

Bakersfield College

Program Review – Annual Update

Attachments (place a checkmark beside the forms listed below that are attached):

- [Faculty Request Form](#) [Classified Request Form](#) [Budget Change Request Form](#)
 [ISIT Form](#) [M & O Form](#) [Best Practices Form](#)
 Other: _____

I. Program Information:

Program Name: **Construction Technology (Engineering and Industrial Technology Department)**

Program Type: Instructional Non-Instructional

Program Mission Statement: The construction program supports the many diverse construction occupations within our counties five main construction sectors (Residential, commercial, industrial, heavy civil and environmental construction sectors). Because of our counties rising need for skilled construction personnel, the Construction Technology program is dedicated to provide involved students with the opportunity to develop skills and knowledge for enter into these construction sectors. Emphasis is placed on blending technical skill development with practical lab exercises.

The construction program and related staff strive to offer relevant, current and student centered instruction. Instructors are also sensitive to the diversity of our students, their educational needs, and their career goals. To accommodate our diverse student population, much of the instruction is modularized, interactive and self paced. The construction staff is also sensitive in assisting each student to define their specific career goal.

Program Description: Describe how the program supports the mission of Bakersfield College

Career and Technical Education: Students have the opportunity to obtain a Certificate of Achievement or an Associate of Science degree. These involved students select these courses from the Construction Technology area and/or from the various related departmental programs (Industrial Drawing, Architecture, Wood Technology and Industrial Technology).

Transfer: Introduction to Construction and Estimating, Print Reading & Scheduling courses are transferable.

Furthermore many transferring students in the architecture, industrial drawing, construction management and wood working programs find that the various construction courses and related construction experience complements their personal professional growth.

Basic skill: The construction program recognizes that many of the involved students are deficient in basic math, reading, writing and workforce preparation skills. Recognizing this, much of the instruction is self-paced and modularized.

Students needing further basic skill support are encouraged to seek support from services within the college.

Degrees and Certificates: List the degrees and/or Certificates of Achievement awarded by the program, if applicable.

Certificate of Achievement in Construction Technology

Associates of Science degree in Industrial Technology (Construction Technology option)

II. Program Assessment:

- a. How did your outcomes assessment results inform your program planning?

The need to refine curriculum related to building green concepts, safety and other technical aspects related to construction was identified and addressed. The need to also refine the lab construction lab for student efficiency

and safety was also identified. Lastly, the need to develop lab activities complementing common construction standards was noted.

- b. How did your outcomes assessment results inform your resource requests this year?

The instructor has refined the curriculum and instruction as follows:

Technical: The technical instruction has been refined into individual interactive computer based assignments. The evaluation of student's progress has also been refined. Instructor recognizes the need to further develop learning activities that replicate common construction concepts.

Safety: The instructor refined the safety and technical redesigned safety modules. Many of these assignments are completed online (sample completion documents are attached). These safety assignments are reinforced with related instructor demonstration and discussion. Students also participated in identifying and correcting any safety issues in lab.

Green construction: The CNST 50A and CNST 50B courses have integrated green construction techniques into the instruction. The present challenge is to develop cost effective lab exercises into the instruction. It is a goal to seek advice on this topic from both industry professionals and construction advisory members.

- b. Note any significant changes in your program's strengths since last year.

Summary:

- i. Improving economy has increased the demand for skilled construction workers (see attached documentation).
- ii. The construction advisory committee has been refined with hopes of greater input and participation.
- iii. Immediate management within college has changed and their input and direction has been helpful to the construction program.
- iv. Students and instructor have improved construction lab for efficiency and safety. Over the last five years the construction program has had to move lab facilities two times. Both times the labs were not up to both acceptable teaching and safety standards. The instructor and students have invested a considerable amount of work in bringing the present lab to an acceptable standard. Students and instructor have installed lab safety accessories and related safety signage. Lab has been improved to industry standards.
- v. To complement these changes and to improve instruction, students have designed and fabricated educational trainer units. These "trainers" provide students with real construction scenarios in a cost effective manner.

- c. Note any significant changes in your program's weaknesses since last year.

Several years ago, the HUD grant provided resources for faculty and equipment related to the construction program in the Engineering & Industrial Technology (EIT) department. The premise of this grant was to support the construction of affordable homes in an impoverished area and to encourage construction skill development for interested individuals residing in this area.

Partnerships with over fifty contractors, building officials, city staff and related professional organizations supported in the construction of the successful "Project House" (profit of \$80,000). In this process, outside

construction training programs requested our support. (For example: New Life Training and Recovery, Redwood High School located at Ledro Juvenile Facility and the construction academy at Arvin High School). With this in mind, the construction program has stayed true to the intent and direction of the HUD grant (provide construction training to those with employment challenges).

The construction program is sensitive and dedicated to providing educational support to individuals with employment challenges (It should be noted that the construction instructor has extensive experience in supporting career development to those with employment barriers).

With this in mind, it is important for the college to possibly dialog regarding the following sensitive questions:

- a. Is prison realignment impacting certain program's retention?
- b. With the high rate of recidivism, how does this impact expected enrollment expectations?

Possible discussion source: Prison Postsecondary Education: Bridging Learning from Incarceration to the Community

By: Jeanne Contardo and Michelle Tolbert <http://www.urban.org/projects/reentry-roundtable/upload/Contardo.pdf>

...”Simply having a prison record also decreases a former inmate’s ability to find employment that pays a livable wage (Bushway, 1998; Western, Kling, & Weiman, 2001). As a result, many former convicts return to their criminal behavior because they lack the educational and social skills necessary to function successfully in society (Kachnowski, 2005; Tyler & Kling, 2004; Visher, Winterfield, & Weiman, 2004). Despite these obstacles, inmates on the whole want to secure employment upon release and, if they do, they are less likely to recidivate (Harer, 1994; Sampson & Laub, 1997; Uggen, 2000)”.

- d. If applicable, describe any unplanned events that impacted your program.

III. Technology and Facilities Analysis

- a. Has your program received new or repurposed technology in this cycle? No

If yes, how have you assessed the outcome of the use of that technology and its effectiveness as it relates to student outcomes?

- b. If no, what technology could play a contributing factor in future student success and outcomes for your program?

Due to the numerous computer based instructional assignments, presentations and videos, the CNST 50A, 50B and CNST 3 classes utilize IT 205 computer lab for classroom instruction. Having two or three computers with related audiovisual equipment in the construction lab would give students the opportunity to complete their various assignments while in the lab. Instructor would also be able to present many quality safety and instructional videos that are available online.

Currently the instructor is dialoging with college support staff regarding this issue. If it is deemed beneficial an ISIT request will be processed on the next cycle.

- c. How would you evaluate the use of this technology?

- d. How might other areas use this technology? The often-overbooked IT 205 computer classroom would be freed up for other programs to use. Other areas would be free to use construction lab as the schedule permits.

(NOTE: Technology requests can be made by filling out the [ISIT Request form](#).)

- e. Has your area received any facilities maintenance, repair or updating in this cycle? If yes, how has the outcome contributed to student success? No, students and instructor have made lab improvements. It should be noted that these improvements have been made at little or no cost to the college.

IV. Trend Data Analysis:

- a. Discuss any significant changes in data trends over the last year using data provided by Institutional Research.

Comparing our “success” indicator between BC and the state average, we found we were 18% below the state average. (Source: DataMart) Comparing our BC “completion” Perkins IV core indicator #2 to our district-negotiated target, we found we were 19% below. Although, compared with the state average of “completions,” we were 22% above the state average. Analysis and Plan for Improvement and Reassessment: Regarding the “success” indicator, we feel there are several factors that contributed to a lower than state average percentage.

Whereas many of the programs throughout the state have a larger number of courses and a higher enrollment, we are small in both sections and enrollment, and therefore each student counts as a greater portion of the calculations; 2) We have a significant number of students with challenges, both academically and in their outside life which interfere with the success rate within our courses; 3) We also lose several students in each section due to work, home, or other challenges that interfere with attendance and therefore the ability to complete assignments or be instructed in particular topics. As a result of this finding, we plan on continuing our efforts to increase student success through the following initiatives: 1) tailored instruction on basic skills, particularly in the area of math, 2) continued use of computer-based instruction in safety and on construction-related topics, 3) continued evolution of coursework and projects in the various CNST courses, including more structured, project-based assignments, and 4) reevaluating assessment methods and grading standards.

Regarding the “completions” indicator, we feel that several factors are challenges to student completions rates. The main challenge to student completion is that we only have a Certificate of Achievement and an associate’s degree. Of the courses in the certificate and the major, only four are taught as CNST courses. The remaining coursework is in other disciplines related to construction. Therefore a good portion of our students often complete just the CNST courses and possibly a few others, then seek employment, rather than stay in college long enough to complete all the required classes. It is important to note that our “employment” core indicator shows 91.23% employment, compared with a state average of 83.35%. This is evidence that even though our success indicator is lower than state average, the final outcome (employment) of our training is very successful (above average). It would be wise to re-evaluate the certificate and degree requirements to ensure that the courses outside of CNST are relevant and attractive to students, and also explore the possibility of creating several areas of specialization within the certificate and degree so that students can be more focused on an area of interest to them.

Our construction programs have been operating with a minimal investment by the college; equipment was purchased mainly through a HUD grant, and many of the materials used have been donated and purchased by sources outside of GUI funding.

Employment trends (See attached documents): A review of the attached employment documents indicates a rising demand for skilled construction workers both nationally, in California and Kern County. This data can be summarized as follows:

- i. Employment Development Department (EDD) employment date report indicates that in California there are 25 construction related occupations with a predicted demand for workers ranging from 18 to 57%.
- ii. EDD also reports that In Kern County there are 22 construction related occupations with a predicted demand for workers ranging from 18 to 57%.
- iii. The Bureau of Labor Statistics predicts that the demand for construction labor-both skilled and unskilled- will increase by nearly 60% as of 2020. National Association of Home Builders (NAHB).
- iv. Fannie Mae foresees a 1-million-worker shortage for construction workers, by 2016.
- v. According to a 2013 survey conducted by the National Association of Home Builders (NAHB), growing labor shortages in all facets of the residential construction sector are impeding the housing and economic recovery. The survey of our members shows that since June of 2012, residential construction firms are reporting an increasing number of shortages in all aspects of the industry – from carpenters, excavators, framers, roofers and plumbers, to bricklayers, HVAC, building maintenance managers and weatherization workers. The same holds true for subcontractors,”
- vi. The survey also found that more than half of the builders reported that labor shortages over the past six months have caused them to pay higher wages or subcontractor bids to secure projects, and consequently, to raise home prices. Moreover, 46 percent of the builders surveyed experienced delays in completing projects on time, 15 percent had to turn down some projects and 9 percent lost or cancelled sales as a result of recent labor shortages.
- vii. Nationally, the construction of 1,000 single-family homes generates more than 3,000 jobs, approximately \$145.4 million in wages, and more than \$89 million in federal, state and local tax revenues. As the economy mends, pent-up demand for housing will continue to grow. NAHB is anticipating total housing starts of 970,000 this year and 1.18 million in 2014 as the market continues its gradual rebound.
- viii. According to NAHB, Hispanic workers account for about one-fifth of the residential construction workforce. NAHB also reports that are a Hispanics valuable employee source and have and will be impacted by immigration reform. The U.S. Department of Labor also report that in 2011 Hispanics represented 15% of the U.S. labor force and by 2020 they’ll represent 20% of the workforce.
- ix. The U.S. Department of Labor reports that women represent 9% of total construction employment and will grow by 1.7% annually though 2020.
- x. The Center for Strategic Economic Research reports that construction contributes \$20.7 billion to the California economy and supports over 122,000 jobs per year. The report also states that every dollar spent on housing construction in California generates \$1.20 in total economic activity, while each job created through residential construction supports an additional 1.4 jobs.
- xi. According to the Los Angeles Times, Bakersfield leads the country in year-over-year construction employment growth, with payrolls swelling by almost 23% since July 2011. By comparison, state construction employment grew by 5%”.

V. Progress on Program Goals:

List the program’s goals from the previous Program Review. For each goal, please discuss progress and changes. If the program is addressing more than two (2) goals, please duplicate this section.

Previously Established Goal 1: *(state goal)*

Continue to coordinate with local industry through the work of advisory boards and other collaborative efforts.

[Continued goal from last year. Changes in curriculum were either made or proposed in response to feedback by advisors. Evaluation of the change will take place over the next several years.]

Progress on Goal:

X Completed: 9-20-2013 Revised: _____ (Date)

Comments on Goal 1: Advisory committee has been refined and provided direction and support in recent curriculum refinements (construction math, safety and building green concepts). Construction program is encouraged by this and other support and looks forward to this interaction.

Previously Established Goal 2: *(state goal)*

Continue to address gaps in core indicators. This is continued from last year – especially in terms of non-traditional student (female) enrollment.

x Completed: 9-20-2013 Revised: _____ (Date)

Comments on Goal 2:

Focus on “employment” core indicator showed an improved 91.23% employment rate. Success and completers area of data is being addressed and is a work in progress. Non-traditional (female) enrollment and their success have also improved. Both national and regional demographic trends in the various construction sectors indicate the potential for further positive growth.

VI. Curricular Review (Instructional Programs only):

- a. List each of the courses offered within the discipline’s academic program in the first column, using one row per course. Place an **X** in the appropriate column to indicate when the course is scheduled for review.

Course	2013-2014 (2019-2020)	2014-2015 (2020-2021)	2015-2016 (2021-2022)	2016-2017 (2022-2023)	2017-2018 (2023-2024)	2018-2019 (2024-2025)
CNST B1 3/2011	X		X		X	
CNST B2 3/2011	X		X		X	
CNST B3A (deleted)						
CNST B3B (deleted)						
CNST B50A 9/2012		X		X		X
CNST B50B 9/2012		X		X		X
CNST B54A (deleted)						
CNST B54B (deleted)						

- b. List courses that are proposed for *addition*. **None**
- c. List courses that are proposed for *deletion*. **None, in the refinement process, prior courses have been deleted (Residential Electrical, Residential Plumbing and Special Problems in Construction).**
- d. List any changes the program has made to online/hybrid/distance education courses.
No changes at this time – program does not use online/hybrid/distance education.
- e. Provide an update on the program’s transition to adopting a [Transfer Model Curriculum](#) (AA-T or AS-T), if applicable.
Not Applicable – Program does not have a TMC.

VII. Conclusions and Findings:

Present any conclusions and findings about the program.

The construction program is encouraged by the numerous reports that indicate a strong demand for a broad section of construction jobs.

The revisions in curriculum and instruction over the last three years have been positive. Refinements in curriculum relating to safety, technical development and green building are adding to student growth. The development of related instructional trainer units is complementing these revisions.

The construction program is pleased that it has refined the construction lab for student efficiency and safety.

The program is also encouraged that the current immediate management is providing positive support. They appear to realize that prior decisions have had significant impact on the success and direction of the construction program. Refinements in the construction advisory committee will assist in providing additional support.

The construction program realizes the need to develop lab exercises that reflect common construction techniques and emerging green building techniques. To do this in a cost effective manner is a challenge. The instructor is looking forward to working with the advisory committee and other involved construction personnel in the development and refinement of these lab activities.

The construction program is dedicated to providing quality education to its students. It is also dedicated to the mission and success of the college. With this in mind, the construction program recognizes the need to improve enrollment and retention in CNST 50A & CNST B50B. Input from support personnel will be consulted.

Employment Development Department (EDD) employment date report:
 Indicates that in California there are 25 construction related occupations with a
 predicted demand for workers ranging from 18 to 57%.

EDD California Labor Market Information

9/15/13

Fast growing construction related occupations in California

Occupation	Est. Year - Proj. Year	Est. Employment	Proj. Employment	Change	%Change
Helpers, Carpenters	2010 - 2020	3,100	4,700	1,600	51.6
Helpers, Brickmasons and Tile Setters	2010 - 2020	3,500	5,100	1,600	45.7
Helpers, Pipelayers, Plumbers, and Pipefitters	2010 - 2020	3,300	4,500	1,200	36.4
Reinforcing Iron and Rebar Workers	2010 - 2020	1,400	1,900	500	35.7
Tapers	2010 - 2020	6,000	8,000	2,000	33.3
Cost Estimators	2010 - 2020	22,400	29,600	7,200	32.1
Helpers, Construction Trades	2010 - 2020	20,200	26,400	6,200	30.7
Helpers, Laborers, and Material-Moving Supervisors	2010 - 2020	21,100	27,500	6,400	30.3
Glaziers	2010 - 2020	5,600	7,200	1,600	28.6
Stonemasons	2010 - 2020	1,800	2,300	500	27.8
Heating/Air Conditioning and Refrigeration Workers	2010 - 2020	20,700	26,300	5,600	27.1
Drywall and Ceiling Tile Installers	2010 - 2020	22,200	27,900	5,700	25.7
Pipelayers	2010 - 2020	3,600	4,500	900	25
Brickmasons and Blockmasons	2010 - 2020	5,200	6,500	1,300	25
Cement Masons and Concrete Finishers	2010 - 2020	14,700	18,300	3,600	24.5
Tile and Marble Setters	2010 - 2020	11,300	14,000	2,700	23.9
Helpers, Construction Trades, All Other	2010 - 2020	2,100	2,600	500	23.8
Helpers, Painters, Paperhangers, and Plasterers	2010 - 2020	2,600	3,200	600	23.1
Mechanical Door Repairers	2010 - 2020	1,300	1,600	300	23.1
Supervisors, Construction and Extraction Workers	2010 - 2020	46,000	56,000	10,000	21.7
Construction Trades and Extraction Supervisors	2010 - 2020	46,000	56,000	10,000	21.7
Helpers, Electricians	2010 - 2020	4,200	5,100	900	21.4
Water Transportation Workers	2010 - 2020	5,600	6,800	1,200	21.4
Construction Laborers	2010 - 2020	109,500	130,900	21,400	19.5
Construction and Extraction Occupations	2010 - 2020	607,900	721,800	113,900	18.7

Employment Development Department (EDD) also reports that In ***Kern County*** there are 22 construction related occupations with a predicted demand for workers ranging from 18 to 57%

California Labor Market Information

9/15/13

Fast growing construction occupations in Kern County

Occupation	Est.Year - Proj.Year	Est. Employment	Proj. Employment	Change	%Change	Growth rate %
Reinforcing Iron and Rebar Workers	2010 - 2020	80	130	50	62.5	5
Brickmasons and Blockmasons	2010 - 2020	60	90	30	50	4.1
Cement Masons and Concrete Finishers	2010 - 2020	310	450	140	45.2	3.8
Cost Estimators	2010 - 2020	360	520	160	44.4	3.7
Helpers, Construction Trades	2010 - 2020	390	560	170	43.6	3.7
Helpers, Brickmasons and Tile Setters	2010 - 2020	50	70	20	40	3.4
Construction Trades and Extraction Supervisors	2010 - 2020	1,640	2,250	610	37.2	3.2
Construction Laborers	2010 - 2020	2,770	3,740	970	35	3
Extraction Workers	2010 - 2020	4,430	5,970	1,540	34.8	3
Helpers, Installation and Repair Workers	2010 - 2020	270	360	90	33.3	2.9
Construction and Extraction Occupations	2010 - 2020	17,820	23,360	5,540	31.1	2.7
Construction Trades Workers	2010 - 2020	10,950	14,090	3,140	28.7	2.6
Tapers	2010 - 2020	80	100	20	25	2.3
Plumbers, Pipefitters, and Steamfitters	2010 - 2020	920	1,150	230	25	2.3
Carpenters	2010 - 2020	1,040	1,310	270	26	2.3
Construction Managers	2010 - 2020	1,220	1,530	310	25.4	2.3
Drywall and Ceiling Tile Installers	2010 - 2020	460	570	110	23.9	2.2
Construction and Building Inspectors	2010 - 2020	130	160	30	23.1	2.1
Other Construction and Related Workers	2010 - 2020	420	490	70	16.7	1.6
Painters, Construction and Maintenance	2010 - 2020	710	820	110	15.5	1.5
Roofers	2010 - 2020	230	260	30	13	1.2
Cabinetmakers and Bench Carpenters	2010 - 2020	130	140	10	7.7	0.7

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THE MAGAZINE
OF THE NATIONAL ASSOCIATION
OF HOME BUILDERS

Builder

HOW TO HIRE PEOPLE // WHERE TO FIND THEM // WHO'S NEEDED MOST

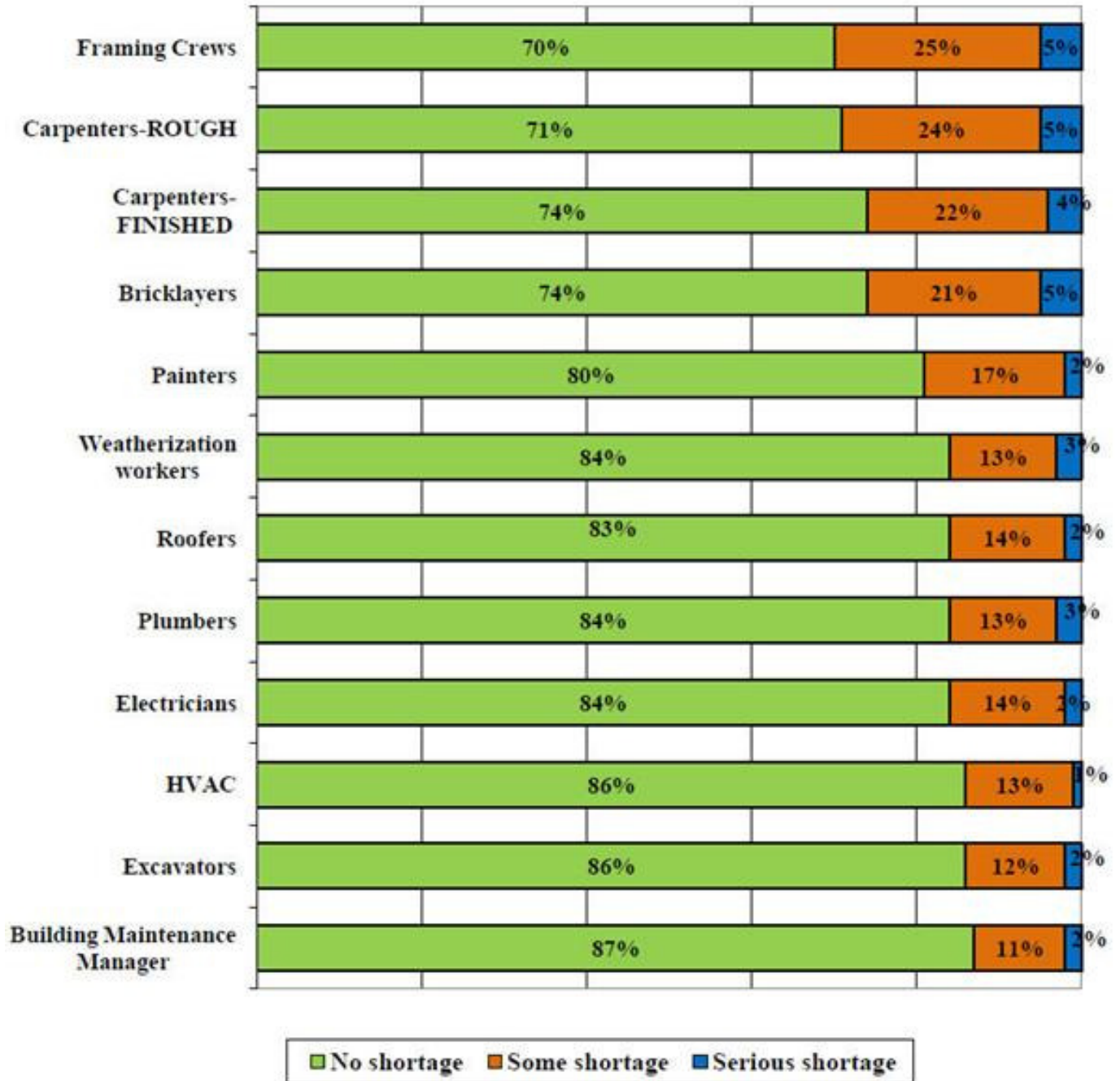


Help Wanted:
Will labor shortages stifle
the housing boom?

hwy

AUGUST 2013 // WWW.BUILDERONLINE.COM

**Exhibit 1. Availability of Labor (Directly Employed by Firm)
(Percent of Respondents)**



Builders Brace for Labor, Skill Shortages

A recent survey by the NAHB shows historically low levels of shortages, but danger on the horizon.

By Claire Easley

Having just weathered an economic tsunami, the home building industry seems to be in the calm before a storm of another type: labor shortages. However, unlike the widespread havoc the housing bust wreaked on the industry as a whole, the shortages likely to be caused by the industry's recovery may be more selective, both by region and area of expertise

But first, the calm. According to a recent survey by the [National Association of Home Builders \(NAHB\)](#) (to which 481 single-family home builders responded), 70% of builders are not currently experiencing any shortages of labor in the 12 trade areas inquired about, and 80% of builders indicated there is no shortage in nine of those areas.

When questioned about subcontractors specifically for the same 12 trade areas, reports of shortages increased, but remained low by historical standards. The NAHB has collected data on labor availability six times over the last 16 years, and in June 2012, subcontractor shortages were the lowest seen since the inception of the series. In half of the trade categories, 80% of builders had not experienced any shortage of sub labor, and 65% of builders had seen no shortage in any subcontractor category.

But fears are brewing. "I've been traveling for six months, and what I consistently hear everywhere is concern that depending on how fast the market picks up, there's a fear of the lack of skilled tradespeople," John Courson—president and CEO of the [Home Builders Institute \(HBI\)](#), the workforce development arm of the NAHB—told *Builder*. "A lot of trades have left the business, and they've moved on and are doing something else."

Already, some troubling trends are appearing. Among survey responders, 25% reported some level of labor shortage for framing labor; 24% reported shortages of rough carpenters; and 22% have encountered shortages of finish carpenters. When asked specifically about subcontractors, 29% reported shortages of framing crews.

Regional trends are also playing into availability. For example, in the Northeast, 18% of respondents had encountered shortages of framing labor, but that number grew to 28% in the Midwest, 32% in the South, and 34% in the West.

Coming off of the worst year on record for housing starts, the NAHB projects that single-family starts will grow to 514,000 in 2012, from 429,000 in 2011; and then rise to 751,000 in 2013. And the builders surveyed apparently anticipate improvement as well, as 41% of respondents said they plan to hire or contract more skilled labor in the coming 12 months. That percentage grew to 56% among builders who started 100 or more units in 2011.

But in addition to concerns about being able to find labor at all, more than half of the builder respondents expressed concern that their current skilled trades may need more training. "A lot of the workforce is not at a skill level that builders need now," Courson said. "In the past, they've had the luxury to being able to provide on-the-job training. Now they want folks who are job ready." That change, he says, has come as the result of an increased focus on green building, more use of technology, and increased need for efficiency to turn a profit. "Builders need to be able to produce homes with a smaller workforce, and they don't have the means to do training," he said.

Earlier this year, HBI predicted that there would be 113,000 new trade hires during 2012, a 17% increase from last year. So far, Courson says that percentage has proved accurate. Training programs such as the HBI's, which works with 13,000 students per year, as well as training programs offered by unions and nonprofits, are working to fill the void. However, some of that trained talent will be siphoned off by remodeling companies, Courson warns, "as more people find themselves underwater on their mortgages and decide to stay put."

Claire Easley is a senior editor at Builder.

<http://www.builderonline.com/supply-chain/builders-brace-for-labor-skill-shortages.aspx>

Los Angeles Times

Many signs point to a Bakersfield boom

Unlike much of the state, Bakersfield is adding residents and jobs while attracting companies. But the economy has not fully recovered, and the city is hindered by a variety of weaknesses.

September 09, 2012 | By Ricardo Lopez

“...These and other projects have given Bakersfield something to boast about. *It leads the country in year-over-year construction employment growth*, with payrolls swelling by almost 23% since July 2011. By comparison, state construction employment grew by 5%”.

May 13, 2013

Another Analysis Wonders If Labor Supply Might Slow Housing's Recovery

Fannie Mae foresees a 1-million-worker shortage for construction workers, by 2016.

By [John Caulfield](#)

New-home construction is expected to get back to a “normal” level of 1.6 million starts per year by 2016. If the industry reaches that plateau again, it is also expected to create an estimated 412,000 new residential construction jobs between 2012 and 2016. But that increase would still leave the industry’s construction employment nearly 1 million workers short of the 3.4 million it hit at the peak of the last housing boom in 2006.

These are the conclusions of a [May 6 analysis of supply and demand in housing and employment by Fannie Mae’s Economic and Research Group](#). The analysis adds to the growing body of research that raises questions about the housing industry’s ability to sustain its recovery.

The Fannie Mae paper can be seen as a response to an analysis of residential construction jobs released last February by Kris Dawsey and Hui Shan of [Goldman Sachs](#). In their paper titled “Housing Sector Jobs Poised for a Comeback,” the researchers estimate that the housing industry’s construction employment fell by 1.5 million, or 42%, between 2006 and 2011. They also introduced the controversial notion that builders “hoarded” workers during the recession—that is, companies didn’t lay off as many workers as they could have, given the collapse in construction activity.

This hoarding premise is based on a calculation of the economic value added per worker, which Goldman estimates fell to \$60,000 in the fourth quarter of 2012 from \$80,000 in 2006. But productivity among construction workers has been gaining, leading the researchers to infer that hiring would again account for a larger share of future increases in residential investment output.

Consequently, the Goldman Sachs researchers believe that as home building expands, housing-related employment this year and next could grow at a rate of 25,000 to 30,000 jobs per month.

Other studies anticipate a similar job-creation spurt. Last December, [Michelle Meyer of Merrill Lynch](#) wrote that while employment did not keep pace with housing starts in 2012, “looking back at prior cycles, it appears that it is normal for construction jobs to lag output by about a year. We think we are on the verge of construction hiring. As demand for housing continues to improve, construction companies will likely become more comfortable expanding their workforce.”

Fannie Mae throws some cold water on these predictions. Fannie basically agrees with Goldman’s estimates for job losses during the recession, stating that jobs related to the construction of residential buildings and specialty trade contractors declined by 1.4 million, or 41%, between 2006 and 2011. But where it differs from other analyses is in its observations about the connection between construction employment and housing starts, which Fannie contends was “highly correlated” in the pre-bust era. It expects this correlation to reassert itself over the next three or four years.

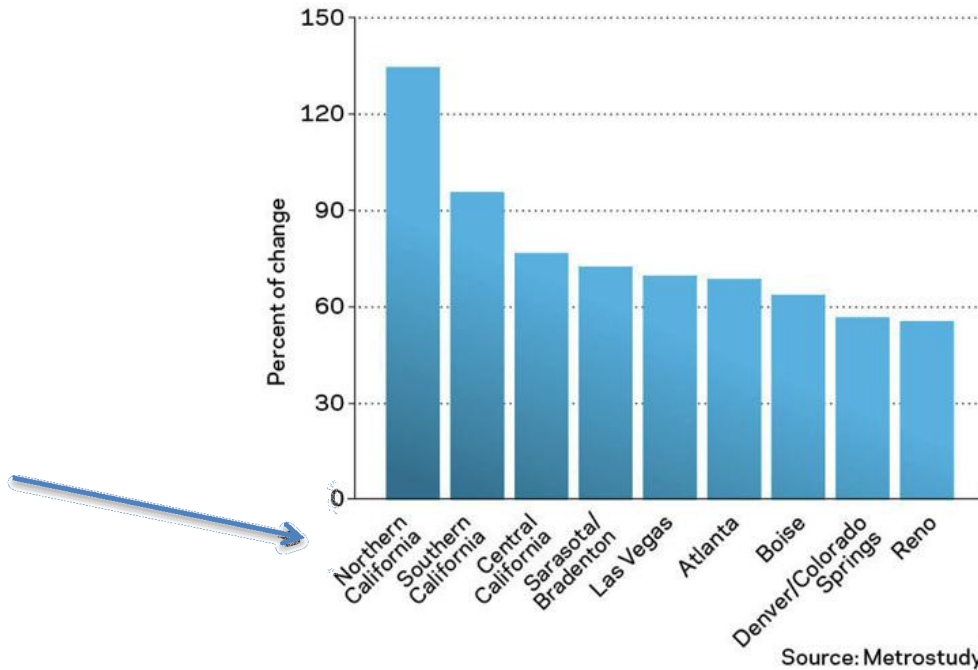
So if the industry eventually gets back to 2006-level construction, Fannie argues that employment should rise to that level, too. Fannie projects a healthy 20% increase in residential construction jobs between 2012 and 2016. But adding 412,000 new jobs over this period would only bring the industry's employment ranks to about 2.41 million, or 1 million less than where employment stood in 2006.

The paradox in Fannie's analysis lies in its estimate that at the peak of the housing boom, there may have been 1.6 million more workers than fundamental housing demand justified. That imbalance corrected itself only last year when, says Fannie, construction jobs were essentially in line with fundamental demand.

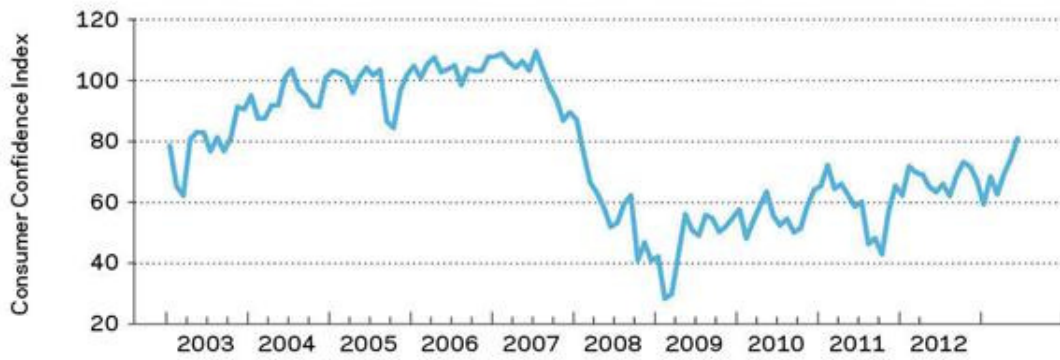
The good news is that this realignment "sets the stage for sustained growth in home building jobs over the next several years," states Fannie's analysis.

John Caulfield is senior editor for Builder magazine.

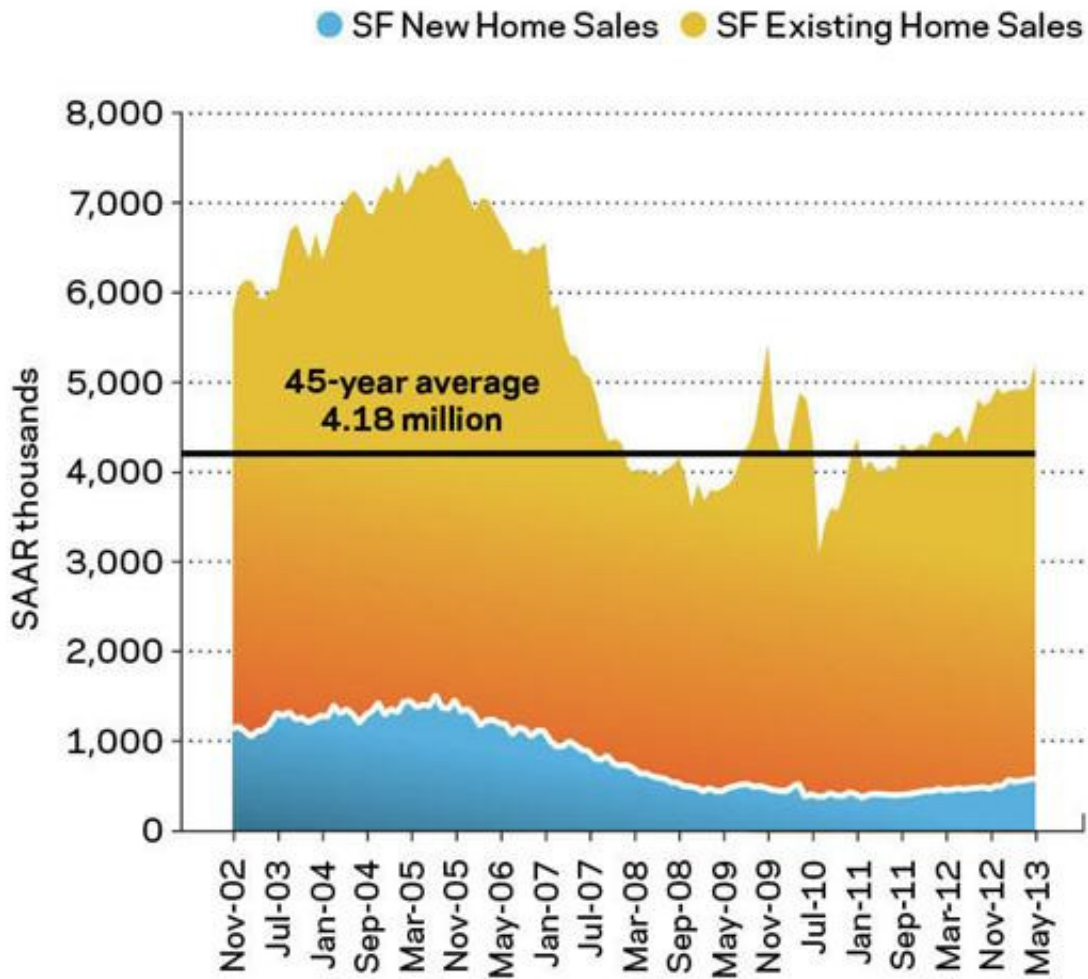
New Housing Starts YOY Change



Consumer Confidence Makes Solid Progress



Single-Family Home Sales



Source: Commerce Department and NAR

Bureau of Labor Statistics:

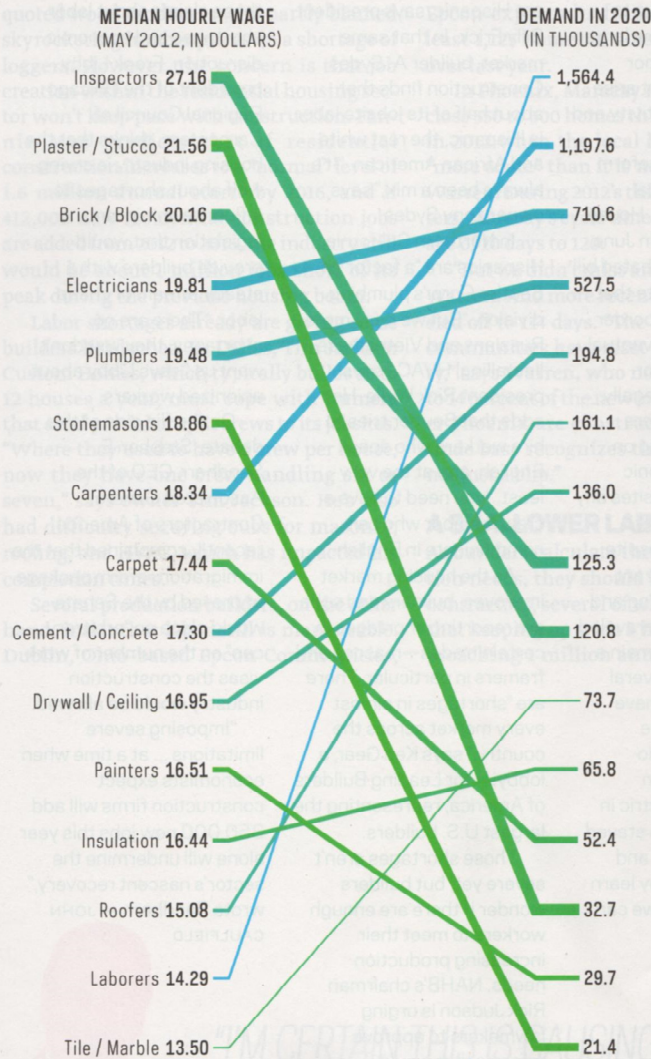
“Predicts that demand for construction labor-both skilled and unskilled- will increase by nearly 60% as of 2020”

LABOR'S BOTTOM LINE

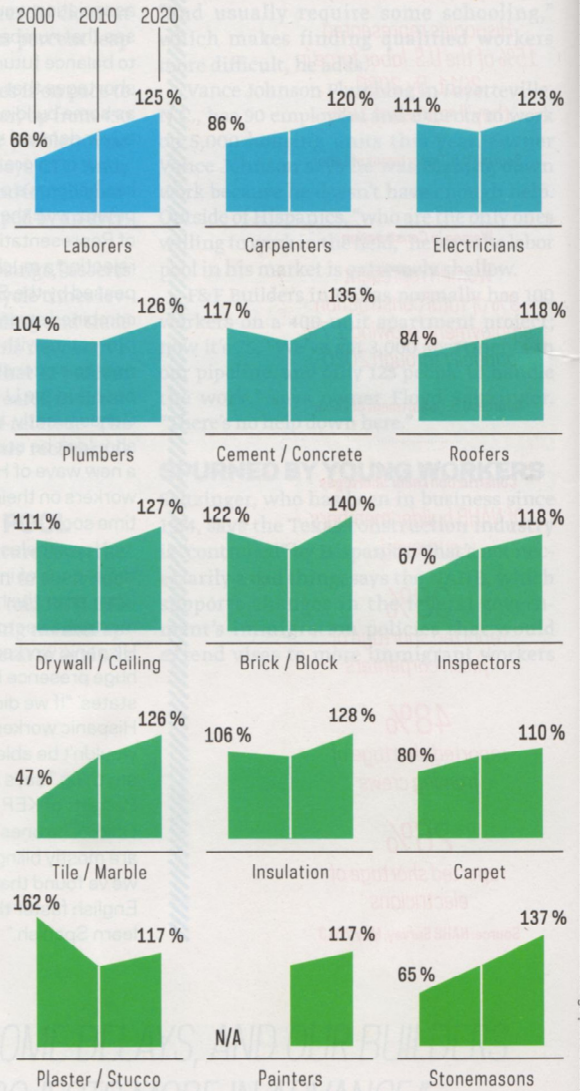
The Bureau of Labor Statistics (BLS) predicts that demand for construction labor—both skilled and unskilled—will increase by nearly 60 percent as of 2020. The trade in highest demand is laborers, the lowest-skilled and among the lowest-paid position. Laborers often are immigrants or high school dropouts and graduates, but BLS statistics expect the pool of 16 to 24 year olds to shrink (22.5 million in 2000

to 18.3 million in 2020). The next highest demand is for carpenters, the trade that laborers work with most, and then for more highly skilled electricians and plumbers, who require a license and have their own code book. Hispanics represent one in five construction workers, so it's good news that Hispanics in the labor force will continue to rise (16.7 million in 2000 to a projected 30.5 million in 2020), according to BLS.

PROJECTED CONSTRUCTION INDUSTRY EMPLOYMENT BY SALARY



PAST AND PREDICTED DEMAND IN COMPARISON TO 2010



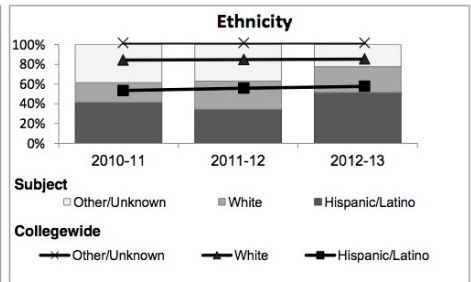
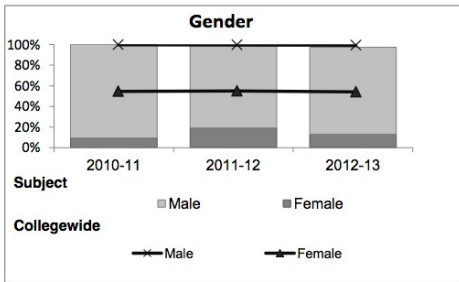
Source: Bureau of Labor Statistics

Construction Technology

Student Demographic Information

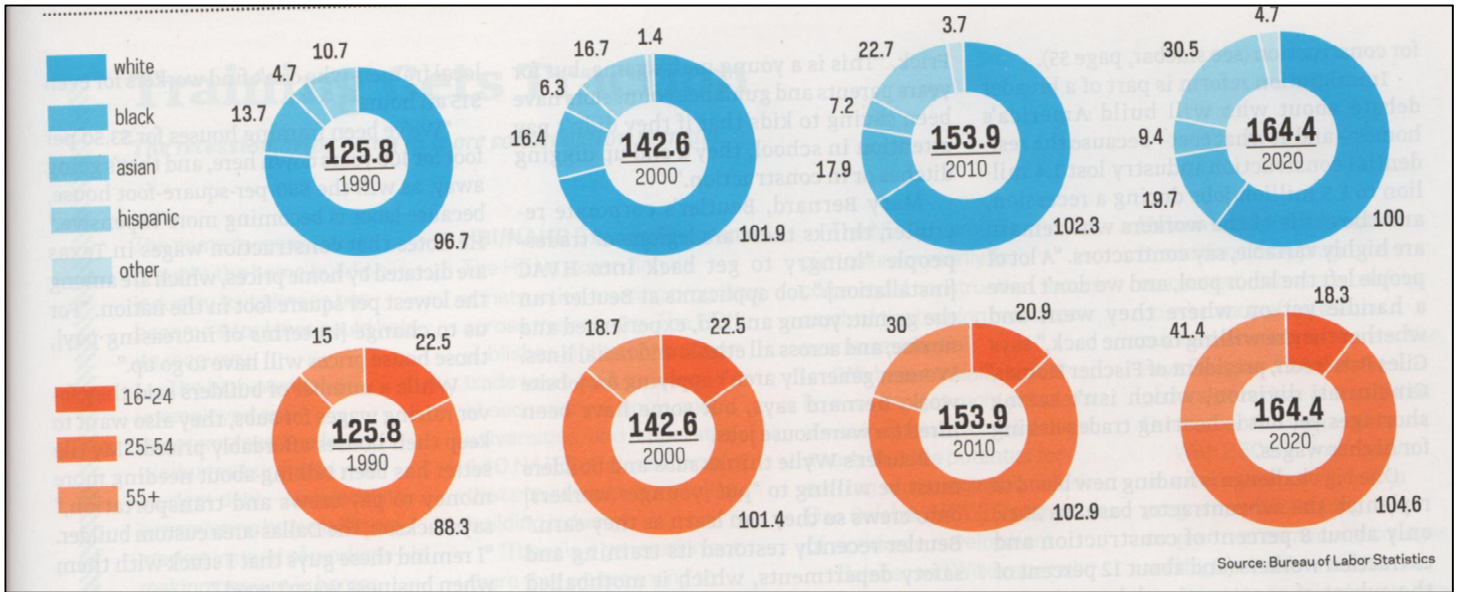
Student Headcount	2008-09		2009-10		2010-11		2011-12		2012-13			
	#	% change - Prior Yr	#	% change - Prior Yr	#	% change - Prior Yr	#	% change - Prior Yr	Subject		Collegewide	
									#	% change - Prior Yr	#	% change - Prior Yr
Unduplicated ²	93	--	85	-9%	75	-12%	84	12%	76	-10%	24,186	-4%

	2008-09		2009-10		2010-11		2011-12		2012-13			
	#	%	#	%	#	%	#	%	Subject		Collegewide	
									#	%	#	%
Gender												
Female	9	10%	4	5%	7	9%	16	19%	10	13%	13,002	54%
Male	83	89%	81	95%	68	91%	67	80%	64	84%	11,007	46%
Unknown	1	1%	0	0%	0	0%	1	1%	2	3%	177	1%
Age												
19 & Younger	15	16%	16	19%	14	19%	16	19%	11	14%	5,879	24%
20-29	40	43%	46	54%	24	32%	33	39%	36	47%	12,407	51%
30-39	18	19%	11	13%	24	32%	20	24%	13	17%	3,344	14%
40 & Older	20	22%	12	14%	13	17%	15	18%	16	21%	2,555	11%
Ethnicity												
African American	16	17%	21	25%	26	35%	27	32%	13	17%	1,479	6%
American Indian	19	20%	1	1%	0	0%	0	0%	0	0%	148	1%
Asian/Filipino/Pac Islander	2	2%	4	5%	3	4%	0	0%	1	1%	1,180	5%
Hispanic/Latino	30	32%	34	40%	31	41%	29	35%	39	51%	13,518	56%
White	19	20%	21	25%	15	20%	24	29%	20	26%	6,706	28%
Two or more races	1	1%	4	5%	0	0%	4	5%	3	4%	802	3%
Unknown	6	6%	0	0%	0	0%	0	0%	0	0%	353	1%



Bureau of labor Statistics:

Labor Force by Ethnicity & Age (in millions)



The Hispanic Labor Demand

Will immigration reform quash the flow of laborers?

By John Caulfield

Hispanic workers account for about one-fifth of the residential construction workforce, according to NAHB estimates. The trade association would like to see that number grow larger to balance future labor shortages that might arise as home building activity and buyer demand swell.

But immigration reform has become a political piñata, with the U.S. House of Representatives in June rejecting a much-debated bill passed by the Senate that combined stronger border protection with an eventual path to citizenship for people in the U.S. illegally. Consequently, builders shouldn't be counting on a new wave of Hispanic workers on their jobsites any time soon.

Nevertheless, despite the exodus of immigrant labor after the housing and mortgage sectors unraveled, Hispanic workers remain a huge presence in several states. "If we didn't have Hispanic workers, we wouldn't be able to do anything," says Kevin Padgett of KEP Electric in Ohio. "The ones who stayed are mostly bilingual, and we've found that they learn English faster than we can learn Spanish."

But Hispanic workers don't dominate everywhere. In Jacksonville, Fla., only three of American Electrical's 74 employees are Hispanic, says president Billy Frick. In that same market, builder A. Sydes Construction finds that about half of its jobsite labor is Hispanic, the rest white and African American. "It's always been a mix," says owner Tony Sydes.

In Northern California, Hispanics are "a factor" in Beutler Corp.'s plumbing division. "But we have more Russians and Vietnamese [installing] HVAC," says president Rick Wylie. He adds that Beutler tries to hire workers who speak English, and at the very least, "you need to have a crew member who can communicate in English."

As the housing market improves, builders and subs are reporting shortages in certain trades—masons and framers in particular. There are "shortages in almost every market across the country," says Ken Gear, a lobbyist for Leading Builders of America, representing the largest U.S. builders.

Those shortages aren't severe yet, but builders wonder if there are enough workers to meet their increasing production needs. NAHB's chairman Rick Judson is urging lawmakers to approve reforms that would complement the housing industry's efforts to train more people with a market-based visa system that allows more foreign workers to enter the construction workforce each year.

Not everyone is buying these claims about labor shortages and economic disruption. Frank Libby, president of the [Chicago](#) Regional Council of Carpenters, thinks that the housing industry is crying wolf about shortages to influence immigrant legislation that would provide builders with a steady stream of cheap labor. "There are no shortages; they just don't want us," says Libby about unionized workers.

On the flip side of this debate, Stephen E. Sandherr, CEO of the Associated General Contractors of America, recently complained that the immigration reform package approved by the Senate would place an “arbitrary cap” on the number of work visas the construction industry would be allowed.

“Imposing severe limitations ... at a time when economists expect construction firms will add 350,000 new jobs this year alone will undermine the sector’s nascent recovery,” wrote Sandherr.

National Association of Home Builders Survey, May 2013

BY THE NUMBERS

Hispanics in Construction
1 in 5 workers in the housing industry are Hispanic.
Source: NAHB

People of Hispanic Ethnicity
Hispanics represented 15% of the U.S. labor force in 2011. By 2020, they'll represent 19%.
Source: U.S. Department of Labor

Women in Construction
Women represent 9% of total construction employment, growing 1.7% annually through 2020.
Source: U.S. Department of Labor

Construction Labor Shortages
Of NAHB builder members surveyed:

- 38% reported shortage of finish carpenters
- 48% reported shortage of framing crews
- 26% reported shortage of electricians

Source: NAHB Survey, May 2013

The Economic Benefits of Housing in California

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Executive Summary

New housing construction is one of the most visible and widely dispersed industries in California. Taking into account the full range of economic impacts, new housing construction contributes over \$20.7 billion per year to the California economy and supports nearly 123,000 jobs statewide on an annual basis, based on 2011 new housing unit permit numbers. Almost one-half of the economic output (about \$9.6 billion) is directly the result of new housing construction. The balance (nearly \$11.1 billion) is generated by those sectors which supply goods and services to the residential construction industry as well as the spending activities of the employees of the construction industry and its supplier sectors. Every dollar spent on new housing construction in California generates another \$1.20 in total economic activity, while each job created through residential construction supports an additional 1.4 jobs.

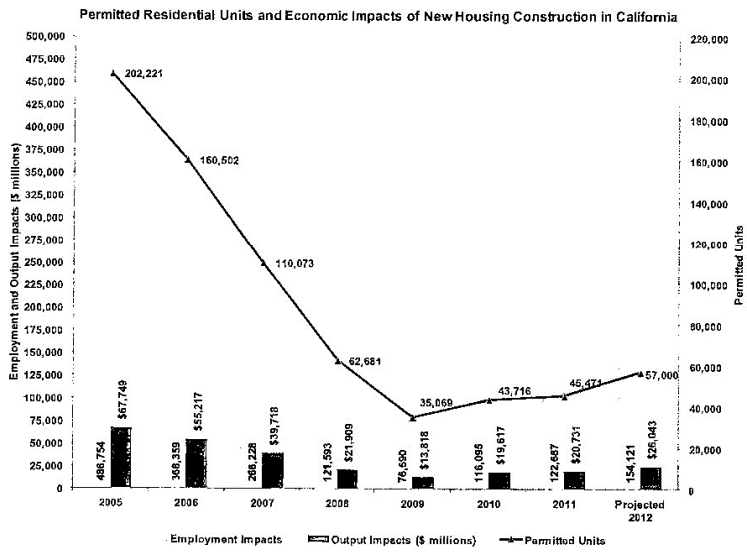
New housing construction:

- Contributes over \$20.7 billion to the California economy
- Supports over 122,000 jobs per year
- Constitutes 0.3 percent of the state's output

New housing construction is an important industry for the state's economy, accounting for 0.3 percent of California's total output and ranking among the top 15 percent of all industries. While new housing construction remains a key contributor to the California economy, its potential economic benefits are much greater. According to the California Department of Housing and Community Development, the expected population growth and household formation in California demands housing unit production levels around 220,000 per annum. New housing construction has lagged behind the estimated demand since the late 1990s and permit levels have fallen well short in recent years. An annual production level closer to the statewide need would significantly increase the economic benefits of new housing construction in California.

With a drop in residential permit activity of close to 78 percent between 2005 and 2011, the economic benefits of new housing construction in California have decreased considerably. In 2005, a period around the most recent peak, permit levels topped 202,000 units, generating an economic impact of over \$67.7 billion and nearly 487,000 jobs. At that time, building levels were much closer to the anticipated annual demand and the full range of economic benefits of new housing construction accounted for close to three percent of the state's total output. Housing construction declined each year from 2005 until bottoming out in 2009 at \$13.8 billion of output and 76,000 jobs. The number of building permits issued increased in the years 2010 and 2011 which led to greater total employment and output impacts. From 2009 to 2011, output and employment impacts increased about 50 percent and 60 percent, respectively. Thus, while the economic downturn has had a dramatic effect on the contributions of new housing construction over the last few years, the current trend suggests that with the increase in building activity, 2012 impacts could potentially reach over 154,000 jobs and \$26 billion of output. However, the forecast for 2012 still shows new housing activity well below the long-term average. Overall, the declines in new housing construction's contribution to the state's economy are considerable and the impacts affect a wide range of linked sectors.

EXECUTIVE SUMMARY



In all of the state’s counties, new housing construction is an important economic contributor with total output benefits capturing a notable portion of overall output. Los Angeles, San Diego, and Orange Counties have seen the greatest economic benefits from new housing construction, based on 2011 new housing unit construction data each with total impacts measuring between around \$1.4 and \$4 billion of output and 8,000 and 25,000 jobs.

The entire housing industry:

- Generates close to \$328.5 billion of output
- Supports about 922,000 jobs
- Accounts for 10 percent of all economic activity in California

The larger picture of the housing industry’s influence in California includes not only the construction of new housing units, but also a wide range of related activities such as remodeling, repair, brokerage, property management, and financing. Accounting for all facets of the housing industry shows that it generates over \$328.5 billion of output and supports about 922,000 jobs throughout the

state. Around 10 percent of California’s total economic output is encompassed within the entire housing industry, ranking it first among the state’s leading industries in terms of output. Even when accounting for the front end of the housing downturn, the industry’s output places ahead of some of the state’s most notable sectors including Wholesale & Retail Trade; Finance and Insurance; and Professional, Scientific, & Technical Services.

The entire housing industry creates a notable contribution to all of the state’s counties. The economic benefits of the housing industry are highest in California’s largest and most mature counties where the accumulation of housing assets over many years, along with ongoing construction, has resulted in a large inventory with high value. The highest levels of output fall within Los Angeles, Orange, and San Diego Counties where the housing industry encompasses between about \$30.7 and \$82.4 billion of output and 91,000 and 228,000 jobs.

Prison Postsecondary Education: Bridging Learning from Incarceration to the Community

Jeanne Contardo and Michelle Tolbert

INTRODUCTION

Inmates reentering society face a wide range of challenges, from securing employment and housing to treating substance abuse and mental and physical illnesses to reconnecting with their families and communities (Urban Institute: Justice Policy Center, 2006, p. 2). With nearly 700,000 inmates released from prisons in the United States each year and many more from jails, a growing number of states are working hard to identify effective methods for helping inmates meet the challenges of reentry and successfully reintegrate into society.¹ These approaches can include prison education programs (adult basic education and academic and vocational postsecondary education), life-skills and job-readiness training, job placement assistance, mentoring services, and pre- and post-release case management (Solomon, Waul, VanNess, & Travis, 2004).

This paper focuses on prison postsecondary education programming, which attempts to address factors that contribute to incarceration and assist with reintegration into society by providing credit and non-credit college-level courses to inmates before their release from prison. Specifically, we describe several postsecondary correctional education programs primarily offered by community colleges, including programs in California, New Mexico, North Carolina, Texas, Virginia, and Washington, and identify both challenges and solutions in providing these services to inmates. We also highlight program features that may improve reentry outcomes. The paper concludes with a discussion of research areas warranting further attention from researchers and policy makers.

THE EDUCATION AND EMPLOYMENT GAP

Although there is a societal tendency to want to lock up offenders and “throw away the key,” the reality is that 95 percent of prison inmates, who tend to be poor, ethnic or racial minorities, male, and young, will eventually be released to rejoin society and either return to their criminal lifestyles or adopt new, socially responsible patterns of behavior (Erisman & Contardo, 2005; Freeman, 1996; Harlow, 2003; Harrison & Beck, 2006; Petersilia, 2003). On average, these inmates are less educated than the general population. Approximately 40 percent of inmates in state and federal prisons and jails do not have a high school diploma or a General Educational Development (GED) diploma, compared to 18 percent of the general population.

¹ For example, the Reentry Policy Council (<http://reentrypolicy.org/>) was established in 2001 by the Council of State Governments Justice Center to help states develop, coordinate, and promote state and local strategies for addressing the challenges of reentry. The Council is currently developing an online assessment tool to measure the risks and needs of inmates to inform state supervision, treatment, and program plans. Other examples of states receiving assistance with their prisoner reentry strategies include the National Governors Association’s Prisoner Reentry Policy Academy (www.nga.org/center/reentry/), the President’s Prisoner Reentry Initiative (www.reentry.gov), and the federally funded Serious Violent Offender Reentry Initiative (SVORI), which provided over \$110 million to state and local agencies “to develop new or existing programs offering integrated supervision and reentry services to adults or juveniles leaving correctional facilities” (Lattimore et al., 2004, p. 2).

The gap is even greater at higher education levels. While more than half of the general population has some college education, less than one-fourth of all state and federal inmates have any postsecondary education (Harlow, 2003). Obtaining a college education, however, is becoming increasingly important in today’s knowledge-based, global economy, as described by Irwin Braun, co-author of *America’s Perfect Storm*:

The economy itself is experiencing seismic changes, resulting in new sources of wealth, new patterns of international trade, and a shift in the balance of capital over labor. These changes are causing a profound restructuring of the U.S. workplace, with a larger proportion of job growth occurring in higher-level occupations that require a college education, such as management, professional, technical, and executive-level sales. The wage gap is widening between the most-

and least-skilled workers; men with bachelor's degrees can expect to earn almost twice as much over their lifetimes as those without (Education Testing Service, 2007).

Moreover, researchers argue that spending time in prison actually decreases one's ability to cope in the community and maintain employment, as the values needed to succeed in prison often directly conflict with societal norms (Bloom, 2006; Walters, 2003). Simply having a prison record also decreases a former inmate's ability to find employment that pays a livable wage (Bushway, 1998; Western, Kling, & Weiman, 2001). As a result, many former convicts return to their criminal behavior because they lack the educational and social skills necessary to function successfully in society (Kachnowski, 2005; Tyler & Kling, 2004; Visher, Winterfield, & Weiman, 2004).

Despite these obstacles, inmates on the whole want to secure employment upon release and, if they do, they are less likely to recidivate (Harer, 1994; Sampson & Laub, 1997; Uggen, 2000). A four-state longitudinal survey of inmates after their release from prison found that 26 percent said that they would have liked job training while incarcerated (Visher, LaVigne, & Travis, 2004). A study conducted by the Select Committee on Narcotics Abuse and Control to determine the usefulness of prison literacy and vocational programming found that inmates were more likely to participate in programs if they believed their participation could help them obtain a job after release. The study also found that inmates who enrolled in these programs while incarcerated were more likely to maintain employment and earn slightly higher wages than inmates who did not enroll (U.S. General Accounting Office, 1993).

Not all correctional institutions, however, are able to offer these programs to eligible and/or interested inmates. Although most prisons offer academic and vocational programs, many have waiting lists. In fact, according to the 2003 National Assessment of Adult Literacy, more inmates reported being on waiting lists for vocational education programs than were enrolled (Greenberg, Dunleavy, & Kutner, 2007)....

THE ROLE OF THE COMMUNITY COLLEGE

With a century-old tradition of expanding educational access to everyone, particularly historically underrepresented groups and non-traditional students, community colleges are a natural partner for states that offer PSCE. This is evident in the demographic makeup of today's community college student population; most of the 11.6 million students (46 percent of all postsecondary education students in the U.S) are older, more likely to be racial and ethnic minorities, and often attend classes part time as they juggle other responsibilities (American Association of Community Colleges, n.d.).

The U.S. House of Representatives passed H.R. 4137, the College Opportunity and Affordability Act, on February 7, 2008. It includes provisions that would make all age groups eligible for the Incarcerated Youth Offender grant—a formula grant to states that funds literacy, life, job skills, and postsecondary education programs—and expand the spending cap from \$1,800 per year to \$3,300. The bill now goes to conference committee to reconcile differences with the Senate version passed in July 2007.

Several federal grant/funding programs that supported components of correctional education suffered during the “get tough on crime” movement in the 1990s, including the Pell grant, which funds the postsecondary education of low-income students. Before the 1994 Violent Crime Control and Law Enforcement Act, inmates were eligible for Pell grants, but the 1994 law made inmates ineligible for Pell grants and other forms of financial assistance. Subsequent changes to the law have also prohibited anyone with a prior conviction for certain drug offenses from receiving Pell grants. Changes to the Carl D. Perkins Vocational and Technical Education Act and the Adult Education and Family Literacy Act also restricted state spending on correctional education.

Community colleges also tend to cost less, with average tuition rates of \$2,272 annually in 2007, compared to \$5,836 at public four-year colleges (American Association of Community Colleges, n.d.). This low cost makes community colleges particularly attractive to prisons, since state and federal funding for correctional education has not kept pace with the growing prison population. Further, when Pell grant eligibility was eliminated for inmates in 1994, many PSCE programs lost their primary source of funding and needed to find more cost-effective education providers.

Community colleges also have a reputation for greater course flexibility and more direct contact with local community populations, especially industry (Cohen & Brawer, 1996). Often businesses requiring additional training and professional development for their employees approach their local community colleges to provide such education. According to Cohen and Brawer, community colleges “change frequently, seeking new programs and new clients... never satisfied with resting on what has been done before, they try new approaches to old problems” (p. 37). This tendency to seek out new client bases while responding to societal changes is important for PSCE; while many community college employees consider teaching prisoners to be part of their mission, many also are quick to point out that PSCE revenue helps maintain the financial stability of their institutions.

While the reasons states and prisons partner with community colleges to provide PSCE are generally consistent across the board, how these services are designed, implemented, and supported vary from state to state, and even from institution to institution. Variations can be found in structure, degrees and certificates awarded, funding, approaches to addressing inmate completion issues, and public relations tactics. These variations, described below, are significant because they may help or hinder inmates in using or continuing their education upon release.