Association of 24 Community Action Agencies in Massachusetts

Workforce Development Committee developed Unified Career Training Matrix for Green Industries (theoretical model) - 2008

Conducted workforce needs assessment to identify skills required for entry level employment in energy efficiency and other green industries - 2009

Facilitated weatherization “bootcamp” training at CAAs - 2009/2010

Developed/implemented job readiness pilot project - 2010

Developed enhanced weatherization training model - 2010

Patricia Pelletier, Presenter
<table>
<thead>
<tr>
<th>PHASE I: Basic Training in Energy Conservation</th>
<th>PHASE II: Common Pre-Apprenticeship Construction Training Core</th>
<th>PHASE III: Specialized Training in Green Technologies</th>
<th>PHASE IV: College Degree Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRAINING CONTENT</strong></td>
<td><strong>660 clock hours</strong> of hands-on and classroom training in general construction skills with an emphasis on green building techniques and technologies</td>
<td><strong>Options for:</strong> Specialized Energy Conservation Training Specialized Solar Energy Training Specialized Wind Energy Training Or other training offered through the MA Clean Energy Center sites, post secondary institutions, training programs.</td>
<td><strong>Course offerings at participating Community Colleges; Credit for approved prior classroom education and professional experience.</strong></td>
</tr>
<tr>
<td>Energy conservation technologies (5 -10 day crew training, 10 day auditor/site supervisor training)</td>
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<tr>
<td>40 hours of worksite career exploration + academic remediation</td>
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<td></td>
</tr>
<tr>
<td>50 hours work-readiness training + comprehensive case management and family support services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CREDENTIAL</strong></td>
<td><strong>Certificate of Pre-Apprenticeship Training</strong></td>
<td><strong>Nationally-recognized specialty Certificate from NABCEP, GBCI, BPI or equivalent</strong></td>
<td><strong>College Certificate or AA Degree</strong></td>
</tr>
<tr>
<td>Certificate in Basic Conservation Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Target Positions</strong></td>
<td><strong>Construction Trades Helper; Registered Apprentice.</strong></td>
<td><strong>Conservation Services Contractor; Solar Energy Technician; HVAC Mechanic/Installer; Electrical/Electronic Equipment Mechanic, Installer, Repairer; Hazmat Technician; Electronic Fabricator</strong></td>
<td><strong>Environmental Science Technician; Engineering Technician; Project Manager; Property Manager; Facilities Manager</strong></td>
</tr>
<tr>
<td>Weatherization Crew; Worker/Installer; Crew Chief; Auditor; Inspector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BUSINESS DEVELOPMENT</strong></td>
<td>40-60 additional hours of small business assistance training/education/support to assist participants to start energy conservation crews within the participating CAA.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Theoretical Model, 2008</strong></td>
<td></td>
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</tr>
</tbody>
</table>
WORKFORCE NEEDS ASSESSMENT

A report from the
MASSCAP Green Career Ladder Initiative
Energy Efficiency/Weatherization
Workforce Planning Partnership

Funded by:
The Boston Foundation, SkillWorks Energy Efficiency/Weatherization
Workforce Partnership Initiative, 2009
13 KEY INTERVIEWEES

- Atlantic Weatherization
- Massachusetts Department of Housing and Community Development
- Building Diagnostics
- National Consumer Law Center
- Green Home Solutions
- Peregrine Energy Group
- Conservation Service Group
- Quinsigamond Community College
- JFY Networks
- Stellaris
- Hoisted/Portable Engineers Local 4-Apprenticeship and Training
- Women in Building Trades
- Boston Power, Inc.
ENTRY LEVEL JOBS PROJECTIONS

- Green Industries are growing
- Best opportunities are in weatherization/insulation work (currently residential, soon commercial)
- Future opportunities as hazardous waste technician, HVAC technician, energy utility technician
- Solar industry has potential for employment in solar panel manufacturing, geo-thermal and solar panel installation
- Battery technology (for electric cars, etc.)
- Administrative support (clerical, sales, customer service) in emerging green industries

MASSCAP Green Career Ladders Initiative, Workforce Needs Assessment, November 2009
SKILLS/QUALIFICATIONS FOR “GREEN” ENTRY LEVEL JOBS

- “Soft” skills (attitude, people skills, punctuality, dependability....) 62%
- Hands-on training (weatherization) 54%
- Basic construction/carpentry skills (for weatherization jobs) 54%

MASSCAP Green Career Ladder Initiative, Workforce Needs Assessment, November 2009
MASSCAP JOB READINESS PILOT PROJECT

- 120 hours classroom and independent activities in:
  + Self Exploration
  + Career Readiness Skills
  + Entering the World of Work
  + Communications & Interpersonal Skills
  + Financial Literacy
  + Job Search and Retention
WEATHERIZATION CAREER PATHWAY

<table>
<thead>
<tr>
<th>Weatherization Installer</th>
<th>Weatherization Crew Chief</th>
<th>Weatherization Auditor</th>
<th>Weatherization Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competencies/ Skills</td>
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<td>Competencies/ Skills</td>
</tr>
<tr>
<td>• Read &amp; write legibly</td>
<td>All Installer skills plus</td>
<td>All Crew Chief Skills</td>
<td>All Auditor skills plus</td>
</tr>
<tr>
<td>• Basic verbal skills</td>
<td>training or experience</td>
<td>(other than project</td>
<td>training or experience</td>
</tr>
<tr>
<td>• Basic construction</td>
<td>in:</td>
<td>management) plus</td>
<td>in:</td>
</tr>
<tr>
<td>knowledge</td>
<td>Project management</td>
<td>training or experience</td>
<td>Business Management</td>
</tr>
<tr>
<td>• Basic computer skills</td>
<td>(specific to crew of</td>
<td>in: Measure Selection</td>
<td>(maintain required</td>
</tr>
<tr>
<td>• HS diploma/ GED</td>
<td>installers)</td>
<td>• Work Space</td>
<td>licenses, insurance,</td>
</tr>
<tr>
<td>preferred</td>
<td>• Training (including</td>
<td>Development</td>
<td>employment practices,</td>
</tr>
<tr>
<td>Training/experience in:</td>
<td>adult learning concepts)</td>
<td>• May be required to</td>
<td>bidding, negotiations,</td>
</tr>
<tr>
<td>• Air sealing</td>
<td>• Diagnostic Testing</td>
<td>have Building</td>
<td>etc.)</td>
</tr>
<tr>
<td>• Duct sealing</td>
<td>• Combustion Appliance</td>
<td>Performance Institute</td>
<td></td>
</tr>
<tr>
<td>• Insulation</td>
<td>Safety</td>
<td>(BPI) Certification</td>
<td></td>
</tr>
<tr>
<td>• Basic-load measures</td>
<td>• Code Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Training is often done</td>
<td>• Inspection &amp;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>on the job)</td>
<td>Measurements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• Basic computer skills
• HS diploma/ GED preferred
“Enhanced” Weatherization Training Model

- 30 hours job readiness (including soft skills and green career ladders)
- 100 hours weatherization
- OSHA 10
- Lead Safe Renovation
- Basic Construction (Structure and Systems)
- Energy Basics
- Insulation
- Air Sealing
- Test Prep-- BPI Air Sealing Certification
- 60 hours paid (at Davis-Bacon wages) field placement
- Job coach and case management for career planning/job placement/follow up
- Weatherization crew chief module (for trainees with abilities/interest)
CASE STUDY - RODNEY

- Union Carpenter - unemployed since 2008 (50+ years old)
- Prior Experience: Fourteen years carpentry--commercial, industrial, and residential building trades; Facilities Specialist experience; industrial building and machine maintenance experience; HVAC Building Controls Certificate; working knowledge of Microsoft applications; no formal post secondary education.
- Attended Insulation Installer Weatherization “Bootcamp” at ABCD-Mattapan and received certificate.
- Employed in 2010 as Logistics/Facilities Coordinator at energy efficiency company in Boston (updated skills and integrated with transferrable skills).

Rodney’s Pathway

Facilities Specialist

\[\downarrow\]

Computer Training

\[\downarrow\]

Building Trades

\[\downarrow\]

HVAC, OSHA,..

\[\downarrow\]

“Green” Re-training

\[\downarrow\]

Installer, BPI Training

\[\downarrow\]

Employment in Green Industry—Facilities/Logistics
CASE STUDY - KEN

- Decorated Army veteran, discharged in 2009
- Unemployed after military discharge
- Employment background in construction and management
- Sought assistance from North Shore Career Center - Obtained BPI Building Analyst Certification at North Shore Community College
- Attended “How to Start a Weatherization Business” at NSCC
- Assistance from Northeast Veteran’s Outreach - Obtained Massachusetts Construction Supervisors License
- Hired as Weatherization Crew Chief for Project Renew at Community Teamwork, Inc. in Lowell (updated skills and integrated transferrable skills)

Ken’s Pathway

Construction/Management → Military

Squad Leader

Training → Green Industry Crew Chief

BPI, Construction Supervisor
# SOLAR PHOTOVOLTAIC CAREER PATHWAY

<table>
<thead>
<tr>
<th>Traditional Trades Person</th>
<th>Licensed Electricians</th>
<th>Traditional Engineers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry Level Trades Person</td>
<td>Solar Photovoltaic Technician Installer</td>
<td>PV Installer Lead/ Supervisor</td>
</tr>
</tbody>
</table>

### Competencies/ Skills

- **Entry Level Trades Person**
  - Good verbal/written communications
  - Basic computer skills
  - Attention to detail
  - Good physical health
  - Grasp of current trades
  - Troubleshooting on site
  - Safety training
  - Ability to read and understand specs

- **Solar Photovoltaic Technician Installer**
  - Licensed Electrician
  - Entry Level Occupational Certificate
  - All Entry Level Trades skills plus:
  - Electronic component installation/troubleshooting
  - Report & proposal writing

- **PV Installer Lead/ Supervisor**
  - Licensed Master Electrician
  - Advanced Occupational Certificate
  - Supervisory skills

- **Solar Photovoltaic Engineer/ Designer**
  - Bachelor in Engineering
  - Robust verbal and written communications
  - Excellent computer skills
  - Strong analytical skills
  - Solar panel design/operations
  - Insulation
  - Structural design
  - Atmospheric science
  - Meteorology
  - Aerodynamics
  - Fluid mechanics
  - Tech. analysis & verification
  - Field experience

- **Traditional Engineers**
  - Bachelor in Engineering
  - Masters in Engineering preferred
  - Excellent verbal and written communications
  - Strong analytical skills
  - Engineering experience (electrical power design) codes, building construction
  - Multi tasking
  - AutoCAD
  - MS applications
  - Attention to detail

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Developed by UMass-Lowell Clean Energy Career Pathways Team, 2010
FOR FURTHER INFORMATION

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