ExEcutivE Summary

The current economic downturn has caused vast unemployment in California's construction industry. In the year ending in June 2009, the state lost almost a fifth (18.6%) of its construction jobs, the greatest percentage among all major industries.\(^1\) Getting workers back on the job is crucial to getting the California economy back on its feet.

Yet, increased employment is not enough for an equitable recovery. The construction industry’s historically good jobs have been depleted by the squeeze on the middle-class over the past 30 years. And the industry is shifting to a green economy, with a focus on new skills, in response to climate change and high energy costs. As the economy revives, new construction jobs must include middle-class career paths and training in skills for the green economy.

As this report demonstrates, building trades apprenticeship programs provide the best model to keep the construction industry on the high road and provide high-quality jobs, to the benefit of the industry, the workers and the greater community.


KEY FINDINGS

- Construction work has two faces. It can provide stable, middle-class careers or temporary, hazardous, dead-end jobs.

- Apprenticeship programs strengthen communities by providing career paths and consistent health insurance for people from disadvantaged backgrounds. They also benefit the building industry by reducing workplace injuries, reducing turnover and providing a motivated and well-trained workforce.

- Most apprenticeship programs in California (82%) are joint labor-management programs established through collective bargaining. Those programs produce almost all (92%) of the state’s apprenticeship graduates.

- The joint labor-management programs are more successful than unilateral management programs at removing barriers to graduation and therefore have much higher completion rates.

- Local policies are needed that encourage and support successful apprenticeship programs. These include local hiring requirements, resources for support services, and using the public contracting process to set and enforce standards.

- With a proven record of success in producing a skilled workforce, apprenticeship programs provide the best means to train workers in the skills needed for the new green economy.
# TABLE OF CONTENTS

1 Executive Summary and Key Findings

3 Economic Trends
   • Shifting to the Green Economy

4 The Truth about Construction
   • Construction is Hazardous
   • Construction Jobs are Low-Wage, Temporary and Lack Benefits

5 Registered Apprenticeships: The Basics
   • How Apprenticeship Differs From Other Training

6 The Value of Apprenticeships
   • The Value for Industry
     Healthcare and Pension Benefits
     Worker Safety
   • The Value for Workers
     Wages and Career Stability
     Paying Prevailing Wage Strengthens Families

10 Apprenticeships Succeed Because Labor and Management Work Together
   • The Vast Majority of California’s Apprenticeship Programs are Joint Labor-Management
   • Joint Programs Have More Graduates and Higher Completion Rates

11 Barriers to Program Completion
   • Dropouts
   • Worker Story: Iron Woman
   • Poaching

14 Necessary Policies to Support Apprenticeship Programs
   • Career Ladders – Pathways out of Poverty
     Recruitment and Case Management
     Soft Skills
     Hard Skills
     Careers
     Case Study: Los Angeles Unified School District “We Build”
   • Local Hire Requirements
   • Good Jobs in the Green Economy
     Weatherization Pre-Apprenticeships
   • Worker Story: From apprentice to contractor

17 Summary

17 Recommendations

18 Appendix: Work Descriptions and Enrollment Requirements for Southern California
   Joint Labor-Management Apprenticeship Program Occupations
ECONOMIC TRENDS

An historical look at the middle-class shows that as worker productivity increases, wages also increase. Between 1947 and 1979, worker productivity and income doubled together. Since the 1980s, however, incomes have grown only a quarter as much as worker productivity. Since 2000, middle-class families have experienced a nearly 4% decline in real income while productivity has increased 18.5%.²

The disconnect between wages and productivity means that the benefits of increased productivity have not been shared equally. In fact, half of overall economic growth from 1993 to 2007 went to the top 1% of incomes. In the boom times of 2000-2007, the top 1% of incomes captured two-thirds of the economic growth.³

Besides family-supporting wages, a good, middle-class job encompasses employer-provided health insurance, pensions, paid vacation and holidays, sick leave and family leave, a safe and healthy workplace, some degree of employment security and opportunities for advancement.⁴ The history of “good jobs” over the last three business cycles (1980s, 1990s, and first half of 2000s) shows a sharp deterioration in the provision of benefits.⁵ For the years 1979-2006, the share of jobs with employer-provided health insurance declined 5.3% and those with employer-provided pensions declined 6.4%.⁶

Rebuilding the middle class will require reconnecting worker productivity with compensation through the creation and support of good jobs.

Shifting to the Green Economy

The new, green economy is changing the face of construction, with new types of jobs using new technologies and innovations on current practices. Solar panel installation or energy efficiency auditing are examples of new green jobs that build on skills that trained and qualified construction workers have had for years.

Definition: Green jobs
Jobs with family-supporting wages and benefits, in fields that contribute significantly to preserving or enhancing environmental quality.⁷

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² Middle Class Task Force (MCTF). The Vice President of the United States. 2009. The American Recovery and Reinvestment Act: Helping Middle Class Families.
⁶ Schmitt, op cit.
THE CONSTRUCTION INDUSTRY HAS THE HIGHEST CONCENTRATION OF CONTINGENT WORKERS...AND THE LOWEST RATE OF EMPLOYER-PROVIDED HEALTH COVERAGE AMONG CALIFORNIA’S NON-FARM INDUSTRIES.

THE TRUTH ABOUT CONSTRUCTION

The construction industry in California has two faces: the first is a high-road industry with family-sustaining wages, healthcare and pension benefits, safe working conditions, career stability and opportunity for advancement. The other is a low-road industry with low pay, no benefits, dangerous conditions and frequent periods of unemployment.

According to a study by the Construction Industry Institute, both contractors and workers report the same issues with recruitment and retention: unsafe job sites, insufficient wages and benefits, impermanency of employment, poor working conditions and poor treatment of employees.8

Construction is Hazardous

In 2007, the construction industry nationally accounted for 20% of workplace deaths and 10% of all workplace injuries and illnesses.9 California, Texas and Florida account for more than 25% of all non-fatal construction injuries and illnesses resulting in lost work days nationally.10

The total cost of death and injury in the U.S. construction industry is estimated at nearly $13 billion (in 2002 dollars).11 On average, when a construction worker dies, the overall loss is estimated to be $4 million and a non-fatal injury that results in lost workdays costs approximately $42,000.12

Construction Jobs are Low-Wage, Temporary and Lack Benefits

In 2005, more than 120,000 construction workers in California were in occupations that paid less then $30,000 per year based on the weekly wage.13 In addition, many construction workers are not employed year-round, resulting in a much lower actual annual income.

Typically on construction projects, a worker’s skill set may be needed only during certain phases, resulting in lay-offs, unemployment and loss of benefits. The construction industry has the highest concentration of contingent workers – defined as workers who do not have an implicit or explicit contract for on-going employment – of any non-farm industry in California.14

Contingent workers are twice as likely as permanent workers to report household or family income less than $27,000 a year and are much less likely to have employment-based healthcare or pensions.15 The lower a worker’s educational attainment, the higher the incidence of contingent work.

In 2005, at the height of the building boom, the construction industry had the lowest rate of employer-provided health coverage among California’s non-farm industries – only 35%.16 The construction industry accounted for 15% of the state’s chronically uninsured, with only 7.3% of the workforce.17 More than a quarter (27%) of construction workers were uninsured for the entire year while more than 40% were uninsured at least part of the year.18

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12 CWPR, op cit.
16 BLS, op cit.
18 CPI, op cit.
**REGISTERED APPRENTICESHIP: THE BASICS**

Apprenticeship is a combination of on-the-job training and related instruction in which workers learn the practical and theoretical aspects of a highly skilled occupation.\(^{19}\) The apprentice works side-by-side with a journeyworker to attain demonstrable competency in the craft.\(^{20}\) Apprenticeships are time-intensive and require high standards of performance.

Oversight of registered programs is provided directly by the U.S. Department of Labor for 25 states and through state-approved agencies in the other 25 states.\(^{21}\)

**How Apprenticeship Differs From Other Training**

The strict legislative regulation over apprenticeship programs creates a unique immersion training system and sets it apart from others, such as paid internships. The apprentice and the program sponsor sign an apprenticeship agreement, which contains the terms and conditions of the employment and training of the apprentice.\(^{22}\) Included in the agreement is the graduated wage scale to be paid to the apprentice throughout the program, the required hours and skills learned in on-the-job training and related technical instruction and performance standards.\(^{23}\)

A registered apprenticeship program must meet government-mandated standards of quality and quantity of instruction.\(^{24}\) Further, the sponsor must provide adequate and safe equipment and facilities, and safety training for apprentices on the job and in related instruction. Most apprenticeship programs require 3-5 years of training with between 2,000 and 8,000 hours of on-the-job training and 144 hours of related technical instruction.\(^{25}\) Advancement depends on the apprentice’s work record and progress in related instruction.\(^{26}\)

An apprenticeship graduate has completed a specified minimum number of on-the-job training hours and related technical instruction hours, and has demonstrated competency in the skills and knowledge necessary for work at the highest standards.\(^{27}\) Each program evaluates apprentices regularly, usually every 6 or 12 months, with both on-the-job performance assessments and written exams. Wage increases and continuation in the program depend on successful demonstration of competency.\(^{28}\)

Apprentices emerge from the programs proficient in safety and environmental laws and regulations, first aid and CPR, mathematics, drafting, blueprint reading and other sciences connected with the trade.\(^{29}\) Often included is training in diversity, sexual harassment, personal development, environmental remediation and jobsite management.\(^{30}\)

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29 California Department of Industrial Relations, Division of Apprenticeship Standards. Minimum Industry Training Criteria. [http://www.dir.ca.gov/DAS/mitc.htm](http://www.dir.ca.gov/DAS/mitc.htm)
30 California Department of Industrial Relations, Division of Apprenticeship Standards, op cit.
### TABLE 1:  
Apprenticeship Program Requirements for Selected Crafts  
*Top 10 crafts sorted by total number of apprentices graduated from programs*

<table>
<thead>
<tr>
<th>Craft</th>
<th>Years</th>
<th>On-the-job hours</th>
<th>Classroom hours/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpentry</td>
<td>4</td>
<td>4,800</td>
<td>144</td>
</tr>
<tr>
<td>Electrician, Residential</td>
<td>3</td>
<td>4,800</td>
<td>160</td>
</tr>
<tr>
<td>Commercial/Industrial</td>
<td>5</td>
<td>8,000</td>
<td>160</td>
</tr>
<tr>
<td>Plumbing</td>
<td>4</td>
<td>7,200</td>
<td>200</td>
</tr>
<tr>
<td>Operating Engineer</td>
<td>4</td>
<td>6,000</td>
<td>144</td>
</tr>
<tr>
<td>Sheetrock</td>
<td>4</td>
<td>6,500</td>
<td>160</td>
</tr>
<tr>
<td>Laborer</td>
<td>2</td>
<td>3,000</td>
<td>216</td>
</tr>
<tr>
<td>Painting &amp; Decoration</td>
<td>3.5</td>
<td>7,000</td>
<td>114</td>
</tr>
<tr>
<td>Roofers</td>
<td>3.5</td>
<td>4,000</td>
<td>144</td>
</tr>
<tr>
<td>Plumbing</td>
<td>4</td>
<td>7,200</td>
<td>200</td>
</tr>
<tr>
<td>Air conditioning &amp; refrigeration</td>
<td>5</td>
<td>7,500</td>
<td>216</td>
</tr>
<tr>
<td>Carpet, Linoleum &amp; Soft Tile</td>
<td>4</td>
<td>6,400</td>
<td>160</td>
</tr>
</tbody>
</table>

Source: California Department of Industrial Relations, Division of Apprenticeship Standards. Minimum Industry Training Criteria. http://www.dir.ca.gov/DAS/mitc.htm

### THE VALUE OF APPRENTICESHIPS

Apprenticeship programs benefit the entire community by providing good wages, health insurance and career stability for disadvantaged community residents. The stringent training also helps ensure high quality public works projects and cost containment by decreasing turnover, workplace accidents and lost productivity.

#### The Value for Industry

Apprenticeship programs provide skilled workers trained to employer specifications, and lead to reduced turnover, improved on-the-job safety and higher quality results, according to a study commissioned by the U.S. Department of Labor.31

The value of apprenticeship training is extolled by the Construction Users Roundtable (CURT), comprised of some of the largest companies in the U.S., including Boeing, Procter & Gamble, General Electric, and the U.S. Army Corps of Engineers. CURT recommends that end users or owners require the contractors working for them to commit to training programs as a prequalification for doing business.32

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APPRENTICESHIPS LEAD TO CAREERS WITH HIGHER AVERAGE WAGES AND PROMOTE JOB STABILITY THROUGH SKILL CERTIFICATION AND PORTABILITY

The Value for Workers

Most apprenticeship programs provide good jobs from the beginning, with fair wages, family healthcare benefits, a pension plan, paid sick days, a safe work environment and employment stability. Program completion secures these advantages for an entire career.

Wages and Career Stability

Apprenticeships lead to careers with higher average wages and promote job stability through skill certification and portability. Apprentice wages start out as a percentage of the journeyworker hourly rate, significantly higher than minimum wage, and increase regularly as competency is demonstrated.33

As Table 2 demonstrates, apprentices in San Diego County begin at a basic hourly rate equal to more than $28,000 per year. Program graduates make a basic hourly wage equating to nearly $60,000 annually.

Moreover, a certificate of completion signifies attainment of nationally and globally recognized skills.34 With the portability of credentials a worker can move between projects and employers with a documented set of skills on their resume, thereby facilitating the hiring process and ensuring the correct pay rate commensurate with skill level.

Many apprenticeship programs have formal agreements with 2- and 4-year colleges and universities which offer credits for the education received.35 A worker can use accumulated credits to pursue a college degree later in life, facilitating transition to another career, if desired.

### TABLE 2:
Apprenticeship Basic Hourly Wage Increase Schedule, San Diego County, California, Q1 2009*

<table>
<thead>
<tr>
<th>Years in Program</th>
<th>Part of year (1/2)</th>
<th>Carpenter, Commercial</th>
<th>Electrician, Inside Wireman</th>
<th>Plumber, Pipefitter, Steamfitter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Wage level per 600 on-the-job training hours</td>
<td>Wage level per 800 on-the-job training hours</td>
<td>Wage level per 1,600 on-the-job training hours</td>
</tr>
<tr>
<td>1</td>
<td>1st</td>
<td>$14.54</td>
<td>$14.54</td>
<td>$16.65</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td>$16.15</td>
<td>$15.99</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1st</td>
<td>$19.38</td>
<td>$17.45</td>
<td>$19.97</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td>$21.00</td>
<td>$18.90</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1st</td>
<td>$22.61</td>
<td>$20.36</td>
<td>$23.30</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td>$24.23</td>
<td>$21.81</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1st</td>
<td>$25.84</td>
<td>$23.99</td>
<td>$26.63</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td>$29.07</td>
<td>$25.45</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1st</td>
<td></td>
<td>$28.35</td>
<td>$29.96</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td></td>
<td>$29.81</td>
<td></td>
</tr>
</tbody>
</table>


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35 California Department of Industrial Relations, Department of Apprenticeship Standards. Educators home page. [http://www.dir.ca.gov/das/educators.htm](http://www.dir.ca.gov/das/educators.htm)
PAYING PREVAILING WAGE STRENGTHENS FAMILIES

California and many other states require that contractors pay Prevailing Wage on public projects, but cities can selectively opt out. For example, the City of San Diego requires prevailing wage only on projects worth more than $10 million, and the City of Vista recently voted to abandon prevailing wage completely.\(^\text{38}\) Prevailing wage requirements invest in communities by providing good wages and benefits, and protect taxpayers from the hidden costs of supporting the uninsured and the working poor.\(^\text{39}\)

In California, the Department of Industrial Relations reviews the wages and compensation paid to workers in the local area and sets the local prevailing wage at the level most commonly paid to workers in each classification.\(^\text{40}\) Prevailing wage is also required for apprentices.\(^\text{41}\)

As Table 3 illustrates, prevailing wage creates middle-class jobs by determining the amount of employer contributions to worker benefit funds, including health insurance, pension, holidays and vacation, and training.

Prevailing wage requirements:

- Do not increase cost, because workers who earn more are more productive. Also, workers are safer, lowering worker’s compensation costs.\(^\text{42}\)
- Increase rates of health coverage and self-sufficient retirement through pensions.\(^\text{43}\)
- Improve worker safety by encouraging better training and use and retention of experienced workers.\(^\text{44}\)
- Encourage minority participation in apprenticeship programs, creating pathways out of poverty for local workers.\(^\text{45}\) States with prevailing wage laws have nearly 20% more minorities in construction apprenticeships than states that do not require prevailing wage.\(^\text{46}\)

Healthcare and Pension Benefits

Many apprenticeship programs give workers access to health coverage and pension benefits, and when the program sponsor is part of a multiemployer trust, workers have benefits portability between jobs.\(^\text{47}\) Without that structure, the frequent job changes in construction can result in loss of health insurance and pensions, which generally are accessed through employers in the United States.

Multiemployer plans are created through collective bargaining. With this structure, 83% of unionized construction workers had job-based health coverage compared to only 48% in the nonunion sector of the industry in 2005.\(^\text{48}\) Unionized workers are also 23% to 54% more likely to be in employer-provided pension plans.\(^\text{49}\)

\(^{36}\) California State Labor Code, Div. 2, Part 7. Chp. 1, Sec. 1771.
\(^{40}\) California State Labor Code, Div. 2, Part 7. Chp. 1, Sec. 1773.
\(^{41}\) California State Labor Code, op cit., Sect. 1777.5(b).
\(^{46}\) Philips, op cit.

\(^{49}\) California State Labor Code, Div. 2, Part 7. Chp. 1, Sec. 1771.
Worker Safety

Safety training is highly effective in preventing workplace accidents and injuries, which saves money. A survey of 8,000 construction laborers in Washington found that health and safety training decreased the likelihood of workers’ compensation claims by 12%. Among workers ages 16-24, there were 42% fewer claims.52

Apprenticeships in the building trades provide certified and coordinated instruction in building and earthquake codes, environmental laws and safety, including hazardous materials handling and remediation.53 Minimum apprenticeship training for all crafts must include safety instruction provided on-the-job and in the classroom.54 In California, most crafts require first aid, CPR, tools and materials safety.55

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51 EBRI, op cit.
53 California Department of Industrial Relations, Department of Apprenticeship Standards. Minimum Industry Training Criteria. http://www.dir.ca.gov/das/mitc.htm
55 California Department of Industrial Relations, Department of Apprenticeship Standards. Minimum Industry Training Criteria. http://www.dir.ca.gov/das/mitc.htm
APPRENTICESHIPS SUCCEED BECAUSE LABOR AND MANAGEMENT WORK TOGETHER

Due to the resources required to adequately train workers, the structure of sponsorship plays an important role in the success of the program. Apprenticeship programs can be sponsored by a single employer, a group of employers or a group of employers in cooperation with labor. Sponsors plan the training, review apprentice progress, maintain the records of appropriate progress and pay for the program. The total cost can be $40,000 to $200,000 per apprentice, depending on the trade and length of apprenticeship.

The sponsor must have the ability to hire and train apprentices in a real work environment. If the sponsors don’t provide steady work, the apprentices have fewer opportunities to earn wages and thereby remain in the program.

The Vast Majority of California’s Apprenticeship Programs are Joint Labor-Management

<table>
<thead>
<tr>
<th>Table 4: Advantages of joint labor-management apprenticeship programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>California State Certified Apprentice Programs</td>
</tr>
<tr>
<td>Joint Labor-Mgmt</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Asbestos Workers</td>
</tr>
<tr>
<td>Boilermakers</td>
</tr>
<tr>
<td>Bricklayer</td>
</tr>
<tr>
<td>Carpenter</td>
</tr>
<tr>
<td>Carpet, Linoleum &amp; Soft Tile</td>
</tr>
<tr>
<td>Cement Masons</td>
</tr>
<tr>
<td>Drywall / Lather</td>
</tr>
<tr>
<td>Electrical &amp; Electronic</td>
</tr>
<tr>
<td>Elevator</td>
</tr>
<tr>
<td>Engineer</td>
</tr>
<tr>
<td>Glazier &amp; Glass Workers</td>
</tr>
<tr>
<td>Heating, Ventilation &amp; Air Conditioning</td>
</tr>
<tr>
<td>Iron &amp; Steel Workers</td>
</tr>
<tr>
<td>Laborers</td>
</tr>
<tr>
<td>Lineman</td>
</tr>
<tr>
<td>Millwright</td>
</tr>
<tr>
<td>Painting &amp; Decorating</td>
</tr>
<tr>
<td>Plasterers</td>
</tr>
<tr>
<td>Plumbing</td>
</tr>
<tr>
<td>Roofers</td>
</tr>
<tr>
<td>Sheet Metal</td>
</tr>
<tr>
<td>Surveyor</td>
</tr>
<tr>
<td>Tile Layer/Setter</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Percentage</td>
</tr>
</tbody>
</table>

Source: California Department of Industrial Relations, Division of Apprenticeship Standards dataset. April 2009.

Joint labor-management (joint) programs sponsor the majority of apprenticeship programs offered in California and graduate the vast majority of apprentices. The sponsorship structure, meaning whether the sponsor is joint or unilateral management, is a key component to the strength of a program. Cooperation and a shared commitment to training unite employers and workers to create the success of joint programs.

In California, 217 registered programs train apprentices in 23 trades. Joint labor-management programs provide 82% of those programs and offer training in all trades. In 10 trades, only joint programs are offered.

Definitions:
Sponsor
Any person, association, committee, or organization operating an apprenticeship program and in whose name the program is (or is to be) registered or approved.

Joint labor-management (joint)
Composed of an equal number of representatives of the employer(s) and of the employees represented by a bona fide collective bargaining agent(s)

Unilateral
An apprenticeship program sponsor without a bona fide collective bargaining agent.

CONSTRUCTION APPRENTICESHIP PROGRAMS: CAREER TRAINING FOR CALIFORNIA’S RECOVERY

Joint Programs Have More Graduates and Higher Completion Rates

Ninety-two percent (92%) of California’s nearly 30,000 apprenticeship graduates in 2002-2007 were from joint labor-management programs (Figure 2). Since program completion is what secures middle-class career wages and benefits, the ability of apprentices to succeed is vital.

Completion rates in joint programs are higher because they are more established and better funded, according a Government Accountability Office report. Joint apprenticeship training trusts are funded through collective bargaining, meaning that member workers agree to have a small part of their paycheck deposited by the employer into the trust.

Joint labor-management programs use a multi-employer structure, with several signatory contractors, to keep apprentices fully employed to fulfill their on-the-job training hours. Joint programs generally take responsibility for placing apprentices with employers, rather than requiring the apprentices to look for work and experience intermittent unemployment. Through local chapter affiliation and portability agreements, apprentices in joint programs keep their benefits and are more likely to find work in other areas with another local.

Ninety-five percent (95%) of women and 92% of people of color graduating from apprenticeship programs are in joint labor-management programs (Figure 3 and Figure 4). Joint labor-management sponsored apprenticeship programs have a significantly higher completion rate (49%) than unilateral programs (33%) across the board. In many of the largest trades, the joint program completion rates are 20-30% higher than unilateral programs (Figure 5, Page 12).

BARRIERS TO PROGRAM COMPLETION

Program sponsorship has two main challenges: failure to complete the program and the loss of a trained worker to another employer, or “poaching.” These problems increase the cost of training and threaten continuation of the programs.

Dropouts

Apprenticeship programs are rigorous. It is full-time, physically

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58 GAO, op cit.
59 Apprenticeship dataset received from the California Department of Industrial Relations, Division of Apprenticeship Standards, April 2009.
60 Apprenticeship dataset, op cit.
demanding work, with classroom instruction and studying after work or on weekends. It can be difficult to juggle time commitments or manage the stress of constant training challenges and evaluations. An apprentice needs both personal commitment and a support system to be successful. This is even more critical if the apprentice comes from an at-risk background.

Social service or support programs within the community can help apprentices succeed by providing needed additional services, such as substance abuse or mental health counseling, childcare, or small loans for reliable transportation. Using assessments and case management to assist apprentices in identifying personal barriers to success and then connecting them to support services can address many of the reasons for dropping out.62

The most commonly cited reasons for non-completion of a program were63:
- 36% – personal reasons (family needs, mental health or substance abuse problems, physical illness or legal issues).
- 32% – performance problems on the job or in the classroom.
- 30% – gained craft certificate or took another job before completion.

Poaching

The loss of a trained worker to another employer, known as “poaching,” can lead to underinvestment in an employer's workforce. In order to maximize profits in the short-term, some contractors may choose to hire others’ apprentices or journey-workers rather than make the long-term investment to sponsor their own training programs.

The focus on selecting the lowest bidder for construction projects can exacerbate “poaching.” When bidding, contractors may cut training costs to reduce total overhead as much as possible and win the work. This fierce pressure to contain labor costs and undercut the competition encourages employers to poach workers from other contractors rather than incur the costs of training.

Joint labor-management programs report less concern with dropouts and “poaching.” Steady work, higher wages and health insurance may resolve many of the personal reasons for dropping out of a program. A steady paycheck at a family-sustaining level may allow workers to pay for childcare or other assistance, while health insurance provides treatment for physical illness, substance abuse or mental health issues.

Joint programs pool their training costs and resources, creating a “fair playing field” among union contractors, thereby negating the disincentive to provide training and the incentive to poach.

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66 Kotler, op cit.


NECESSARY POLICIES TO SUPPORT APPRENTICESHIP PROGRAMS

The success of apprenticeship programs in creating middle-class careers depends on supportive public policies. Effective policy options include funding the programs and support services, requiring contractors to pay prevailing wage and hire apprentices on more projects, and enacting responsible contracting standards.

Career Ladders - Pathways out of Poverty

A career ladder or pathway out of poverty is a succession of training and support systems that prepare workers for a series of jobs with increasing skill requirements and compensation, providing a bridge from unemployment or dead-end jobs into middle-class careers. Career ladders focus on community members who traditionally face multiple barriers to employment – low-income, people of color, women, unemployed, homeless, ex-offender, returning veterans or those lacking a high school diploma or GED.

A comprehensive career pathway links job seekers, employers, community organizations, educational institutions and the workforce development system, creating “wrap-around” services. Apprenticeship is a key step.

Recruitment and Case Management

Community-based organizations and workforce development providers help connect community members with career pathway programs. They provide skills assessments, identify participant needs and coordinate support services. Some community members need case management assistance along the entire pathway out of poverty. Case management assistance is often necessary for ex-offenders or youth, those with a history of substance abuse, or to help low-income people remain qualified for assistance until they become stably employed.

Soft Skills

Nonprofit organizations and community colleges provide soft skills, including job hunting skills, workplace etiquette, communication skills, conflict management, as well as assistance with obtaining a driver’s license or GED.

Hard Skills

Nonprofit organizations, labor unions and employers provide the actual on-the-job skills training for careers through pre-apprenticeship and apprenticeship programs.

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72 The Apollo Alliance, et al, op cit.

73 The Apollo Alliance, et al, op cit.

74 The Apollo Alliance, et al, op cit.
Careers

Graduates of apprenticeship programs become journeymen. With increasing experience and continuing education, many later become foremen, supervisors, or contractors.

None of this is cheap. Providing the diverse services necessary for moving an at-risk community member to self-sufficiency requires resources. Some funds come from government programs and others through nonprofit or charitable organizations.

Regardless, programs like these need both policy and financial support, especially in today’s economy.

Local Hire Requirements

On-the-job training is the main component of the apprenticeship system. Each apprentice must stay fully employed to complete their program on time. Therefore, a shortage of jobs limits the availability of apprenticeships for community residents.

Local hire policies provide local jobs and also incentivize the creation of career ladders by moving community members into apprenticeship programs and into middle-class careers. Local hire policies require that a certain number of journeymen and apprentices who are residents of the local area to be employed on development projects. Many local hire policies also require a set participation rate by “at-risk” residents or living in poverty. Local hire is a concrete mechanism to ensure that the investment of public funds into the community helps low-income residents.

A successful example of local hire policies in action, the City of Los Angeles implemented local hire after an audit of the 1996 City Hall renovation project showed that less than 2% of project work hours were performed by local residents. The City’s Department of Public Works now requires that 30-40% of project hours be performed by City residents. Because of that policy, $41.5 million has been re-invested in the City through the estimated wages and benefits paid to 2,600 local residents and 2,300 apprentices employed on nine Public Works projects.

The Century Community Training Program is one example of an organization providing “wrap around” services. Trainees receive hands-on experience building on-site model structures where they learn the basics of several trades, including concrete pouring, residential plumbing and electrical systems, reinforcing iron setup and basic framing. Daily physical agility and endurance-building exercises help prepare trainees for the physical demands of construction. Classroom instruction includes shop math, written test-taking, blueprint reading and OSHA 10-hour safety certification. Trainees also receive case management services and job placement assistance, with 85% of graduates entering union apprenticeship programs.

CASE STUDY: Los Angeles Unified School District “We Build”

Since 1999, the Los Angeles Unified School District (LAUSD) has strived to use local district residents to perform at least 50% of total hours worked on bond projects. The local-hire policies cover over $27.1 billion dollars of bond funds, the largest school construction project in the nation. Through diligent, innovative administration and community partnerships, 33% or 19,509 local residents have been employed on LAUSD projects, as of March 2009.

Due to the size and scope of the bond projects, LAUSD has created an internal department to facilitate local hire and community partnerships, called We Build. We Build connects community members with pre-apprenticeship training through both the LAUSD Division of Adult and Career Education Training Centers and the nonprofit Century Community Training Program. Completion of the pre-apprenticeship program places workers in a competitive position to enter union apprenticeship programs and be employed by contractors working on bond construction projects.

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75 Los Angeles Unified School District. We Build. http://www.laschools.org/contractor/webuild/ and “We Build” Program Update & UCLA Labor Center Study Summary. Facilities Committee Report. March 5, 2009. Received from We Build program upon request.
77 Information from the Century Community Training Program website. http://www.centurycommunitytraining.org/
Good Jobs in the Green Economy

The green economy is large and growing rapidly. According to the American Solar Energy Society, renewable energy and energy efficiency generated $970 billion in revenues and 8.5 million jobs in 2006. By 2030, ASES estimates that 1 in 4 U.S. workers will have jobs involving renewable energy or energy efficiency.

With that much of our economy at stake, policy decisions are needed today to ensure high-road, middle-class careers for the future. Increasing numbers of state and local governments and agencies are addressing climate change through requiring buildings to be certified “green” and to increase use of renewable energy. The City of Los Angeles, for example, does both. All new buildings over 50,000 square feet must be LEED certified, City buildings over 7,500 square feet must be retrofit to LEED Silver standards and the Los Angeles Department of Water and Power has an aggressive solar incentive program.

Achieving maximum energy efficiency requires a “whole-building” approach and correct construction and installation. Industry analysts recommend certification of contractors as a means to ensuring proper installation.

Apprenticeship training already incorporates green skills and provides the workforce certified in these skills. Together with a strong foundation in skills of the trades, apprenticeship graduates already are well prepared for most green economy jobs.

For example, solar electric systems require electrical training and licensing, and solar water systems require training in plumbing. Apprentices in the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry (UA) learn how to be green plumbers. In the 32-hour, LEED-approved course, apprentices receive training in water conservation technologies such as gray, recycled and wastewater treatment; solar hot water systems; reducing the energy consumption of heating and cooling appliances, and performing energy and water audits.

Weatherization Pre-Apprenticeships

For the last 32 years, the Department of Energy Weatherization Assistance Program (WAP) has helped low-income families permanently reduce their energy bills by making their homes more energy efficient. Basic construction skills are used to address comprehensive energy usage, water consumption and related health and safety improvements. Weatherization workers seal leaks, replace or repair windows, add insulation and repair duct work, upgrade heating and ventilation appliances, and install water-saving devices, among other tasks.

Since weatherization uses the same basic skills as many of the construction crafts, it is a perfect fit for pre-apprenticeship programs. Community-based organizations and the Laborer’s International Union of North America (LIUNA) are creating programs to train community members in weatherization as a pathway into apprenticeships and out of poverty. Moreover, the American Recovery and Reinvestment Act (ARRA) includes commitments to weatherizing 1 million homes and requires payment of federal prevailing wage to workers. Combining ARRA funds for the WAP program with pre-apprenticeship programs will provide good jobs at an early stage of the pathway out of poverty.

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82 Bedzec, op cit.
87 GreenPlumbers, USA. Green Plumbers Course Information. http://www.greenplumbersusa.com/training-accreditation/course-information/#climatecare
WORKER STORY: From Apprentice to Contractor

Electrical contractor Andre Johnson credits his apprenticeship training as the most valuable factor in his growing business success. “In the apprenticeship, I learned about all aspects of the electrical trade – from residential to commercial, from tenant improvements to motor controls.”

Johnson, 38, spent time in San Diego during his service in the Air Force during the first Gulf War, and knew this was where he wanted to plant roots. He later returned to San Diego to raise his family and work in the electrical industry.

Johnson began his electrical apprenticeship with IBEW in 1995. After completing the program, he worked as a journey-level electrician and then progressed to foreman with San Diego-based Robinson Electric. Gaining experience and business acumen along the way, he then started Johnson Electric in the summer of 2006.

Johnson now employs local electricians and apprentices, and provides health care and retirement benefits, proving that a small business can provide family-sustaining careers and succeed.

“It is important to employ apprentices and make sure they are mentored and supported and learn all the aspects of the trade, so they can take their careers in whatever direction they want to go,” Johnson said.

“It is not easy to start your company, but I did it,” he said. “Now, young apprentices see me, and see that they could own a company one day, too.”

SUMMARY

Completion of apprenticeship programs creates household self-sufficiency rather than a reliance on taxpayer-supported services. Construction workers are also consumers and taxpayers, so their wages and benefits are reinvested in the community as bills and mortgages are paid, local shops are patronized and workers have the time and health to participate in church, schools and other civic associations. Creating more local jobs for apprentices is the key to a strong local community. Rebuilding the economy means creating and supporting high-road, good jobs through policies that train and reward workers for their productivity.

RECOMMENDATIONS

1. State and federal “related technical instruction” funding for apprenticeship programs should increase, and funding should be provided for pre-apprenticeship and support services programs.

2. Projects receiving government subsidy should employ apprentices from registered programs at the highest allowed ratio for all trades.

3. Projects receiving government subsidy should utilize local hire policies that target low-income and/or disadvantaged workers through quality state-certified apprenticeship programs with a proven history of graduating apprentices.

4. Public contracting should give preference to responsible contractors and apprenticeship programs that provide health-care and pension benefits and OSHA safety training certifications.

5. Public contracting should utilize policies that reduce reliance on public assistance and that provide economic benefits to the community.

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## APPENDIX: WORK DESCRIPTIONS AND ENROLLMENT REQUIREMENTS FOR SOUTHERN CALIFORNIA JOINT LABOR-MANAGEMENT APPRENTICESHIP PROGRAM OCCUPATIONS

<table>
<thead>
<tr>
<th>TRADE</th>
<th>DESCRIPTION OF WORK</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allied Workers</td>
<td>Applying thermal insulation to pipes, ducts, boilers, vessels, etc., throughout the commercial and industrial industries.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED, certified copy of birth certificate, CA ID, &amp; SS card. Must pass math, English, &amp; physical.</td>
</tr>
<tr>
<td>Boilermakers</td>
<td>Build &amp; repair boilers, tanks, pipelines &amp; refineries</td>
<td>Min. 18 yrs old, H.S. diploma or GED. Drug test.</td>
</tr>
<tr>
<td>Bricklayers/ Stonemasons</td>
<td>Build with masonry materials, bricks, blocks, stone, &amp; marble.</td>
<td>Min. 18 yrs old, CA ID &amp; SS card. Drug test.</td>
</tr>
<tr>
<td>Carpenters</td>
<td>Erect wood framework in buildings, build forms for concrete, CA erect partitions, studs, joists, &amp; rafters.</td>
<td>Min. 17 yrs old w/ parental consent, good physical condition, &amp; mechanical aptitude necessary. Also, CA ID &amp; SS card. Drug test.</td>
</tr>
<tr>
<td>Carpenter - Acoustic Installer</td>
<td>Installs a variety of factory produced systems &amp; construction material in commercial buildings &amp; public structures.</td>
<td>Same as for Carpenter listed above. Drug test.</td>
</tr>
<tr>
<td>Drywall Finisher</td>
<td>Prepares drywall surfaces for painting. Individual must sand, prepare, tape, &amp; do touch-up using hand applied operations or machine applied systems.</td>
<td>Min. 17 yrs old w/ parental consent, CA ID, &amp; SS card. Must have good physical condition &amp; no fear of heights. Drug test.</td>
</tr>
<tr>
<td>Drywall Lather</td>
<td>Erects wood or metal framing, fastens metal studs, metal lath, &amp; drywall with tie wires, screws, nails, clips, &amp; staples. Work is mostly indoors &amp; in high places.</td>
<td>Same as for Finisher above and needs to have good mechanical aptitude. Drug test.</td>
</tr>
<tr>
<td>Electrical</td>
<td>Apprentices perform all aspects of electrical/ telecommunication wire tasks in commercial, industrial, &amp; residential construction.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED, CA ID, SS card, &amp; good physical condition. Must show proof of successful completion of 1 yr. of H.S. algebra or 1 semester college algebra &amp; provide sealed transcripts. Must have reliable transportation. Math &amp; aptitude exam given and drug test.</td>
</tr>
<tr>
<td>Elevator Constructors</td>
<td>Install &amp; maintain elevators.</td>
<td>Min. 18 yrs. Old. H.S. diploma or GED. Aptitude test &amp; personal interview.</td>
</tr>
<tr>
<td>Floor Covering</td>
<td>Apprentices learn to prepare sub-flooring &amp; install new, resilient flooring &amp; carpet installation.</td>
<td>Min. 18 yrs. old, CA ID, SS card &amp; good physical condition. Drug test.</td>
</tr>
<tr>
<td>Glazing</td>
<td>Requires the use of hand tools, electric drills, electric metal saws, &amp; glass polishing equipment. Also requires blueprint reading, layout work, handling, cutting, &amp; processing glass of all sizes. Work is at various heights on ladders &amp; scaffolds.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED, Calif. ID, SS card, &amp; good physical condition. Applicants should not have blood clotting issues. Drug test.</td>
</tr>
<tr>
<td>Ironworker</td>
<td>Apprentices are employed in four related segments of the trade: Structural Ironworker, Reinforcing Ironworker, Ornamental Ironworker, or Riggers &amp; Machine Movers.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED, CA. ID, SS card, &amp; good physical condition. Must have own reliable transportation. Drug test.</td>
</tr>
<tr>
<td>TRADE</td>
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<tr>
<td>Landscape &amp; Irrigation Fitters</td>
<td>Apprentices acquire proficiency in layout, installation, and testing of irrigation systems. Also requires use of hand tools, power tools, and construction equipment related to the trade.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED and good physical condition. Drug test.</td>
</tr>
<tr>
<td>Millwright:</td>
<td>Apprentices install &amp; perform maintenance on machinery in factories &amp; on precision work in nuclear power plants.</td>
<td>Min. 18 yrs. old, good physical condition, and mechanical aptitude necessary. Drug test and physical exam.</td>
</tr>
<tr>
<td>Operating Engineer:</td>
<td>Apprentices are heavy equipment operators &amp; mechanics for major projects using rock, gravel, sand, or dredging operations.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED, and strong physical condition. Must pass 3 part test: verbal, mechanical &amp; math skills. Drug test.</td>
</tr>
<tr>
<td>Painter</td>
<td>Apprentices prepare surfaces &amp; apply paint working on floors, walls, ceilings, &amp; equipment in &amp; outside of buildings. Paint is usually applied via brushes, spray guns, or rollers.</td>
<td>Min. 17 yrs. old w/ parental consent, and good physical condition. Transportation required. Drug test.</td>
</tr>
<tr>
<td>Pile Driver</td>
<td>Apprentices work in the early states of construction by driving metal, concrete, or wood pilings into the earth for base foundation.</td>
<td>Min. 17 yrs. old w/ parental consent, good physical condition, and mechanical aptitude necessary. Drug test.</td>
</tr>
<tr>
<td>Plasterer</td>
<td>Apprentices gain knowledge, skills, &amp; techniques required for the plastering industry. Skills include: applications of scratch &amp; brown coats, finish coats, as well as maintenance &amp; operation of equipment, machine applied plaster &amp; acoustic materials.</td>
<td>Min. 17 yrs. old w/ parental consent, functional reading writing, and math skills required. Also, must not have fear of heights or hard physical labor. Drug test.</td>
</tr>
<tr>
<td>Plaster Tender</td>
<td>Tending plasterers in all aspects of interior &amp; exterior plaster, fireproofing &amp; EIFS applications, scaffold building, pump &amp; mixer operation of forklifts &amp; other mechanical equipment.</td>
<td>Min. 18 yrs. Must have a CA drivers license, SS card &amp; reliable transportation. Physical agility, oral interview &amp; drug test.</td>
</tr>
<tr>
<td>Plumber &amp; Pipefitter</td>
<td>Apprentices learn all aspects of plumbing and pipefitting for commercial, industrial, and residential construction.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED w/ sealed transcripts, valid photo ID, and birth certificate. Must pass aptitude test at community college &amp; drug test.</td>
</tr>
<tr>
<td>Roofers</td>
<td>Installation of all types of roofing including slate, tile, &amp; composition. Also includes waterproofing.</td>
<td>Min. 18 yrs. old, valid photo ID, ss card, and ability to lift 100 lbs. Functional reading, writing, and math skills needed. Drug test.</td>
</tr>
<tr>
<td>Sheet metal</td>
<td>Apprentices lay out, cut, form, fabricate, assemble, &amp; install sheet metal items. This trade works from blueprints, lays out the work, cuts and forms the metal, then welds, bolts, rivets, and solders as required.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED, and good physical condition. Must pass community college math test &amp; drug test.</td>
</tr>
<tr>
<td>Surveyor</td>
<td>Surveyors use advanced math to determine the proper location of property lines and various field &amp; construction survey work. Measure elevations &amp; distances for preparation of maps showing land surfaces, boundaries, &amp; legal descriptions of property.</td>
<td>Min. 18 yrs. old, H.S. diploma or GED, strong algebra and geometry skills, and good physical condition. Must pass algebra &amp; geometry test &amp; drug test.</td>
</tr>
<tr>
<td>Teamster</td>
<td>Driving rock trucks, water trucks, flatbeds, semi tractor trailer &amp; dump trucks.</td>
<td>Min. 18 yrs. for warehouse/commerical vehicle. Min. 20 yrs. for a class A or B license driving position. Drug test.</td>
</tr>
<tr>
<td>Tile Setters</td>
<td>Preparation and installation of tile.</td>
<td>Min. 18 yrs.</td>
</tr>
</tbody>
</table>

The Center on Policy Initiatives is a nonprofit research and advocacy organization formed in 1997 to address issues affecting working people. Through research, advocacy, public education and coalition-building, CPI promotes policy solutions that guarantee access to quality healthcare, ensure development meets community needs, and combat economic inequality.