455	51.94%	77	83	18	5	162	6	6	34	29	40
Operating Engineers,	56	12	21.43%	44	78.57%	5	4	1	0	24	1	1	0	2	7
Painters, Local 1176	125	43	34.40%	82	65.60%	17	11	5	0	30	0	0	4	3	12
Pile Drivers, Local 34	14	2	14.29%	12	85.71%	2	7	0	0	1	0	0	1	1	0
Plumbers, Local 38	311	82	26.37%	229	73.63%	22	15	20	0	137	4	4	5	15	10
Roofers, Local 40	9	1	11.11%	8	88.89%	0	3	1	0	4	0	0	0	0	0
Sheet Metal Workers, Local 104	37	10	27.03%	27	72.97%	1	2	1	0	17	0	0	2	3	1
Total	**2336**	**843**		**2413**		**211**	**229**	**62**	**12**	**641**	**22**	**22**	**83**	**73**	**157**

Source: San Francisco Department of Human Resources, August 2012

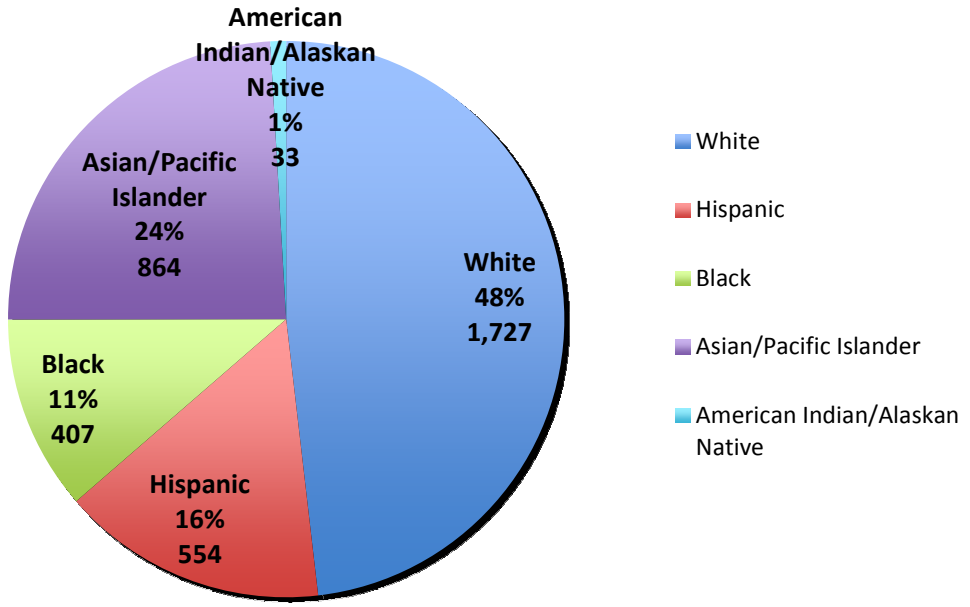
B. Residence

About 30% of the City's construction trades workers live in San Francisco and the other 70% reside in counties outside of San Francisco. This differs from the larger construction workforce employed in the San Francisco which is comprised primarily (43.7%) of San Francisco residents. However, as for other construction workers employed in San Francisco but living elsewhere, the largest numbers of these workers reside in San Mateo (641), Contra Costa (229) and Alameda (211) Counties. This residence distribution varies across trades. The Laborers have the greatest number of local residents, 421 or 48% of all City Laborers, followed by Electrical Workers (216, 29%), Plumbers (82, 26%), Painters (43, 34%) and Carpenters (32, 33%). This distribution closely follows the distribution of San Francisco resident construction workers but again, Electrical workers and Plumbers instead of Carpenters and Painters make up a larger proportion of the City workers who are residents of San Francisco.

C. Gender, Ethnicity and Race Distribution

Like the larger construction workforce employed in San Francisco, the City's construction trades workers are diverse ethnically as referenced by Chart 25. Nonetheless, Whites are the majority, comprising approximately 48% of the workers compared with 36% for all construction workers employed in San Francisco. In contrast, Asian Pacific Islanders and African American construction workers comprise 24% and 11% respectively of the City's construction trades workforce while they comprise 18% and 4% respectively of all construction workers employed in San Francisco. The opposite is true for Hispanic workers who make up only 16% of the City's construction workforce but account for 35% of the overall number of construction workers employed in San Francisco.

Chart 25: Race & Ethnicity Distribution for City and County Construction Employees



Source: San Francisco Department of Human Resources, August 2012

Of note, women construction workers comprise 7% of the City's construction trades workforce, a dramatically higher percentage than the 2% they constitute for all construction workers employed in San Francisco.

IV. Section 2: Summary of Findings

While construction employment has increased since our 2010 report, there remains a substantial number of workers living in San Francisco with experience in construction, who in 2012 were not employed. They are either unemployed, or have left the labor force entirely. By our estimates, while 9,941 workers were employed in construction occupations in the construction industry in 2012, *another* 4,400 had worked in 2011 but were no longer working by 2012.

Further, significant numbers of San Francisco construction workers remain underemployed, working notably fewer hours during the year than their gainfully employed counterparts in other industries. For construction workers *employed in* San Francisco all year, 37% worked fewer than 1,750 annual hours (full-time is 2,080 annual hours), and their average number of hours was just 1,134. For construction workers *living in* San Francisco, the level of underemployment was even lower: as 53% of these workers worked fewer than 1,750 hours, and their average number of hours worked was just 988.

Largely due to underemployment, many San Francisco construction workers earn below the city's per capita income.[2] An estimated 5,092 (36%) of those working in San Francisco earned less than $30,000 in 2012. Among those living in San Francisco (which includes some overlap with those who worked there) 5,956 (60%) earned less than $30,000 in 2012.

While hourly wages for construction workers are rather high ($29.59 on average), only those who work full time most of the year are able to earn at or above the city's per capita income. We found that construction workers employed in San Francisco who earned less than $30,000 worked an average of just 1,356 hours during 2012. Those who lived in San Francisco and had earnings below $30,000 worked an even lower 1,246 hours.

Educational levels are low for San Francisco construction workers, and there is a much higher proportion of construction workers with no higher education beyond high school (70%) than workers in general in San Francisco (22%). Construction is one of the few remaining employment sectors where it is possible to earn a considerably high hourly wage without having attended college. The average hourly wage of San Francisco construction workers who had not attended college in 2012 was $24.50.

The San Francisco construction workforce is aging, and relatively large numbers of construction workers are likely to retire during the next ten years. Fewer than 30% of all construction workers in San Francisco were under the age of 35 in 2012, whereas over 40% were 45 years or older, and 13% were 55 years or older. Moreover, older construction workers in San Francisco are disproportionately White and Asian Pacific Islander, whereas younger construction workers are disproportionately Hispanic.

[2] San Francisco's per capita income was $29,634 between 2009 and 2011 according to the US Census Bureau, American Community Survey , February 2013

SECTION 3: Analysis of San Francisco Residents Employed on City Projects

SECTION 3: Analysis of San Francisco Residents Employed on City Sponsored Projects

The City and County of San Francisco collects extensive data on construction workers who work on City funded projects through the Elation Systems, a web-based certified payroll reporting program used to track and monitor all worker wage and compliance records. The City agencies that utilize the Elation Systems include the:

- Mayor's Office of Housing (MOH)
- Department of Public Works (DPW)
- Department of Public Health (DPH)
- Municipal Transportation Agency (MTA)
- Port of San Francisco (PORT)
- Public Utilities Commission (PUC)
- Recreation and Parks Department (RPD)
- San Francisco International Airport (SFO)

In addition, the Elation Systems collects hours on a small number of non-City sponsored projects, including the multi-billion dollar Transbay Terminal Project, which is situated in San Francisco and receives significant funds from the City. All of the data presented regarding in this section are drawn from the Elation Systems reports.

I. Participation of San Francisco Resident and Non-Resident Construction Workers on City Sponsored Projects

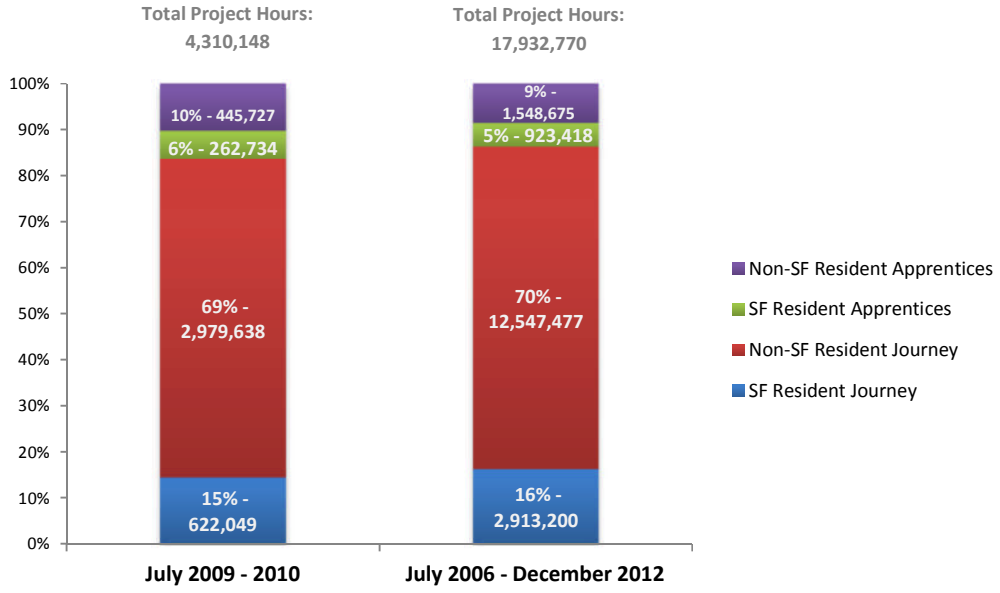
A. All Projects

During the more than six-year period between July 2006 and December 2012, the Elation Systems recorded a total of 17,932,770 project hours worked by skilled trades construction workers on City and County sponsored projects.

As shown on Chart 26, of these total hours, 79% were worked by workers residing outside San Francisco and 21% by San Francisco residents. San Francisco journey level workers performed 2,913,200 or 16% of these hours compared with 12,547,477 or 70% performed by non-resident journey workers. San Francisco resident apprentices performed 923,428 or 5% of the hours and non-San Francisco resident apprentices accounted for the remaining 9% or 1,548,675 hours. Chart 26 also includes the distribution of hours by residence of workers in our previous Labor Market Analysis. That analysis tracked San Francisco resident and non-resident hours worked on all City and County sponsored projects for the period between July 2009 and July 2010, the dates for which data was then available. During that period, skilled trade construction workers worked a total of 4,310,148 hours.

Comparing the period of the first Labor Market analysis and the full period of 2006 - 2012 does not show major shifts in the percentages of hours worked by resident construction workers and non-resident construction workers. The percentage of hours worked by San Francisco resident workers remained the same at 21% for the two periods. The percentage of hours worked by San Francisco resident journey workers increased by 1% from 15% to 16% between the two periods, while the percentages worked by San Francisco apprentice residents decreased 1% from 6% to 5%.

Chart 26: Total Journey and Apprentice Project Hours by Residence

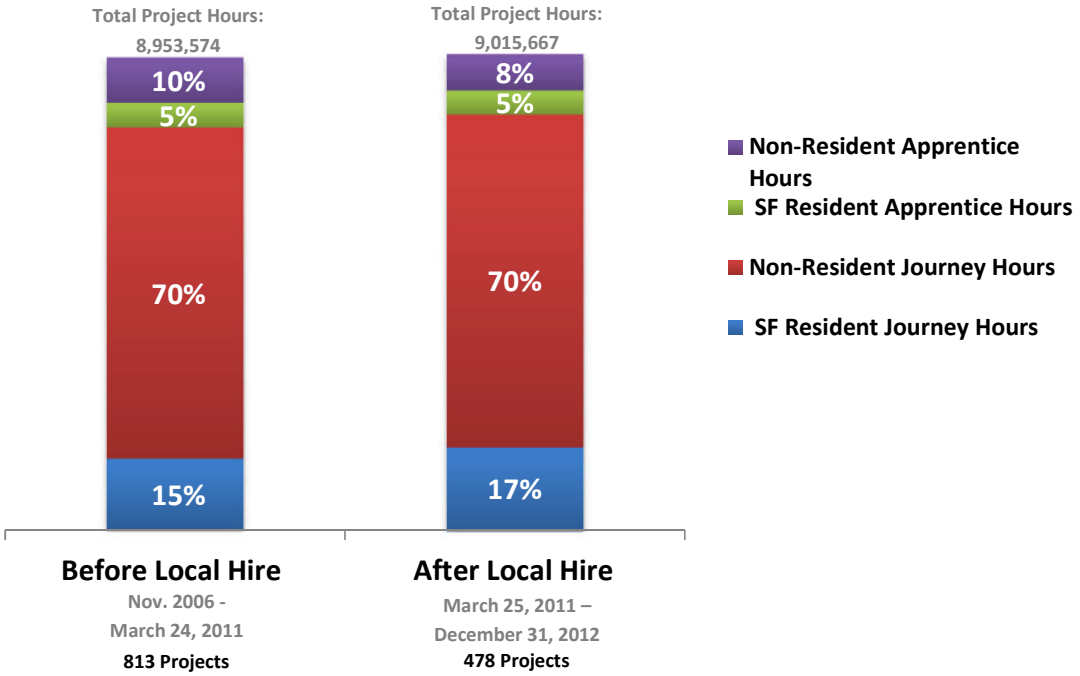


Source: Elation Systems, February 2013

In December 2010, the San Francisco Board of Supervisors amended the City's Administrative Code to include the Local Hiring Policy for Construction (Local Hire Ordinance).[3] The new policy implemented in March 2011 requires contractors on City-funded projects, with estimates greater than $400,000, to meet local resident hiring goals in all trade areas. The local resident hiring percentages began at 20% in the first year of implementation and include a 50% local resident hiring percentage for apprentices. Overall local resident hiring percentages escalate to 50% over seven years. Therefore, we also used the Elation Systems data to examine differences in local resident participation on City and County projects both before and after the implementation of the Local Hire Ordinance.

[3]City and County of San Francisco, City and County of San Francisco Policies, Administrative Code, Chapter 6 – Contracting Policies and Procedures, 2013

Chart 27: Journey & Apprentice Hours by Residence, Before and After Local Hire Ordinance



Source: Elation Systems, February 2013

As revealed in Chart 27, the **overall** number of hours worked by San Francisco residents on City and County projects increased by 2% after the implementation of the Local Hire Ordinance. More specifically, hours worked by San Francisco resident journey workers increased by 2%, while San Francisco resident apprentices maintained at 5% for all project hours. There was a corresponding 2% drop in non-resident apprentice hours while non-resident journey workers remained the same (70%).

The data illustrated in Chart 27 might seem to suggest that the Local Hire Ordinance has had little impact on the distribution of hours between San Francisco residents and Non-San Francisco residents on City and County sponsored projects. However, as we probe further, we find that these overall numbers fail to distinguish the differences in the distribution of hours by residence between projects covered by the Ordinance and those not covered by the Ordinance.

B. Comparing San Francisco Resident and Non-San Francisco Resident Participation on Projects Covered and Not Covered by the Local Hire Ordinance

The picture of San Francisco resident participation on City and County projects differs substantially when we compare this participation on projects covered by the Local Hire Ordinance with those projects not covered by the Ordinance during the legislation's first and second years of implementation (First Period: March 25, 2011 – March 1, 2012; Second Period: March 2, 2012 – December 31, 2012 - Charts 28 and 29).[4]

Overall, San Francisco resident journey and apprentice level workers are performing a much higher percentage of project hours on projects covered by the Ordinance. However, during the first two years following implementation of the Local Hire Ordinance, these San Francisco resident construction workers continued to perform a far greater number of hours on non-covered projects than on covered projects.

C. Journey and Apprentice Hours

During the first period between March 25, 2011 and March 1, 2012, San Francisco journey workers performed 24,128 or 29% of all journey hours on projects covered by the Local Hire Ordinance. Whereas these journeymen performed only 20% of the hours on non-covered projects. In the second period from March 2, 2012 through December 31, 2012, the participation of these San Francisco resident journey workers fell to 28% of all journey hours worked on covered projects. However, the total number of hours increased to 168,919, reflecting a corresponding increase in the number of covered projects and hours worked. Likewise, San Francisco resident journey workers performed a joint total of 746,533 hours on both covered and non-covered projects during the first period and this rose by 11% to 829,439 in the second period.

Similarly, of the overall apprentice hours, 67% were performed by local residents on covered projects compared with 40% of the hours on non-covered projects during the first period. Just as with the journeymen, apprentices saw a decline in the overall percentage of hours worked on covered projects in the second period, decreasing to 58%. Nevertheless, the actual number of apprentice hours on covered projects increased from 5,508 to 39,868. Moreover, the total

[4] PLEASE NOTE, the terms First Period: March 25, 2011 through March 1, 2012 and Second Period: March 2, 2012 through December 31, 2012 refer to chronological time periods and should be distinguished from OEWD's designation of YEAR 1 Projects and Year 2 Projects. When we state that we used data from covered projects during the First Period, this indicates that we drew data from projects in construction and reporting payroll data between March 25, 2011 and March 1, 2012 that were awarded during YEAR 1 of the Ordinance and subject to a 20% local hire participation requirement. When we state that we drew data from covered projects during the Second Period, this indicates that we used data from projects in construction and reporting payroll data between March 2, 2012 through December 31, 2012 that were both awarded during YEAR 1 of the Ordinance and subject to the 20% participation requirement and projects awarded during YEAR 2 of the Ordinance and subject to the 25% local hire participation requirement. Again, First Period and Second Period refer to specific time periods and are not synonymous with OEWD's terms YEAR 1 and YEAR 2 Projects that designate projects according to award dates and local participation requirements.

number of San Francisco resident apprentice hours on covered and non-covered projects rose 33% from 490,212 during the first period to 652,019 for the second period.

Chart 28: Journey Hours by Residence for City and County Projects - Covered and Non-Covered by the Local Hire Ordinance

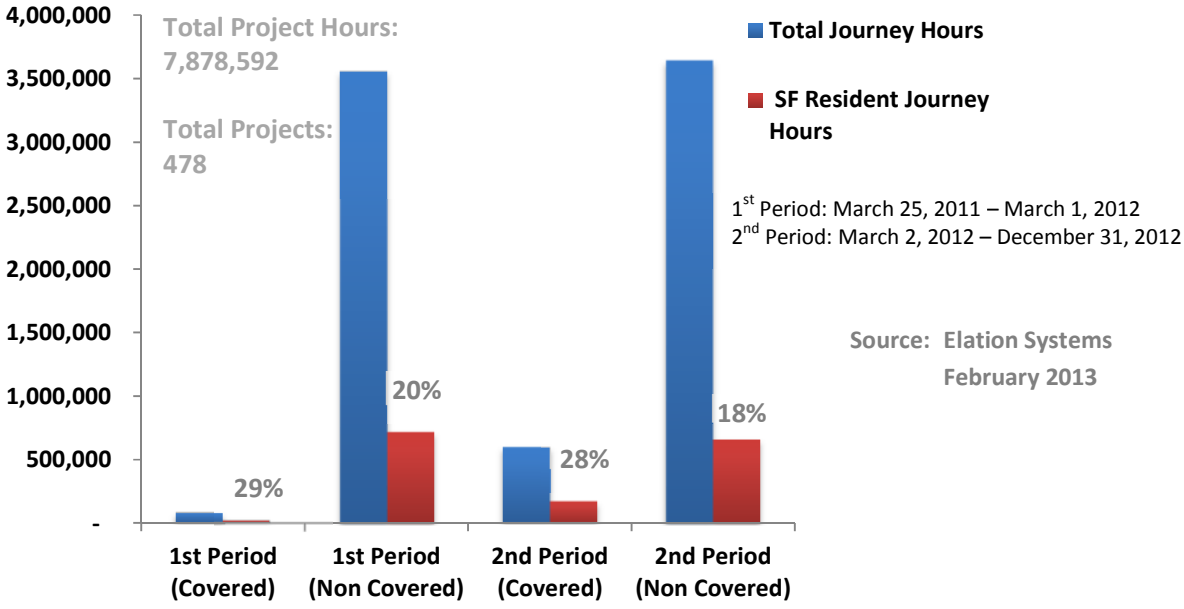
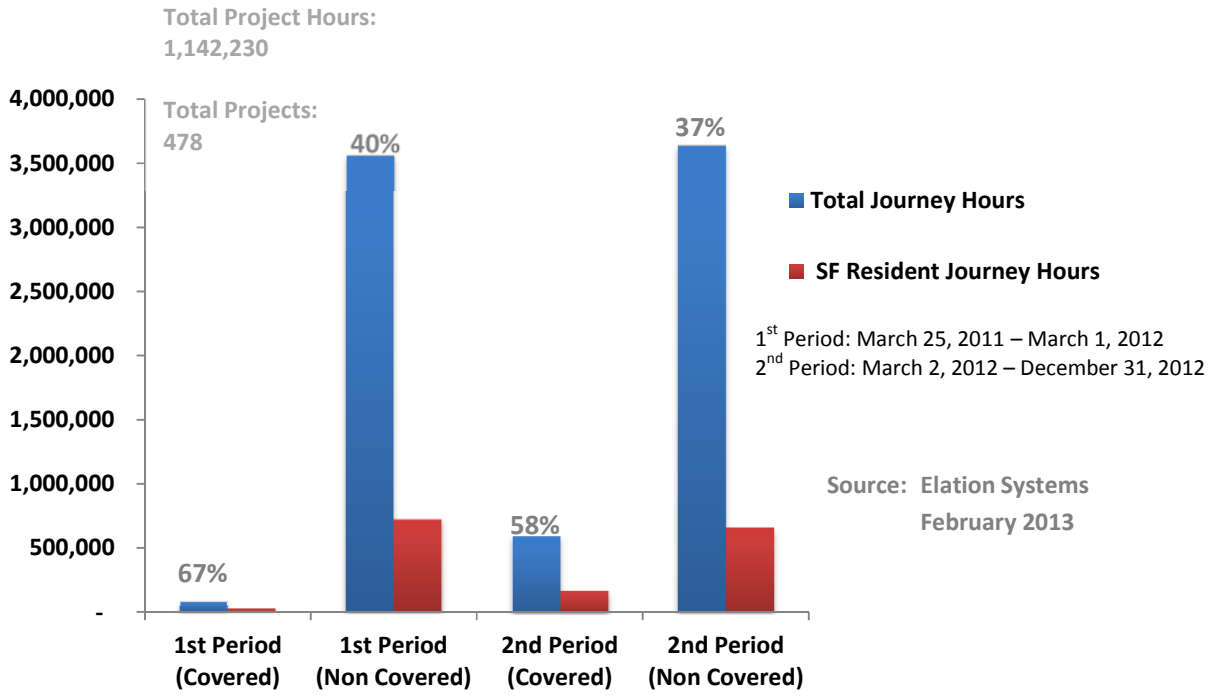


Chart 29: Apprentice Hours by Residence for City and County Projects - Covered and Non-Covered by the Local Hire Ordinance



D. Trade Distribution

We also compared the participation of journey and apprentice workers on a trade by trade basis. Tables 5 and 6 lists the total journey and apprentice hours by trade and residence for covered and non-covered projects, during the first and second periods.

Table 5: Journey Hours by Trade and Residence for Covered and Non-Covered Hours
1st Period: March 25, 2011 to March 1, 2012
2nd Period: March 2, 2012 to December 31, 2012

Trade	Period	Journey Hours					
		Total Non-Covered	Resident Non Covered	%	Total Covered	Resident Covered	%
Asbestos Worker, Heat And Frost Insulator	1st	39,003	8,129	21%	379	-	0%
	2nd	42,449	1,853	4%	9,449	786	8%
Boilermaker-Blacksmith	1st	37,964	-	0%	-	-	0%
	2nd	18,240	-	0%	11	-	0%
Bricklayer	1st	9,039	987	11%	-	-	0%
	2nd	7,275	959	13%	1,379	207	15%
Carpenter	1st	497,910	157,949	32%	3,993	1,120	28%
	2nd	541,167	153,196	28%	43,357	16,510	38%
Carpet, Linoleum, Soft Floor Layer	1st	8,022	2,473	31%	4,949	-	0%
	2nd	12,631	1,162	9%	1,075	40	4%
Cement Mason	1st	87,524	7,567	9%	1,878	646	34%
	2nd	58,593	5,170	9%	19,907	3,905	20%
Electrician	1st	285,913	46,691	16%	1,260	535	42%
	2nd	293,127	56,729	19%	42,190	7,791	18%
Elevator Constructor	1st	12,137	246	2%	-	-	0%
	2nd	9,444	957	10%	-	-	0%
Glazier	1st	45,402	14,295	31%	-	-	0%
	2nd	26,425	5,527	21%	3,186	737	23%
Inspector	1st	22,740	3,115	14%	-	-	0%
	2nd	26,205	2,745	10%	-	-	0%
Iron Worker	1st	186,218	43,941	24%	347	257	74%
	2nd	192,184	45,811	24%	24,308	5,534	23%
Laborers	1st	1,269,416	253,713	20%	52,388	16,268	31%
	2nd	1,139,487	197,501	17%	299,015	95,730	32%
Marble Mason	1st	2,738	-	0%	-	-	0%
	2nd	2,416	-	0%	-	-	0%
Operating Engineer	1st	479,535	55,059	11%	9,951	3,932	40%
	2nd	523,234	44,897	9%	68,640	21,166	31%
Painter	1st	88,950	22,173	25%	283	54	19%
	2nd	117,599	31,525	27%	3,741	969	26%
Pile Driver	1st	59,716	6,137	10%	456	188	41%
	2nd	112,003	8,502	8%	12,952	2,216	17%
Plasterer	1st	7,071	1,812	26%	-	-	0%
	2nd	22,331	2,918	13%	396	198	50%
Plumber	1st	174,392	51,646	30%	456	280	61%
	2nd	273,181	63,532	23%	15,391	2,947	19%
Roofer	1st	53,577	7,100	13%	56	-	0%
	2nd	35,322	8,380	24%	7,139	192	3%
Sheet Metal Worker	1st	66,830	15,022	22%	186	77	41%
	2nd	77,798	13,579	17%	15,392	3,654	24%
Surveyor	1st	6,892	957	14%	16	8	50%
	2nd	10,661	459	4%	499	34	7%
Teamster	1st	92,599	17,562	19%	5,366	664	12%
	2nd	62,942	8,383	13%	24,666	6,097	25%
Telecommunications Technicians	1st	1,715	4	0%	-	-	0%
	2nd	2,078	367	18%	-	-	0%
Tile Finisher and Setter	1st	26,494	5,829	22%	100	100	100%
	2nd	34,105	6,371	19%	936	208	22%

Source: Elation Systems
February 2013

Table 6: Apprentice Hours by Trade and Residence for Covered and Non-Covered Hours

Year 1: March 25, 2011 to March 1, 2012
Year 2: March 2, 2012 to December 31, 2012

Trade	Apprentice Hours						
	Year	Total Not Covered	SF Resident Not-Covered	%	Total Covered	SF Resident Covered	%
Asbestos Worker, Heat And Frost Insulator	1st	481	343	**71%**	0	-	**0**
	2nd	555	336	**61%**	40	8	**20%**
Boilermaker-Blacksmith	1st	648	648	**100%**	0	-	**0%**
	2nd	974	-	**0%**	0	-	**0%**
Bricklayer	1st	395	395	**100%**	0	-	**0%**
	2nd	904	250	**28%**	0	-	**0%**
Carpenter	1st	78,087	78,087	**100%**	590	550	**93%**
	2nd	76,776	47,134	**61%**	5449	2,250	**41%**
Carpet, Linoleum, Soft Floor Layer	1st	1,585	1,585	**100%**	1077	547	**51%**
	2nd	1,739	972	**56%**	112	40	**36%**
Cement Mason	1st	7,323	7,323	**100%**	868	868	**100%**
	2nd	2,651	1,000	**38%**	2864	2,739	**96%**
Electrician	1st	63,935	63,935	**100%**	382	104	**27%**
	2nd	71,371	22,456	**31%**	8465	2,421	**29%**
Elevator Constructor	1st	6,746	6,746	**100%**	0	-	**0%**
	2nd	6,647	48	**1%**	0	-	**0%**
Glazier	1st	15,497	15,497	**100%**	0	-	**0%**
	2nd	10,092	4,699	**47%**	735	136	**19%**
Inspector	1st	5,323	5,323	**100%**	0	-	**0%**
	2nd	5,221	355	**7%**	0	-	**0%**
Iron Worker	1st	47,233	47,233	**100%**	20	10	**50%**
	2nd	54,311	20,600	**38%**	4852	2,464	**51%**
Laborers	1st	109,551	109,551	**100%**	4976	3,422	**69%**
	2nd	115,318	35,861	**31%**	26088	20,644	**79%**
Marble Mason	1st	-	-	**0%**	0	-	**0%**
	2nd	-	-	**0%**	0	-	**0%**
Operating Engineer	1st	35,244	35,244	**100%**	88	8	**9%**
	2nd	45,606	10,724	**24%**	3633	2,990	**82%**
Painter	1st	15,230	15,230	**100%**	0	-	**0%**
	2nd	23,066	12,834	**56%**	330	198	**60%**
Pile Driver	1st	5,266	5,266	**100%**	0	-	**0%**
	2nd	11,763	1,549	**13%**	3331	857	**26%**
Plasterer	1st	188	188	**100%**	0	-	**0%**
	2nd	2,093	914	**44%**	0	-	**0%**
Plumber	1st	51,171	51,171	**100%**	141	-	**0%**
	2nd	111,323	41,427	**37%**	7400	3,664	**50%**
Roofer	1st	20,225	20,225	**100%**	61	-	**0%**
	2nd	17,986	7,429	**41%**	2638	1,321	**50%**
Sheet Metal Worker	1st	13,588	13,588	**100%**	0	-	**0%**
	2nd	19,449	6,979	**36%**	2386	97	**4%**
Surveyor	1st	317	317	**100%**	0	-	**0%**
	2nd	473	-	**0%**	93	40	**43%**
Teamster	1st	-	-	**0%**	0	-	**0%**
	2nd	-	-	**0%**	0	-	**0%**
Telecommunications Technicians	1st	-	-	**0%**	0	-	**0%**
	2nd	-	-	**0%**	0	-	**0%**
Tile Finisher and Setter	1st	3,981	3,981	**100%**	0	-	**0%**
	2nd	5,236	1,162	**22%**	54		**0%**

Source: Elation Systems
February 2013

As Tables 5 and 6 illustrate, the participation of San Francisco journey and apprentice workers varies across the trades on both covered and non-covered projects. For some trades (see below) the percentage of project hours performed by San Francisco journey workers on non-covered projects was at least 20% during the first period. Of note, for this same timeframe, San Francisco resident apprentices account for almost 100% of all apprentice hours worked on these non-covered projects across all trades. The picture differs somewhat for the second period. The percentage of hours for San Francisco resident hours on non-covered projects declines for most trades, with the exception of the Bricklayers, Electricians, Painters, Roofers and Asbestos Workers.

Trades in which SAN FRANCISCO Journey Workers Performed at Least 20% of hours on Non Covered Projects:

- Asbestos Workers
- Carpenters
- Carpet /Linoleum/Soft Floor Layers
- Glaziers
- Iron Workers
- Laborers
- Painters
- Plasterers
- Plumbers
- Sheet Metal Workers
- Tile Finisher/Setters

For covered projects during the first period, San Francisco journey workers performed at least 20% of the total journey hours for all trades that reported hours, with the exception of the Bricklayers, Carpet /Linoleum/Soft Floor Layers, and Painters. This changed only somewhat during the second period. San Francisco resident journey hours were at least 20% for the Carpenters, Cement Masons, Glaziers, Iron Workers, Laborers, Painters, Plasterers, Sheet Metal Workers and Tile Finisher/Setters. For Carpet /Linoleum/Soft Floor Layers, Electricians, Operating Engineers, Pile Drivers, Plumbers, and Roofers, San Francisco resident journey workers accounted for less than 20% of the journey hours. In contrast, for both the first and second periods, San Francisco resident apprentices performed at least 20% of the total apprentice hours for all trades with a few minor exceptions. The Carpenters, Carpet /Linoleum/Soft Floor Layers, Cement Masons, Iron workers, Laborers, Operating Engineers, Painters, Plumbers and Roofers all achieved a 50% San Francisco resident percentage of apprentice hours during either the first or second periods.

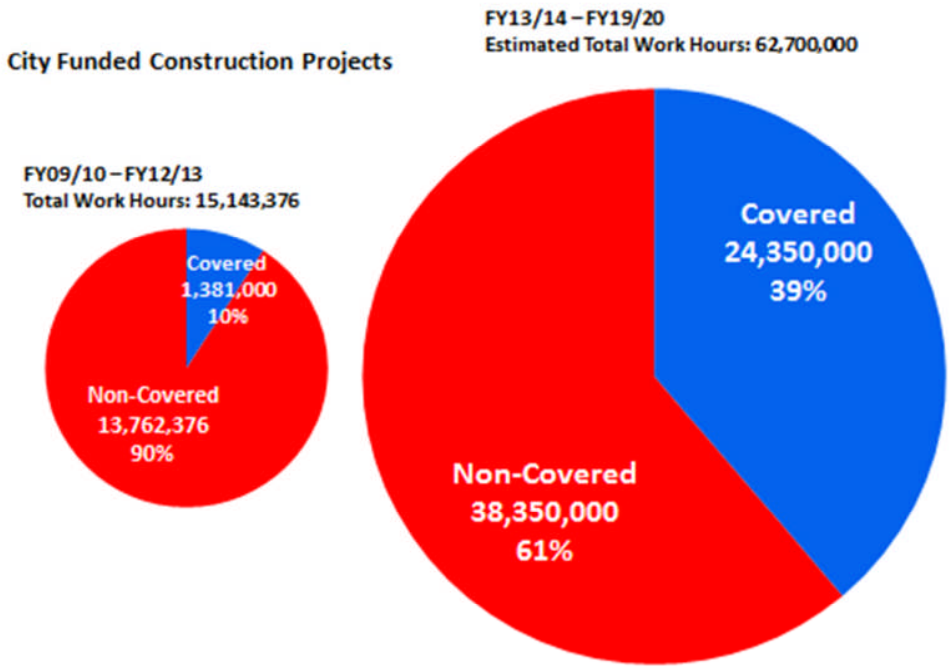
These data indicate that San Francisco resident construction journey and apprentice workers perform a significant amount of all project work hours within most trades on City and County sponsored projects. Since the initiation of the Local Hire Ordinance, the continues to be the case but by far San Francisco residents have worked vastly more hours on projects not covered by the Ordinance. This is due to the significantly greater number of non-covered projects than covered projects. For those projects that are covered by the Local Hire Ordinance, most of the skilled trades have been able to direct at least 20%, and in many cases a higher percentage, of the journey hours to San Francisco residents to these projects over the last couple of years. The same has been true for attaining the 50% local resident apprentice participation requirement.

This would indicate that there is capacity within most of the trades to respond to escalating percentages for San Francisco resident participation within the Local Hire Ordinance.

E. Growth in Covered Projects and Covered Hours

Chart 30 illustrates the expected growth in construction hours that will be covered by the Local Hire Ordinance from now until 2020. The smaller pie indicates the number of City and County project hours for covered and non-covered projects from Fiscal Years 2009-10 to Fiscal years 2012-13. Of the total 15,143,375 craft hours worked during this period, only 9% or 1,381,000 hours were performed on covered projects. The larger pie chart on the right illustrates the estimated growth in the number of covered hours based on projects in the current City pipeline that will be constructed in the next ten years through Fiscal Year 2019-20. These covered projects will comprise a much larger share of City and County work than they do today. An estimated 39% or 24,350,000 of the total 62,700,000 project hours are expected to be on covered projects.

Chart 30: Local Hire Projects FY 2009/10-2012/13 Compared to Local Hire Projects FY2013/14 – 2019/20



Source: Office of Economic and Workforce Development, June 2013

As the number of covered projects and covered hours increases, there will be pressure to migrate more and more San Francisco journey and apprentice level workers to these covered projects. At this time, while there are workers available across most trades as evidenced by the hours that are being worked on non-covered projects, the data are insufficient to signify a

definitive level of availability. Currently, for some trades the number of covered hours is so few that assessing whether there is capacity to meet 20%, 25% or more is not feasible.

F. Wage Distribution and Inflation

The potential for wage inflation is a serious concern. If the demand for San Francisco resident construction workers on projects covered by the Local Hire Ordinance pushes up against a limited supply of workers, market forces would tend to drive up wages. Therefore, we examined the wage data for 2012 for both covered and non-covered projects and compared that with wage data from 2010 for City and County sponsored projects prior to the passage of the Local Hire Ordinance. The data suggested there was no such wage pressure or cost inflation for the trades with the most covered hours, Laborers and Carpenters. There did appear to be some wage pressure for other trades in highest demand, Operating Engineers, Electricians and Plumbers. However, these trades had relatively few covered hours so that the cost impact was very small. Likewise, there was some evidence of wage pressure specifically for San Francisco resident apprentice plumbers and electricians. However, again, the number of covered hours was relatively few so that the impact was not significant.

The issues of wage pressure and cost inflation merit attention as the number of covered hours for all trades continues to rise in coming years. The City should continue to monitor and analyze labor cost data on a trade-by-trade basis, paying particular attention to those trades that perform the greatest number of hours on City sponsored projects and, thus, have the greatest impact on cost. Such analysis will provide key information about the balance between demand and supply of local workers as well as the potential cost impacts of the Ordinance.

II. Section 3: Summary of Findings

Since its initiation, the Local Hiring Policy for Construction has had a modest impact on the overall utilization of San Francisco resident construction workers on City and County sponsored projects. So far, the majority of San Francisco residents continue to work primarily on projects not covered by the Ordinance. However, for those projects subject to the Ordinance, San Francisco construction workers across all trades are participating at higher levels than on projects not covered by the Ordinance. This San Francisco resident participation varies across trades as well as between journey and apprentice level workers. While most of the trades are managing to meet the Year 1 and Year 2 requirements of the Ordinance, others are already experiencing challenges in directing 20-25% of the project hours to San Francisco residents.

Over the next eight years, the number of covered projects and hours are estimated to increase very significantly. Currently, less than 10% of the City and County projects are covered by the Ordinance. By 2021, this should reach at least 39%. This will create a tremendous demand for San Francisco resident construction workers in all trades.

At this time, unfortunately, the certified payroll data are not sufficient to yield clear or conclusive information on availability of San Francisco journey and apprentice workers on a trade by trade basis. To date, there simply have not been enough covered projects or hours worked at the 25% requirement level to adequately evaluate the availability of the SAN FRANCISCO worker pool. As more Elation Systems data are obtainable, we should be able to gain a greater sense of local availability.

Further, the Ordinance does not appear to be causing any wage inflation. Nonetheless, this remains a potential impact and should be monitored and analyzed going forward.

SECTION 4: Updated San Francisco Workforce Demand

SECTION 4: Updated San Francisco Workforce Demand

In 2010, the team was asked to generate workforce projections and assess construction workforce demand based on the City and County's 10 Year Capital Plan for Fiscal Years 2011-2020. This Capital Plan is meant to serve as a road map for San Francisco project implementation, including the job creation associated with major infrastructure projects.[5] For this study, we re-examined the updated Capital Plan for Fiscal Years 2012-2021 issued in March 2012 that recommended construction work totaling $24.8 billion dollars. We concluded that the City and County of San Francisco plans to continue investing substantial dollars to improve and expand the City's infrastructure over the next 10 years. These investments will generate a significant number of skilled-trades jobs, and the City and County of San Francisco will continue to be a source of increasing demand for San Francisco's skilled tradespeople, particularly its resident construction workers.

To more fully understand the demand that City and County's projects will place on the local labor supply, it is important to view this demand within the larger context of both the publicly and privately sponsored work that is scheduled between now and 2021. This includes construction projects undertaken by federal, state, private commercial firms and other entities.

I. OEWD Projections

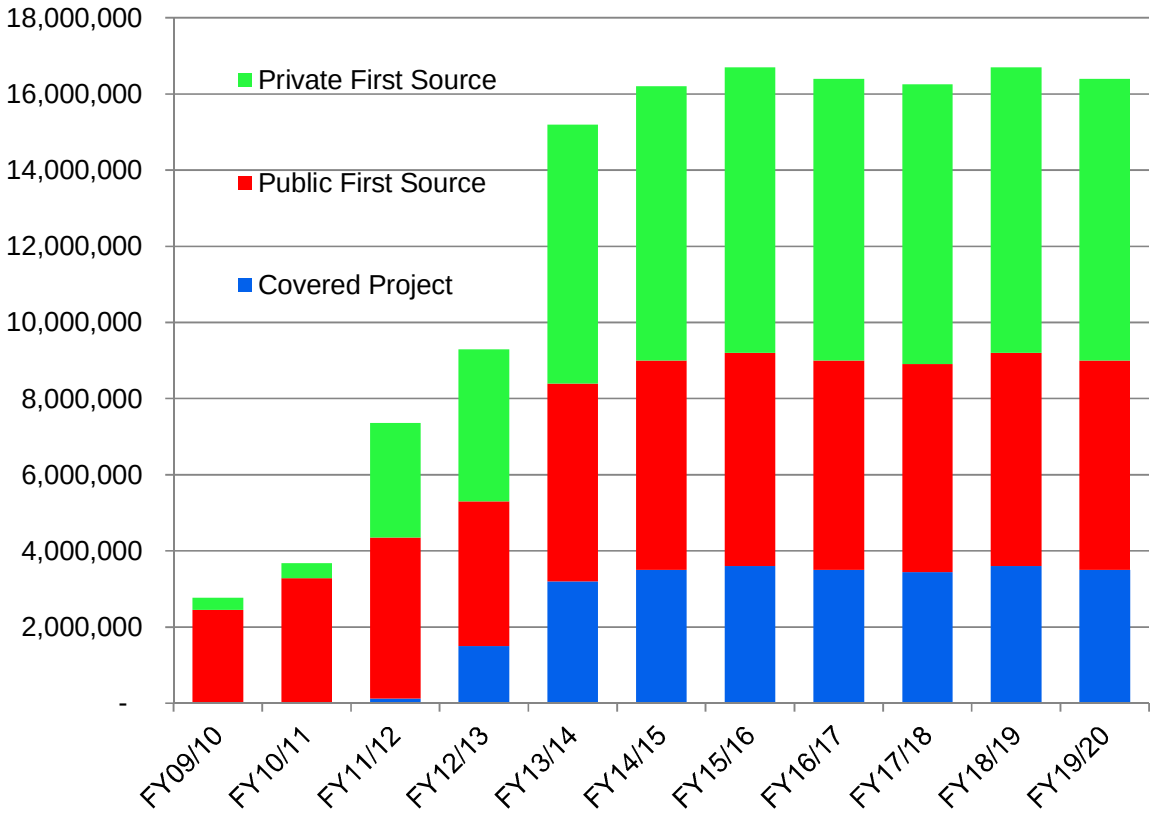
As part of its work as the administrator for the Local Hire and First Source Policies, OEWD has been tracking the upcoming construction work impacted by these two mandates. For fiscal year 2012-2013 alone, OEWD estimated there would be approximately $5.7 billion dollars of such construction work performed in San Francisco, in addition to the work identified in the City's Capital Plan.

Moreover, while at this time the majority of resident construction workers are working on projects not covered by the Local Hire Ordinance, as more City projects come under its purview, there will be pressure to migrate workers to City projects. Simultaneously, there will be similar pressure to meet workforce goals on projects subject to the First Source Policy.[6] OEWD estimates that the work subject to the City's Local Hire Ordinance and its First Source Policy will generate 123,150,000 work hours between July 2012 and June 2020. This translates to approximately 61,575 full-time equivalent positions. As can be seen on Chart 31, the work escalates significantly in FY13 14 and continues at a sustained pace through FY 19-20.

[5] In August 2005, City government adopted Administrative Code sections 3.20 and 3.21 requiring the City to annually develop and adopt a ten-year capital expenditure plan for city-owned facilities and infrastructure. The Plan's Spending Plan sets out projects totaling $31.7 billion, and a more constrained Funding Plan totaling $26.9 billion. Even the Funding Plan, though, does not have guaranteed funding for its projects, and rests on expectations of future funding availability.

[6] San Francisco Administrative Code, Chapter 83, First Source Hiring Program. Requires public contracts in excess of $350,000 or City purchases for goods and services in excess of $50,000, and private developers or builders with projects requiring a building permit for development of 10 or more new residential units or commercial development greater than 25,000 square feet, to enter into a First Source Agreement with the City and make good faith efforts to employ economically-disadvantaged residents in 50% of new entry level positions.

Chart 31: Projected Construction Hours for Covered, Public First Source and Private First Source Projects FY 09/11 through FY 19/20



	FY10/11	FY10/11	FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	FY18/19	FY19/20
Work Hours	2,770,597	3,678,779	7,358,000	9,300,000	15,200,000	16,200,000	16,700,000	16,400,000	16,250,000	16,700,000	16,400,000
FTE	1,385	1,839	3,679	4,650	7,600	8,100	8,350	8,200	8,125	8,350	8,200

Source: Office of Economic and Workforce Development, June 2013

II. Trades in Highest Demand

While these projects signal an upswing in local construction activity for San Francisco, they will place a tremendous demand on the existing construction workforce. Moreover, the demand will impact trades differentially. The EDD and Census data discussed in Section 2 indicate that overall Laborers, Carpenters, Painters, Electricians and Plumbers are in highest demand for San Francisco construction work. This changes somewhat for major infrastructure projects where Operating Engineers and Pile Drivers move into the highest demand category as well. [7] To meet the growing

[7] L. Luster & Associates, Labor Market Analysis San Francisco Construction Industry, Final Report, October 18, 2010.

demand of San Francisco's construction activity a plentiful supply of skilled Laborers, Operating Engineers, Carpenters, Pile Drivers, Painters, Electricians, and Plumbers will be required.

III. Section 4: Summary of Findings

Over the next seven years, the construction activity outlined in the City's Capital Plan along with upcoming federal, state and privately sponsored construction projects will produce significant and sustained demand for construction skilled tradespeople in San Francisco. Moreover, the Local Hire Ordinance in combination with the First Source Policy will create an even stronger call for SAN FRANCISCO resident construction workers, particularly those in the highest demand trades: Laborers, Operating Engineers, Painters, Electricians and Plumbers. The demand for these workers will be heightened beginning in 2014 and remain through 2020.

SECTION 5: Pipeline for San Francisco Resident Skilled Construction Workers

SECTION 5: Pipeline for San Francisco Resident Skilled Construction Workers

This section examines issues related to the pipeline for San Francisco resident skilled construction workers. We focus on data regarding:

- New and projected enrollments of the registered apprenticeship programs, in particular the numbers and characteristics of San Francisco resident apprentices
- Recent intake rates of San Francisco resident apprentices
- Up-to-date cancellation and completion rates of apprentices.

We also include updated information about CityBuild Academy's contribution to the San Francisco resident apprentice pipeline.

I. Numbers and Characteristics of San Francisco Resident Apprentices

With the assistance of the Division of Apprenticeship Standards (DAS) of the California Department of Industrial Relations (DIR), we were able to obtain updated data on apprentices resident in San Francisco, including:

- Data on the numbers of active apprentices from June 2010 (time of previous report) to December 2012
- Data on the rate of intake of active apprentices from June 2010 to December 2012.

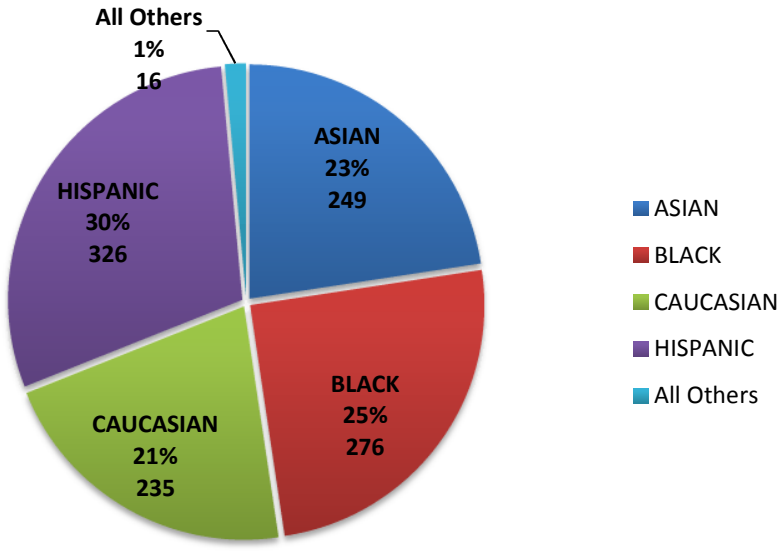
As of December 2012, there were 1,102 active apprentices resident in San Francisco. This compares to the 1,087 active apprentices resident in San Francisco in June 2010. Charts 35 and 36 show the distribution by ethnicity and gender of these 1,102 active apprentices in December 2012.

When compared to the ethnic distribution in June 2010, the ethnic distribution in 2012 looks very much the same. The Hispanic percentage has increased from 27% to 30%, while the other three major ethnic groups have remained for the most part the same:

- Black, 26% in 2010, 25% in 2012
- White 22% in 2010, 21% in 2012
- Asian, 23% in 2010, and 23% in 2012

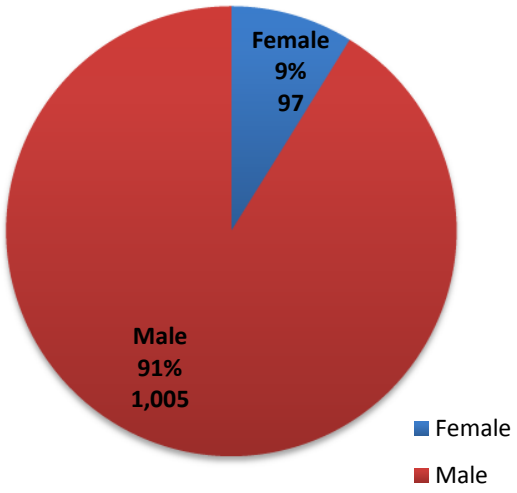
The distribution by gender also has not changed much from June 2010. At that time, males comprised 90% of the active apprentices. In December 2012, males made up a slightly higher 91% of active apprentices. Notably, as in 2010, the 2012 percentage of San Francisco resident female active apprentices (9%) is significantly higher than the percentage of women construction workers now employed in San Francisco which stands at 2%.

Chart 32: San Francisco Resident Active Apprentices by Race & Ethnicity



Source: CA Department of Industrial Relations Division of Apprenticeship Standards, February 2013

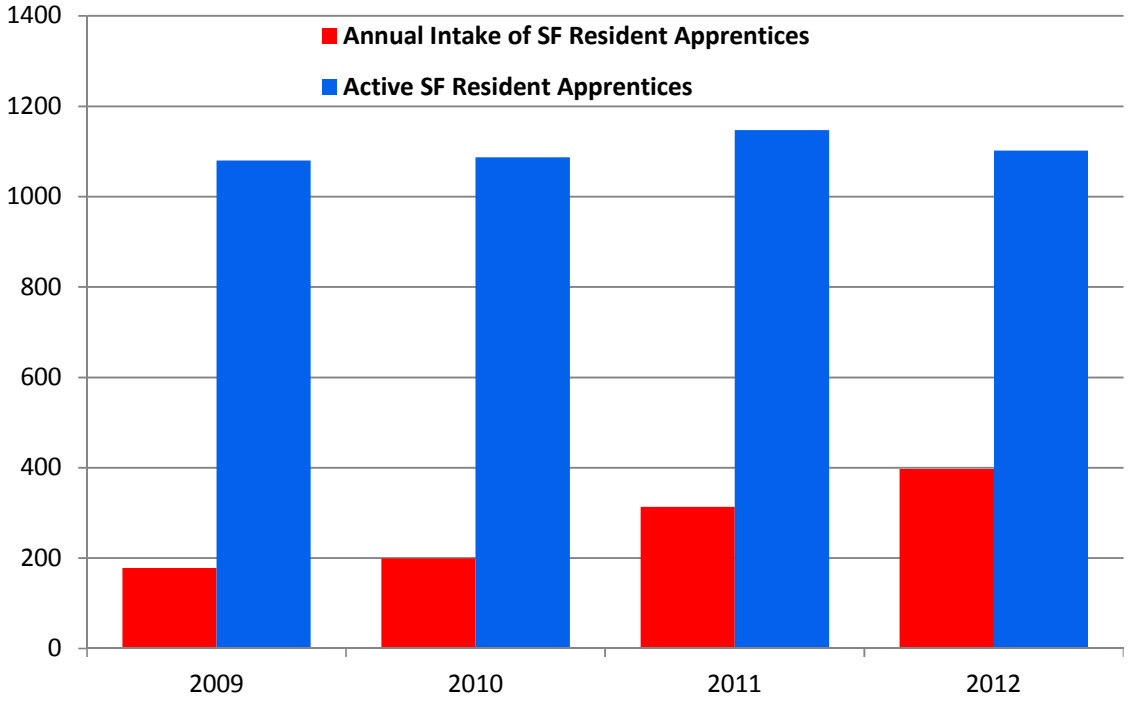
Chart 33: Distribution of San Francisco Resident Active Apprentices by Gender



Source: CA Department of Industrial Relations Division of Apprenticeship Standards, February 2013

The DAS data also includes data on annual apprentice intake, as shown in Chart 34 below. The 398 new San Francisco resident apprentices, who entered in 2012, represented a sharp increase from the number of annual intakes during the period 2009 and 2010, as well as an increase over the 314 new apprentices in 2011. The 398 new apprentices in 2012, though, were still well below the number of annual San Francisco resident apprentice intakes in the pre-Great Recession period of 1999 – 2007 which ranged from a high of 689 to 572 in 2007.

Chart 34: Annual Intake of SF Resident Apprentices and Active SF Resident Apprentices, 2009-2012



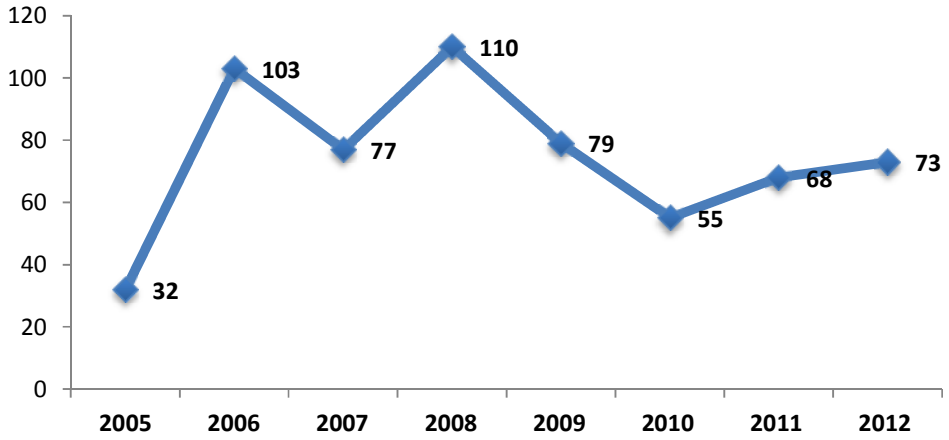
Source: CA Department of Industrial Relations, Division of Apprenticeship Standards, February 2013

Chart 34 also shows the change in the number of San Francisco resident active apprentices from 2009-2012. The current number of resident apprentices, 1102, is only slightly higher than the 1087 in 2010. It is likely that during the economic slump, which continued for most of San Francisco's economy through 2011, significant numbers of apprentices became unemployed and dropped out of their apprenticeship programs. So the actual number of active San Francisco resident apprentices did not grow, despite the influx of new intakes in 2011 and 2012.

A. CityBuild Academy

In the previous report we found that San Francisco's pre-apprenticeship training program, CityBuild Academy, was playing an important role in the construction workforce pipeline for San Francisco residents. This is particularly true for ushering economically disadvantaged residents into the construction skilled trades. Moreover, most of CityBuild Academy's graduate apprentices are placed by the program on projects covered by either the Local Hire or First Source Ordinances. As can be seen in Chart 38, in 2010 and 2011 the number of CityBuild Academy graduate apprentices, 55 and 68 respectively, declined appreciably from the 2008 and 2009 levels. In 2012, the Academy shows an upswing in the number of new graduate apprentices (73) but they remain below the 2008 (110) and 2009 (79) figures.

Chart 35: CityBuild Academy Graduation Rates, 2000 – 2012



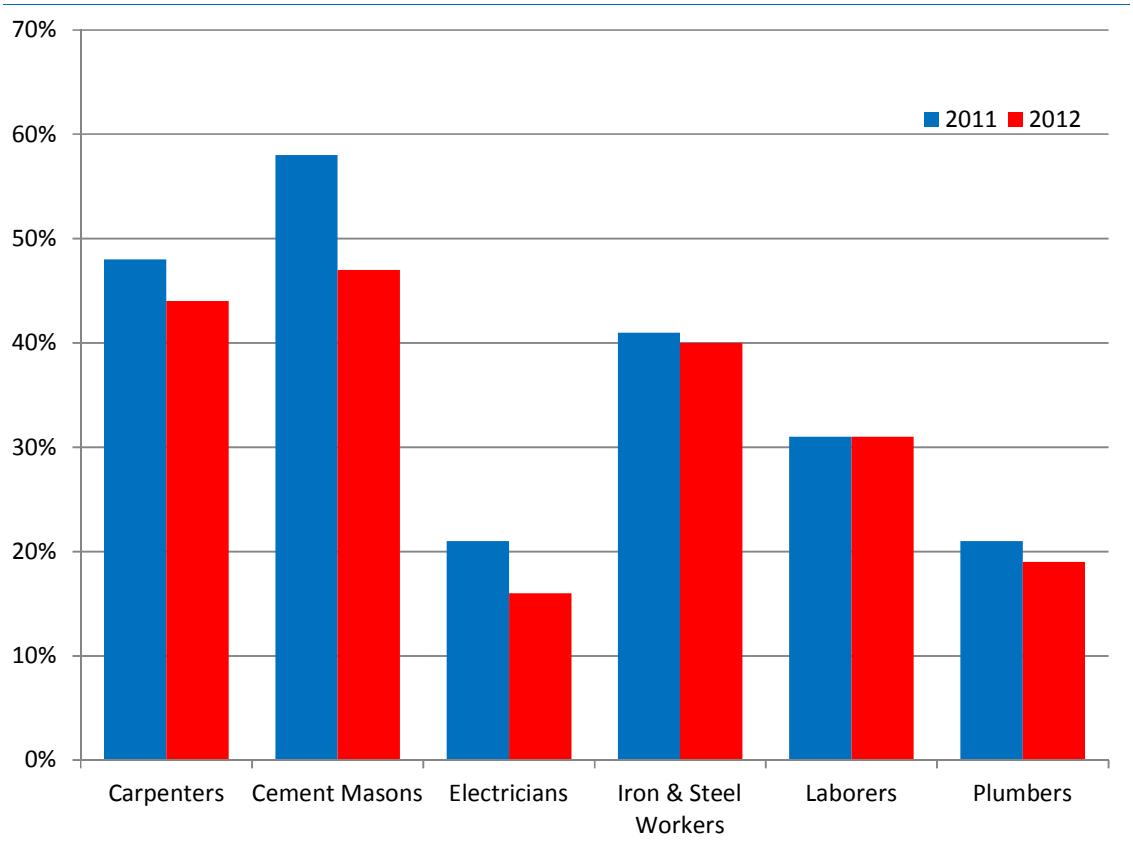
Source: Office of Economic and Workforce Development, City and County of San Francisco February 2013

OEWD data indicate that while these Academy graduate apprentices entered about 22 different trades, the majority became Laborer, Carpenter or Iron Worker apprentices. A much smaller proportion entered the Operating Engineer, Electrical Worker, or Plumber/Pipe Fitter apprenticeship programs. All of these trades are expected to be in highest demand on City and County Capital Plan projects. Clearly, CityBuild Academy and the OEWD/CityBuild program continue to make a significant contribution to bringing new economically disadvantaged residents into the skilled trades and onto City and County sponsored projects. However the Academy must also respond to the economic conditions operating within the local construction industry. The cutbacks created by the Great Depression impacted the Academy's ability to usher residents into and through the construction workforce pipeline. In 2013, OEWD plans to operate two training cycles and train an additional 100 potential apprentices.

B. DAS Apprenticeship Program Drop Out & Completion Rates

The pipeline limitations of the current apprentice training numbers of San Francisco residents can also be seen when we examine the drop out and completion rates of apprentices. Chart 39 shows DAS data on "cancellation" rates within the first year for selected Apprenticeship Committees in 2011 and 2012. As well, these are the rates relative to apprentices who drop out during the first year—the period in which much of program drop outs occur.

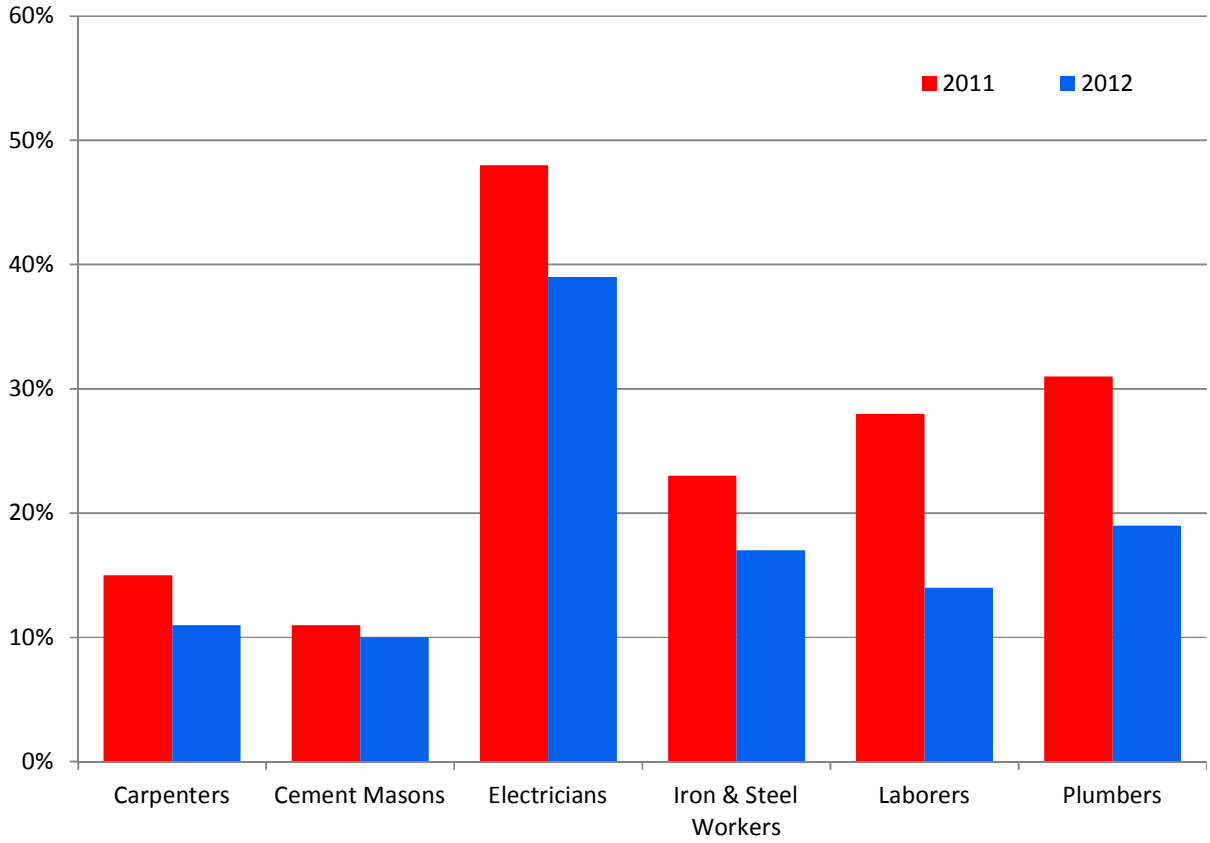
Chart 36: Drop Out Rates within First Year for San Francisco Resident Apprentices



Source: CA Department of Industrial Relations, Division of Apprenticeship Standards, February 2013

The rates vary among the crafts, and vary between the two years. However, for three of the crafts—Carpenters, Cement Masons, and Iron & Steel Workers—the rates for both years were above 40%, and for the other three crafts—Electricians, Laborers, and Plumbers—the rates were near or above 20%. The rates for nearly all crafts decreased from 2011 to 2012, likely reflecting the better job market available to apprentices in 2012. Among those who survive the first year of the apprenticeship, the drop out rate decreases, but there remains significant attrition. This can be seen in Chart 40 depicting Completion Rates for Selected Apprenticeship Committees from Intake for 2011 and 2012. Completion rates from intake differ widely among the crafts. The 2011 and 2012 rates range from the 48%/39% for Electricians to the 11%/10% among Masons.

Chart 37: Completion Rates from Intake for San Francisco Resident Apprentices



Source: CA Department of Industrial Relations, Division of Apprenticeship Standards, February 2013

Increasing the number of intakes of apprentices will result in increasing the pipeline of experienced apprentice and journey level workers. However, the process is not an easy one given the significant drop out rates across all trades, especially during the first year of apprenticeship.

C. *Apprenticeship Participation for Trades in Highest Demand on City and County Sponsored Projects*

In addition to the DAS apprenticeship data, we surveyed the Joint Apprenticeship Training Centers (JATCs) that serve San Francisco residents. These are the apprenticeship programs that recruit and train most of the unionized construction workforce that is employed in San Francisco. While the DAS data discussed earlier is drawn from the reports submitted by these JATCs to the Department of Industrial Relations, the survey requested additional information regarding projected intakes and trends in San Francisco resident participation to corroborate and deepen the DAS data. Of the thirty (30) programs surveyed, we received responses from seventeen (17) JATCs.

As highlighted in Section 4, Laborers, Operators, Carpenters, Pile Drivers and Electricians will be in highest demand on City and County projects. We received survey results from all five of the JATCs serving these trades. The data received revealed that the programs serve all of Northern California and San Francisco residents represent a modest segment of their apprentices (Table 8).

Table 8: Survey Responses from JATC for Highest Demand Trades

Trade	Current Number Enrolled		# Accepted Past 3 - 5 Years		# Journey Out Past 3 -5 Years		Intakes Projections 3 - 5 Years		Referral Sources
	Total	SF Resident	Total	SF Resident	Total	SF Resident	Total	SF Resident	
Carpenter	1125	118	2331	230	1266	111	2600	no response	Colleges, Stockton Youth Build, YEP, City Build, Cypress Mandela, Monterey Adult School, Richmond Works, High Schools
Pile Driver	133	7	196	12	50	1	220	no response	see above
Electricians - Inside Wiremen	241	89	187	62	72	26	350	129	Website, outreach to public & private agencies, career days at schools
Laborers - Construction Craft Laborer	1072	93	1335	70	822	25	1200	35	Pre-Apprenticeship Programs, Contractors, CityBuild, Conservation Corps
Operating Engineers - Construction Equipment Operator, Construction Gradechecker, Construction Lubrication Technician, Crane & Dredge Operator, Heavy Duty Repairer, Mobile Concrete Pumps Operator, Mobile Vertical AND/OR Horizontal Drilling Machine Operator	443	22	874	no response	725	no response	1000 - 1500	no response	Jobs Corps., Helmets to Hard Hats, CityBuild

Source: JATC Program Survey Responses, February 2013

- The Carpenters report that over the past 3 to 5 years they accepted 2,331 apprentices and about 230, or 10%, of these were San Francisco residents. Also, during the past 3 to 5 years, 1,266 Carpenter apprentices journeyed out. Of these 1,266, 111, or 9%, were San Francisco residents. Within the next 3 to 5 years, the Carpenters anticipate enrolling 2,600 new apprentices. If the current 10% ratio for San Francisco residents remains the same, 260 of these new apprentices will be San Francisco residents. Using an averaged (average of 2011 and 2012) DAS reported completion rate of 13%, we would expect 41 of these 312 apprentices to journey out.

- Pile Drivers apprentice programs report an even smaller number of San Francisco residents. At this time, seven or 5%, of apprentice Pile Drivers are San Francisco residents. Over the past 3 to 5 years, the JATC has accepted 196 Pile Driver apprentices of which 12, or 6%, have been San Francisco residents. Moreover, of the 50 Pile Drivers that have journeyed out over the past five years, one has been a San Francisco resident. The Pile Drivers expect to enroll about 220 apprentices within the next three to five years. If the San Francisco resident proportion remains the same, then an estimated 11 of the 220 will be San Francisco resident apprentices.

- The Operating Engineers (all categories) are currently training 443 apprentices of which 22, or 5%, are San Francisco residents. If this trend continues over the next 3-5 years, of the 1000 – 1500 apprentice enrollees, we can expect 50-75 will be San Francisco residents.

- Similarly, although San Francisco residents currently comprise 7% of all Laborer apprentices, the Northern California Laborers estimate that only 35, or 3%, of their 1,200 Construction Craft Laborer intakes within the next 3 to 5 years will be San Francisco residents.

- The story differs somewhat for Electricians. The Electrical Worker JATC is the only training center located in San Francisco. They report that currently there are 241 apprentices enrolled and 89, or 37%, are San Francisco residents. Likewise, over the past 3 to 5 years they have accepted 187 new apprentices of which 33% were San Francisco residents. This same trend holds for those apprentices that have attained journey status, in which 26, or 36%, of the total 72 are San Francisco residents. Finally, the Electrical Worker JATC estimates that they will bring in 350 new inside wiremen apprentices within the next 3 to 5 years, and they also expect 37% of these will be San Francisco residents.

When viewed in combination, the DAS apprentice program drop out and completion rate data and the JATC data indicate that the San Francisco resident pipeline for construction trades in highest demand on City sponsored projects will be limited for at least the next several years. With the possible exception of Electrical Workers, the number of San Francisco residents expected to journey out in the next 3 to 5 years is very constrained. Also constrained is the overall number of San Francisco residents that are expected to enter these apprenticeship programs.

II. Section 5: Summary of Findings

The supply of San Francisco resident construction workers and efforts to increase this worker pool are inexorably linked with the existing pipeline for construction workers. Currently, significant constraints exist on the pipeline, particularly for the unionized workforce who tends to predominate on City and County sponsored projects. Large numbers of construction workers, including apprentices, left the construction workforce during the years of the economic downturn, resulting in few San Francisco residents in the current pipeline working towards journey status. Further, the apprenticeship drop out/completion rates signal the struggle that most apprentices experience in achieving journey status. Moreover, many of the unionized apprenticeship training programs are not projecting sizeable San Francisco resident enrollment over the next 3 to 5 years.

The findings indicate that the number of San Francisco residents enrolled in apprenticeship training programs is not geared to create a significant jump anytime soon regarding the employment of San Francisco resident construction workers, especially not relative to journeymen. Today, the number of apprentices may be sufficient to meet existing Local Hire goals but the City will not be producing a significant increase in new journey level workers within the next few years from its pool of current apprentices.

SECTION 6: Findings and Implications for Local Hire Policy

SECTION 6: Findings and Implications for Local Hire Policy

In this final section, we present implications of the findings we believe are most pertinent in assessing the implementation of San Francisco's Local Hiring Policy for Construction, in particular the evaluation of the annual escalation rates for mandatory resident participation. The aim of this study is to inform the Mayor's Construction Workforce Advisory Committee, OEWD, the Controller's Office, and other interested stakeholders in their review of this Policy. We understand that assessing the impact of the mandatory participation levels and determining the availability of a sufficient supply of qualified resident construction workers are important to this review.

I. Worker Demand

A. Since 2011, construction employment in San Francisco has been on a growth trajectory, reaching 14,328 payroll jobs in the second quarter of 2012. This is in keeping with San Francisco's overall job recovery noted by City and County's Chief Economist, Ted Egan, in his October 3, 2012 presentation, *The End of the Great Recession*. Although modest, the Bay Area has been steadily adding private sector jobs, including construction jobs.

   The City and County's 10-Year Capital Plan continues to signal that San Francisco public investment in infrastructure and building will continue into the next decade. Moreover, large scale, private sector construction activity will also be robust, creating a strong demand for construction workers.

   In addition, about 50% of the San Francisco resident construction workforce is now over the age of 45. Many of these workers will be leaving the industry within the next five to ten years. Census data show that younger workers are not entering the skilled trades in sufficient numbers to replace older workers leaving the industry, adding to a growing demand for resident construction workers.

B. The escalating Local Hire percentage requirements on City and County sponsored projects will produce an increased demand for San Francisco resident skilled tradespeople. Many of the City's projects currently in construction were awarded prior to the passage of the Ordinance, and therefore, were not subject to its requirements. This will no longer be the case in coming years. The projects included in the Capital Plan are estimated to drive up the percentage of covered projects to at least 39% of all City and County sponsored projects. The construction hours on these projects are estimated at no less than 62,700,000 hours. Thus, not only will the number of projects covered by the Ordinance increase throughout the decade but the size and breadth of projects will also increase. Further, it is important to note that the construction phases for many of these projects, along with existing covered projects, will overlap. Consequently, the demand for San Francisco resident skilled tradespeople will continue to increase to a considerable extent in coming years.

As of March 1, 2013, OEWD reports that most crafts are meeting the Year 1 local hire percentage of 20% and Year 2 percentage of 25%. However, some trades including the Carpet/Linoleum/Soft Layer workers, Pile Drivers, and Roofers have struggled to attain 20%. As the percentage requirements escalate annually from 30% in Year 3 to 50% in Year 7, those trades that are already struggling will need to substantially expand their pool of San Francisco resident workers. Indeed, to achieve a 50% local participation percentage, it is likely that the pool of San Francisco residents for all crafts, with the possible exception of the Laborers, will need to expand substantially.

Moreover, the demand for San Francisco craft workers will not be limited to City and County sponsored projects. Much of San Francisco's private construction is subject to the First Source Ordinance which at minimum requires that economically-disadvantage jobseekers have the opportunity to compete for entry level positions with the goal of filling at least 50% of these jobs. Likewise, several private projects have elected to participate in the City's local hiring program. The California Pacific Medical Center project has committed to an overall 30% local hiring goal for their construction workforce, and a letter of commitment has been signed for the Golden State Warriors Project for an overall 25% local workforce goal.

The combined factors of substantial construction activity and an aging construction workforce will produce an ongoing and steady demand for construction workers across all craft areas in San Francisco. In addition, the joint mandates of the Local Hiring and First Source Ordinances will create a heightened demand for San Francisco resident construction workers across all trades. Most crafts will need to considerably increase their pool of resident workers over the course of the next three to five years to respond to these demands.

II. Worker Supply

A. The issue of worker supply is not as clear cut as the demand. Ideally, the team would have data to pinpoint the current number and availability of San Francisco residents working in the construction industry on a trade by trade basis. We would know their respective craft areas, skill levels, and age. We would be able to determine the size of the qualified worker pool. We would also be able to locate a true "saturation" point, as it related to whether there are additional qualified San Francisco construction workers available for work. This would provide the necessary information to assess the feasibility of the escalating percentage requirements as spelled out in the Ordinance.

B. Unfortunately, the data are less than conclusive. The escalating demand for workers will place a great deal of pressure on the supply side. However, without a clear idea as to how many skilled workers are actually available relative to each trade, it is difficult to determine whether the supply of San Francisco resident workers is adequate to meet the general demand, as well as the heightened demand created by the Local Hire Ordinance.

There are several reasons for this ambiguity regarding the worker pool:

1. Census data indicate that about 70% of San Francisco resident construction workers report that they are working in the industry. This includes construction unionized individuals employed by the City and County itself, the union workers that tend to make up the public sector construction workforce and other crafts people that perform residential or smaller commercial work. We were not able to obtain reliable data on how many or what percentage of San Francisco residents are currently members of the craft unions that dispatch workers to City and County projects. We do not know how many of these individuals are currently working or the number that are unemployed or "sitting on the bench." Likewise, we do not know how many of the employed workers are actually under-employed or would be available to work a greater number of months, weeks or hours per year.

2. Similarly, the census data reveal that about 30% of all San Francisco resident construction workers reported they were unemployed or no long even looking for jobs. However, the data reflects worker employment status during 2012. The steady recovery of the local industry and changes in these figures between 2011 and 2012 would indicate that probably fewer of these workers remain unemployed or out of the workforce today. Further, we do not know the skill level of these workers or how many of these unemployed workers are actually prepared to work on publicly-sponsored projects in a primarily unionized environment.

3. It is possible that the increased demand for San Francisco skilled trades workers may stimulate workers currently employed in other sectors to migrate to construction. However, again, there is no way to determine whether these workers would enter the various trades at an apprentice level or whether there may be those who would qualify for journey status based on past experience and skill level. It is also impossible to predict what trade areas these workers might qualify for or wish to enter.

4. At the national level, there is recognition that the country as a whole will be facing a shortage of construction workers due to the aging workforce. Younger workers are not entering the construction workforce in sufficient numbers to fill the gap.[8] As stated previously, census data reflect this trend in San Francisco. Younger San Franciscans are not entering the construction sector in numbers adequate to replace older workers. Furthermore, any of these younger workers who would be entering the construction skilled trades would be entry level apprentices and could not contribute to the supply of experienced journey level workers for a number of years to come.

[8] McGraw-Hill Construction, SmartMarket Report, Construction Industry Workforce Shortages: Role of Certification, Training and Green Jobs in Filling the Gaps, 2012.

5. The City and County projects' certified payroll data reported through the Elation Systems are contributing to our understanding of the local construction workforce. For projects in construction during the first year the Ordinance was implemented (March 25, 2011-March 1, 2012) San Francisco residents have accounted for 29% of the hours worked on projects covered by Local Hire and 20% of the hours worked on other City projects not covered by the Ordinance. For those projects in construction during the second year of implementation, March 2, 2012-December 31, 2012, participation grew to 28% on projects covered by Local Hire but decreased to 18% on projects not covered by Local Hire. For apprentice hours, the differential was greater, with San Francisco apprentices accounting for 67% of hours on Local Hire projects during the first-year time period and 40% on non-covered City projects, then decreasing to 58% for the second-year time period and 37% on non-covered City projects.

   Though contractors have been able to achieve the initial Local Hire goals, two notes should be added regarding worker supply moving forward:

   a. To date only a small percentage of all City sponsored projects have been covered by the Local Hire Ordinance. As the number and size of covered projects increases and as the number of private projects continues to increase, the pressure on the local resident labor supply will be tremendous.

   b. Without information from union locals about numbers and skill levels of the membership and with only the limited data from for Year 2 projects[9], there are insufficient data to specify the San Francisco resident construction worker saturation levels across trades. As two to three years of additional certified payroll data become available, and as unemployment levels decline, there will be much clearer data and information available regarding this point.

III. The Pipeline for San Francisco Resident Construction Workers

A. The supply of qualified San Francisco resident construction workers and the efforts to increase this worker pool are inexorably linked with the existing pipeline for unionized construction workers who make up the vast majority of construction workers on City and County sponsored projects, as well as on larger privately-sponsored projects. Currently, this pipeline has limited access points.

1. The JATCs that train apprentices indentured into local unions serve union affiliates throughout Northern California and San Francisco apprentices make up a relatively small portion of their enrollment. The JATCs are set up to respond to regional market conditions rather than San Francisco demands. Moreover, at this time these JATCs, with the exception

[9] City and County of San Francisco, Office of Economic & Workforce Development, *Local Hiring Annual Report Data Overview*, March 8, 2013

of the San Francisco Electrical JATC, are training modest numbers of San Francisco active apprentices. Even with an immediate sizeable uptick in enrollment of San Francisco apprentices, it will be years before these apprentices attain journeyman status and contribute significantly to the pool of qualified San Francisco resident skilled trades people. The 50% first year drop out rates exacerbate this situation.

2. Even if workers from other employment sectors migrate into construction, enrollment and participation in the DAS apprenticeship and JATC system will be required for most work on City and County sponsored construction projects. Therefore, without unusual movement of experienced incumbent construction workers, who could qualify at journeyman level, into union locals serving San Francisco, it appears unlikely that there is a sufficient number of San Francisco resident construction workers available to meet escalation rates up to 50% for all trades over the next four years.

3. Also, the existing pipeline does not appear adequate to prepare enough resident workers within a satisfactory timeframe to meet the demand of annual escalations. The participation level that could be met by the combined utilization of existing qualified unemployed or under-employed workers and apprentices currently in the pipeline is not clear. The Year 1 level of 20% has been met to date. The supply may be adequate for achieving the 25% participation level for Year 2 but the 30% level for Year 3 or those for subsequent years remain indeterminate. The data are not available to provide clear guidance.

4. In addition, there are differing challenges across construction trades relative to availability and the pipeline of San Francisco resident workers. Notably, as pointed out in the previous report, a 50% local resident participation project goal could probably be met on many projects through the participation of the trades that currently have the highest levels of San Francisco residents and are in greatest demand. These include the Laborers, Carpenters and Electricians. Achieving 50% San Francisco resident participation through these trades could result in increased and more sustainable work opportunities for larger numbers of San Francisco resident construction workers.

   Such trade focused participation levels might also increase the annual income of the incumbent San Francisco resident workforce. However, it would increase work opportunities generally but not broadly throughout the trades. Therefore, to achieve the same result, the City and County's construction workforce pipeline must emphasize San Francisco resident participation across a wider and more strategic distribution of skilled trades. Inroads in San Francisco resident participation for Pile Drivers and Operating Engineers would have the greatest impact on directing job opportunities in high-demand and in high-wage trades to the local residents.

5. To expand the current pipeline of San Francisco resident construction workers, the City and its labor and contractor partners may want to consider the following:
    - Establishing an active partnership with San Francisco Unified School District to build upon the industry related curriculum offered at John O'Connell High School. In some parts of the country, union affiliates are operating charter high schools that focus on preparing students for the opportunities within the skilled trades. The myriad of careers in the construction industry have not been marketed to a broad section of young local residents and their families. Highlighting this local growth sector may generate additional interest in the skilled and craft union trades among San Francisco high school aged and younger adults.
    - Creating a mentorship program to increase retention. The City and its partners could explore establishing mentoring programs within the trades to enhance the completion and retention rates for apprentices.
    - Investigating the potential of negotiating direct entry programs into selected JATCs for CityBuild Academy graduates, students that complete a specified curriculum at John O'Connell High School, or some other cohort of San Francisco residents.
    - Working with union and industry partners to identify incumbent construction workers not currently working for City and County contractors and creating a pathway for these resident workers into the higher paid unionized construction workforce. Similarly, a pathway could be created for experienced union resident construction workers who are interested in moving into the higher paying trades, such as Electrical and Plumbing.

IV. Gender Imbalance

As reported in 2010, the characteristics of the San Francisco construction workforce indicate that there is very limited participation of women. Over the last two years, this situation has deteriorated. In 2010, the percentage of women residing in San Francisco and employed in San Francisco was 3%. In 2012 female participation levels had declined to 2%. City and County craft employees continue to maintain higher levels of female participation, reporting 8% in 2010 and 7% in 2012. Likewise, San Francisco resident women apprentices comprise 9% of all apprentices.

Gender equity remains a major issue in the skilled trades and within the San Francisco construction workforce. The City and County of San Francisco could seek ways to maximize opportunities for women. The Local Hire Ordinance does not address gender equity, nor does it include specific goals for female participation. One potential step in this direction could be for the City to adopt female participation goals that are in alignment with those established for federally funded projects, which is currently set at 6.9%. Corresponding goals would need to be set for all other pipeline efforts.

V. Regionalism

Construction operates in a regional rather than in a city or county-specific employment sector. Training for the skilled trades is offered at regional centers that serve multiple counties. Larger public works contractors bid and work throughout a region, state and nation. The collective bargaining agreements the contractors have with the craft unions reflect the regional nature of the industry. Local Hire Ordinances inherently present some challenges to the structure of the construction employment sector. Since the passage of San Francisco's Local Hire Ordinance, legislators and leaders in other jurisdictions have expressed concern that workers from their municipalities and counties that work in San Francisco and are dependent economically on San Francisco's construction activities, will be penalized by the Local Hire Ordinance. The San Francisco Public Utilities Commission (SFPUC), which has a service territory that extends beyond the boundaries of the City and County, had to address this concern. Reciprocity agreement with San Mateo County resulted in regional local hiring goals on projects located in the San Mateo County.

As noted in the 2010 LMA report, other Bay Area cities, including Oakland and Richmond, as well as the Port of Oakland, have incorporated local hiring into their contracting processes. It will be important for San Francisco to remain cognizant of the needs of construction workers and contractors to work in multiple counties in order to promote sustainable employment and economic viability in the local construction sector. San Francisco's local hiring efforts must be monitored not only for internal but also regional impacts.

VI. Local Hire Infrastructure

Implementing, monitoring, and reporting on Local Hire policies requires a well-resourced infrastructure. OEWD is primarily responsible for these tasks and will need additional support to address the amplified number of covered projects and First Source projects that are slated in future years. The same is true for creating or sponsoring innovative pipeline initiatives that can tackle gender equity or take on preparation of residents for Operating Engineer, Electrical Worker, Sprinkler Fitter, or Plumber/Pipefitter apprenticeship programs with higher educational and experiential thresholds. If the City and County of San Francisco wishes to enhance the viability and effectiveness of its Local Hire Ordinance, it must be ready to make the requisite investments not only in its Capital Plan projects but also in its workforce infrastructure.

Appendices

APPENDIX A: Construction Payroll Employment in San Francisco County by Sub-Sector - Second Quarter 2012

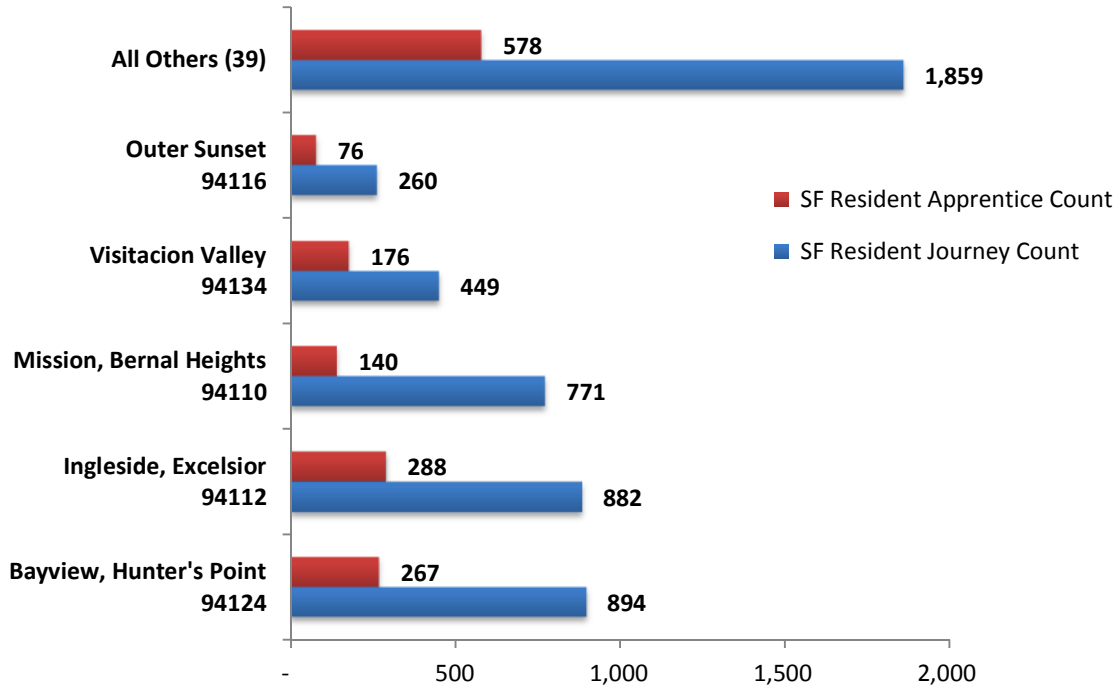
NAICS Code	Detailed Industry Title	S	Number of Establishments	Average Monthly Employment	Total Quarterly Payroll	Average Weekly Pay
					(in thousands)	
1012	Construction		1,529	14,328	$270,408	$1,452
23	Construction		1,529	14,328	$270,408	$1,452
236	Construction of Buildings		709	6,371	$128,126	$1,547
2361	**Residential Building Construction**		**602**	**3,505**	**$58,483**	**$1,283**
23611	Residential Building		602	3,505	$58,483	$1,283
236115	New Single-Family Housing		280	1,140	$16,089	$1,086
236116	New Multifamily Housing	S	--	--	--	--
236117	New Housing Operative Builders	S	--	--	--	--
236118	Residential Remodelers		300	1,795	$30,405	$1,303
2362	**Nonresidential Building Construction**		**107**	**2,866**	**$69,643**	**$1,869**
236210	Industrial Building	S	--	--	--	--
23622	Commercial Building	S	--	--	--	--
236220	Commercial Building	S	--	--	--	--
237	**Heavy and Civil Engineering Construction**		**81**	**1,280**	**$29,818**	**$1,792**
2371	Utility System		22	408	$8,213	$1,546
23711	Water and Sewer System		13	345	$6,863	$1,527
237110	Water and Sewer System		13	345	$6,863	$1,527
23712	Oil and Gas Pipeline Construction	S	--	--	--	--
237120	Oil and Gas Pipeline	S	--	--	--	--
237130	Power/Communication System	S	--	--	--	--
2372	Land Subdivision		44	554	$14,280	$1,980
23721	Land Subdivision		44	554	$14,280	$1,980
237210	Land Subdivision		44	554	$14,280	$1,980
2373	Highway, Street, and Bridge		11	295	$6,830	$1,781
23731	Highway, Street, and Bridge		11	295	$6,830	$1,781
237310	Highway, Street, and Bridge		11	295	$6,830	$1,781
2379	Other Heavy		4	21	$495	$1,759
23799	Other Heavy		4	21	$495	$1,759
237990	Other Heavy		4	21	$495	$1,759
238	**Specialty Trade Contractors**		**739**	**6,676**	**$112,464**	**$1,296**
2381	Building Foundation/Exterior		123	1,255	$16,021	$982
23811	Poured Concrete Structure		12	121	$2,324	$1,474
238111	Residential Poured Foundation		7	80	$1,635	$1,566
238112	Nonresidential Poured Foundation		5	41	$689	$1,293
23812	Steel and Precast Concrete		11	285	$4,128	$1,112
238121	Residential Structural Steel		5	122	$1,154	$726
238122	Nonresidential Structural Steel		6	163	$2,974	$1,401
23813	Framing Contractors		7	7	$90	$994
238132	Nonresidential Framing	S	--	--	--	--
23814	Masonry Contractors		10	148	$1,775	$922
238141	Residential Masonry	S	--	--	--	--
238142	Nonresidential Masonry	S	--	--	--	--

APPENDIX A (Continued)

NAICS Code	Detailed Industry Title	S	Number of Establishments	Average Monthly Employment	Total Quarterly Payroll	Average Weekly Pay
23815	Glass and Glazing		21	204	$3,132	$1,177
238151	Residential Glass/Glazing		14	85	$1,143	$1,035
238152	Nonresidential Glass/Glazing		7	119	$1,989	$1,278
23816	Roofing Contractors		52	431	$4,075	$727
238161	Residential Roofing		46	254	$1,961	$593
238162	Nonresidential Roofing		6	177	$2,114	$919
23817	Siding Contractors		4	20	$171	$657
238171	Residential Siding	S	--	--	--	--
238172	Nonresidential Siding	S	--	--	--	--
23819	Other Building Exterior		6	37	$325	$670
238191	Other Residential Exterior	S	--	--	--	--
238192	Other Nonresidential Exterior	S	--	--	--	--
2382	Building Equipment Contractors		320	3,190	$63,592	$1,533
23821	Electrical Contractors		155	1,853	$39,746	$1,650
238211	Residential Electrical		104	415	$6,393	$1,183
238212	Nonresidential Electrical		51	1,437	$33,353	$1,785
23822	Plumbing and HVAC		155	1,165	$19,312	$1,275
238221	Residential Plumbing/HVAC		120	832	$13,077	$1,208
238222	Nonresidential Plumbing/HVAC		35	332	$6,235	$1,442
23829	Other Building Equipment		10	171	$4,535	$2,032
238291	Other Residential Equipment		3	37	$730	$1,490
238292	Other Nonresidential Equipment		7	134	$3,805	$2,184
2383	Building Finishing Contractors		242	1,676	$23,233	$1,066
23831	Drywall and Insulation		30	288	$4,892	$1,304
238311	Residential Drywall		20	65	$784	$923
238312	Nonresidential Drywall		10	223	$4,108	$1,415
23832	Painting and Wall Covering		116	766	$10,099	$1,014
238321	Residential Painting		102	408	$3,548	$668
238322	Nonresidential Painting		14	357	$6,551	$1,409
23833	Flooring Contractors		30	238	$3,176	$1,025
238331	Residential Flooring		25	173	$2,150	$956
238332	Nonresidential Flooring		5	65	$1,026	$1,208
23834	Tile and Terrazzo Contractors		27	134	$1,640	$942
238341	Residential Tile/Terrazzo	S	--	--	--	--
238342	Nonresidential Tile/Terrazzo	S	--	--	--	--
23835	Finish Carpentry		30	152	$1,833	$924
238351	Residential Finish	S	--	--	--	--
238352	Nonresidential Finish	S	--	--	--	--
23839	Other Building Finishing		9	97	$1,592	$1,263
238391	Other Residential Finishing	S	--	--	--	--
238392	Other Nonresidential Finishing	S	--	--	--	--
2389	Other Specialty Trade		54	554	$9,618	$1,335
23891	Site Preparation		21	230	$4,392	$1,465
238911	Residential Site Preparation		10	79	$1,585	$1,544
238912	Nonresidential Site Preparation		11	151	$2,807	$1,424
23899	All Other Specialty Trade		33	323	$5,226	$1,242
238991	All Other Residential Trade		22	125	$1,643	$1,006
238992	All Other Nonresidential Trade		11	198	$3,583	$1,392

Source: Quarterly Census of Employment and Wages, SF County, February 2013

APPENDIX B: Journey and Apprentice Counts by Zip Code for Covered and Non-Covered Hours, after Local Hire (March 25, 2011 to December 31, 2012)



Source: Elation Systems
February 2013

APPENDIX C: City and County of San Francisco Capital Plan Projects, Fiscal Years 2011 - 2020

Public Safety

Critical Firefighting Facilities & Infrastructure
Auxillary Water Supply System Core Facilities Upgrade
Public Safety Building - New Mission Bay Fire Station
State of good repair renewal
Consolidation of Family Court Services at YGC Campus
Police Station Renewals & Improvements
ADA Transition Plan Improvements
Public Safety Building - SFPD HQ & Southern Station
Forensic Sciences Center (Crime Lab/Medical Examiner)
HOJ Traffic Division Relocation
State of good repair renewal - Proposed Uses
ADA Transition Plan Improvements
Auxillary Water Supply System Pipeline Improvements

Health & Human Services

State of good repair renewal - Proposed Uses
ADA Transition Plan Improvements
SFGH Rebuild
Data Center Relocation and Utility Upgrades
State of good repair renewal - Proposed Uses
ADA Transition Plan Improvements
State of good repair renewal - Proposed Uses

Infrastructure & Streets

Street Resurfacing
Curbs Ramps (ADA Right of Way Transition Plan)
Street Structures
Street Tree Maintenance
Street Tree Replacement & Establishment
Median Maintenance and Irrigation System Repair
Plaza Inspection & Repair
Doyle Drive Replacement Project
Regional - Watershed/Right of Way Management
Regional - Treatment Facilities
Regional - Water Conveyance
Local - Water Conveyance/Distribution System
Local - Treasure Island
Sewer System Improvement Program - Planning
Odor Control
Treatment Facilities
Pump Stations
Sewer/Collection System
Treasure Island
Hetchy Power - Streetlight
Hetchy Power - Transmission/Distribution
Hetchy Power - Renewable/Generation
Hetchy Power - Energy Efficiency
Hetchy Power - Treasure Island
Hetchy Water - Communications/Security/Miscellaneous
Hetchy Water - Reservoirs/Dams
Hetchy Water - Water Transmission
Hetchy Water - Power Infrastructure
Hetchy Water - Facilities/Roads/Right of Way

Transportation

Equipment Program
Facilities Program
Fleet Program
Infrastructure Program
Capital Plan - Airfield
Capital Plan - Airport Support
Capital Plan - Groundside
Capital Plan - Terminals
Capital Plan - Utilities
BRT - Van Ness BRT
BRT - Geary BRT
Caltrain - Replace SF Bridges - 22nd, 23rd, & Paul Ave
Caltrain - Rolling Stock Replacement
Caltrain - Electrification Infrastructure
Caltrain - Other
Transbay Terminal - phase I
Transbay Terminal - phase II

Recreation, Culture & Education

State of good repair renewal - Proposed Users
ADA Transition Plan Improvements
State of good repair renewal - Proposed Users
State of good repair renewal - Proposed Users
State of good repair renewal - Proposed Users
Systemwide Modernization Program
Marina Yacht Harbor Renovation
State of good repair renewal - Proposed Users
Veterans Building Seismic Renovation & Opera House Addition

Economic & Neighborhood Development

PAP - Dredging
PAP - Emergency Facilities Repair
Renewals
Modernizations & Aesthetic Improvements
Infrastructure Costs
Affordable Housing
Other Costs (Agency Costs)
Property Acquisition / Assumption
Infrastructure Costs
Transportation Program (Ferry Terminal, Boats, Buses, Shuttles, Parking)
Affordable Housing
Environmental Remediation
Historic Rehab, Retail Subsidy & Fiscal Mitigation Payments

APPENDIX C (Continued)

Economic & Neighborhood Development cont'd
Other Costs (Entitlement, Marketing, Project Management, et al.)
Inflation to Costs
Recreation & Parks Department
Department of Public Works
Library Commission
Program Administration
Recreation & Parks Department
Department of Public Works
Municipal Transportation Agency
Department of Children, Youth, and their Families
Library Commission
Program Administration
Recreation & Parks Department
Department of Public Works
Municipal Transportation Agency
Department of Children, Youth, and their Families
Library Commission
Program Administration
Recreation & Parks Department
Department of Public Works
Municipal Transportation Agency
Department of Children, Youth, and their Families
Library Commission
Program Administration
Recreation & Parks Department
Department of Public Works
Municipal Transportation Agency
Department of Children, Youth, and their Families
Library Commission
Program Administration
General Government
State of good repair renewal - Proposed Users
State of good repair renewal - Proposed Users
State of good repair renewal - Proposed Users
ADA Transition Plan Improvements
Wholesale Produce Market Expansion
Hall of Justice Interim Improvement Program

APPENDIX D: List of all Local Hire Ordinance (LHO) Covered and Non-Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)

Total Covered Projects:	**45**
Total Non-Covered Projects:	**234**
Total Projects:	**279**

APPENDIX D: LHO Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
1	17th Street Pavement Renovation Phase 1 (1746J)
2	7223A BP 1.0 Cruise Ship GENERAL REQUIREMENTS
3	7223A BP 2.0 Cruise Ship DEMOLITION
4	7223A BP 26.2 Cruise Ship SHORE POWER
5	7223A BP 5.0 Cruise Ship STRUCTURAL STEEL/METAL DECK/STAIRS
6	AOA Security Checkpoints Improvements
7	As-Needed Sidewalk Inspection and Repair Program (SIRP) No. 2 (2035D-4)
8	As-Needed Sidewalk Repair for Accelerated Sidewalk Abatement Program - Rebid (2116D)
9	Balboa Park Site Improvements
10	Cabrillo Street Pavement Renovation (1739J)
11	Cayuga Clubhouse and Playground Renovation Project (3027V)
12	Contract 60 New Traffic Signals (1812J)
13	Design/Build of Plot 2 Employee Parking Lot
14	Design/Build of SFIA Data Center Project - Trade Package 3
15	Design/Build of SFIA Data Center Project - Trade Package 4
16	Design/Build of SFIA Data Center Project - Trade Package 7
17	Design/Build of SFIA Data Center Project - Trade Package 9
18	Fulton Playground and Clubhouse Rehabilitation (3035V)
19	Guerrero Street Pavement Renovation Phase 1 (1764J)
20	Heron's Head Park Improvement Project
21	HSH JOS BUILDING
22	ITB U.S. Customs and ECP Renovations
23	Lawton Street Pavement Renovation (1765J)
24	Mission and Geneva Pedestrian Improvements (1667J)
25	Parnassus Avenue Pavement Renovation (1747J)
26	Pier 35 North Apron Repair
27	Roundhouse 2 HVAC Central Plant Upgrade
28	SOMA West Ancillary Improvements (1378J)
29	Storm Drainage System Improvement-Phase 1
30	Terminal 3 Carpet Replacement
31	Terminal 3, Boarding Area E Improvements Project (8974.B)
32	Various Locations Pavement Renovation No. 15A (1787J)
33	Various Locations Slurry Sealing 2011 Contract No. 1 (1779J)
34	WD-2445 8-inch Ductile Iron Pipe Main Installation on Second, New Montgomery, Stevenson, Minna and Annie Streets

APPENDIX D: LHO Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
35	WD-2456 - 8-inch DIM Installation and Pavement Renovation on Mission Street from 17th Street to 21st Street, on 19th Street from Shotwell Street to Valencia Street and on San Carlos Street from Sycamore Street to 21st Street
36	WD-2606 Forest Hill Pump Station Upgrade
37	WD-2661 - As-Needed Integration Services
38	WW-418 Various Locations Sewer Replacement No. 2
39	WW-433 Buchanan/Pierce/Filbert/Sacramento Streets and Marina Boulevard Sewer Replacement
40	WW-480, Various Locations Sewer Replacement Contract No. 3 and Pavement Renovation
41	WW-482 Various Locations Sewer Cleaning Contract No. 1
42	WW-488, As-Needed Main Sewer Replacement No. 1
43	WW-504 Sunset District Sewer Replacement and Pavement Renovation
44	WW-520 Spot Sewer Repair Contract No. 26
45	WW-533 Wastewater Facility Lighting Efficiency Improvements, North Point, Oceanside & Bruce Flynn Facilities

APPENDIX D: LHO Non-Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
1	1075 Le Conte
2	Airport Telecommunication System Repairs & Construction
3	Closed Circuit Television Advanced Surveillance Program
4	HH-939-09 1650 Mission HVAC
5	JOC-21-20 Domestic Water System Improvements (Building), UV Disinfection, O'Shaughnessy
6	JOC-21-21 Domestic Water System Improvements (Building), UV Disinfection, Early Intake
7	JOC-21-25 Cherry Lake Cottage 1 Renovation
8	JOC-22-05 CDD Northpoint -- Roof Repair
9	JOC-22-06 Pier 96 -- Inverter Enclosure Project
10	JOC-26-20 Tower 558 Repair
11	JOC-28-12 SEP840 Upgrade
12	JOC-28-19 Installation of Cathodic Protection System on 42 CS1 & CS2 Crossover Pipeline
13	JOC-33-04 Lining Moccasin Lifting Station
14	JOC-33-06 Domestic Water System Improvements (Mechanical), UV Disinfection Early Intake
15	JOC-36-02 555 7th Street Lighting Retrofit
16	JOC4-003.00: Replace Wood Retaining Wall Eureka Portal Twin Peak Tunnel
17	JOC4-005.0: Repair Cracks in Concrete Ceiling near Forrest Hill Station Twin Peaks Tunnel
18	Metreon-Brandy Hos
19	Moscone Tenant Improvements BP4 Communications Work (7295A-60)
20	Moscone Tenant Improvements Final Cleaning (7295A-48)
21	Moscone Tenant Improvements Fire Protection (7295A-42)
22	Moscone Tenant Improvements LED Visual Displays (7295A-47)
23	Moscone Tenant Improvements Metals (7295A-25)
24	Moscone Tenant Improvements Mirrors, Glass and Glazing (7295A-28)

APPENDIX D: LHO Non-Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
25	Sunset Playground Renovation (3029V)
26	WD-2415 8-inch Ductile Iron Pipe Main Installation on Mason Street, Powell Street, Taylor Street and Auburn Street, and Auburn Street Sewer Replacement and Pavement Renovation
27	WD-2640 Bioregional Habitat Restoration
28	WD-2646i Goat Rock Fence
29	WD-2652 Bioregional Habitat Restoration, San Antonio Creek
30	WW-479 21st/23rd/24th/ Hampshire/ York/Utah Streets and San Bruno Avenue Sewer Replacement
31	WW-515 Southeast Plant Northside Facility Reliability Upgrades Phase I
32	680 Folsom/50 Hawthorne
33	Airfield Lighting Systems Repairs and Construction
34	Airport Wide Electrical Power Distribution Construction and Repairs
35	HH-939-10, 25 VAN NESS- HVAC
36	HH-939-11 1660 Mission HVAC
37	HH-939-16 Hall of Justice HVAC - Phase I-Wireless and Economizers
38	HH-939-17 Hall of Justice HVAC - Phase 1-Fan Room and Pumps
39	HH-940-06 Youth Guidance Center- HVAC Retrofit
40	JOC-21-11 Sterling Park Security Fence
41	JOC-21-14 Domestic Water System Improvements (Building), UV Disinfection Moccasin
42	JOC-28-17 Northshore to Channel Force Main Drainage Improvement
43	JOC-32-18 North Fair Oaks Restoration
44	JOC-32-20 Sewer Assessment on Stanyan and Parnassus for Paving Project
45	JOC-34-02 Stockton Tunnel Street Light Replacement
46	JOC-34-11 Replacement of Three Plant Air Compressors
47	JOC-35-01 Log Cabin Ranch- Lighting Retrofit
48	JOC-35-03 Youth Guidance Center Lighting Retrofit
49	JOC4-002.0: Twin Peaks Tunnel Concrete Repair Eureka Portal
50	JOC5-004.0: Network NEXTMUNI Displays
51	MAINTENANCE DREDGING 2011-2015
52	Metreon 4th Floor, Cityview Remodel
53	Metreon, Target City Store
54	Mission Bay Shoreline Protection for Bayfront Park Project
55	Moscone Tenant Improvements (7295A-58)
56	Moscone Tenant Improvements HVAC (7295A-44)
57	Moscone Tenant Improvements Millworks (7295A-26)
58	Moscone Tenant Improvements Signage and Way Finding (7295A-37)
59	Residential Airport Noise Insulation Program
60	Taxiways C, F1, and S Reconstruction
61	WD-2551 Calaveras Dam Replacement Project
62	1257: Van Ness Motor Generator Replacement Project
63	Airport Fire Suppression Systems Repairs and Upgrade
64	As Needed Carpet Repair

APPENDIX D: LHO Non-Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
65	Design-Build for TSA Baggage Screening and Optimization Project.
66	Emergency Response Marine Rescue Facility
67	HH-926R Hetch Hetchy Microwave Upgrade - Phase II
68	HH-941-01 HSA Polk & Golden Gate Shelters HVAC Retrofit
69	HIGH MAST LIGHTING REPLACEMENT
70	Hunters View (Vertical) Blocks 4, 5 and 6
71	JOC-21-13 Rock River Buildings and Grounds Improvements
72	JOC-21-18 Sunol Andrade Road Water Well
73	JOC-32-01 Habitat Restoration Project, Alameda Watershed Sites, Seed Collection
74	JOC-32-06 Calaveras Dam Replacement, Cattle & Environmental Fence, Phase 1 North
75	JOC-32-09 Calaveras Dam Replacement, Cattle & Environmental Fence, Phase 2 South
76	JOC-32-11 Safety Access Ramp Improvement, Sunol Quarry Pond
77	JOC-32-17 BDPL #5, Driveways & Parking Lots
78	JOC-34-03 Sunol Yard - Facility Improvements Ph. 2
79	JOC-34-14 Sunol Maintenance Yard Building and Grounds Building Tenant Improvements
80	JOC-34-15 Sunol Maintenance Yard Building and Grounds Building Electrical Upgrades
81	JOC4-011.00 Sunset Tunnel West Security Fence and Gates
82	JOC4-012.0: New Flashing at Performing Arts Garage, Retail Storefronts
83	JOC5-008.0: Geneva Upper Yard Perimeter Fence
84	Moscone Tenant Improvements AC 14/15 Repair (7295A-52)
85	Moscone Tenant Improvements Traffic Coatings (7295A-51)
86	Rene Cazenave Apartments, Transbay Block 11A
87	Richmond Playground Basketball Courts Resurfacing
88	San Francisco Office of AIDS Renovation (S.O.A.R.) (7265A)
89	Van Ness Corridors Project - Gough Street [Federally Funded - FTA] (1685J)
90	WD-2439 - 8-inch Ductile Iron Main Installation on Laguna Street from Market Street to Post Street
91	WD-2643(I) GOAT ROCK WATER WELL
92	WW-514R - Southeast Water Pollution Control Plan (SEWPCP) Medium Voltage System Reliability Upgrades
93	1248: N-Line Along Carl Street Track Improvement Project
94	1800 Oakdale office remodel
95	2020 Ellis St.
96	Citywide - 474 Natoma St. Project
97	Facilities Roofing Preventive Maintenance
98	Helen Diller Playground at Dolores Park (3023V)
99	HH-940-04 Biofuel Program Hydronic Piping Interconnect and Installation of Three Eye Washes and a FOG
100	JOC-26-17 Moccasin Switchyard Upgrades Phase 1
101	JOC-26-25 Dobble EMI Diagnostic Testing at HPH, KPH, MPH
102	JOC-28-07 Crystal Springs Pipeline 1 & 2 Crossover Installation of 42 and 48 Valves at Delta/Sunnydale

APPENDIX D: LHO Non-Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
103	JOC-28-13 South East Outfall Repairs
104	JOC-31-11 EECBG - HVAC Retrofit at SOMArts Cultural Center
105	JOC-32-02 Sewer Cleaning on Beach Street Using Sewer Hog
106	JOC-32-15 SJPL In-Line Inspection, East Pipeline Assessment Support
107	JOC-33-05 Domestic Water System Improvements (Mechanical), UV Disinfection O'Shaughnessy
108	JOC-33-07 Camp Mather Tennis Court Renovation
109	JOC-34-05 Pine Lake PS - Retaining Wall Replacement
110	JOC-34-09 Pilarcitos Transmission Pipeline Grouting
111	JOC-34-10 Jessie St Conduit Repair
112	JOC5-013.0: Replace Two Horizontal Steel Gates w/Security Cameras Woods Division
113	MB Block 2
114	MB Blocks 8/9/9A AT&T and Sanitary Sewer Improvements
115	Mission Clubhouse and Playground Renovation (3030V)
116	Moscone Tenant Improv. 7295A-53
117	Moscone Tenant Improvements Electrical and Fire/ Life Safety (7295A-45)
118	Moscone Tenant Improvements Side-Coiling Fire Door (7295A-27)
119	Moscone Tenant Improvements Tile and Quartz Countertops (7295A-31)
120	National University
121	SAN FRANCISCO MARINA WEST HARBOR RENOVATION (3038V-1)
122	Various Locations Curb Ramps Contract No. 3 (1708J)
123	1239: Church and Duboce Track Improvement Project
124	As-Needed Palm Tree Removal and Replanting (1101C)
125	JOC-21-03 Sunol Watershed Keeper Pre-Fab Building
126	JOC-21-17 Placing Modular Home at Camp Mather
127	JOC-21-26 SEP Digester #9 Cover Cleaning and Sampling
128	JOC-22-01 Zoo Lift Station Eye Wash Heater
129	JOC-26-21 Install Inverter and Accompanying Equipment at Warnerville Switchyard
130	JOC-28-02 Sodium Hypochlorite Pipe Repair Project
131	JOC-28-16 Sunnydale PS AFD Upgrades
132	JOC-32-03 SEP860 Bin No. 1 Roof Replacement and Outside Bin Coating
133	JOC-32-05 Seismic Upgrade of BDPL 3&4 - Preconstruction Excavation
134	JOC-34-04 SEP930 Second Floor Office installation
135	JOC-34-19 Lake Merced Tunnel Shoreline Protection - Emergency (Reach 3)
136	JOC3-004.00: Kirkland Facilities Video Security
137	JOC3-006.00: Presidio Maintenance Facility Video Security
138	JOC3-007.00: CO2 Fire Suppression System in the Engine Room at Woods Division
139	JOC4-001.0: Metro Station Entrance Gates, Van Ness, Church and Castro
140	MARINE STRUCTURAL PROJECTS III
141	Moscone Tenant Improvements Interior Demolition (7295A-24)
142	Moscone Tenant Improvements Painting (7295A-35)
143	Palace Drive Re-Striping

APPENDIX D: LHO Non-Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
144	SF Shines / Yvonne's Southern Sweets
145	WD-2611-29 WSS Force Main Piping
146	WW-410 Cesar Chavez Street Sewer Improvement
147	1241: MUNI Metro Subway System Fire Alarm and Detection System Upgrade
148	Boarding Areas C & E Apron Reconstruction
149	Firewood, Metreon Bldg.
150	Grandview Trail Enhancement
151	HH-925-002 Road and Parking Lot Striping
152	HH-939-05 City Hall Mechanical Retrofits
153	HH-953 Tesla Portal Protection
154	JOC-21-16 Cooking Oil Feedstock, Plant Installation- FOG Biofuel, Pipe Supports
155	JOC-21-22 Channel Pump Station Roofs
156	JOC-26-26 Holm Powerhouse Upgrades-Transition Box Installation
157	JOC-26-28 MPH Switchgear Repair - Magneblast, Moccasin Powerhouse
158	JOC-28-06 Sansome Baffle Repair
159	JOC-28-22 Griffith PS and SEP-062 Primary Effluent Pump Control Upgrades
160	JOC-32-08 Install Cathodic Protection System on the San Joaquin Pipeline
161	JOC-32-14 SJPL In-Line Inspection, West Pipeline Assessment Support
162	JOC-33-01 Domestic Water System Improvements (Mechanical), UV Disinfection Moccasin
163	JOC3-003.000: Repair 12 Crack Sewer Between Palou & Quesada Street Along 3rd Street
164	JOC4-007.0: Repair Joint Between Bart and Existing Twin Peaks Tunnels
165	LOG CABIN RANCH SCHOOL IMPROVEMENTS FIRE PUMP SYSTEM UPGRADE (0326J)
166	Mission Bay Blocks 11 & 12, Warehouse and Bluepeter Building Demo
167	Moscone Tenant Improvements Doors Frames and Hardware (7295A-53)
168	Moscone Tenant Improvements SF Interiors, Package #33 (7295A-33)
169	Moscone Tenant Improvements Specialties (7295A-36)
170	Parking Guidance System Project and Pavement Renovation [Federal ID #VPPTCSP6328(022)] (1500J)
171	Plot 16D Material Off-Haul
172	SAN FRANCISCO COUNTY JAIL 3 REPLACEMENT PHASE 2, JAIL 3 DEMOLITION (7308A)
173	WD-2596 - Harry Tracy Water Treatment Plant Long-Term Improvements
174	WD-2600 Regional Groundwater Storage and Recovery Project- Test Well Drilling
175	Boarding Area 'C' Checkpoint Expansion
176	College Track
177	HH-935C - San Joaquin Pipeline System - Eastern Segment & Other Facilities
178	HH-939-18 Hall of Justice HVAC - Fan Room Automation
179	JOC-21-19 OSP Dry Polymer Upgrade
180	JOC-21-23 Moccasin Administration Carpet
181	JOC-21-27 SEP Digester #9 Cover Repair and Coating
182	JOC-26-24 Holm Powerhouse Unit 1 52G Addition, Switchgear and Station Service Replacement, Control Protection
183	JOC-28-11 Crystal Springs Pipeline No. 1 & 2 Crossover Installation of 36 and 42 at

APPENDIX D: LHO Non-Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
	Sunnydale/Tomasco
184	JOC-32-04 Old Richmond Tunnel Cleaning and Investigation
185	JOC-32-19 New Crystal Springs Bypass Tunnel Revegetation
186	JOC-32-21 Bay Tunnel Cattails Removal
187	JOC-33-03 New Camp Mather Water Tanks
188	JOC3-001.00: Third St. - Swoosh Arm & Luminaries Installation
189	JOC5-005.0: Mobile Gates Roll-up Woods Bus Facility
190	Midori Project
191	Mission Bay Blocks 36-39, Phase II
192	Moscone Tenant Improvements Terrazzo (7295A-32)
193	Port Security Fences Phase 3
194	Smith-Emery of San Francisco As-Needed Special Inspection and Testing Services (179358)
195	Stern Grove, Parkside Square and Pine Lake Park Tree Removal and Pruning
196	Storm Drainage System Improvements Phase II
197	Various Locations Pavement Renovation #14 (1724J)
198	WD-2641R Habitat Reserve Program, Homestead Pond, San Andreas Reservoir Wetlands, Adobe Gulch Grasslands
199	1252: Third Street Light Rail Program Phase 2, Central Subway - Tunneling
200	15th Avenue Pavement Renovation (Re-Bid) (1680JR)
201	As-Needed Airfield Pavement Reconstruction
202	Athens And Avalon Site Improvements [Micro-LBE Set-Aside Program] (1699J)
203	Bayview Branch Library (7529A)
204	BRIDGE PREVENTIVE MAINTENANCE PROGRAM GROUP C [FEDERAL ID NO. BPMP-5934 (145)] (1636J)
205	BRIDGE PREVENTIVE MAINTENANCE PROGRAM GROUP D [FEDERAL ID NO. BPMP-5934](1647J)
206	Duboce Park Improvements
207	Hall of Justice Fire Alarm Upgrade Phase 2 (1735JR)
208	HH-939-15 Hall of Justice HVAC - Phase I-Heating Plant B2 and B3
209	JOC-21-15 Modular 4, Roof Repairs
210	JOC-21-24 Sunol Office Space Set-Up for East Bay Regional Parks District (EBRPD)
211	JOC-22-02 EyeWash Heaters, SEP
212	JOC-26-11 San Joaquin Valvehouse Modifications for Pressure Relief Functionality
213	JOC-26-19 Furnish and Install Cherry Ridge 2500 KVA Transformer at HPH
214	JOC-28-05 Crystal Springs Pipeline No. 3
215	JOC-32-16 Lake Merced Boathouse Cleanup
216	JOC-33-02 Moccasin and Early Intake Pool Repair
217	JOC-34-01 EPA Contamination Warning System Project - Various Locations
218	JOC-36-03 25 Van Ness Lighting Efficiency Improvements
219	JOC3-002.00: Communication Cable Tray at Van Ness Platform Station
220	Martin Luther King Jr. Drive Pavement Renovation (3017V)
221	MB P10 & MBD Median Project

APPENDIX D: LHO Non-Covered Projects, 1st Period (March 25, 2011 to March 1, 2012)	
222	Moscone Tenant Improvements Clean up above Ceiling (7295A-50)
223	Moscone Tenant Improvements Communications (7295A-46)
224	Moscone Tenant Improvements Elevator Modernization (7295A-41)
225	Moscone Tenant Improvements Flooring (7295A-34)
226	Moscone Tenant Improvements Gypsum (7295A-30)
227	Moscone Tenant Improvements Plumbing (7295A-43)
228	Moscone Tenant Improvements Solar Control Window Film (7295A-29)
229	P43-1/2 BAY TRAIL LINKS
230	SFJAZZ
231	WD-2653 As-Needed Integration Services (Lenel VAR required) - San Francisco Region
232	WD-2665 Bay Division Pipeline Reliability Upgrade Project - Bay Division Pipeline No. 5, Cordilleras Microtunnel
233	WW-519 Channel Pump Station Odor Control and Facility Improvements Phase III
234	WW-521, Spot Sewer Repair Contract No. 25

APPENDIX E: List of all LHO Covered and Non-Covered Projects, 2nd Period (March 2, 2012 to December 31, 2012)

Total Covered Projects:	**80**
Total Non-Covered Projects:	**119**
Total Projects:	**199**

APPENDIX E: LHO Covered Projects, 2nd Period (March 2, 2012 to December 31, 2012)	
1	2008 Park Bond Restroom Program Replacement Project - Traditional Design (3069V)
2	5th and Mission Parking Garage 2nd Floor Maintenance (7368A)
3	7223A BP 21.0 Cruise Ship FIRE PROTECTION
4	7223A BP 22.0 Cruise Ship PLUMBING
5	7223A BP 23.0 Cruise Ship HVAC
6	7223A BP 26.0 Cruise Ship ELECTRICAL & COMMUNICATION
7	7223A BP 3.3 Cruise Ship SITEWORK & CONCRETE
8	7223A BP 32.0 Cruise Ship Paving
9	7223A BP 32.3 Cruise Ship FENCING
10	7223A BP 5.5 Cruise Ship MISC. IRON AND ORNAMENTAL IRON
11	7223A BP 6.0 Cruise Ship ROUGH & FINISH CARPENTRY
12	7223A BP 7.2 Cruise Ship ACOUSTIC INSULATION
13	7223A BP 7.5 Cruise Ship ROOFING/WATERPROOFING/FLASHING/SHEET METAL & BP 8.9 EXTERIOR WALL
14	7223A BP 8.1 Doors, Frame, and Hardware
15	7223A BP 8.3 Cruise Ship COILING DOORS
16	7223A BP 9.2 Cruise Ship DRYWALL/SOFP/BATT INSULATION
17	7223A BP 9.5 ACOUSTICAL CEILINGS
18	7223A BP 9.9 Cruise Ship PAINTING / EXTERIOR STEEL COATINGS
19	AC34 Improvements
20	AMG, As-needed Hazardous Materials Abatement Contracting Services (DPW#180388)
21	Apparatus Bay Slab Replacement at FS No. 35 (J19-01-7433A)
22	As-Needed Curb Ramps FY 09-10 (1717J)
23	As-Needed Paving Contract No. 8 (1975J)
24	As-Needed Sidewalk Inspection and Repair Program (SIRP) No. 3 Negotiated Contract (2035D-5)
25	Boarding Area B Restrooms Addition
26	Cabrillo Playground and Clubhouse Renovation (3070V)
27	ESER 1 Fire Stations No. 15, 17, 26, and 32 Roof Replacement (7431A-4)
28	ESER 1 Fire Stations No. 18, 31, and 40 Roof Replacement (7431A-3)
29	Hall of Justice Emergency Generator Integration - Rebid (1846J)
30	Hub T3 Food Court Expansion
31	International Terminal Arrival Level Seismic Joint Cover Replacement
32	J19-05-7056A Garfield Square Swimming Pool Barrier Removal
33	J21-05-3066V Glen Canyon Sediment Basin
34	J21-08-7293A SFGH Bldg. 80 Parking Lot
35	Jefferson Street Improvements (1949J)

APPENDIX E: LHO Covered Projects, 2nd Period (March 2, 2012 to December 31, 2012)	
36	JOC-40-02 San Bruno Jail HVAC Project
37	JOC-40-05 1660 Mission- Server A/C-Phase 1- Chilled Water and Electrical
38	JOC-40-06 1660 Mission-Server A/C-Phase2-Data Floor
39	JOC-40-08 Hall of Justice - Replacement of Failed Outside Air Dampers
40	JOC-40-16 Boiler #3 commissioning
41	LAFAYETTE PARK RENOVATION (3072V)
42	Marina Boulevard, Lyon Street and Columbus Avenue Pavement Renovation (1758J)
43	McLaren Playground Renovation
44	North Beach Library (7526A)
45	Palega Playground Renovation (3037V)
46	Panhandle Improvement
47	Pavement Renovation and Sewer Replacement - Fulton/Euclid/Vallejo/Laguna Streets (1932J)
48	Pier 23 Electrical Service Upgrade for the 34th America's Cup Event
49	Pier 33.5 Improvements
50	Pier 50 Valley Substructure Repairs
51	RENTAL CAR CENTER (RCC) EXIT STAIR
52	San Jose Avenue Pavement Renovation and Sewer Replacement (1912J)
53	SE Inc. As-needed Hazardous Materials Abatement Contracting Services (DPW# 180589)
54	SFGH Building 5 Accessibility Compliance Improvements - Phase 1 Set A: Emergency Department (7209A)
55	St. Mary's Phase II
56	Stanyan and Golden Gate Pavement Renovation (1762J)
57	Sunset Mental Health Center Renovation (7222A) Rebid
58	The Brannan Street Wharf
59	Various Locations Pavement Renovation No. 15B (1895J)
60	Various Locations Slurry Sealing 2011 Contract No. 2 (1894J)
61	Water Conservation Projects (Alta Plaza and Jefferson Square Parks) - Rebid (3083V)
62	WD-2446 8-inch Ductile Iron Pipe Main Installation on Hartford, 18th, 19th and Noe Streets
63	WD-2612 8-Inch Ductile Iron Main Installation in Florida Street From 16th Street to 26th Street
64	WD-2673R CDD As-Needed 2012 Annual Paving Contract
65	WW-483RR North Shore to Channel Force Main Improvement and Pavement Renovation
66	WW-490 Oceanside Water Pollution Control Plant 620 Digesters Sequencing Batch Reactor Temperature Phased Anaerobic Digestion Conversion and Facility Improvements
67	WW-499 Downtown District Sewer Replacement and Pavement Renovation
68	WW-500 SOMA/Mission Districts Sewer Replacement and Pavement Renovation
69	WW-501 Western Addition/North Beach/Marina Districts Sewer Replacement and Pavement Renovation
70	WW-502 Laurel Heights/Haight Districts Sewer Replacement and Pavement Renovation
71	WW-503 Richmond District Sewer Replacement and Pavement Renovation
72	WW-505 Noe/Glen Park Districts Sewer Replacement and Pavement Renovation
73	WW-506 McLaren/Ingleside/Excelsior/Mt. Davidson Districts Sewer Replacement and Pavement Renovation

APPENDIX E: LHO Covered Projects, 2nd Period (March 2, 2012 to December 31, 2012)	
74	WW-507 Bernal Heights/Potrero Districts Sewer Replacement/Rehabilitation and Pavement Renovation
75	WW-508 Bayview/Hunters Point Districts Sewer Replacement/ Rehabilitation and Pavement Renovation
76	WW-522 Southeast Water Pollution Control Plant Dewatering Facility Corrosion Repairs
77	WW-540 Spot Sewer Repair Contract
78	WW-542 Oceanside Water Pollution Control Plant Dewatering Facility Upgrades
79	WW-553 As-Needed Main Sewer Replacement
80	WW-555 Spot Sewer Repair Contract

APPENDIX E: LHO Non-Covered Projects, 2nd Period (March 2, 2012 to December 31, 2012)	
1	2000 Ellis aka 1301 Divisadero Project
2	Airport Underground Storage Tank Testing, Repair and Compliance Work
3	JOC-26-38 Holm Transformer Repairs
4	JOC-32-23 AWSS Pump Station 1 Sea Tunnel Cleaning
5	JOC-32-30 San Andreas Pipeline No3 Installation - Welding Warranty Inspection
6	JOC3-019.00: SMC Upgrade Project - MUNI Metro System
7	JOC4-015.00: Woods Division Facilities Perimeter Hardening
8	Noe Valley Library Retaining Wall (8191R)
9	Pier 50D Emergency Power Modifications
10	Sunnyside Playground
11	As-Needed Airport Perimeter Fencing
12	Block 3W
13	Boarding Area B Lower Level Gate Canopy
14	HH-944-31 Sewer Assessment at Various Locations III
15	JOC-34-26 OSP-WSS Wastewater Bar Screen Repair
16	JOC-34-29 Garcia / Hanson Water System Enclosure
17	JOC-34-37 Southeast Water Pollution Control Plant - Building 200 Deck - RAS Valve Replacement
18	JOC3-021.00: Facilities Doors, Temporary Fuel System at Kirkland, & Misc. Repairs
19	Moscone Tenant Improvements Cooling Tower Bird Screen (7295A-64)
20	Moscone Tenant Improvements Esplanade Lobby Conference Room Doors
21	Moscone Tenant Improvements Scaffolding (7295A-59)
22	RSA R/W 10R Paving and Lighting
23	RSA South Field Substation BR Relocation
24	WD-2629 Seismic Upgrade of Bay Division Pipeline Nos. 3&4 at the Hayward Fault
25	WD-2651R Peninsula 2011 Watershed Compensation, Sherwood Point, Adobe Gulch Creek, Skyline Quarry, Skyline Blvd. Point, and Upper San Mateo Creek Project
26	WD-2666 Bioregional Habitat Restoration, Sheep Camp Creek
27	YBG Expansion Joint Repair Project
28	9-1-1 Emergency Communications Center UPS Upgrade (1854J)
29	Fleishhacker Pool Building Demolition - Emergency

APPENDIX E: LHO Non-Covered Projects, 2nd Period (March 2, 2012 to December 31, 2012)	
30	Gate 68 Building Panel Repairs
31	JOC-21-34 SEP Digester #3 Cleaning and Inspections
32	JOC-21-35 SEP Digester #3 Cover Repairs
33	JOC-26-27 KPH III Governor Hydraulic Control Replacement
34	JOC-26-31 Control Network Security Upgrade & Wonderware Servers
35	JOC-28-34 System Security Upgrade
36	JOC-32-22 Sewer Assessment at Various Locations 2
37	JOC-32-28 SEC DHW Pipe Repair
38	JOC-34-25 Ocean Beach Shoreline Protection - Sand Management Project
39	JOC3-005.00: Cable Car Barn Maintenance Facility Video Security
40	JOC3-013.000: CCTV and Intrusion Alarms for Drawbridges
41	MB Blocks 5 and 11 Apartments
42	SF Zoo ADA Remediation
43	(R-BP-025B) Ceramic Tiles/Terrazo
44	19th Avenue Median Improvements [Federal Aid Project No. DEM06L 5934(166)] (1056J)
45	Balboa Park Roof Replacement
46	Building 813 - Light Demolition and Abatement Project
47	Coffman Pool Boiler Replacement
48	Design Build - ITB & T3 BA/F CBIS Modernization & ITB BHS Improvements
49	Golden Gate Park Phase I Tree Removal Project
50	JOC-26-23 Network Security and Wonderware Servicer
51	JOC-26-29 KPH Switchgear Repair Magneblast
52	JOC-26-36 KPH Governor Control Replacement Unit 1
53	JOC-28-28 BDPL5 East Bay Restoration
54	JOC-32-29 Furniture Disassembly and Reassembly for Move to 525 Golden Gate Avenue
55	JOC-32-36 Wye Diffuser, South East Outfall repairs
56	JOC-34-22 Wisconsin St Street Light Addition
57	JOC3-009.00: 1095 Indiana St., Install security cameras at Woods Facility
58	JOC3-018.00: Epoxy Sealing of Diesel Tank Vaults - Flynn Motor Coach Facility
59	Kezar Deferred Maintenance Project
60	WD-2627R Sutro Reservoir Rehabilitation and Seismic Upgrade
61	(R-BP-040) Morgue Equipment
62	ESER 1 Fire Station No. 28 Roof Replacement (7431A-1)
63	HH-962E Emergency Ratification, South Fork Additional Access Rockfall Stability
64	JOC-21-39 525 GG, 13th Floor Conference Room & Misc. TI
65	JOC-22-08 Lake Merced Boathouse Remodel
66	JOC-26-30 115KV Switch Replacement
67	JOC-28-30 BDPL5 Peninsula Restoration Ph. 2
68	JOC-36-01 Lighting Controls and Lamp Replacements at the Main Library
69	DT Computer Room Air Conditioning Unit Replacement (0166P)
70	Fay Park Restroom
71	JOC-21-31 Alvarado Solar - Roof Flashing

APPENDIX E: LHO Non-Covered Projects, 2nd Period (March 2, 2012 to December 31, 2012)	
72	JOC-21-37 UV Disinfection PLC Upgrade
73	JOC-21-38 SVWTP Bird Nettling Over Open Channel
74	JOC-28-18 Treasure Island Gas Line Replacement Project
75	JOC-32-26 Mather Ridge Line Transformer
76	JOC-33-08 Moccasin U.V. Water Disinfection PLC Programming
77	JOC-34-16 SF Street Light Additions, incl. Bernal Heights
78	JOC-34-21 Millbrae Yard Electrical Improvements
79	JOC-34-31 Pulgas G20 Erosion Repairs
80	JOC3-010.00: Potrero Facility - Install Cameras
81	Mission Bay Lot A VARA between Blocks 2 & 3
82	Pier 29 Fire Damage
83	(R-BP-01D) General Requirement - Remodel
84	JOC-21-30 SEP930 Roof Membrane and Air Cooling Unit Replacement & Safety Guardrail Installment
85	JOC-21-32 Millbrae WQ Lab Ceiling Tile Replacement
86	JOC-26-37 KPH Governor Control Replacement Unit 2
87	JOC-28-24 SEP850 Domestic Water Heat Exchanger and SEP 011 Flood Door Replacement
88	JOC-28-29 North Shore Force Main Emergency Response
89	JOC-32-25 Cherry Ridge Transformer - II
90	JOC-34-35 Pulgas G20 Culvert Replacement
91	JOC-34-36 Southeast Water Pollution Control Plant - Building 200 Deck - Mechanical Equipment Replacement and Electrical Upgrades
92	JOC3-012.00: SMT Upgrade Project - Lenox OCC
93	JOC3-024.00: SFMTA Facility Permits and Repairs
94	JOC4-019.00: Vent Shaft Repair at Hattie Street
95	Lily Pond Restoration
96	Marina Sewer Pipe Replacement
97	PBB relocation Gate 41 to Gate 27
98	Precita Park
99	St. Francis Seawall Repair
100	ENGEO Inc./CM Pros - ESER - Material Testing and Special Inspection Services (DPW#180191)
101	GGP Tennis Courts
102	HH-944-15 Electrical Upgrades and Repairs at HHWP Facilities, Phase 2
103	JOC-21-33 BDPL5 Peninsula Restoration, West Reach
104	JOC-26-33 Kirkwood distribution Valve replacement
105	JOC-28-09 Repair of Insulating Flange Joints (IFJs) in SFPUC System
106	JOC-32-24 Subsurface Investigation- Transmission Line Crossing. Don Pedro Red Mountain Bar Transmission Tower
107	JOC-32-34 Southeast Community Facility Tenant Improvements
108	JOC-34-24 Francisco Reservoir Roof Removal
109	JOC3-015.00: Subway Platform Lighting Upgrade - Powell & Montgomery Subway Station
110	JOC4-018.00: Modify Roll-Up Doors at MUNI Metro Stations

APPENDIX E: LHO Non-Covered Projects, 2nd Period (March 2, 2012 to December 31, 2012)	
111	MB 1180 4th Housing Project
112	MB Infrastructure Blocks 2-13, Long Bridge Phase II and Blocks 5-6
113	Moscone Tenant Improvements Concrete Planter Infills BP3 (9295A-61)
114	Moscone Tenant Improvements Esplanade Rigging Points (7295A-65)
115	Potrero Hill Community Garden Retaining Wall [Micro-LBE Set-Aside Program] (3104V)
116	Replacement Airport Traffic Control Tower and Integrated Facilities
117	RSA R/W's 10L-28R & 28L Paving & Lighting
118	RSA South Field Drainage Improvement
119	Union Square ADA Remediation

APPENDIX F: References

City and County of San Francisco

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GLOSSARY of ACRONYMS

BLS	Bureau of Labor Statistics
DAS	Division of Apprenticeship Standards
DPH	Department of Public Health
DPW	Department of Public Works
EDD	California Employment Development Department
FTE	Full Time Equivalent
JATC	Joint Apprenticeship Training Center
LMA	San Francisco Labor Market Analysis
MOH	Mayor's Office of Housing
MD	Metropolitan District
MTA	Municipal Transportation Agency
OEWD	San Francisco Office of Economic and Workforce Development
PORT	Port of San Francisco
PUC	Public Utilities Commission
SFO	San Francisco International Airport
SFPUC	San Francisco Public Utilities Commission
WSIP	Water System Improvement Program


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