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Periodic Construction Update from FRESC: The Case for Apprenticeship Training

Aging Construction Workforce in the Metro Area

According to research by the University of Michigan, the estimated average age of retirement in the construction industry is 58.[1] However, not all workers make it to retirement, and a typical construction worker will leave the industry by age 36.[2]

In the Denver Metro region, 38.1% of construction and extraction industry workers are over 40 years of age, and 14.2% of workers in the industry are over 50 years of age.[3]

Projected Construction Industry Growth in the Metro Area

The building construction segment of the industry in the Denver Metro area is projected to grow by 39.8 percent between 2006 and 2016, faster than the 21.8 percent growth rate for all industries in the area. This amounts to 6,302 additional jobs over the period, or about 630 added jobs per year - *not counting replacement due to attrition of existing workers*.[4]

The heavy and highway segment of the industry is projected to grow by 33.3 percent between 2006 and 2016, faster than the 21.8 percent growth rate for all industries in the area. This amounts to 3,419 additional jobs over the period, or about 342 added jobs per year - *not counting replacement due to attrition of existing workers*.[5]

The specialty trade contractors segment of the industry is projected to grow by 24.9 percent between 2006 and 2016, faster than the 21.8 percent growth rate for all industries in the area. This amounts to 15,311 additional jobs over the period, or about 1,531 added jobs per year - *not counting replacement due to attrition of existing workers*.[6]

Projected Shortage of Construction Workers in the Metro Area

The Denver Metro Workforce Gap Analysis predicts a significant decline in the supply of available workers by 2011 – resulting in an undersupply of workers.[7] (Unfortunately, the Gap Analysis did not look at the age distribution or projected surpluses/gaps of particular construction crafts.)

Falling Rates of Construction Apprenticeship Training

According to the Colorado office of the US Department of Labor, Office of Apprenticeship Training (OAT), training of registered apprentices in Colorado has dropped significantly since 1985.

Missed Opportunities

A Spring 2008 survey of the largest joint apprenticeship programs indicates that hundreds of potentially qualified workers are turned away each year for a lack of on-the-job positions for apprentices on construction sites. Because the non-union sector has an employer-sponsored system where individuals cannot apply on their own for apprenticeship, similar estimates for that sector are not possible. However, both sectors indicated capacity to grow their programs to serve additional apprentices.

Although record keeping systems prior to 2008 did not allow for aggregation of apprenticeship data by project, the Denver Auditor's Prevailing Wage Division, which audits all certified payroll including hours worked by registered apprentices, estimates that utilization prior to 2008 was somewhere in the vicinity of 5% - far below both the maximum allowable ratio (50%) under Denver's prevailing wage, the legally established ratio for crafts with state standards, and the maximum ratio established in collective bargaining agreements for the union sector.

Demonstrated Return on Investment for Project Owners and Industry

A study by the Construction Industry Institute at University of Texas at Austin (CII) concludes that every $1 invested in construction training provides $1.30 - $3 in benefits ranging from increased productivity to reductions in turnover, absenteeism, and rework.[8]

According to the CII study, the standards associated with formal apprenticeship training, such as curriculum, recordkeeping, ratios, and equal opportunity selection procedures, "help to ensure a level of quality that may not be achieved through other types of training." The study also notes that workers in formalized programs have greater job satisfaction, which contributes to higher retention rates.

A cost-benefit analysis of the Canadian apprenticeship system, which operates very similarly to the system in the United States, found that the benefits of apprenticeship training exceed the costs for each construction craft examined.[9]

Demonstrated Return on Investment for Workers

Workers involved in a *formal* training program with *craft certification levels* experience greater wage progressions than other craft workers. Specifically, every 100 hours of training is associated with a 10 cent per hour increase in craft worker wages.[10]

Formally trained craft workers also score higher than their counterparts on written craft tests.[11]

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[1] Center for Construction Research and Training (CPWR), *Construction Chart Book*, 2nd Edition (2001).
[2] Construction Industry Institute, Characteristics of the Construction Craft Workforce (199x).
[3] Development Research Partners for the Denver Office of Economic Development and Regional Workforce Investment Boards, 2007 Denver Regional Workforce Gap Analysis (September 14, 2007).
[4] Colorado Department of Labor, Labor Market Information, *Narrative Industry Summary – Construction – Denver-Aurora MSA* (accessed July 8, 2008). Colorado Department of Labor employment projections for specific occupations within the construction industry are available at: http://www.fresc.org/downloads/Construction%20Occupational%20Employment%20Projections%20through%202016.pdf.
[5] Ibid.
[6] Ibid.
[7] Development Research Partners, *Gap Analysis.*
[8] Construction Industry Institute, *Construction Industry Craft Training in the United States and Canada* (August 2007).
[9] Canadian Apprenticeship Forum, *Return on Apprenticeship Training Investment* (2006). The study concluded that employers receive C$1.38 benefit for every C$1 invested in apprenticeship training.
[10] Construction Industry Institute, *Construction Industry Craft Training.*
[11] Ibid.