NREL
NATIONAL RENEWABLE ENERGY LABORATORY

WAP Workforce Needs Analysis

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NCAP Management and Leadership Training Conference

February 2022

Background

As identified through stakeholder dialogue, Weatherization Assistance Program (WAP) Grantees and Subgrantees face challenges in hiring and retaining field staff in the following positions:

- Retrofit Installers/Technicians (RITs)
- Crew Leaders (CLs)
- Energy Auditors (EAs)
- Quality Control Inspectors (QCIs).

Previously, the WAP lacked reliable nationwide data regarding:

- Current baseline staffing needs
- Staffing needs to meet increased funding levels
- Barriers/challenges to hiring, training, certifying staff.

Data Collection Objectives

- ✓ Determine the number of individuals needed per position: RIT, CL, EA, and QCI.
- ✓ Determine the relationships between Subgrantee subcontracting approaches and staffing needs.
- ✓ Determine number of positions required to accommodate production increases.
- ✓ Identify the scale of recruitment needed to implement WAP at expected increased funding levels.
- ✓ Identify qualitative factors affecting workforce challenges.

WAP Workforce Needs Data Collection and Target Audiences

To gain a baseline understanding of workforce needs, NREL collected voluntary workforce data from May 4-June 30, 2022, from the following respondents:

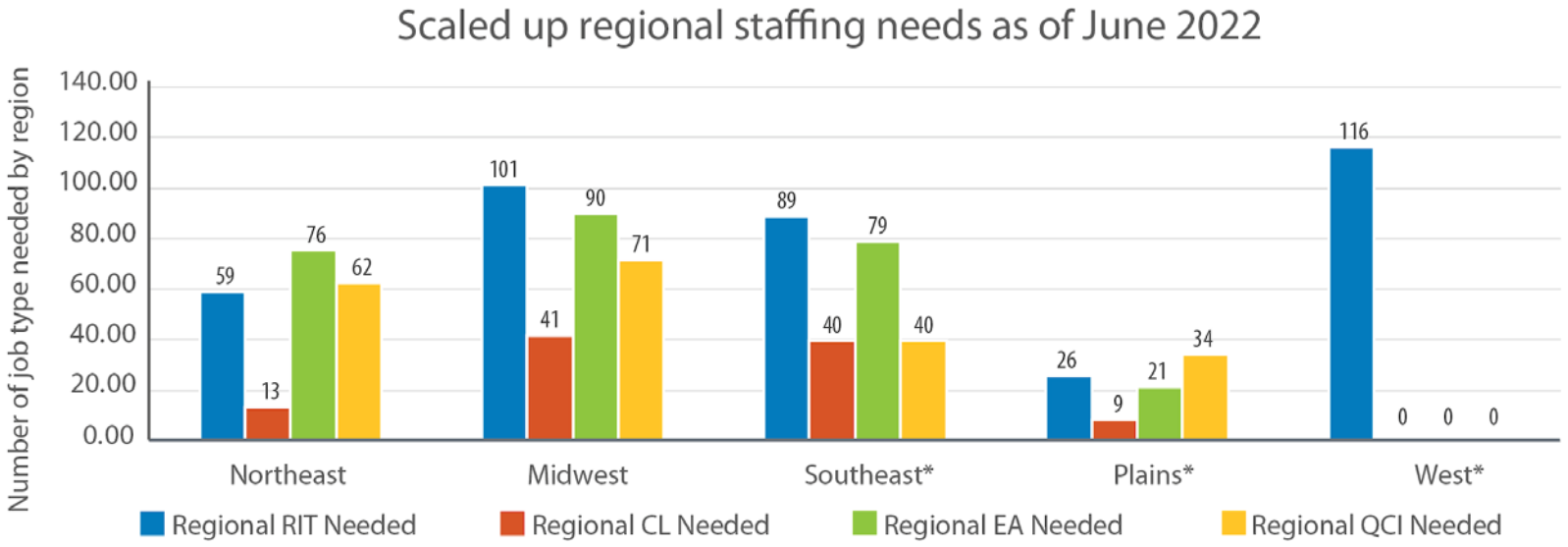
- Grantees (18 questions)
  - 20 respondents.
- Subgrantees (29 questions)
  - 92 respondents.
- Subcontractors (20 questions)
  - 23 respondents.
- WAP Training Organizations (15 questions)
  - 6 respondents.

Figure 1: Scaled-Up Regional Staffing Needs as of June 2022

This chart shows the labor shortage in terms of number of jobs by position by region for subgrantees as of June 2022.

Key takeaway by region:

- Midwest has the largest shortages for positions, with the exception of RIT, where the West has the highest need (although the sample size is small and zero needs may not be reflective of actual needs).



*Results may not be fully representative of the region due to small sample size.

Figure 2: Regional Subgrantee Job Gap To Meet Production Associated With BIL Funding

This figure shows the number of field jobs by position by region resulting from additional production funded by the estimated first 2 years of BIL.

Key takeaway:

- With the influx of the first 2 years of BIL funding, the WAP Subgrantee labor shortage is expected to grow by approximately 1,900 RITs, 1,200 CLs, 600 EAs, and 450 QCIs.

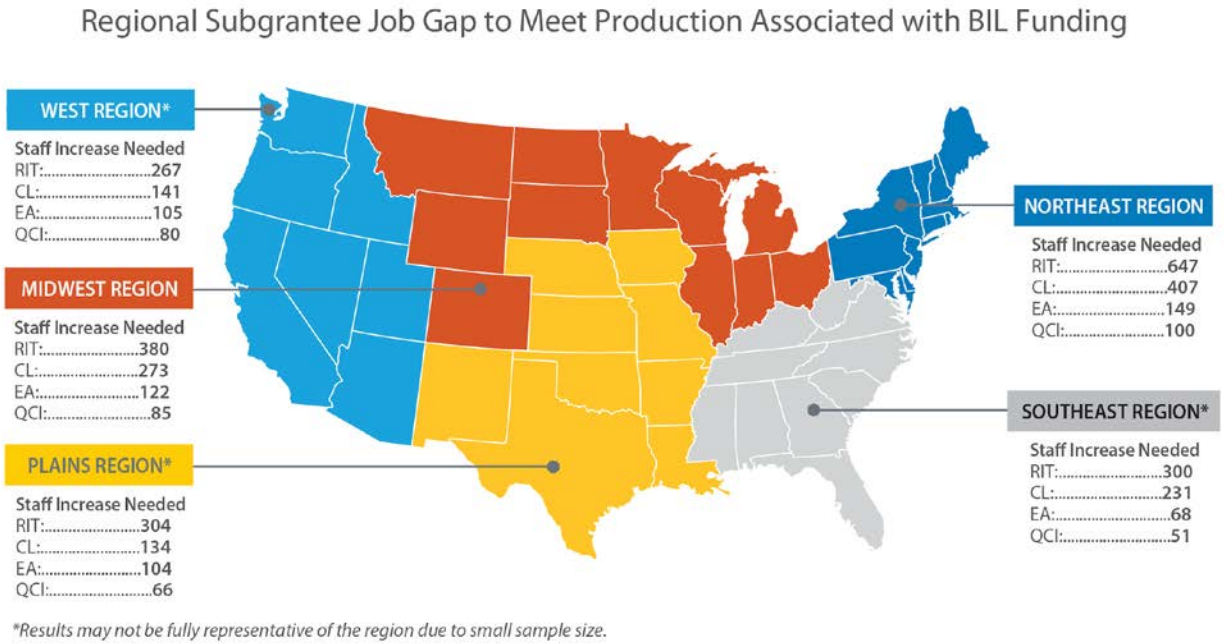
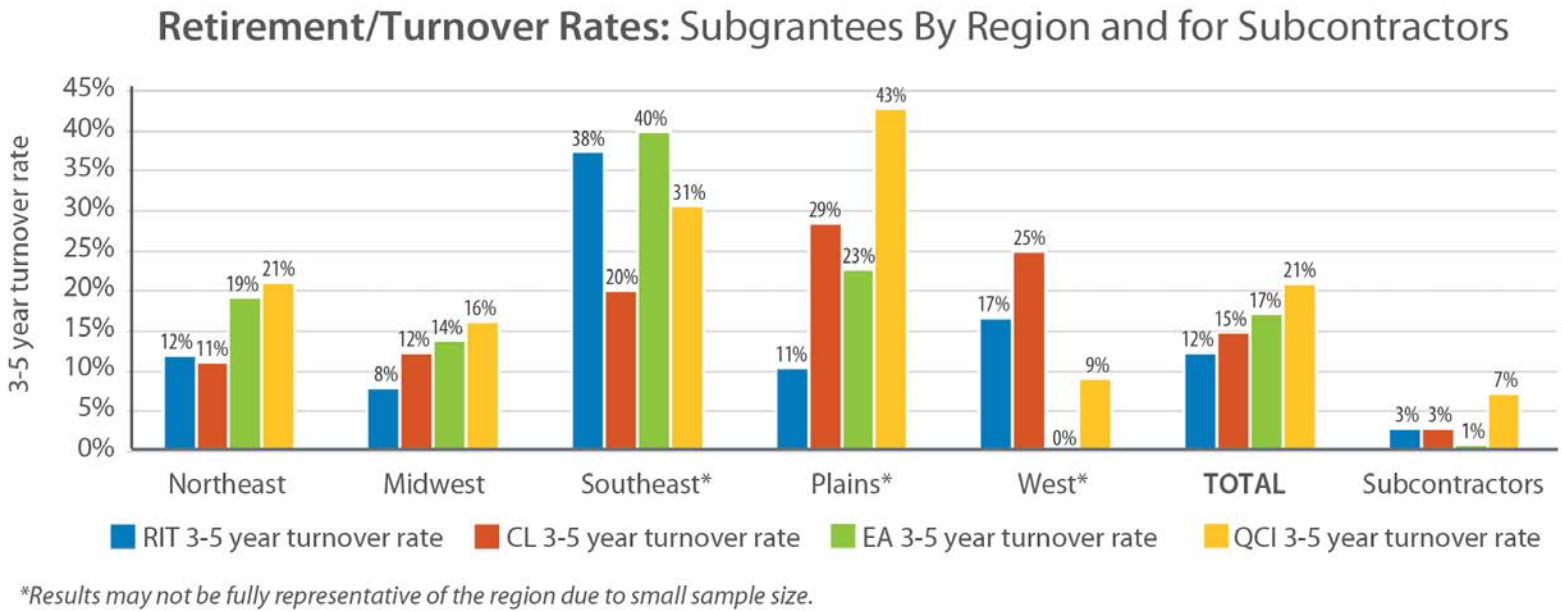


Figure 3: Turnover Rates for Subgrantees by Region and for Subcontractors

This chart shows turnover rates for the past 3-5 years for Subgrantees by region compared to subcontractors.

Key takeaways:

- Southeast and Plains appear to have higher turnover rates across the job positions, but the sample sizes are small.
- Subcontractors have significantly lower turnover rates, implying better retention.



Results may not be fully representative of the region due to small sample size.

Qualitative Analysis

Factors Affecting Workforce

Respondents were asked about perceived barriers or challenges in the following areas:

- Onboarding practices and staff turnover
- Earning or maintaining EA and QCI certification
- Production approaches:
  - Subcontracting versus in-house crews
  - Energy audits (priority lists versus DOE approved modeling tool).
- Expanding training.

Figure 4: Staff Turnover Factors

Question: When experiencing staff turnover, select the most common responses given by staff when asked, "Why are you leaving our organization?"

Key takeaways:

- Compensation ranked highest for Subgrantee/Grantee staff but third for subcontractors.
- Working conditions influenced Subgrantee and subcontractor turnover much more than workplace culture or work life balance.

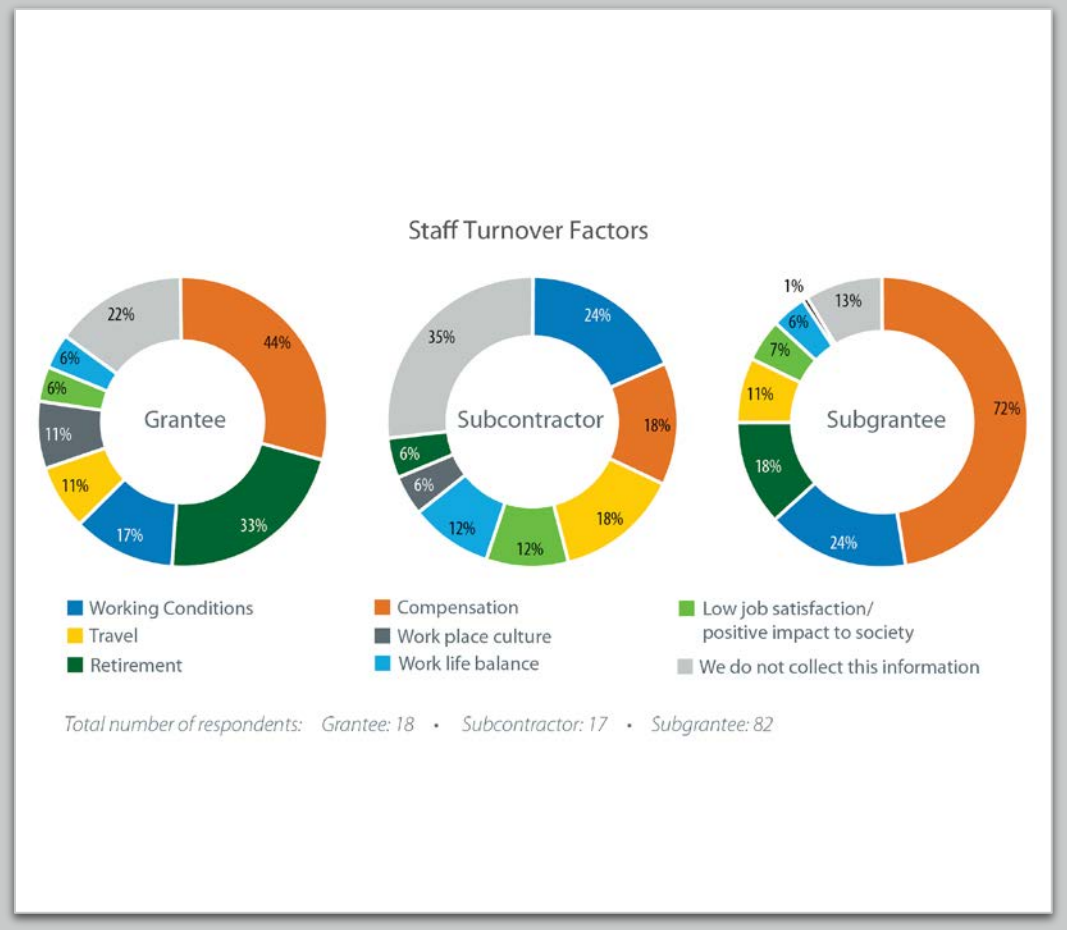


Table 1: Subgrantee Onboarding

The table below shows the % of respondent organizations utilizing each approach.

Key takeaways:

- Just over 40% of respondent organizations do not have a formal diversity, equity, and inclusion plan.
- 3% of respondent organizations use a registered apprenticeship program.

Subgrantee Onboarding	
An onboarding standard operating procedure	68%
A diversity, equity, and inclusion plan	59%
Temporary hiring agencies	29%
Registered apprenticeship programs	3%
U.S. Department of Labor subsidies to offset onboarding/training cost	3%

Perceived EA and QCI Certification Barriers

Key takeaways:

- Prerequisite requirements and the time commitment were the top concerns for Subgrantees and Grantees.
- Lost production and the time commitment were the top concerns for Subcontractors.
- Building science written exam difficulty were common reported barriers for Subgrantees and subcontractors.

Table 2: Training Organizations

Key takeaways:

- Finding qualified trainers was the number one challenge to expanding training capacity reported by training organization respondents.
- Funding, training prop development/maintenance, outdated curriculum, and demand for HEP training were reported as barriers for half or more of respondents.

Training Program Expansion Barriers	
Finding qualified trainers	83%
Funding	66%
Training prop development/maintenance	66%
Outdated curriculum	50%
Registration/demand for HEP Training	50%
Retaining qualified trainers	33%
Training center facility limitations	33%
Organizational interest	33%
Training Provider accreditation	16%
Technology (software, learning management system, etc.)	16%

Key Takeaway Summary

Key Takeaways

1. The estimated national WAP Subgrantee **field staff shortage as of June 2022,** scaled by **existing reported vacancies**, is approximately:
   - **400 RITs**
   - **100 CLs**
   - **260 EAs**
   - **200 QCIs.**
2. With the influx of the first 2 years of **BIL funding**, the Subgrantee labor shortage is expected to grow by approximately:
   - **1,900 RITs**
   - **1,200 CLs**
   - **600 EAs**
   - **450 QCIs.**

Key Takeaways

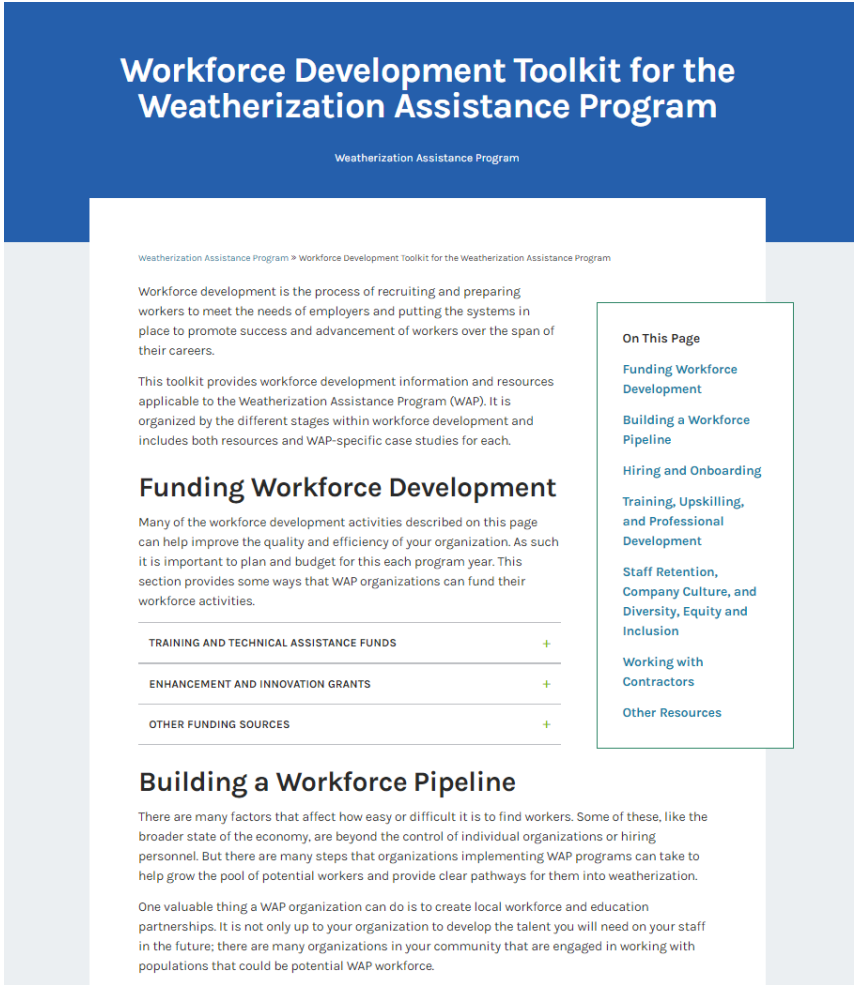
3. The Midwest region is facing the largest labor shortage across most positions and has the lowest capacity to accommodate production increases.
4. Subcontractors appear to have lower turnover rates and greater production capacity compared to Subgrantees.
    a. Subcontractors reported **60%-80% lower turnover rates** across positions compared to Subgrantees.
    b. Subgrantees that utilized subcontractor labor had **greater capacity to accommodate production increases.**
5. Training organization respondents reported difficulty finding qualified trainers.
    a. Difficulty finding trainers coupled with the network-reported job vacancies as of June 2022 and the projected staffing increase due to BIL funding suggests that the WAP is facing **a significant training gap in addition to a jobs gap.**

New Workforce Resources

Workforce Development Toolkit

New interactive only tool supporting workforce development in WAP, including:

- Overview of approaches for workforce development
- Links to key DOE, NASCSP, NCAP, and NREL resources
- WAP case studies of innovative workforce development programs
- Information on developing and funding workforce programs.



Workforce Development Toolkit for the Weatherization Assistance Program

Weatherization Assistance Program

Weatherization Assistance Program » Workforce Development Toolkit for the Weatherization Assistance Program

Workforce development is the process of recruiting and preparing workers to meet the needs of employers and putting the systems in place to promote success and advancement of workers over the span of their careers.

This toolkit provides workforce development information and resources applicable to the Weatherization Assistance Program (WAP). It is organized by the different stages within workforce development and includes both resources and WAP-specific case studies for each.

On This Page

Funding Workforce Development

Building a Workforce Pipeline

Hiring and Onboarding

Training, Upskilling, and Professional Development

Staff Retention, Company Culture, and Diversity, Equity and Inclusion

Working with Contractors

Other Resources

Funding Workforce Development

Many of the workforce development activities described on this page can help improve the quality and efficiency of your organization. As such it is important to plan and budget for this each program year. This section provides some ways that WAP organizations can fund their workforce activities.

TRAINING AND TECHNICAL ASSISTANCE FUNDS +

ENHANCEMENT AND INNOVATION GRANTS +

OTHER FUNDING SOURCES +

Building a Workforce Pipeline

There are many factors that affect how easy or difficult it is to find workers. Some of these, like the broader state of the economy, are beyond the control of individual organizations or hiring personnel. But there are many steps that organizations implementing WAP programs can take to help grow the pool of potential workers and provide clear pathways for them into weatherization.

One valuable thing a WAP organization can do is to create local workforce and education partnerships. It is not only up to your organization to develop the talent you will need on your staff in the future; there are many organizations in your community that are engaged in working with populations that could be potential WAP workforce.

https://www.energy.gov/scep/wap/workforce-development-toolkit-weatherization-assistance-program

Installer Badges Toolkit

Retrofit Installer Tasks

25 Badges

- Work Lead Safe
- Air Seal Attic Floor
- Seal and Dam High-Temperature Heat Sources in Attic
- Prep Attic Floor for Insulation
- Treat Attic Hatch, etc.

Installer Badges Toolkit

The Installer Badges Toolkit provides a flexible, customizable model for a competency-based apprenticeship approach to training and skills recognition across the home energy retrofit industry.

The National Renewable Energy Lab (NREL) and the U.S. Department of Energy (DOE) Weatherization Assistance Program (WAP) are collaborating with the home energy retrofit industry to support the development of skilled workers. The Installer Badges Toolkit provides a flexible, customizable, and voluntary approach to training and skills recognition for WAP implementers, utility programs, private sector workers, and contractors. It can be the basis of a competency-based Registered Apprenticeship, which offers greater flexibility and options for addressing talent development needs through apprenticeship, detailed here: https://www.apprenticeship.gov/.

A Flexible, Customizable Skills Verification Toolkit

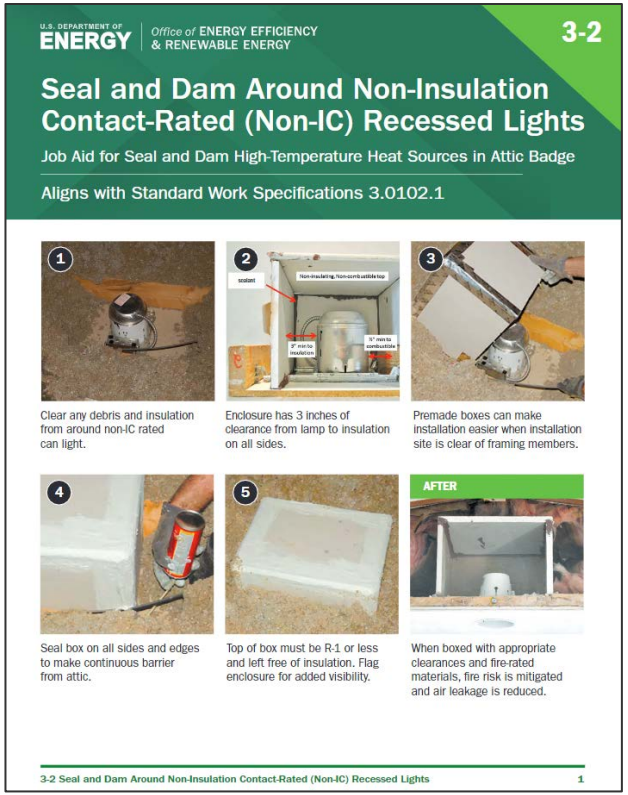
The Installer Badges Toolkit consists of 25 Badges, each representing different energy efficiency tasks that an installer could perform on a home. Each Badge defines the desired outcome, criteria to verify, applicable material requirements, and references to SWS or other relevant standards. Workers earn Badges by completing each task and receiving approval from a qualified supervisor. To track progress, trainers or sponsors can provide workers with a physical Badges Passport or a digital badging platform.

The Badges provide a consistent approach to training by ensuring that installers in different regions are learning the same skills nationwide. Organizations can also customize the Toolkit by choosing only those Badges that are relevant to their program.

Whether workers earn Badges on the job with supervisor approval or at a training center, the work quality requirements are consistent. This allows workers to transfer applicable

https://sws.nrel.gov/installerbadges

Weatherization Job Aids



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3-2

Seal and Dam Around Non-Insulation Contact-Rated (Non-IC) Recessed Lights

Job Aid for Seal and Dam High-Temperature Heat Sources in Attic Badge

Aligns with Standard Work Specifications 3.0102.1

1

Clear any debris and insulation from around non-IC rated can light.

2

Enclosure has 3 inches of clearance from lamp to insulation on all sides.

3

Premade boxes can make installation easier when installation site is clear of framing members.

4

Seal box on all sides and edges to make continuous barrier from attic.

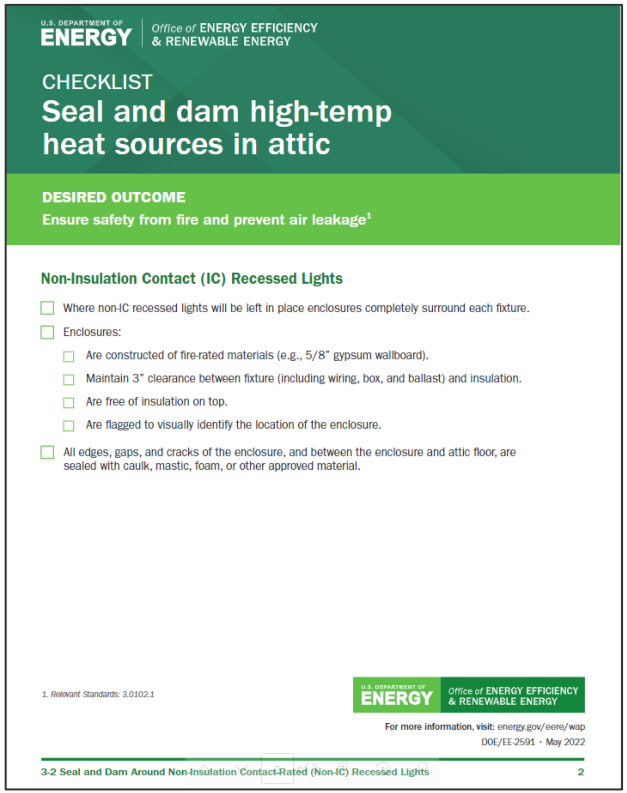
5

Top of box must be R-1 or less and left free of insulation. Flag enclosure for added visibility.

AFTER

When boxed with appropriate clearances and fire-rated materials, fire risk is mitigated and air leakage is reduced.

3-2 Seal and Dam Around Non-Insulation Contact-Rated (Non-IC) Recessed Lights 1



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CHECKLIST

Seal and dam high-temp heat sources in attic

DESIRED OUTCOME

Ensure safety from fire and prevent air leakage[1]

Non-Insulation Contact (IC) Recessed Lights

- ☐ Where non-IC recessed lights will be left in place enclosures completely surround each fixture.
- ☐ Enclosures:
  - ☐ Are constructed of fire-rated materials (e.g., 5/8" gypsum wallboard).
  - ☐ Maintain 3" clearance between fixture (including wiring, box, and ballast) and insulation.
  - ☐ Are free of insulation on top.
  - ☐ Are flagged to visually identify the location of the enclosure.
- ☐ All edges, gaps, and cracks of the enclosure, and between the enclosure and attic floor, are sealed with caulk, mastic, foam, or other approved material.

1. Relevant Standards: 3.0102.1

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For more information, visit: energy.gov/eere/wap

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3-2 Seal and Dam Around Non-Insulation Contact-Rated (Non-IC) Recessed Lights 2

https://www.energy.gov/scep/wap/weatherization-installer-job-aids-and-single-family-interactive-3d-house

3D House

https://www.energy.gov/scep/wap/weatherization-installer-job-aids-and-single-family-interactive-3d-house

Upcoming NREL Workforce Development Efforts

With expected production growth due to the influx of BIL funds, NREL will be conducting the following activities:

- Leadership training and support for local WAP agencies in partnership with NCAP
- Exploring workforce pipeline partnerships outside of WAP to help grow and stabilize the WAP workforce
- Coordinate with NASCSP to update the WAP wage survey
- Develop an ACPU Wage Sensitivity Calculator
- Explore online badging platform for Retrofit Installer Badges.

The goal of these efforts is to help support the workforce development needs, barriers, and concerns for the weatherization network across the country.

Thank you!

www.nrel.gov

NREL/PR-6A20-85129

This work was authored by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy Weatherization and Intergovernmental Program Office. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government. The U.S. Government retains and the publisher, by accepting the article for publication, acknowledges that the U.S. Government retains a nonexclusive, paid-up, irrevocable, worldwide license to publish or reproduce the published form of this work, or allow others to do so, for U.S. Government purposes.