



Weatherization Works

SOLUTION SUMMIT RESULTS:

Stakeholder Feedback to Enhance Quality and Delivery

December 2017

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	3
PROJECT BACKGROUND	4
SUMMARY OF SOLUTION SUMMITS.....	5
Markets and Participants.....	5
Ranking of Barriers	6
Problem-Solving Activity	7
KEY THEMES AND IDEAS	8
Simplify	8
Communication	9
Streamline Requirements.....	10
Financial Flexibility	11
Accountability	12
NEXT STEPS	13
GLOSSARY	14
ADDITIONAL RESOURCES	16
PRINCIPAL BARRIERS AND PROPOSED SOLUTIONS.....	17
Barrier 1: Lack of funding for staff	17
Barrier 2: Weatherization service providers are trying to comply with multiple programs	17
Barrier 3: Lack of emphasis at all levels on training opportunities for non-technical staff	18
Barrier 4: WAP requires extensive experience to implement effectively	18
Barrier 4a: Technical requirements can be seen as complex and lengthy	19
Barrier 6: Challenges may not be communicated within and across organizations	19
Barrier 7: Lack of accountability at all levels	20

EXECUTIVE SUMMARY

Recently, the U.S. Department of Energy (DOE) Weatherization Assistance Program (WAP) and the National Renewable Energy Laboratory (NREL) sponsored a series of four collaborative meetings called Solution Summits across the U.S. to bring together professionals crucial to the delivery of weatherization services.

The goals of these events were to:

1. Identify barriers to delivering quality weatherization services.
2. Draft a list of ideas that could assist stakeholders with more effectively and efficiently managing weatherization programs.

Through group dialogue and voting exercises, participants prioritized the barriers they face in the delivery of WAP.

- Lack of funding for staff.
- Weatherization service providers are trying to comply with multiple programs.
- Lack of emphasis at all levels on training opportunities for non-technical staff.
- WAP requires extensive experience to implement effectively.
- Technical requirements can be seen as complex and lengthy.
- Challenges may not be communicated within and across organizations.
- Lack of accountability at all levels.

Participants then formed small groups and identified strategies for overcoming the barriers. Based on this feedback, event facilitators compiled key themes and narratives from the group problem-solving activity. Within each theme, more concrete ideas and potential steps were then developed. It should be noted that many of the issues and barriers in

Any plan to improve will require a number of steps to gather feedback and finalize strategies for implementation, with the ultimate goal of increasing quality and impact across the entire weatherization network.

this report are the result of a communication gap. **For instance, many of the suggested ideas are already in place, but stakeholders may not be aware of available resources.** WAP recognizes that a comprehensive communication strategy is an important first step to addressing this gap. Simultaneously, WAP can build a plan around those ideas that will best address all of the barriers emphasized by participants. Any plan to improve will require a number of steps to gather feedback and finalize strategies for implementation, with the ultimate goal of increasing quality and impact across the entire weatherization network.

KEY THEMES



PROJECT BACKGROUND

The U.S. Department of Energy (DOE) Weatherization Assistance Program (WAP) reduces energy costs for low-income households by increasing the energy efficiency of their homes while improving their health and safety. The program supports 8,500 jobs and provides weatherization services to approximately 35,000 homes each year. These homes save an average of \$283 per year according to a **WAP national evaluation**. Since the program's inception in 1976, WAP has helped improve the lives of more than 7 million families through weatherization services. A key factor in WAP's success is a highly skilled and trained network of weatherization service providers that includes 57 grantees and over 700 subgrantees.

As with any successful program, continuous improvement is an important goal of WAP. While the Guidelines for Home Energy Professionals project focuses on quality at the installation level, the current effort takes a broader view, looking at all aspects of program administration. To improve, it is essential to gather feedback from the people working to deliver weatherization services. Recently, WAP and the National Renewable Energy Laboratory (NREL) sponsored a series of four collaborative meetings called Solution Summits. These events brought together professionals crucial to the delivery of weatherization services in order to document ideas that would assist stakeholders with more effectively and efficiently managing weatherization programs.

Through group dialogue and voting exercises, participants prioritized the barriers they face daily in the delivery of WAP. With a shortlist of barriers identified, participants formed small groups and utilized a problem-solving template to identify strategies for overcoming each one. Participation was enthusiastic, and dozens of potential solutions were identified.

Based on the results of this brainstorming, a list of ideas, in no specific order, has been developed that includes possible activities for WAP to consider. These ideas reflect the key themes of the Solution Summits and points of emphasis among the problem-solving groups. However, this report is only a starting point. It is up to WAP to determine which ideas have merit and how to put them into action in order to increase installation quality and operational efficiency throughout the network.

WAP'S IMPACT SINCE 1976



7 MILLION

FAMILIES' LIVES IMPROVED



8,500

CURRENT JOBS



35,000

HOMES EACH YEAR



\$283/YEAR

AVERAGE SAVINGS



57 GRANTEES

700 SUBGRANTEES

SUMMARY OF SOLUTION SUMMITS

1. Clarify the key barriers to delivering quality weatherization programs and services.
2. Brainstorm a list of initiatives and resources that can be utilized to increase the quantity of homes repaired without sacrificing the quality of measure installation.

After discussions with WAP staff and partners, the following locations were chosen to host the Solution Summits: the Community Action Partnership's 2017 Annual Convention and the National Association for State Community Services Program's 2017 Annual Training Conference. These settings achieved some measure of geographic diversity while also leveraging planned events of weatherization stakeholders. Figure 1 shows the locations represented by the participants.

Philadelphia, PA – August 29, 2017

Grantees	4	Training Centers	1
Subgrantees	7	WAP Advocates	4

Grantees	2	Training Centers	1
Subgrantees	9	WAP Advocates	2

Grantees	9	Training Centers	1
Subgrantees	4	WAP Advocates	3

Grantees	2	Training Centers	4
Subgrantees	6	WAP Advocates	2
Utility Programs	2		

A map of the United States showing the distribution of 40 white dots representing the locations of the 40 largest cities. The dots are concentrated in the eastern half of the country, particularly in the Northeast corridor and the Great Lakes region, and are more sparsely distributed in the western half.

SUMMARY OF SOLUTION SUMMITS

Ranking of Barriers

The first segment of each summit was a ranking exercise. Facilitators presented 12 barriers faced by WAP stakeholders, as identified through market research, surveys and interviews. These barriers were organized into four categories: training, policies, processes and culture.

Participants were asked to vote for the four barriers that, if addressed, would provide the greatest potential improvement in terms of their organization's ability to complete weatherization work effectively and efficiently. A tally of barriers and votes, along with those that were addressed through the group problem-solving, is presented in Table 2.

TABLE 2 • RANKING EXERCISE RESULTS (ALL EVENTS)

RANK	BARRIER	TOTAL VOTES	ADDRESSED THROUGH GROUP PROBLEM-SOLVING
1	Lack of funding to hire, pay and retain competent, experienced staff.	39	YES
2	Weatherization service providers are trying to comply with multiple programs	32	YES
3	Lack of emphasis at all levels on training opportunities for non-technical staff.	30	YES
4	Weatherization program rules require extensive experience to implement effectively.	25	YES
4a	Weatherization technical requirements can be seen as complex and lengthy.	25	YES
6	Challenges and process gaps may not be communicated within and across organizations.	20	YES
7	There is often a lack of accountability at all levels of the network: WAP, grantee, subgrantee, installer and contractor.	14	YES
8	Management and administrative staff have limited experience or involvement in quality assurance (QA) policies and procedures.	9	NO
9	Documented checkpoints are lacking within and across organizations to confirm that all tasks are completed according to requirements.	8	NO
10	Lack of job descriptions and minimum requirements for staff at all levels of the network.	5	NO
10a	An innovative, well-thought-out training plan for staff is often missing.	5	NO
12	Managers have little to no training on quality management methods and resources.	1	NO

SUMMARY OF SOLUTION SUMMITS

Problem-Solving Activity

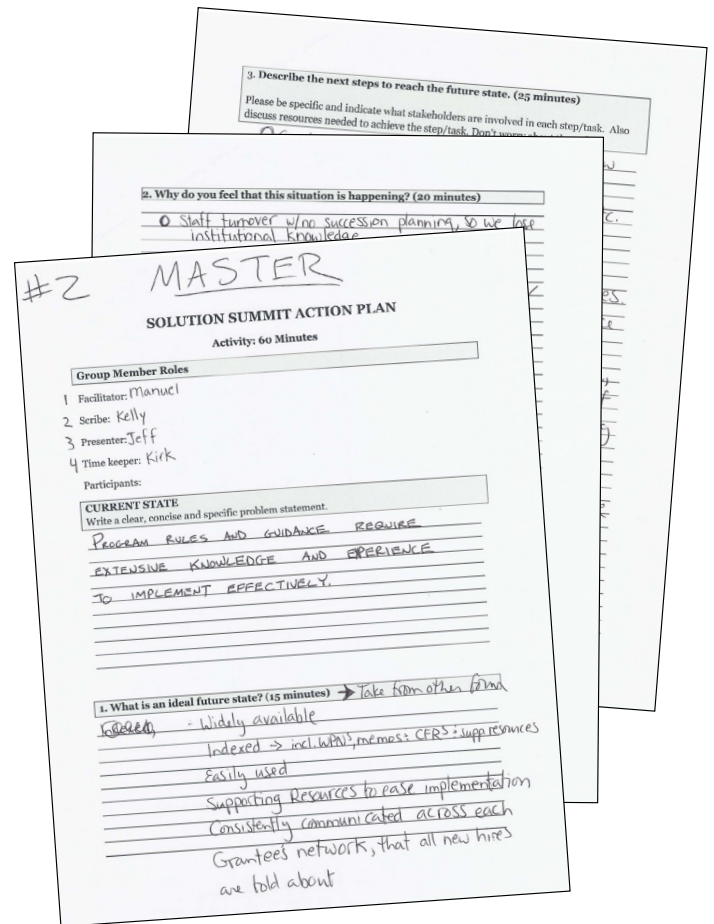
The majority of each Solution Summit was spent on the second phase – group problem-solving. After participants voted for their most pressing barriers, they divided into smaller groups and were assigned a barrier to address. Groups worked through a problem-solving template provided by the facilitators and completed the following tasks:

- Documented the desired future state once the barrier was addressed
- Compiled a list of key strategies and resources needed to reach this future state
- Examined their proposed solutions with the larger group



Stakeholders working together at problem-solving.

Over the course of all Solution Summits, the top seven barriers were addressed. Participants remained engaged throughout the event and provided excellent feedback, which is summarized in the Principal Barriers and Proposed Solutions section. The proposed solutions that received overwhelming support have been consolidated and presented in the Key Themes and Ideas section of this report.

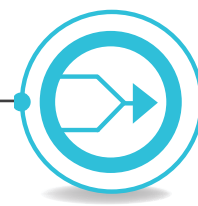


Examples of the participant templates.

KEY THEMES



KEY THEMES AND IDEAS



Simplify

At each summit, participants agreed that WAP program requirements – administrative, fiscal and technical – are extensive and can be a challenge to navigate, interpret and communicate. Reducing the sheer number and length of program requirements

would decrease complexity and free up resources for clients. It should also be easy to determine what current program language and supporting guidance applies to an individual's role and responsibilities.

IDEA	POSSIBLE STEPS	BENEFITS	METRICS	TIMELINE
Create quick links to the most relevant Weatherization Program Notices (WPNs), memorandums and summary tables highlighting program changes	Make them obvious when first opening the searchable Weatherization Program Guidance webpage	Makes program requirements and resources easy to find, allows for consistent messaging, provides a feedback mechanism, saves time/money, lowers stress	Webpage clicks (i.e., unique visits to the site), downloads, questions submitted	Short Term (Less than 1 year)
	Include supporting documentation and resources, including case studies and training materials (administrative, fiscal and technical), on the same site			
	Maintain FAQs, updated quarterly, including a method to submit questions			
Continue working to reduce the total number and length of active WPNs and memorandums	Partner with a diverse group of weatherization stakeholders and subject matter experts to review and edit current WPNs and memorandums	Reduces complexity, allows for easier communication, frees up resources, focuses on the details that matter, encourages buy-in, builds confidence, saves time/money	Reduction in total number of words/unique requirements, participation by the network (meetings attended, comments received)	Medium Term (1-2 years)
	Write requirements using unambiguous language that all can understand (i.e., plain English)			
	Begin each piece or section of guidance with a desired outcome			
	Initiate an open comment period ahead of official dissemination of edited requirements, as well as future WPNs			
Consider establishing a federal priority list that captures fewer measures but increases the number of homes that receive energy conservation measures (ECMs) with historically high savings to investment ratios (SIRs); essentially a preapproved prescriptive path for grantees	Explore the possibility by forming an advisory group that could assist in developing the structure and measures	Reduces complexity, saves time/money, makes for easier onboarding and training, promotes simplified quality control/quality assurance (QA/QC)	QC/QA data, SIR vs. audit programs, number of homes/units repaired, reduction in administrative costs per home	Long Term (2-5 years)
	ResStock – an NREL software tool capable of completing accurate, large-scale residential energy analysis – could be used to help develop measure lists based on climate zone and fuel type			
	Include an option for certain homes to follow a performance path			
	Maintain a pathway to address heating systems			

KEY THEMES AND IDEAS



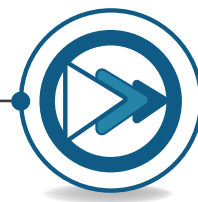
Communication

Challenges and gaps in communication were referenced consistently. Participants are looking for a reliable communication channel between all weatherization stakeholders. Identify the best methods to communicate program requirements

and changes so that stakeholders have a common understanding, a channel to provide feedback, and a method for WAP to document that all grantees and subgrantees have heard their message and understand decisions and expectations.

IDEA	POSSIBLE STEPS	BENEFITS	METRICS	TIMELINE
Explore a variety of communication tools/venues when sending program updates, in addition to emails and conference calls	Use video conferencing, online training platforms, annual conferences, solution summits, regional/state meetings, peer-to-peer networks, etc. Consider holding an open comment period before finalizing WPNs and memorandums to gain buy-in Run Q&A sessions after any final WPN is issued, documenting feedback and FAQs	Improves access to information, encourages buy-in, builds trust	Participation rates, webpage clicks, number of downloads, comments submitted, FAQs documented, volume of follow-up calls/emails received	Short Term (Less than 1 year)
Clarify the application of the Standard Work Specifications (SWS)	Contact each grantee and ask them to explain how the SWS and potential variances apply to their program and subgrantees; document their response and provide clarification as necessary Work with grantees on a strategy to confirm that subgrantees understand how the SWS apply to their work and know where to locate current resources	Improves stakeholder understanding of SWS, allows for more consistent application of SWS, saves time/money, increases likelihood of compliance	Amount of requests for clarification of SWS, volume of variance requests, length of variance approval process, QC/QA data	Short Term (Less than 1 year)
Require an executive summary at the beginning of state plans that highlights everything that has changed from the previous year; redline changes to language throughout individual sections	Draft an example executive summary with changes and key points highlighted Verify during review and approval of state plans	Additional method to convey information to subgrantees, more effective and efficient communication, easier for stakeholders to understand	% grantees completing executive summary, volume of plan changes year to year, compliance with changes	Medium Term (1-2 years)
Make grantees accountable for communicating new program requirements, WPNs and memorandums	Document how information gets passed from each grantee to their subgrantees and relevant subcontractors Suggest grantees hold monthly collaboration webinars with all stakeholders (one or two representatives from subgrantees) Grantees, subgrantees and others hold monthly, bimonthly or quarterly calls with project officers (POs)	Increases information transfer, builds trust, allows for more efficient workflow, increases likelihood of compliance	Webinar/call participation rates, volume of support calls/emails, QC/QA data, fiscal requirements, required reporting	Medium Term (1-2 years)
WAP management should coordinate with POs to ensure timeliness and consistency	During regular meetings with POs and other relevant staff, confirm agreement on interpretations of requirements and grantee variances Establish a minimum timeline for responding to questions from the network Circulate high volume FAQs with all POs and come to an agreement on how to respond and what requirements and resources to reference; have all POs sign off on responses before publishing any public-facing information	Enables more consistency in the field, increases understanding of WAP requirements, allows for more efficient workflow, builds trust	QC/QA data, impact on satisfaction survey, response times, volume of support calls/emails	Medium Term (1-2 years)
Utilize e-learning platforms and best practices to communicate program updates, share technical materials and case studies, etc.	Release new WPNs (or changes) to grantees and subgrantees as required assignments on a learning management system (LMS) – such as downloading program updates, passing a quiz or completing a survey Consider assigning the grantees to serve as an LMS administrator for their state in order to answer questions, grade assignments, provide feedback, etc.	Increases information transfer, allows for consistent messaging, can track learning, tests knowledge and skills	Assignment completion rates, questions asked	Medium Term (1-2 years)

KEY THEMES AND IDEAS



Streamline Requirements

Many participants expressed the potential for greater coordination between federal and local programs. Any effort to align federal and local program standards, reporting platforms and fiscal requirements has the potential to reduce costs, make training new

staff easier and enhance an organization's ability to leverage funds from multiple sources. Alignment might result in more weatherization measures installed per home, while also providing additional pathways to deal with deferrals.

IDEA	POSSIBLE STEPS	BENEFITS	METRICS	TIMELINE
Create a "Welcome to WAP" package for all new hires	Provide a guide with the key positions at each level of the weatherization network that captures: <ul style="list-style-type: none"> • Roles and responsibilities • Job processes (i.e., what they do) • Checklists • Relevant WPNs and FAQs Develop a RACI chart (Responsible, Accountable, Consulted, Informed) for all critical activities and decisions	Provides clarity of job requirements, establishes accountability, allows for more efficient workflow, enables consistent training, reduces frustration, saves time/money	Downloads, time spent on-boarding new staff at partner grantees/ subgrantees	Short Term (Less than 1 year)
Utilize peer exchange to help poor-performing states	POs create a peer exchange network of their grantees, scheduling biannual meetings to share lessons learned and success stories Pair a struggling/non-engaged state with a successful/engaged state of a similar size and market	Increases use of proven strategies, builds confidence and trust, encourages collaboration, strengthens the overall network, saves time/ money, increases quality, builds skills	Change in satisfaction survey results, meeting participation rates, completion rates of assignments, feedback through evaluation/ after-action reviews	Medium Term (1-2 years)
Work to align diverse programs, sponsors and organizations working to support low-income households	Facilitate discussion/coordination between government agencies, funding sources and WAP grantees Document ways to limit redundancy – forms, reports, assessments, trainings, etc. Streamlines data capture for multiple programs; for example, Home Performance Extensible Markup Language (HPXML) can be used by programs to standardize the collection and exchange of data on energy performance, ECMs, and the physical and operational attributes of a home Provide access to appropriate information and data	Encourages leveraging of multiple funding sources, saves time/money, reduces complexity, results in more upgrades/savings, produces more comprehensive repairs with fewer federal dollars, reduces deferrals	Change in grantee/ subgrantee budgets, change in budget percentages – federal vs. state/local/private, dollars spent per house, measures (energy and non-energy) per home/ unit, number of homes/ units repaired	Medium Term (1-2 years)
Require annual training on 10 CFR 440 and new WPNs to be delivered by DOE staff (or curriculum developed by the program to be delivered by grantees or training centers)	Coordinated so that multiple stakeholders – grantees, training providers and subgrantees – are in attendance and hear the same information Training on how to find current information, resources and contact information Map the relationships of different requirements Provide case studies and examples of applying key requirements Examples: <ul style="list-style-type: none"> • Choosing the right ECMs • Good vs. bad installations • Annual program performance metrics Make additional coaching available after the training by phone or in person	Keeps stakeholders up to date, allows for more efficient workflow and more consistency in all aspects of work, provides WAP an ongoing opportunity for feedback and improvement	Participation numbers, webpage clicks, number of downloads, feedback through post-course evaluations, volume of support calls/emails	Medium Term (1-2 years)
Develop an annual guide to WAP-centric training opportunities for procedural, fiscal and administrative staff	Maintain an updated list of training courses for grantee and subgrantee executive directors, financial officers and program managers <ul style="list-style-type: none"> • Communicate this through existing communication methods • Have POs contact states that show a need for non-technical training to notify them of opportunities near them • Focus on identifying online courses to provide flexibility and cost savings 	Enables more efficient and effective program operation, can on-board non-technical staff more quickly, allows for better cross-training, builds confidence, builds skills specific to WAP requirements	Number of training centers that offer the curriculum, participation numbers, feedback through post-course evaluation/after-action reviews, accuracy of required reporting	Medium Term (1-2 years)

KEY THEMES AND IDEAS



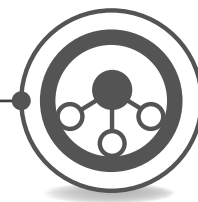
Financial Flexibility

All participants recognize that the cost of maintaining competent staff is a challenge. This is especially true of people that have achieved certifications, as they can often demand higher salaries from the private market. Grantees and subgrantees need to

be creative in their efforts to recruit, support and retain experienced workers. Employee retention is particularly critical as the expectations for grantees and subgrantees continue to be more explicitly documented and enforced.

IDEA	POSSIBLE STEPS	BENEFITS	METRICS	TIMELINE
Assess the organization of different low-income assistance programs within a high-performing grantee	Identify the ideal points of collaboration and leveraging of resources	Creates a resource for the network, applies proven strategies, increases funding, saves time/money, increases quality	Downloads, volume of support calls/emails, instances of grantee reorganization, change in total grantee funding levels	Short Term (Less than 1 year)
	Document examples and a list of best practices			
	Develop a case study and webinar that can be shared with the network			
Conduct a wage study to document current/projected labor costs for grantees and subgrantees	Share suggested regional/state wages and subcontractor rates for subgrantees and grantees to follow	Better aligns salaries/budgets with market expectations, reduces staff turnover, secures competent trades, maintains program/project schedules and budget	Staff turnover rates, percent of projects on-time and on-budget, installation quality	Medium Term (1-2 years)
	Provide best practice staffing and compensation guidelines for small, medium and large grantees that can be used in the annual plan process			
Create measurable goals beyond households served or ECMs installed. Example: workforce development — WAP has created an industry, training thousands of skilled tradespeople. NOTE: We recognize that this is a regulatory requirement and that any changes would entail working through general counsel	Track the number of companies with the term "weatherization" in their name or product/service marketing; identify the number of weatherization programs sponsored separately from federal funds — state, county, city, utility, nonprofit; document the number of standard home energy upgrade measures initially tested and developed by WAP; measure the improvement in comfort through behavior change and homeowner surveys; estimate impacts per state and major metro area	Documents impacts beyond energy and utility bill savings, strengthens support from program sponsors and their constituents, justifies expenditures, increases worker productivity, grows demand for weatherization trainees, creates jobs, grows the economy, increases grid reliability, improves health and safety outcomes	Total \$ spent on weatherization projects (excluding federal expenditures), certifications achieved, jobs created, families impacted, businesses created, products/services offered	Long Term (2-5 years)

KEY THEMES AND IDEAS



Accountability

Stakeholders emphasized that accountability is essential to installation quality and consistency. Each job category's roles and responsibilities need to be documented and communicated to all parties. All organizations in WAP should ensure that enforceable policies are in place so that when work quality issues are identified, they can be addressed with the backing of written policies. This establishes accountability if staff are either unable

to meet responsibilities or unwilling to ask for help when it is needed. Defined expectations apply to all program areas: administrative, fiscal and technical. Documented roles and responsibilities serve as a guidepost. They reduce the need for people to make judgment calls and initiate a process to work with stakeholders on improving workflow, communication and accountability.

IDEA	POSSIBLE STEPS	BENEFITS	METRICS	TIMELINE
Establish an environment that explicitly assigns failure to the process, not people	Emphasize that most mistakes and failures are unintentional, the result of an unclear process or breakdown in communication	Surfaces problems and inefficiencies, fewer mistakes covered up or ignored, encourages process improvement, increases morale	Reporting of failures/defects, volume of support calls/emails, QC/QA data	Medium Term (1-2 years)
	Consider facilitating training opportunities for grantees and subgrantees focused on leadership, change management and process improvement			
Build a feedback mechanism for all members of the network	Provide a nonjudgmental way for subgrantees to get answers and share feedback with WAP without having to go through grantees	Surfaces problems and inefficiencies, increases morale, allows for sharing of lessons learned, encourages process improvement	Comments received, complaints filed, number of FAQs developed	Medium Term (1-2 years)
	Include a conflict resolution process for disagreements <ul style="list-style-type: none"> • Introduce the process via an online orientation with supporting resources 			
Use data collected through current quality assurance processes and risk assessments	Share aggregated field data with grantees and subgrantees; include pictures of failures with references to relevant technical requirements	Focuses attention on current issues/failures, invests resources in the issues that provide the greatest savings, increases stakeholder buy-in, encourages accountability, eliminates opinion	QC/QA data, utilization of training and technical assistance dollars, participation numbers in training/coaching opportunities	Medium Term (1-2 years)
	Track grantee questions/comments/failures; use the information tracked to identify trends, pain points and provide feedback to grantees			
Encourage all levels of the network (i.e., WAP, training centers, grantees and subgrantees) to develop an organizational blueprint that clarifies responsibilities and establishes accountability through clearly written policies	Develop a sample plan and template that includes: <ul style="list-style-type: none"> • Job descriptions for each position, including roles, responsibilities references to applicable policies and core competencies • Training for all positions that includes job aids, "in-field" coaching and documented feedback • Career ladders • Individual development plans 	Increases accountability, reduces the need for judgment calls, motivates employees, builds skills	Turnover rates, training completion, managerial vacancies, QC/QA data	Medium Term (1-2 years)



As with any successful program, continuous improvement is a central goal of WAP. Documenting stakeholder feedback is an essential step in this process. The Solution Summits were instrumental in understanding some of the different perceptions of the network, while also identifying areas that will improve this valuable program. For any solutions in this report to be realized to their fullest potential, we recommend that WAP management and key implementation staff receive leadership training in quality management and process improvement. This training will help develop knowledge, skills and abilities to complete work more effectively and efficiently. The goals of such training are:

- Increased quality (i.e., doing work to agreed-upon requirements)
- Increased efficiencies in processes (i.e., doing more with less)
- Increased job satisfaction and motivation among employees and stakeholders
- Increased capacity to innovate and adopt new products

Background information on quality management concepts and approaches can be found in the

Additional Resources section of this report.

Given the potential challenges of implementing the ideas outlined, a reasonable first step would be to review them, determine what ideas are already being implemented (partially or fully) and work as a team to determine a method for prioritizing next steps.

Ideas can be ranked on an individual basis and then compared, or can be discussed as a group to assess each one's Return on Investment (ROI). The metrics in each table can be evaluated to determine what is possible and what would require Office of Management and Budget (OMB) approval, with the aim to draft realistic and actionable success metrics. The goal is to identify a list of objectives and activities to address the barriers identified and emphasized by the participants of the Solution Summits. This is the best way to establish ownership and alignment across the WAP network when trying to initiate change.

An abbreviated, public-facing version of this Solution Summit report, including a one-page summary of potential initiatives to be executed, should be shared with the entire network.

An abbreviated, public-facing version of this Solution Summit report, including a one-page summary of potential initiatives to be executed, should be shared with the entire network. Context should be included for how the ideas were selected, as well as the potential strategy, goals and timelines of the initial activities. This plan can be presented via email and conference call, and in-person venues or conferences should be identified for conducting future collaborative meetings with past Solution Summit participants and other interested stakeholders. This approach would provide a formal setting to gather feedback, prioritize a final list of solutions and confirm next steps.

GLOSSARY

Administrative Staff: Manage day-to-day subgrantee performance using performance metrics, coaching, documentation and professional communication skills.

American Customer Satisfaction Index (ASCI) Survey: Grantee-level survey implemented by the DOE in the fall of 2016. Fifty-two of 59 grantees responded. Measured customer satisfaction and identified/rated the drivers of satisfaction.

A subgrantee-level customer satisfaction survey was implemented in January 2017 with 579 of 740 responses collected (78%).

Code of Federal Regulations (CFR) – 10 CFR 440: The legislative language that defines the requirements of WAP.

Crew Lead: Responsible for overseeing all retrofit work on a weatherization project home.

Energy Auditor (EA): At the subgrantee level, the individual responsible for assessing homes. Reviews household characteristics, performs diagnostic testing, gathers energy audit inputs and engages in client interaction and education.

Energy Conservation Measures (ECMs): Any type of project conducted or technology implemented to reduce the consumption of energy in a building.

Grantee: Funding recipients of WAP.

Grantee Quality Plans: Developed by grantees to guide implementation of WAP in their respective state. Required by the DOE.

Guidelines for Home Energy Professionals: Developed by the DOE to foster the growth of a high-quality home energy retrofit industry and a skilled and credentialed workforce.

Installation Crews: Responsible for following WAP requirements while completing retrofit work on program homes. “Crews” refers to local agency employees. Subcontractors may also be hired to complete retrofit work.

Job Task Analyses (JTAs): Identify and catalog the key steps a worker takes to complete an energy efficiency improvement in a home. The Guidelines for Home Energy Professionals contain JTAs for four common home energy upgrade job classifications: Energy Auditor, Installer/Technician, Crew Leader and Quality Control Inspector.

Knowledge, Skills and Abilities (KSAs): Identify the minimum competencies that workers should possess to perform quality work and the conditions necessary to achieve the desired outcomes of a given energy efficiency retrofit measure.

Program Manager: State/grantee-level person responsible for allocating and distributing WAP funds to local agencies (subgrantees). Develops grantee quality plan to guide local agencies on how to appropriately implement the program. Responsible for quality assurance oversight of local agencies/subgrantees.

Project Officers (POs): DOE employees responsible for working with states/grantees. Provide technical support and interpretations of the DOE weatherization requirements. Also perform quality assurance on grantees.

Quality Control Inspector (QCI): Reviews household characteristics, performs diagnostic testing, evaluates energy audit inputs, engages in client interaction and education, completes final inspection and confirms that requirements are being met.

Standard Work Specifications (SWS): Define the minimum requirements for high-quality work and the conditions necessary to achieve the desired outcomes for each energy efficiency retrofit measure.

State and Regional Weatherization Assistance Program Training Centers: Provide training to subgrantees based upon WAP’s core competencies and to meet the requirements for quality training required by the program.

Subgrantee: Funding recipients of the grantee-level WAP.

Technical Monitoring Staff: Analyze and document subgrantees' ability to meet technical requirements; coach and hold accountable subgrantees not meeting requirements.

Weatherization Coordinator: Subgrantee-level person who runs a weatherization program. May have the role of QCI or EA but is also responsible for supervising WAP staff, determining workflow, possibly procurement, and being a liaison with fiscal staff/agency executive management.

Weatherization Evaluation: Evaluation of WAP for program year 2008 (Retrospective Evaluation) and program year 2010 (Recovery Act Evaluation). Both evaluations were conducted by the Oak Ridge National Laboratory to address energy and cost savings, non-energy benefits, program cost-effectiveness and program operations.

Weatherization Program Notices (WPNs): Policy documents put out by the DOE that explain or clarify compliance expectations of 10 CFR 440.

Glossary References:

WAP Guidance

<https://energy.gov/eere/wipo/weatherization-program-guidance>

WAP Evaluation website

<https://energy.gov/eere/wipo/downloads/weatherization-assistance-program-national-evaluation>

Guidelines for Home Energy Professionals

<https://energy.gov/eere/wipo/guidelines-home-energy-professionals>

ADDITIONAL RESOURCES

The ideas and benefits referenced in this report are based on the principles of quality management, and many of the potential next steps and metrics outlined could be a part of a well-designed quality management systems (QMS). The American Society for Quality defines a quality management system as *“a formalized system that documents processes, procedures, and responsibilities for achieving quality policies and objectives. A QMS helps coordinate and direct an organization’s activities to meet customer and regulatory requirements and improve its effectiveness and efficiency on a continuous basis.”*



Follow the links below to find additional information on quality management systems and approaches. Many of the links also include downloadable documents, tools and resources that you can apply to increase effectiveness, lower costs and start establishing a culture of quality and system thinking.

Advanced Energy - Success With Quality Management

American Society for Quality® - What Is a Quality Management System (QMS)?

British Assessment Bureau - The 8 Principles of QMS

The Balance - Total Quality Management (TQM) And Quality Improvement

PRINCIPAL BARRIERS AND PROPOSED SOLUTIONS

Barrier 1: Lack of funding for staff

Current state: Insufficient funding to hire and pay competent staff; organizations unwilling to pay higher salaries

Future state: Provide higher wages to hire and retain quality staff; pay would increase based on meeting training and/or certification levels; management focus on retention vs. retraining

Participants' vision of a solution:

- Evaluate the need to increase the allowable administrative percentage for grantees and subgrantees
- Conduct two separate studies to encourage higher pay:
 - Project costs: subgrantee staff vs. subcontractor labor
 - Wage study to establish a national/state average guideline for subgrantees and states to consider
- Encourage grantees and subgrantees to consider compensating those that maintain additional certifications/training

Barrier 2: Weatherization service providers are trying to comply with multiple sets of program requirements

Current state: Providers of weatherization services are often trying to comply with multiple sets of requirements from different programs in order to leverage funding; it is difficult to follow, track and maintain all of these requirements; many organizations are looking for guidance

Future state: Local, state and federal funding sources coordinate and communicate with one another to align requirements where possible; standardized energy conservation measures; establish centralized data collection, reporting and information storage

Participants' vision of a solution:

- Facilitate discussion/coordination between government agencies, other weatherization funding sources and WAP grantees
- Work to align data collection processes; some utilities are providing robust database systems, and most subgrantees have their own systems/databases
- Work with other programs within an organization to identify the ideal points of collaboration and leveraging of resources
- Collaborate with successful peers to determine ways to align service territories of related programs; determine where it makes sense to coordinate who is implementing the programs and where
- Encourage utilities and their implementers to review the SWS whenever they develop weatherization measures and requirements

PRINCIPAL BARRIERS AND PROPOSED SOLUTIONS

Barrier 3: Lack of emphasis at all levels on training opportunities for non-technical staff

Current state: At the grantee and subgrantee level, few weatherization-specific training opportunities exist in the areas of administration, finance and project management; typically, state weatherization offices are small, so they may receive less attention and have fewer resources; administrative confusion around what work is required

Future state: Everyone has the tools and training needed to administer the weatherization program; training is targeted to multiple positions (e.g., executive director, chief financial officer (CFO), grantee program manager, subgrantee coordinators and crew leads); all staff receive same message in terms of roles and responsibilities to garner more accountability

Participants' vision of a solution:

- Training for procedural, fiscal and administrative staff similar to technical staff
- Develop a training curriculum for state and agency CFOs that could be handed off to training centers
- Peer-to-peer training on non-technical requirements for weatherization coordinators, agency staff and training centers
- Poll non-technical staff to determine most common challenges and misconceptions

Barrier 4: WAP requires extensive experience to implement effectively

Current state: WAP requires extensive knowledge and experience to implement effectively; there are currently 49 active WPNs and memorandums; program requirements and supporting resources are often posted on websites other than WAP's searchable Weatherization Program Guidance page.

Future state: Every weatherization stakeholder is capable of effectively interpreting and applying rules and guidance; program requirements are indexed → include WPNs, memorandums, Code of Federal Regulations (CFR) and supporting resources; guidance is consistently communicated across each grantee's network, including new hires

Participants' vision of a solution:

- The most recent versions of policy updates and program notices should be obvious and well-documented in a centralized list or catalog; all references to WAP requirements should be linked directly to EERE
- Create a "Welcome to WAP" package for all new hires
- Need training on 10 CFR 440 and WPNs to be delivered by WAP staff (or curriculum developed by the program)
- Required component of the state plan: Grantees to indicate how they intend to communicate policy to every level of their network

PRINCIPAL BARRIERS AND PROPOSED SOLUTIONS

Barrier 4a: Technical requirements can be seen as complex and lengthy

Current state: Weatherization technical requirements (including but not limited to the SWS) are often perceived as complex and lengthy; hard to manage within budget limits; installation quality can vary and be open to interpretation; requires more training; reduces flexibility in regard to leveraging funds (examples include coordinating the Low Income Home Energy Assistance Program [LIHEAP] in combination with WAP)

Future state: Work is done properly and in accordance with all requirements; technical requirements are clear, uniform, concise and available for reference; technical trainings are always aligned with requirements; evaluation of pass/fail trends in application of requirements is reported; approved variances to the SWS are built into each grantee's state plan and communicated to all staff

Participants' vision of a solution:

- Review and edit current technical requirements to be more clear and concise
- Utilize a variety of communication tools and venues to share changes to technical requirements
- Evaluate the application of technical requirements by grantee; this includes initial assessment, installation and quality assurance

Barrier 6: Challenges may not be communicated within and across organizations

Current state: Challenges experienced may not be communicated within and across organizations; all weatherization information (guidance, requirements, etc.) may not be communicated within and across organizations

Future state: All information (guidance, challenges, etc.) is communicated across all entities in a clear, easy-to-access and consistent manner; all individuals know where to go to find and share information; clear expectations from management when a unit fails, including an official template to reduce individual variability; formal resolution process for disagreements

Participants' vision of a solution:

- Build a feedback mechanism for all members of the network
- Make grantees accountable for communication
- Grantees develop and train subgrantees on work processes and resources to be used in delivering WAP services, including fiscal and administrative requirements
- Establish a blame-free environment that explicitly assigns failure to the process, not people
- Policy guidance for grantees to make decisions and recommendations based on data (objective) and defined requirements

PRINCIPAL BARRIERS AND PROPOSED SOLUTIONS

Barrier 7: Lack of accountability at all levels

Current state: There is often a lack of accountability at all levels: WAP, training center, grantee, subgrantee, installer and contractor; too much is left to interpretation (a gray area); there is confusion on roles and responsibilities; confusion on who is authority on various issues (program, fiscal, technical)

Future state: Roles and responsibilities are defined to get everyone on the same page without being too prescriptive; WAP project officers and technical staff provide uniform interpretation of requirements; grantees disseminate information in a timely manner to subgrantees – who communicate regularly with staff and contractors – so that everyone is equally informed

Participants' vision of a solution:

- Define roles and responsibilities for key positions at each level of the WAP network
- WAP should coordinate with all project officers to ensure consistent interpretation of program requirements, as well as timely responses to questions
- Calculate the impact of poor-performing grantees – cost, waste, lost production, etc. – and implement consequences consistently

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