OMB Control No: 1910-5127
Expiration Date: 11/30/2016

U.S. Department of Energy
WEATHERIZATION ASSISTANCE PROGRAM (WAP)
WEATHERIZATION ANNUAL FILE WORKSHEET

(Grant Number: EE0006162, State: MN, Program Year: 2016)

IV.1 Subgrantees

Subgrantee (City)	Planned Funds/Units
Arrowhead Economic Opportunity Agency, Inc. (Virginia)	$576,714.00 61
Bi-County Community Action program, Inc. (Bemidji)	$251,800.00 25
Community Action Partnership of Ramsey & Washington Counties (Saint Paul)	$1,059,808.00 113
Dakota County Community Development Agency (Eagan)	$382,317.00 40
Fond Du Lac Reservation Business Committee (Cloquet)	$27,022.00 2
Heartland Community Action Program (Willmar)	$194,311.00 19
Inter-County Community Council (Oklee)	$161,176.00 15
KOOTASCA Community Action, Inc. (Grand Rapids)	$163,977.00 16
Lakes and Pines Community Action Council, Inc. (Mora)	$455,209.00 48
Leech Lake Reservation Tribal Council (Cass Lake)	$64,767.00 5
Mahube-OTWA Community Action Partnership, Inc. (Detroit Lakes)	$529,138.00 56
Mille Lacs Band of Ojibwe Indians (Onamia)	$30,210.00 2
Minnesota Valley Action Council (Mankato)	$382,257.00 40
Northwest Community Action, Inc (Badger)	$107,512.00 10
Prairie Five Community Action Council, Inc. (Montevideo)	$115,374.00 10
Semcac (Rushford)	$512,973.00 54
Southwestern Minnesota Opportunity Council, Inc. (Worthington)	$130,876.00 12
Sustainable Resources Center (Minneapolis)	$1,183,611.00 126
Three Rivers Community Action, Inc. (Zumbrota)	$164,150.00 15
Tri-County Action Programs, Inc. (SC) (Waite Park)	$443,141.00 46
Tri-County Community Action Program, Inc. (LF) (Little Falls)	$305,953.00 31
West Central Minnesota Communities Action, Inc. (Elbow Lake)	$353,996.00 36
Western Community Action, Inc. (Marshall)	$166,812.00 16
White Earth Reservation Tribal Council (White Earth)	$66,543.00 6

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Wright County Community Action, Inc. (Maple Lake)	$147,110.00 14
Total:	**$7,976,757.00** **818**

IV.2 WAP Production Schedule

Weatherization Plans	Units
Total Units (excluding reweatherized)	818
Reweatherized Units	0

Note: Planned units by quarter or category are no longer required, no information required for persons.

Average Unit Costs, Units subject to DOE Project Rules		
VEHICLE & EQUIPMENT AVERAGE COST PER DWELLING UNIT (DOE RULES)		
A	Total Vehicles & Equipment ($5,000 or more) Budget	$0.00
B	Total Units Weatherized	818
C	Total Units Reweatherized	00
D	Total Dwelling Units to be Weatherized and Reweatherized (B + C)	818
E	Average Vehicles & Equipment Acquisition Cost per Unit (A divided by D)	$0.00
AVERAGE COST PER DWELLING UNIT (DOE RULES)		
F	Total Funds for Program Operations	$5,810,854.80
G	Total Dwelling Units to be Weatherized and Reweatherized (from line D)	818
H	Average Program Operations Costs per Unit (F divided by G)	$7,103.73
I	Average Vehicles & Equipment Acquisition Cost per Unit (from line E)	$0.00
J	Total Average Cost per Dwelling (H plus I)	$7,103.73

IV.3 Energy Savings

Method used to calculate savings: ☑ WAP algorithm ☐ Other (describe below)

	Units	Savings Calculator (MBtus)	Energy Savings
This Year Estimate	818	29.3	23967
Prior Year Estimate	762	30.5	23241
Prior Year Actual	560	30.5	17080

Method used to calculate savings description:

Method used to calculate savings: WAP algorithm provided by DOE. Based on Minnesota's PY16 allocation, the total energy savings realized should be 23,850 MBTUs.

IV.4 DOE-Funded Leveraging Activities

DOE defines leveraging as the actions of the state and local agencies to obtain and account for resources provided to supplement or supplant federal funding being used to weatherize dwelling units. Minnesota is not dedicating any resources for leveraging activities in Program Year 2016.

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IV.5 Policy Advisory Council Members

☐ Check if an existing state council or commision serves in this category and add name below

CenterPoint Energy	Type of organization: Utility Contact Name: Nick Mark Phone: 6123214613 Email: nick.mark@centerpointenergy.com
Energy Cents Coalition	Type of organization: Non-profit (not a financial institution) Contact Name: Pam Marshall Phone: 6517749010 Email: pam@energycents.org; chris@energycents.o
Energy Conservatory	Type of organization: Other Contact Name: Paul Morin Phone: 6128271117 Email: pmorin@energyconservatory.com
Fond Du Lac Reservation Business Committee	Type of organization: Indian Tribe Contact Name: Joan Markon Phone: 2188794593 Email: joanmarkon@fdlrez.com
Great River Energy	Type of organization: Utility Contact Name: Jeff Haase Phone: 7634456106 Email: jhaase@grenergy.com
Home Performance Strategies	Type of organization: For-profit or Corporate (not a financial institution or utility) Contact Name: Kevin Brauer Phone: 6128680365 Email: kevinbrauermn@gmail.com
State of Minnesota	Type of organization: Unit of State Government Contact Name: John Harvanko Phone: 6512843275 Email: john.harvanko@state.mn.us
State of Minnesota	Type of organization: Unit of State Government Contact Name: Tikki Brown Phone: 6514313822 Email: tikki.brown@state.mn.us
State of Minnesota	Type of organization: Unit of State Government Contact Name: Jessica Burdette Phone: (651)296-0404 Email: jessica.burdette@state.mn.us
State of Minnesota	Type of organization: Unit of State Government Contact Name: Katie Topinka Phone: (651)296-3706 Email: katie.topinka@state.mn.us
State of Minnesota	Type of organization: Unit of State Government Contact Name: Michelle Gransee Phone: 6515391855 Email: michelle.gransee@state.mn.us
Sustainable Resources Center	Type of organization: Non-profit (not a financial institution) Contact Name: Dan Roberts Phone: 6128125524 Email: d.roberts@src-mn.org
Western Community Action, Inc.	Type of organization: Non-profit (not a financial institution) Contact Name: Jeff Gladis Phone: 5075371416 Email: jeff.gladis@wcainc.org
Xcel Energy	Type of organization: Utility Contact Name: Shawn White Phone: 6123306096

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(Grant Number: EE0006162, State: MN, Program Year: 2016)

	Email: shawn.m.white@xcelenergy.com

IV.6 State Plan Hearings (Note: attach notes and transcripts to the SF-424)

Date Held	Newspapers that publicized the hearings and the dates the notice ran
04/13/2016	A 'Save the Date; of the public hearing appeared in a March 2016 WAP Wire, sent to all MN Service Providers. A notice of the hearing appeared in the April 1, 2016 WAP Wire sent to all WAP Service Providers and subscribers of the CIP newsletter, which focuses on utilities. The draft copy of the 2016-17 State Plan was posted on the Commerce website on April 1 and a link to the posting was included in the WAP Wire. The public hearing took place on April 13, 2016 at 1:00 PM in the Summit Conference Room of the Golden Rule Building, 85 7th Place East, St. Paul, Minnesota 50101. The April 13, 2016 public hearing was held to comply with the annual state plan hearing required in 10 CFR 440.14 as well as the requirement for a public hearing in 10 CFR.440.15 (d) when there are changes in subgrantees. The plan and minutes were made available by request by contacting Caren Warner, Minnesota Department of Commerce, 85 7th Place East, Suite 500, St. Paul, MN 55101

IV.7 Miscellaneous

Recipient Business Officer:

Prefix:	Mr
First Name:	Bill
Middle Name:	
Last Name:	Grant
Suffix:	
Title:	Deputy Commissioner
Telephone Number:	(651) 539-1801
Fax:	(651) 539-0109
Email:	bill.grant@state.mn.us

Recipient Principal Investigator:

Prefix:	Ms
First Name:	Michelle
Middle Name:	
Last Name:	Gransee
Suffix:	
Title:	State Energy Office Manager
Organization Affiliation:	Department of Commerce/Div. of Energy Resources
Telephone Number:	(651) 539-1855
Fax Number:	
Email:	michelle.gransee@state.mn.us

CHANGE IN SERVICE TERRITORIES

In PY2016, a planned agency merger will take place. Western Community Action, Inc. and Heartland Community Action Program will merge and become one agency, anticipated in October 2016. The merged agency will take on a new name, but will retain Heartland Community Action Program's DUNS number and Tax ID. WAP services are not anticipated to be interrupted by the merger. The nine affected counties are Cottonwood, Jackson, Kandiyohi, Lincoln, Lyon, McLeod, Meeker, Redwood, and Renville.

PREVAILING WAGE

Prevailing Wage requirements do not apply to this grant.

ENSURING EXPENDITURE OF FUNDS

In an effort to ensure that agencies will complete their allocation of units, Commerce regularly analyzes the status of each subgrantee to compare its Work Plan to units completed. Commerce works with subgrantees it believes may not complete its allocation within allotted time frame and may recapture funds from any under-performing subgrantee in order to ensure that the State of Minnesota completes the number of units required under the current DOE Weatherization grant. . All funds must be spent by the end of federal grant period or will be returned to DOE.

Commerce understands that situations arise when a subgrantee may not be able to complete its unit allocation. In such a situation, a subgrantee may relinquish units and funding for those units if, for any reason, it believes it cannot complete those units before the end of the grant period.

Per DOE rules and regulations and per contract with subgrantees, Commerce reserves the right to de-fund any subgrantee not performing to the contract and/or not following standard fiscal or administrative procedures.

U.S. Department of Energy

WEATHERIZATION ASSISTANCE PROGRAM (WAP)

WEATHERIZATION ANNUAL FILE WORKSHEET

(Grant Number: EE0006162, State: MN, Program Year: 2016)

Policy Advisory Council

The purpose of the Minnesota Weatherization Assistance Program Policy Advisory Council is to provide advice to the Department of Commerce with respect to the development and implementation of the Minnesota WAP. The MN WAP PAC meets a minimum of once per year. Members represent organizations that specialize in assisting low income families and those addressing residential energy efficiency.

The Public Advisory Committee (PAC) met twice in PY15. The PAC will meet at least twice in PY16 to address policy related items.

Other Miscellaneous

Minnesota typically reviews its funding allocations when new census data is provided. The allocation formula was changed in 2014 to take into account the 2010 census data and including the 200% federal poverty level in addition to 50% SMI, whichever number is greater.

Minnesota continues to allow two exceptions to 10 CFR 440 Appendix A. These include the use of LED bulbs, when applicable, and the replacement of energy inefficient refrigerators with same features, Energy*Star model refrigerators. The features of the existing refrigerator will be documented with pictures from the audit so no installed appliances will have upgraded features.

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WEATHERIZATION ASSISTANCE PROGRAM (WAP)
STATE PLAN/MASTER FILE WORKSHEET

(Grant Number: EE0006162, State: MN, Program Year: 2016)

This worksheet should be completed as specified in Section III of the Weatherization Assistance Program Application Package.

V.1 Eligiblility

V.1.1 Approach to Determining Client Eligibility

Provide a description of the definition of income used to determine eligibility

Minnesota uses a combined LIHEAP/WAP application for both Energy Assistance (LIHEAP) and Weatherization Assistance Program (WAP). A dwelling unit is eligible if it is occupied by a household whose income is at or below 200% of Federal Poverty Income Guidelines, or is eligible for assistance under the LIHEAP income limit of 50% of State Median Income, whichever is greater, as allowed by 10 CFR 440.22 and required under Minnesota 2009 Session Laws, Chapter 138, Article 2, Subd. 4.

Households where one or more members have received payment under Title IV or XVI of the Social Security Act during the preceding 12 months are also eligible.

In all cases, eligibility is determined by the eHEAT software system, a tool developed by Minnesota's LIHEAP and WAP programs to determine income eligibility and to centralize payments to utility companies.

Describe what household Eligibility basis will be used in the Program

Household eligibility documentation is available through eHEAT and Service Provider files. All weatherization events are initiated in eHEAT and downloaded into the Weatherization Assistant (WA) software program. The eHEAT software prevents weatherization events from being created and downloaded until the household is determined to be eligible. This safeguard ensures that all households receiving WAP services are eligible.

Minnesota treats renters and owner-occupied dwellings equally. The Minnesota Weatherization Policy Manual requires Service Providers to have procedures in place to ensure eligible households are served according to their priority, whether or not the eligible household rents or owns the dwelling. Service Provider procedures are reviewed by Commerce. Minnesota's tenant eviction policy is specified in the Landlord Agreement. Within that document the landlord agrees not to evict the tenant(s) during the period of agreement, except for documented cause, and also agrees not to raise the rent as a result of increased value due to weatherization work completed.

Service Providers work on a case-by-case basis with rental property owners to ensure and document that any WAP payment for a rental building or dwelling will be directed to eligible low income occupants receiving weatherization services. Any forms for written permission from the owner/landlord prior to the start of any weatherization activities and other requirements, including the dwelling energy audit, must be included in the work file.

Renters have the right to appeal any rent increases they believe do not meet the requirements stated above. Any appeal must be stated in writing and must follow an appeal process as outlined in the Minnesota WAP Policy Manual.

Minnesota strongly encourages, but does not require, financial participation of a landlord for weatherization of a rental property.

Describe the process for ensuring qualified aliens are eligible for weatherization benefits

All potential recipients of WAP services are asked to provide information that ensures they are eligible. Qualified aliens may provide an alternative to a Social Security number to meet this requirement.

V.1.2 Approach to Determining Building Eligibility

Procedures to determine that units weatherized have eligibility documentation

Service Providers are required to retain records that allow them to ascertain which dwellings have been previously weatherized, including the date weatherization activities were completed and a description of the USDOE and other funds used for weatherization. Except in rare exceptions of approved callbacks, as authorized under WPN 11-03, no dwellings weatherized after September 30, 1994 using USDOE funds will receive additional WAP services using USDOE funds. eHEAT provides documentation of units that are vacant or occupied by ineligible households in buildings with more than one dwelling unit.

Service Providers are required to complete a State Historic Preservation (SHPO) review for all dwellings prior to any weatherization activity. Minnesota's SHPO Programmatic Agreement (PA) was extended until December 31, 2020 by a Program Comment published in the Federal Register on March 14, 2013. Commerce review of Service Provider household files includes verification of SHPO review and pre-weatherization status.

Describe Reweatherization compliance

Service Providers are required to retain records of all weatherized dwellings, including the date weatherization activities were completed and a description of USDOE and other funds used for weatherization in a particular dwelling. No dwellings weatherized after September 30, 1994 using USDOE funds will receive additional weatherization using USDOE funds. Dwellings weatherized prior to September 30, 1994 may be re-weatherized if the household in the dwelling is currently eligible and a current energy audit documents that additional cost-effective work can be performed. Exception to the reweatherization policy is allowed under Minnesota's Disaster Plan as described in section V.9.

Describe what structures are eligible for weatherization

Structures that are eligible for weatherization include single family, manufactured homes and multi-family buildings. Minnesota has approved audits for single family (2016), manufactured homes (2016), and multifamily buildings (2012). Non-traditional dwelling types such as shelters and mixed-use buildings, while allowed, must be approved by Commerce prior to weatherization to ensure that the dwelling meets program regulations. If deemed necessary, Commerce will seek approval from the DOE Project Officer for the weatherization of a non-traditional dwelling. Single family structures must be occupied prior to weatherization.

Describe how Rental Units/Multifamily Buildings will be addressed

Rental dwellings have equal access to WAP services as owner-occupied dwellings.

Single family rental dwellings and multifamily buildings up to four units are addressed using the NEAT software.

Minnesota uses the EA-QUIP software to audit buildings with five or more units. Minnesota follows all USDOE Weatherization Program Notices (WPN) with regard to percentage requirements for multifamily buildings with five or more units.

Service Providers are required to enter into an agreement with landlords of multifamily properties that must be approved by Commerce. The agreement must state that rent on properties weatherized with DOE funds cannot be raised as a result of the increase in property value provided by the weatherization for a number of years related to the life of the improvements.

Minnesota uses the HUD list when appropriate and otherwise uses the 66% percent eligible rule (50% for duplexes and fourplexes) to determine eligibility and the amount allowed to be spent on multifamily buildings.

Except in cases where the landlord also qualifies for weatherization services, Minnesota requires financial participation of a landlord for weatherization of a multi-family property. Except in cases where the landlord also qualifies for weatherization services, local Service Providers may choose to require landlord contributions when weatherizing rental properties containing 2-4 units. Amount of financial participation is determined at the local level. Landlord participation can be used to buy-down a SIR.

Landlord contributions for single family dwellings are not required but are optional and may be accepted.

Describe the deferral Process

There are conditions or situations when an eligible dwelling unit should not be immediately weatherized. A determination may become evident during the eligibility process, during the audit or after work has begun. The decision to defer work in a dwelling is difficult, but at times necessary. This does not mean that weatherization assistance will never be available, but that work should be postponed until the problems can be resolved and/or alternative resources are found.

Service Providers are expected to pursue reasonable options on behalf of the dwelling owner, and to use good judgment in dealing with difficult situations. Service Providers shall not simply defer service without pursuing other options and identifying other resources to address the identified hazard(s). Whenever appropriate, educational information on how to address the hazard shall be shared with the occupant. If corrections are made on a deferred dwelling that corrects the issue that led to the deferral, the Service Provider may proceed with weatherization. Service Providers are asked to maintain a list of deferred dwellings for that purpose.

Service Providers may elect to defer a home from receiving weatherization services where health and safety hazards exist for the staff, contractors or clients, or where conditions that cannot be addressed by WAP prevent the safe and effective implementation of weatherization measures.

Conditions where Service Providers must not weatherize include:

- The dwelling was weatherized after September 30, 1994
- The dwelling is scheduled for demolition
- The condition of the structure would make weatherization impossible or impractical (e.g. inability to meet SWS)

Conditions where a Service Provider may defer, include, but are not limited to:

- The dwelling is in the process of being sold
- The dwelling is in the process of being remodeled
- If owners refuse cost effective measures as determined by the Weatherization Assistant (WA) software tool, Service Providers must defer that dwelling per WPN 13-5 unless approval from Commerce is requested and approved.
- The building structure or its mechanical systems, including electrical and plumbing, are in such a state of disrepair that failure is imminent and the conditions cannot be resolved cost-effectively.
- The house has sewage or other sanitary problems that would further endanger the client and weatherization installers if weatherization work were performed.
- The house has been condemned or electrical, heating, plumbing, or other equipment has been "red tagged" by local or state building officials or utilities and the conditions cannot be resolved with WAP funds.
- Moisture problems are so severe they cannot be resolved under existing health and safety measures and with minor repairs.
- Dangerous conditions exist due to high carbon monoxide levels in combustion appliances, and cannot be resolved under existing health and safety measures.
- The client is uncooperative, abusive, or threatening to the crew, subcontractors, auditors, inspectors, or others who must work on or visit the house.
- The extent and condition of lead-based paint in the house would potentially create further health and safety hazards.
- In the judgment of the energy auditor, any condition exists which may endanger the health and/or safety of the work crew or subcontractor, the work should not proceed until the condition is corrected.
- The client has known health conditions that prohibit the installation of insulation and other weatherization materials.
- The cost to weatherize a home is so significant that it will negatively impact the Service Provider's ability to meet the state-wide average cost per dwelling (e.g. those homes that are more than 2x the state average). Commerce must be notified in writing prior to deferring a dwelling for this reason.

In cases where an individual client feels a deferral is unfairly determined, the individual client may appeal a decision to defer.

V.1.3 Definition of Children

Definition of children (below age): **19**

V.1.4 Approach to Tribal Organizations

☐ Recommend tribal organization(s) be treated as local applicant?

If YES, Recommendation. If NO, Statement that assistance to low-income tribe members and other low-income persons is equal.

All eligible households, including those with Native American Indian members, are served equally without regard to race, color, national origin, gender or religion.

Four Minnesota tribal nations are WAP Service Providers. Those tribal nations not receiving direct awards are included within other service territories.

V.2 Selection of Areas to Be Served

Minnesota serves all 87 counties in the state in order to provide equal access to WAP services for all eligible households. Minnesota tribal nations reservations are either a direct Commerce Service Provider or are served by another WAP Service Provider.

V.3 Priorities for Service Delivery

As required by federal regulation, Minnesota prioritizes households with elderly or disabled family members, and families with children under 19 years of age. Minnesota Service Providers also use high residential energy use and/or high energy burden in prioritizing households for WAP service. WAP staff work with LiHEAP staff to determine thresholds for high energy use/high energy burden on an annual basis. Service Providers determine their order of priorities, or combination of priorities, that best serves the eligible population in their service territory. Service Providers may choose to use oldest application approval date for positioning applicants with the same category. Service Providers are required to have a written policy of their prioritization system. Service Providers may not discriminate due to housing type where the eligible household lives.

In addition, high energy use households, especially those without secondary heat sources, may be prioritized by a Service Provider when an energy crisis is anticipated or in the year following an energy crisis, in order to prioritize that fuel type for weatherization services (e.g. propane). Service Providers' eHEAT work plans are used to indicate the order in which priority households are served. eHEAT provides each Service Provider with a list of priority households which may be further sorted into smaller subgroups.

V.4 Climatic Conditions

Minnesota has a continental-type climate, subject to frequent outbreaks of continental polar air throughout the year with Arctic outbreaks during the cold season. Periods of prolonged heat occur during summer, particularly in the southern portion of Minnesota.

Mean annual temperatures range from 36 ° F in the extreme north to 49 ° F along the Mississippi River in the southeast. State temperature extremes range from -60 to 114° F. Monthly mean temperatures vary from 85º F in the southwest to -11° F in the northwest. Mean temperatures during January in the northern portions of the State average near 4° F.

Minnesota is located in International Energy Conservation Code Climate Zones 6, 7, and 8. Minnesota uses the WA software tool and adjusts for clients specific climatic conditions and fuel costs as appropriate.

Heating degree days in Climate Zones 7 and 8 (combined on zone charts) range from 9363 to 10,487.

Heating degree days in Climate Zone 6 range from 7414 to 9363.

V.5 Type of Weatherization Work to Be Done

V.5.1 Technical Guides and Materials

All weatherization work in Minnesota is performed in accordance with DOE-approved procedures, including the appropriate DOE-approved energy audit (single family, multifamily, or mobile home),10 CFR 440 Appendix A, and the Standard Work Specifications (SWS). The Minnesota SWS aligned Field Guide is found at: http://wxfieldguide.com/mn/.

Beginning in PY15, all Service Provider contracts were updated to contain language confirming the receipt of and conformance with all applicable USDOE WPNs and Memoranda, the MN WAP State Plan, the MN WAP Policy Manual, and the MN WAP Field Guide including the MN SWS for single family, multifamily and mobile homes.

Also beginning in PY15 and as required by WPN 15-4, Service Providers must include similar language in their contracts with contractors who perform work for WAP. Administrative monitors review contracts for compliance. Field monitors, through monitoring inspections, confirm conformance with the SWS.

V.5.2 Energy Audit Procedures

Audit Procedures and Dates Most Recently Approved by DOE

Single-Family :	Minnesota uses the NEAT audit, last approved in 2016 (February).
Manufactured Housing :	Minnesota uses the MHEA energy audit, which was last approved in 2016 (February).
Multi-Family :	Minnesota uses the EA-QUIP energy audit for multifamily buildings. It was last approved in 2012 (October).

Comments

All dwellings scheduled for weatherization must have a comprehensive energy audit that treats the dwelling as a whole system (See Section V.7). Data from the audit is entered into the Weatherization Assistant (WA) software which then determines which energy conservation measures are cost-effective for the dwelling. Weatherization measures for a dwelling are considered cost-effective if the Savings to Investment Ratio (SIR) is 1 or greater for each measure and the job. In addition to DOE-approved conservation measures, Minnesota also installs health and safety and general (incidental) repair measures as dictated by the audit on each dwelling.

Minnesota WAP uses the EA-QUIP audit tool for assessing all multi-family buildings (5+ units) being considered for weatherization. Every building receives an on-site energy audit; data is collected at the on-site energy audit and entered into the EA-QUIP software. The software performs the engineering analysis and generates a list of recommended cost-effective measures.

The completed measures are those recommended by EA-QUIP. The building owner's contribution to the project is negotiated. When the landlord agreement is finalized, signed, and all supporting documentation is assembled, it is submitted to Commerce for review and approval. No work on the building is allowed until all approvals are received.

In 2015 Commerce worked with staff at Oak Ridge Lab to upgrade its Weatherization Assistant to include a LED lighting retrofit option and ASHRAE 62.2-2013 calculations. All Commerce and Service Provider weatherization staff computers running Weatherization Assistant have been updated with version 8.10.0.6.

By July 1, 2017, Weatherization Assistant will be updated to align with ASHRAE 2016 calculations.

Commerce received DOE approval for MN's updated fuel switch policy in February 2016.

V.5.3 Final Inspection

The Minnesota Weatherization Policy Manual specifies the activities/tests that must be completed in a final inspection and the process for rework should the need arise (MN WAP Policy Manual 4.6). The final inspection will be conducted to confirm that all work was done to the SWS standards. Dwelling units may not be reported as complete until all work passes a final inspection and all required signatures are obtained on the required forms. Each Service Provider or its authorized representative is required to use a certified Quality Control Inspector (QCI) who is in good standing with the Building Performance Institute to conduct all final inspection of all dwelling units. The QCI may oversee and sign-off on final inspection duties conducted by non-QCI certified staff related to NEAT data entry, fiscal entry, etc.

At the beginning of each program year Service Providers will give Commerce the names and BPI certification of the QCIs they intend to use for final inspections. Commerce will maintain a current list of QCIs to ensure that adequate numbers are available to inspect all jobs statewide.

Commerce use monitoring forms that are provided to Service Providers prior to monitoring visits. These forms will be structured to ensure compliance with the work quality requirements outlined in WPN 15-4 Section 1.

Service Providers will provide QCI-certified inspections according to the following protocol:

Independent QCI: A final inspection on every home will be conducted by a QCI who had no involvement in the weatherization work on the home--either as the auditor or as a member of the crew. State field monitoring will be done by a Commerce certified QCI. Commerce will conduct field monitoring visits of at least 5 percent of all completed units.

Commerce also conducts desk monitoring of Weatherization Assistant to ensure that QCIs are performing final inspections.

QCI Shortage: To meet production goals in a timely manner, Service Providers are responsible for maintaining staff and/or contractual relationships with QCI-certified inspectors. In the case of a shortage of QCI-certified inspectors in the service territory, Commerce may choose to allow the following, in accordance with WPN 15-4, Section 3:

The QCI certified auditor performs the audit and the final quality control inspection. The auditor is not involved in any of the actual work on the home. In this case a Minnesota Department of Commerce certified QCI or a DOE-approved representative will perform quality assurance reviews of at least 10 percent of all completed units as this model does not allow for an independent review of the audit on every home. Additionally, the Service Provider will be required to develop and submit a quality assurance plan to ensure that the individual who is functioning as both the auditor and the quality control inspector is able to consistently perform both tasks and Commerce may choose to reduce the respective Service Provider T&TA allocation to cover the expense of increased monitoring.

Disciplinary Actions: If a QCI inspector is found to be negligent, either through repeat findings or gross negligence in their duties, Commerce, with or without the support of a Service Provider, may institute the following:

- Additional training
- Temporary suspension (e.g. six months)
- Permanent suspension and written notification to BPI

V.6 Weatherization Analysis of Effectiveness

- How is the effectiveness of Service Provider weatherization assessed?

Commerce conducts annual visits and periodic reviews of each Service Provider. This assessment of effectiveness is through an electronic administrative monitoring tool completed by the Service Provider and reviewed by Commerce staff prior to on-site visit; on-site visits and interviews with coordinators, fiscal staff, energy auditors and final inspectors; on-site visits to job completions with interviews of crews and contractors; regular desk monitoring of Service Provider production and spending status, and extensive use and analysis of over 40 different reports incorporated into the Minnesota version of WA.

- How is productivity and energy savings between Service Providers compared?

Monthly WA and financial reviews assess individual Service Providers' compliance and job completion performance.

These reports extract SIR information on all conservation measures as well as health and safety data, demographics , safety checks, and measurements of mechanical systems. Details from these reports may be downloaded monthly. More detailed information may be obtained from quarterly reports. Commerce allows buy downs as permitted by WPN 10-17 for multi-family buildings. At the beginning of the program year Commerce establishes the minimum number of required units and Service Providers are required to submit a production plan to demonstrate their ability to meet the minimum unit requirement. Production plans are reviewed at monitoring visits and periodically during the program year. Commerce follows up with Service Providers that vary from their production plan and requires plan revisions. If Commerce determines that a Service Provider is unable to meet their production goals, funds may be reallocated to other Service Providers to ensure funds are expended.

- How are these comparisons used in the development of T&TA activities and priorities?

Commerce WAP staff and the Weatherization Supervisor meet weekly to discuss monitoring visits and reports, technical issues, and T&TA needs. The staff also gathers feedback from Service Providers through email, phone, and regular meetings of the MN Weatherization Advisory Group (MWAG), the MN Community Action Partnership (MinnCAP) directors meeting, and the Fiscal Directors meeting. If Commerce determines a Service Provider is not meeting production goals, additional monitoring visits may take place in conjunction with Tier 2 training to address barriers. As themes of training needs emerge, Tier 1 trainings are also scheduled. All T&TA activities are outlined in section V.8.4.

- How is the training capability being assessed and how is the Grantee incorporating monitoring feedback?

Continued in PY16, Service Providers that have had ongoing or severe issues with their program will be required to set forth a remediation plan before contracting and will be specifically offered T&TA support and monitoring on these issues over the coming year. Commerce is expanding risk assessment procedures into the PY16 Service Provider contracting process that will further align training needs and offerings.

- What is the Grantee doing to be on a path of continuous improvement?

Commerce has made updates to state-specific policies, consequence management policies, monitoring procedures, and reporting requirements during PY15. Review of policies and procedures is ongoing and will continue through PY16.

- How is the Grantee tracking Service Provider performance reviews?

Commerce utilizes an electronic Issues Log to document issues found through local Service Provider field monitoring visits. The Issues Log generates a report that includes required corrections for each household monitored. The Issues Log (for field monitoring visits), along with a cover letter and summary of observations, compliance issues, and findings for all monitoring visits is sent to Service Providers within thirty days, on average, of the monitoring visit. Service Providers make corrections, record the correction and the date of completion, and return the completed Issues Log to Commerce within thirty days.

All monitoring reports are stored electronically and are accessible to Commerce weatherization staff. Previous years' monitoring reports are reviewed prior to each monitoring visit. Past findings are followed up on during the visits. Improvements to past findings or compliance issues are noted during visits. Commerce WAP and LIHEAP staff share monitoring findings that affect both programs.

Commerce's fiscal division reviews third party single audits for all Service Providers. Management decision letters are issued if the audit indicates findings related to WAP or crosscutting findings that affect the management of WAP.

Any Service Provider consistently failing to meet WAP program standards may be subject to sanctions, including, but not limited to, a Corrective Action Plan as well as designation as a "high risk Service Provider," depending on the nature and seriousness of the compliance failure. Service Providers may be considered "high risk" based on successive poor results on monitoring visits or other weaknesses identified by desk monitoring at the state level. Sanctions may include, but are not limited to: stoppage of work until corrections are made, increased oversight by the state, reimbursement-only funding, refusal to approve cash requests, or defunding of program funds.

All monitoring findings and corrective action plans must be remediated by individual Service Providers prior to entering into a new program year contract with Commerce. If issues remain unresolved, services may be temporarily assigned to an alternate Service Provider for six months. If issues cannot be remediated within the six month suspension, the temporary assignment may be extended for the remainder of the current program year and a long-term Service Provider may be selected, via RFP, or other method for the territory.

- If a Service Provider has failed final inspections, how are things improving?

In cases where final inspections have failed, Service Providers require reworks and callbacks of contractors or crews, as appropriate. In addition, technical assistance is offered to individual Service Providers as needed and at times, required. All final inspections are conducted by a certified QCI.

- If a Service Provider has management findings or concerns cited as a result of Grantee monitoring or audit proceedings, how are things improving?

Commerce continues to develop and offer trainings to address monitoring issues. Greater emphasis has been placed on sharing best practices among Service Providers. Past findings are reviewed prior to each monitoring visit. Major monitoring findings or concerns are followed up on until resolution is verified. Unresolved major findings can result in a temporary reassignment of services to another Service Provider until resolution is demonstrated.

In addition, WAP staff is working closely with LIHEAP and DHS staff to identify any systematic issues sooner, with consistency and resolution. One Service Provider is currently on a Corrective Action Plan in order to improve service delivery and production management. Significant board and leadership changes have been made within this agency and some programmatic improvements have been implemented.

Commerce's fiscal division reviews third party single audits for all Service Providers. Management decision letters are issued to any Service Provider if the audit indicates findings related to WAP or crosscutting findings that affect the management of WAP. Audit findings and/or the resolution of prior audit findings could potentially impact future WAP awards to a local Service Provider.

- Are there technical and financial systems that have been reviewed?

Minnesota is currently assessing software alternatives that would make the review of Service Provider compliance, risk, and effectiveness more efficient and comprehensive.

V.7 Health and Safety

Minnesota's Health and Safety Plan is a separate attachment to SF-424.

V.8 Program Management

V.8.1 Overview and Organization

The Minnesota Department of Commerce has been designated as the statewide administrator of Minnesota's Weatherization Assistance Program. Commerce's Division of Energy Resources includes not only WAP but also the State Energy Program (SEP), Low Income Energy Assistance Program (LIHEAP), the Conservation Improvement Program (CIP), as well as other energy regulatory areas. Placement of WAP in close proximity to these programs (especially LIHEAP and CIP) provides the best opportunities for coordination of programs affecting low-income households. Service Provider contracts include three types of funds: USDOE, LIHEAP, and Propane. Of the three, only USDOE funds are governed by the WAP State Plan. LIHEAP funds are governed by the LIHEAP State Plan and Propane funds are governed by relevant Minnesota statute.

Commerce is responsible for the administration and oversight of the USDOE WAP in accordance with the conditions set forth in this plan. Responsibilities include statewide programmatic and fiscal planning and development, training and technical assistance (T&TA), monitoring, evaluation, and reporting. Commerce annually contracts for program delivery activities with approximately twenty five local Service Providers. These Service Providers include Community Action Agencies, tribal nations, a private non-profit agency, and a community development authority.

In PY2016, a planned agency merger will take place. Western Community Action, Inc. and Heartland Community Action Program will merge and become one agency, anticipated in October 2016. The merged agency will take on a new name, but will retain Heartland Community Action Program′s DUNS number and Tax ID. WAP services are not anticipated to be interrupted by the merger. The nine affected counties are Cottonwood, Jackson, Kandiyohi, Lincoln, Lyon, McLeod, Meeker, Redwood, and Renville.

Minnesota's WAP funds are distributed via an allocation formula that was revised in early 2014 to reflect the current conditions and energy conservation needs in Minnesota as shown by the 2010 census. The formula uses the same factors that were decided in conjunction with the Service Providers during several meetings in 2004. USDOE does not require states to allocate funds within a state in any particular way, but Commerce decided to use a similar formula to the one that USDOE uses to allocate its funds to states. It uses a three-part formula that includes a population factor, a heating degree day/cooling degree day factor and an energy cost factor. Commerce used the information below:

- US 2010 Census data. 2010 census data updates numbers and distribution of low-income households across the state.
- WAP income eligibility is 200% of Federal Poverty Income Guidelines. Data from the number of households with incomes at 100% of poverty level or less is also taken into account in determining eligibility. These two factors allow Commerce to cast a large eligibility net, while also providing attention to those households most in need.
- Heating and cooling degree days reflect that Minnesota's climate is an important energy conservation consideration.
- Low-income household energy bills take up a much larger share of their income and eligible households are disproportionately affected by increasing home energy costs so an energy cost factor is used. Commerce used a five-year average for natural gas, electricity, propane and other fuels.

Commerce reserves the right to work with Service Providers it believes may not be able to complete its allocation within allotted time frames and may recapture funds from any under-performing Service Provider to ensure that the State of Minnesota completes its required number of units under the USDOE grant. Commerce also reserves the right to recapture funds from all Service Providers every year and reallocate them over the entire network to ensure that all funds are expended as efficiently and effectively as possible.

Service Providers are required to monitor use of funds by county or tribal territory, in order to ensure relatively equal distribution of funds throughout a service territory.

Commerce reviews individual Service Provider financial audits annually, however, the Weatherization Assistance Program may not be a major program audited each year.

V.8.2 Administrative Expenditure Limits

Commerce retains 3.5% of USDOE Program Year funds for statewide program administration. The remaining 6.5% is allocated to subgrantees by the allocation formula.

Subgrantees who receive less than $350,000 in USDOE funds will receive up to an additional 5% for administrative purposes. The additional funds will come from subgrantees' program allocation and will be inversely pro-rated according to the amount of USDOE funds received. The higher a subgrantee allocation, the less the subgrantee will receive in additional administrative dollars. The pro-rate formula percent decreases at a rate of 0.5% per $25,000 until the allocation reaches $350,000.

V.8.3 Monitoring Activities

The overall goals of monitoring are to ensure compliance with federal and state rules, policies and the efficiency, quality and effectiveness of Service Provider operations. An additional goal is to identify and correct issues that have the potential to cause major program deficiencies. Because work with Service Providers has a broader focus than compliance, T&TA dollars may fund activities in this area. Staff includes the SEO Manager - Clean Energy and Programs, a WAP coordinator, program administrator, training and technical administrator, training and technical assistance specialist, and field and administrative monitors. A portion of time devoted to WAP activities in also spent on other administration needed to run an effective weatherization program.

General monitoring strategies include the following:

- Desk monitoring: Desk monitoring includes ongoing reviews of monthly programmatic and fiscal data submitted by Service Providers. Programmatic data from each household served is reported via WA. Examples of WA data include estimated and final cost data by measure and by job, mechanical test results, and blower door readings. Fiscal data is reported and reviewed in the eHEAT software system and includes Service Provider monthly expenses and cash requests as well as allocations. Fiscal review also includes audit review and financial reconciliation.
- Service Provider visits: Each Service Provider receives at least one on-site field visit per year, monitoring a minimum of 5% of all weatherized households statewide. In addition, each Service Provider receives a minimum of one administrative monitoring visit per grant cycle (typically once every three years). A risk assessment is conducted at the start of the program year (and modified throughout the year), to determine priority in monitoring. For both field and administrative monitoring, additional visits are scheduled, as needed, to address specific Service Provider issues as they arise.
- Inspections of completed dwellings are conducted to determine compliance with federal and state requirements, client satisfaction and work quality. Commerce also may choose to visit "in progress" jobs. All Commerce household inspections are completed by a certified Quality Control Inspector.
- Commerce has developed both a field and an administrative monitoring tool. The administrative tool was updated in PY15. These tools are used to ensure that no part of the planned monitoring visit is missed. The tools are available for the Project Officer to review during USDOE monitoring visits.
- Commerce has developed an electronic monitoring tool known as the Issues Log. This tool tracks each dwelling monitored with any issues discovered during the visit. Commerce is able to track individual issues with this tool and is then informed of issues that may arise on a regular basis. If needed, training on any of these issues can then be added to the training schedule. This tool also tracks the date and number of all visits by the monitor. The Issues Log also notes trends with respect to findings, concerns, or other issues.
- Household file reviews: Commerce staff reviews WA data and household files for required WA data, forms, signatures, bids, invoices, and other documentation. The on-site file review sample may include those dwellings that are selected for on-site inspection. In depth household file reviews are conducted by field monitors prior to inspection. Administrative monitors randomly sample files during on-site visits to demonstrate compliance with DOE, Commerce, and local Service Provider policy.
- Service Providers are required to upload files of dwellings to be inspected by Commerce field monitors to a secure website.
- Administrative Monitoring: These reviews include follow-up on issues raised by the monitoring questionnaire as well as any other administrative and and/or fiscal issues as needed, including but not limited to:
    - Program overview
    - Equipment/Inventory/Materials
    - Client/Household eligibility
    - Distribution of services between renters and owners
    - Distribution between counties within the Service Provider service territory
    - Reporting compliance
    - Internal controls related to financial management and operations
    - Fiscal Audits
    - Payroll/Personnel
    - Vehicles and equipment
    - Sub-awards/Service Provider monitoring
    - Invoicing
    - Records retention
    - Staff qualifications and training
    - How monitoring results are handled and required follow-up procedures
    - Inventory records
    - Contractor/crew qualifications
    - Procurement procedures
    - Outreach efforts to incorporate minority and disadvantaged contractors
- Field Monitoring visits: All Commerce field inspections are conducted by a certified Quality Control Inspector who will ensure compliance with the Standard Work Specifications. These reviews include follow-up on issues raised in desk monitoring, prior monitoring reports, as well as any other issues as needed, including but not limited to:
    - Administrative field work (Client file review, Work orders, Audit reporting)
    - Energy audits
    - Training & Technical Assistance activities and needs
    - Weatherization of units
    - Health and safety
    - Final inspections and verification that all inspections are performed by a QCI
    - How monitoring results are handled and required follow-up procedures
    - Lead-safe work practices Quality Assurance
    - Compliance with Standard Work Specifications (SWS)

Tracking: Findings and other issues are tracked to resolution using the Issues Log.

- Reports: Service Providers are briefed on observations and findings noted during the monitoring visit, typically during an exit interview. Health and Safety issues are noted at that time, particularly if they present an imminent danger to occupants. Any waste, fraud, or abuse found is immediately reported to USDOE. Written reports are provided to Service Providers within thirty days of the Service Provider visit.

Commerce will summarize each of the Service Providers' financial audits, program monitoring reports, and any outstanding issues. Service Provider weaknesses and strengths will be summarized. These summaries will be available for the USDOE monitor to review at the annual federal monitoring visit.

- Analysis: The WA and eHEAT databases make it possible to review not only individual household data, but also aggregate data by Service Provider and across the state. Over time it also enables longitudinal analysis of various programmatic and fiscal data. The results of such analysis are used to discern not only trends and common themes, but also to guide program policy, overall program direction, and T&TA needs.
- Service Providers who have been identified as deficient in any area will receive additional monitoring visits including WA and hard file reviews. If a Corrective Action Plan is necessary, Commerce will work with the Service Provider to resolve issues. Monitoring findings must be remediated by individual Service Providers prior to entering into a new program year contract with Commerce. See "How is the Grantee tracking Service Provider performance reviews?" above.
- Approximately 19% of admin/T&TA funds are allotted for monitoring activities.

V.8.4 Training and Technical Assistance Approach and Activities

Training and Technical Assistance activities (T&TA) for both Service Provider and Commerce WAP staff are instrumental in the provision of weatherization services to low income households in Minnesota. Commerce offers Tier 1 training through IREC accredited providers and Tier 2 through a combination of qualified State staff, industry professionals, and certified trainers. T&TA activities increase the efficiency, quality, and effectiveness of the Minnesota WAP. All T&TA activities have at least one of the following objectives:

- Maximize energy savings.
- Ensure the health/safety of low income households/weatherization workers
- Increase the effectiveness of client education
- Minimize production costs/Maximize production efficiencies
- Improve the quality of weatherization work on dwellings.
- Improve program management/administrative procedures.
- Avoid the potential for waste, fraud, abuse and mismanagement.

Commerce retains 60% of the state's total T&TA allocation for training, planning, oversight, and monitoring activities. The remaining 40% of the state's T&TA allocation pass to Service Providers. While Service Providers are not required to attend all T&TA activities, they are responsible to know and implement any technical and policy content covered in those T&TA activities. The State verifies, through the Service Provider's Local Plan and Training Activities Report that sufficient training is provided to appropriate staff.

Commerce does not require specific certification of Service Provider staff prior to hire. It is the responsibility of the Service Provider to ensure the qualifications of its hires. Auditors must, within the first year of work, successfully complete the Building Analyst or Quality Control Inspector certification from the Building Performance Institute. An equivalent certification may be used with preapproval by Commerce. All inspectors must be Quality Control Inspector certified prior to completing inspections. Commerce will offer continuing education credits where possible at state trainings. Commerce will also make Service Providers aware of additional resources for continuing education. Commerce staff must have all required DOE certifications that directly relate to their job duties.

T&TA funds may be used to pay for wages of Service Provider weatherization workers for training events. Service Provider T&TA funds may be used to train contractors, including providing a reasonable stipend to contractors who attend WAP training at the request of the Service Provider. All such contractors must sign a retention agreement in accordance with DOE guidelines. T&TA funds may also be used for Service Provider administrative staff to attend Weatherization related training.

Individual Service Provider T&TA needs are assessed in three ways:

- Monitoring activities (dwelling inspections, fiscal/administrative, desk monitoring, DOE inspections, and all other types) are used to identify specific areas where improvement is needed. Specific Tier 2 T&TA activities that address identified problems may be completed during monitoring visits or carried out at a later date depending on the complexity of the need. In addition, informal conversations with Service Provider personnel, not connected to monitoring, are used as a means of identifying specific T&TA needs at the Service Provider level.
- Service Providers assess their own T&TA needs and objectives via the submission of a Local Plan as a part of their budget. Each Service Provider's work plan and budget are reviewed as part of the contract submission process, and are evaluated during monitoring activities.
- A quarterly updated Training Activities Report is filled out by each Service Provider and submitted to Commerce which includes a list of training taken by each employee

On a broader level, T&TA needs, including client education, are assessed in a number of ways:

- Commerce staff members compile and compare individual Service Provider monitoring results to determine multiagency needs and trends.
- Service Provider surveys are used to elicit input for not only general policy/procedural issues but also T&TA needs.
- The Minnesota Weatherization Advisory Group (MWAG) provides an excellent source of input and feedback regarding T&TA. MWAG membership includes representatives of Service Providers.
- The Policy Advisory Council (PAC) is used to garner input from a broader spectrum of WAP affected constituents within the state.
- Cooperation with other energy program units within the Department of Commerce provides sharing of information about energy conservation issues, some of which may be addressed by T&TA activities.

T&TA effectiveness is assessed as follows:

- State field and fiscal monitoring visits are used to evaluate T&TA training effectiveness and to determine specific training that may be necessary. Evaluation forms are distributed as a part of every group T&TA event. The completed evaluations provide information about the effectiveness of the workshop, class or other group activity. Evaluations may also prompt Commerce to consider additional training.
- The results of these evaluations become part of future T&TA needs assessments.

PY16 Training Plan Overview

PY16 Tier 1 trainings include JTA aligned Crew Leader, Energy Auditor, and Quality Control Inspector trainings to reflect industrywide initiatives and broaden the skills to successfully maintain quality work in the WAP. Based on feedback from our network, tier 2 trainings will focus on mechanical systems and CAZ testing among other topics.

The State staff will meet in quarter four of PY15 to plan out all training and monitoring visits for the year. The coordination of monitoring and training schedules allows feedback from field monitors to have an impact of training offerings. Once the training schedule is completed, contracts will be signed with training institutions to provide training. In PY16 Commerce staff will meet quarterly to review the training schedule and cross reference it with federal and state monitoring reports, the Training Activities Report, and any other relevant indicators to determine if the training plan is on track and effective.

Analysis of Training Needs for Weatherization workers Quality Control Inspector (QCI)

In PY13 and PY14 Commerce focused largely on QCI training and certification. As of the end of the third quarter of PY15 Minnesota WAP has 56 QCI

certified individuals in its statewide network. All Service Providers currently have access to a QCI through direct employment or a contractual agreement. There are 33 QCI certified individual's (58.9%) whose certification will expire at some point in the fourth quarter of PY16. The need for QCI training/recertification is

high.

Energy Auditor (EA)

In PY13 and PY14 all auditors were encouraged to attend QCI training. A large number of auditors statewide are crossed trained and certified as QCI. In PY15 Commerce began to scale up EA training by providing 1 week long training. The need for EA training is moderate.

Crew Leader (CL) and Retrofit installer (RI)

For building shell work, Minnesota has six crew based Service Providers, the remaining are contractor based. In PY14 Commerce provided initial training on the SWS for crews and contractors and in PY15, 2 one week Crew Leader trainings where offered. The need for CL and RI training is moderate.

Multifamily: all four job titles

Multifamily training has not been a focus of training efforts in recent years as the move to Tier one trainings has been the primary focus. In PY15 Commerce staff attended a multifamily ventilation training and we plan to expand on that in PY16. The need for multifamily training low to moderate.

Anticipated Intervals for Tier 1 training for Weatherization workers

To address staff turnover, Commerce anticipates the need of at least one of each of the Tier 1 trainings. These trainings will be in addition to the others noted.

Quality Control Inspector

Since the QCI certification is required by DOE, Commerce anticipates providing comprehensive training on a three year basis to align with the certification timeframe.

Energy Auditor

Since the EA certification is not required by DOE at this time, Commerce plans to provide more comprehensive Tier 1 training on a five year basis.

Crew Leader

Since the CL certification is not required by DOE at this time, Commerce plans to provide more comprehensive Tier 1 training on a five year basis.

Retrofit Installer

Since the RI certification is not required by DOE at this time, Commerce plans to provide more comprehensive Tier 1 training on a five year basis starting in either PY17 or PY18 as funds allow.

Multifamily all four job titles

Since these certifications are not required by DOE, Commerce plans to provide training on a five year basis.

PY16 Statewide Training Offerings

Tier 1 Training

Quality Control Inspector: This five day JTA aligned training with BPI certification testing included will provide new auditors and inspectors the opportunity to become QCI certified. The training will be offered up to two times this program year. In addition, two commerce staff will go through QCI Multifamily training in PY16.

Recertification for current Quality Control Inspector: A one day refresher and field testing will be offered for all current QCI certified individuals whose certification will expire in PY16.

Energy Auditor: This five day JTA aligned training with course completion testing included will provide auditors a comprehensive energy auditor focused training. The training will be offered up to two times this program year.

Crew Leader Training & Testing: This five day JTA aligned training with course completion testing included will be provided for crew and contractor lead workers. The training will be offered two times this program year.

Multifamily QCI: This three day JTA aligned training with course completion testing included will be provided for auditors and inspectors who plan on working on multifamily buildings. The training will be offered up to two times this program year.

Tier 2 Training

Mechanical Systems/ CAZ training: This one day course will cover aspects of DWH and heating plant operation and diagnostic testing. The trainings will also include CAZ testing and the effects of various CAZ conditions on DWH and heating plant operation. Minnesota state WAP specific training materials will be developed for ongoing use at the training facility.

Introduction to Weatherization Assistant 8.10 Software: This one to two day course is a complete overview of the Weatherization Assistant Software (NEAT & MHEA) and will be offered up to two times this program year.

Advanced Weatherization Assistant 8.10 Software: This one to two day course is an in depth overview of the setup libraries and backend data base functions of the Weatherization Assistant Software (NEAT & MHEA). It will be offered up to two times this program year.

Policy Changes Introduction and Implementation: *Tools for a Successful and Seamless Program Year*. This two day offering will provide a thorough overview of all policy changes and will be offered at the beginning of PY16. A second Mid-year Policy Update training will be held at the end of the second quarter of PY16 to relay and training subgrantees on any policy updates.

Administrative Training for New and Seasoned Program and Fiscal Directors: Training on administrative and fiscal topics such as the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, budgets, expense plans, FSRs and cash requests. This will be offered at least once during the year.

Additional Tier 2 training anticipated for PY16:

- ASHRAE 62.2-2016
- Multifamily Techniques for Measuring and Upgrading Multifamily Ventilation Systems
- Regional or state Energy Conference

Service Providers will be responsible for costs related to:

- Travel and labor related to state sponsored Tier 1 and Tier 2 training
- LSW and Lead Renovator training and certification
- Continuing education credits for any relevant certifications (e.g. QCI or Building Analyst)
- Additional Tier 1 and Tier 2 training not available through Commerce
- Contractor stipends, if any

Service Providers will provide a T&TA budget as part of the contracting process that communicates a thorough plan to expend all T&TA funds in an effective manner.

V.9 Energy Crisis and Disaster Plan

The purpose of the Minnesota Disaster Plan is to allow the WAP program to respond quickly and effectively to disasters that affect the lives and dwellings of low income households. This plan reflects the requirements of WPN 12-7 and will be implemented whenever and wherever there is a federal or state disaster designation. For weatherization purposes, a disaster is determined by a Presidential or Gubernatorial order declaring either a Federal or State Emergency.

Goal: In the event of a disaster, low income households often incur the greatest hardship and have the least amount of resources available to assist them in recovery. Minnesota's WAP goal is to assist eligible households, within the confines of WPN 12-7, in restoring their dwellings to the pre-disaster state.

Household Eligibility: Households in disaster areas must meet the same eligibility criteria as other WAP-eligible households. WAP rules (10 CFR 440.16(b)) require that priority be given to identifying and providing weatherization assistance to elderly persons, persons with disabilities, families with children, high residential energy users and houses with high energy burdens. It is permissible to consider households located in the disaster areas as a priority as long as the households are eligible and meet one of the priorities established in regulation and are free and clear of any insurance claim or other form of compensation resulting from damage incurred from the disaster.

Dwelling Eligibility: In order for a dwelling to be considered eligible for WAP assistance under this plan it:

- Must be occupied by an eligible household.
- Must be in a federal or state designated disaster area, or is located in a county contiguous to the official disaster counties and damage was caused by the disaster
- Must be a habitable structure, or will be once all work is complete.
- Either:
    - Was an in-progress WAP unit at the time of the disaster where already installed materials are damaged or destroyed by the disaster; or
    - Was previously weatherized and materials installed with weatherization funds are damaged or destroyed by the disaster.

Priority of Service: Disaster-damaged dwellings will be a priority in designated disaster areas. Both in-progress and previously weatherized dwellings are included. This priority designation will last for up to one year, depending upon the circumstances of the disaster, unless determined otherwise by Commerce.

Eligible Activities The use of USDOE WAP funds is limited to eligible weatherization activities and the purchase and delivery of weatherization materials. All dwellings must have a current energy audit in order to determine which of the following allowed activities are needed and feasible within the parameters of the WAP rules and guidance:

- Securing weatherization materials, tools, equipment, weatherization vehicles or protection of local agency weatherization files, records and the like during initial phase of disaster response
- The cost of incidental repairs to an eligible dwelling unit if such repairs are necessary to make the installation of weatherization materials effective
- The cost of eliminating health and safety hazards, elimination of which is necessary before the installation of weatherization materials
- Removal of previously-installed weatherization and/or health and safety materials that are damaged beyond repair, and will be replaced as part of the current activity.
- Installation of weatherization materials as described in the State Plan and the MN "Allowed Activities and Measure Type Chart".

Service Providers may use weatherization vehicles and/or equipment to help assist in disaster relief provided the WAP is reimbursed according to the USDOE Financial Assistance regulations, 10 CFR Part 600.

Work Quality/Inspection: All work must be completed according to the standards contained in the WAP Policy Manual, SWS, and field guides, as well as building, mechanical or other relevant codes. No unit will be counted as complete until all materials are installed in a quality manner and have passed a Quality Control Inspection by Service Provider staff.

Coordination With Other Funds: It is expected that WAP activities will be coordinated with other funded activities to the maximum extent practical. This will not only help make the most prudent and non-duplicative use of all funds, but will also help to ensure that service to eligible households will be maximized. However, WAP funds will not be used to supplant other funds such as FEMA and insurance dollars, which must be applied first in renovating disaster-damaged dwellings.

Walk-Away: Some dwellings may be found to be unsalvageable, uninhabitable, or beyond the scope of the WAP assistance because of a disaster. The Service Provider will carefully evaluate, document, and inform the client in writing of the reasons for the walk-away determination.

Required Documentation: Files must contain sufficient documentation to establish the eligibility of the household and dwelling, as well as to justify the work performed, in accordance with Minnesota's WAP State Plan and WAP policy manual. Such documentation includes but is not limited to:

- Household eligibility;
- Certification of disaster status (ex: disaster declaration for the household's county, FEMA letter or habitability document, etc.);
- Documentation that all other applicable funds have been used or have been denied prior to the use of WAP funds;
- Existing conditions that will be remediated by WAP activities;
- Amount of other funds being used in renovation of the dwelling;
- Reasons for walking away, where appropriate;
- Other, as specified by Commerce

Costs/Averages: While exact costs for work in disaster-damaged dwellings are anticipated to run somewhat higher than the state average cost per unit, Commerce will maintain its statewide average at the same level as it would be if there were no disaster completions. Incidental repairs determined necessary to complete weatherization work, which will exceed the $1,000 per unit limit, will be reviewed by Commerce on a case-by-case basis.

Minnesota's PY2016 Health and Safety Plan

Minnesota has followed the "House as a System" approach to weatherization since 1990. Both Commerce and Service Provider staff understand that health and safety concerns are important because, when addressed, the lives of low-income persons served by the program, especially those that are particularly vulnerable such as the elderly, persons with disabilities and children are improved. Minnesota has developed its plan using WPN 11-6 and WAPTAC's template to ensure all elements are addressed.

In addition to assessment of the dwelling, Service Providers assess client health issues in the Client Survey that includes health and safety questions and is available for download from WA. This assessment allows Service Providers to capture pre-existing occupant health conditions.

Health and safety issues are a required part of every dwelling audit. Service Providers conduct an on-site audit for each dwelling using the WA software tool to document the audit. WA includes a detailed assessment of potential hazards. The assessment sets a framework for individual weatherization work plans. In some instances, the hazard must be remedied prior to the start of weatherization. In other instances, the hazard is addressed as part of weatherizing the dwelling.

Service Providers must make the choice to walk away from a dwelling when the health and safety problems are beyond the scope of weatherization activities. Service Providers evaluate each dwelling individually and make decisions accordingly. Commerce staff regularly provides assistance to Service Providers in problem-solving specific situations. All health and safety problems and their resolutions are documented in individual household files.

Assessments of indoor air quality problems are conducted at the time of the energy audit. Because conditions in each dwelling vary greatly, potential remedies are developed on a case-by-case basis. Possibilities might include ventilation or allowable repairs within the scope of weatherization, client education, and/or referrals to other potential fund sources for work that is outside the scope of the Weatherization Program.

Health and safety issues are addressed at a number of levels throughout Minnesota's WAP. Minnesota's WAP Policy Manual is incorporated by reference into all grant contracts with Service Providers. The policy manual is updated regularly so it is compliant with current USDOE rules and guidance and the Minnesota State Plan. Each year policy update training informs all Service Providers of the policy changes for the upcoming program year. In addition, any regulatory/policy updates and test standards are delivered to Service Providers via email and changes are posted on the Commerce website.

Commerce allows Service Providers to budget Health and Safety costs outside the overall per unit average. Minnesota strives to keep health and safety costs reasonable, recognizing weatherization's primary goal of energy conservation. The Minnesota WAP Policy Manual expresses the percent as an average Health and Safety cost per unit to provide flexibility to Service Providers as they resolve the multiple issues encountered in client dwellings. This percent/average is reviewed annually and updated as needed in each new Service Provider grant contract once approved by USDOE.

For PY2016 Minnesota will use the USDOE adjusted average cost per dwelling of $7,105. The Health and Safety per unit average, after the analysis completed below, is set at $1,058.

Commerce staff analyzed data from 283 units completed by six Service Providers between July, 2015 and April, 2016. The sample group of Service Providers reflects a variety of geography, population, and housing types. Together they make-up 38.05% of Minnesota's DOE allocation of program funds and therefore constitute a representative sample of the entire state. The WA software was used to gather information on the most common health and safety measures installed by the sample group. A list was compiled and then weighted to create a representative state average and frequency for each measure. The analysis shows an average Health & Safety cost of $2,461 per unit driven largely by ASHRAE compliance and water heater replacement due to back-drafting concerns. Commerce plans to use a mixture of DOE and LIHEAP funds to pay for Health & Safety activities.

Total Weighted State Averages			
Measure	Ave cost	Frequency	Total
ASHRAE 62.2 (new and repair)	$ 1,206	95%	$ 1,146
Water Heater replacement	$ 1,953	28%	$ 552
Duct Sealing	$ 352	66%	$ 234
Furnace/Boiler Replacement	$ 4,353	4%	$ 185
Dryer Venting	$ 182	90%	$ 163
CO/Smoke Detectors (job total)	$ 103	94%	$ 97
Clean & Tune (furnace, boiler, DWH, oven)	$ 219	39%	$ 84
			$ 2,461

Grantee Health and Safety: Commerce staff is required to have a thorough understanding of weatherization-related health and safety issues. Commerce staff attends numerous training sessions addressing health and safety. Commerce staff members are required to follow safe work practices on Service Provider job sites.

Crew/Contractor Health and Safety: The Minnesota Field Guide is incorporated by reference into all Service Provider weatherization contracts with Commerce. The field guide is SWS-aligned and describes Service Provider responsibilities for staff and contractors. The guides address common worker safety issues including vehicle safety, falls, back injuries (proper lifting procedures), exposure to hazardous materials, electrical hazards, repetitive stress injuries, and the use of personal protective gear.

The field guide language requires that local Service Providers and their installers comply with OSHA rules pertaining to worker safety. Service Providers are also required to provide annual training for their crews, auditors and contractors in all worker and weatherization- related health/safety topics so that they understand and meet the rules and regulations of the USDOE WAP or send them to state-based training to meet this requirement.

Pollution Occurrence Insurance: Commerce strongly recommends Service Providers carry appropriate Pollution Occurrence Insurance.

Client/building owner notification: Commerce requires that clients and rental property owners/landlords be notified in writing in all instances where a health and safety issue is found. This includes, but is not limited to the issues listed in the remainder of this document. Minnesota developed a standard Notice of a Safety Problem form which must be signed by the Service Provider, the client and/or landlord and must be included in the client file. Documentation given to the client and/or landlord must include client name and address, dates of the audit/assessment and when the client was informed of a potential health and safety issue, a clear description of the problem, a statement indicating if, or when conditions under which weatherization could continue, the responsibility of all parties involved, and the client(s) signature(s) indicating that they understand and have been informed of their rights and options.

Referrals: In cases where the scope or cost of needed repairs is beyond the range of the weatherization program, Service Providers refer clients to housing rehabilitation programs and other funding sources wherever possible.

Air Conditioning and Heating Systems: Minnesota does not repair or replace air conditioners for energy conservation purposes. On rare occasions, Commerce allows the use of Health and Safety funds for repair of medically necessary air conditioning. In order to qualify for a medically necessary air conditioning repair or replacement, the client must provide a signed letter from his or her doctor that justifies the medical need for air conditioning. Medical conditions requiring air conditioning could include but are not limited to asthma, emphysema or heart disease. In the absence of a medical condition, repairs to air conditioning components are allowed only when needed to protect a heat

exchanger or other furnace components from water damage.

Commerce allows the use of Health and Safety funds for the repair and replacement of heating systems. All combustion equipment must be operating safely prior to beginning weatherization work and at the time of the final inspection. However, mechanical and insulation/air sealing work may be completed simultaneously.

Service Providers first consider a repair or replacement, then a clean and tune. These must meet an SIR of one or greater. Health and Safety funds are used only if the measure does not reach a SIR of one or more and if there is a documented health and safety need.

Asbestos in Siding, Walls and Ceilings: Asbestos-containing siding is common and is sometimes referred to as slate siding. This type of siding is presumed to contain asbestos, which remains non-friable as long as it is not crumbled, pulverized or otherwise disturbed and the asbestos remains bound with its matrix.

To insulate walls in dwellings where asbestos-containing siding is present, the siding must be removed in a manner that allows the siding to remain as intact as possible. Drilling asbestos-containing siding is not allowed. WAP installers are allowed to remove asbestos- containing siding as long as asbestos-safe work practices are performed when doing so.
After the walls have been insulated, the siding must be reinstalled in a manner that allows the siding to remain as intact as possible. Keeping asbestos-containing siding intact greatly reduces a health risk to workers or clients. Chipped, cracked or brittle asbestos-containing siding may require that walls be insulated from the interior of the dwelling.

Asbestos-containing siding may be removed from dwellings of five units or less. Dwellings with five or more units fall under EPA asbestos regulations, which have more stringent requirements governing removal. EPA asbestos regulations apply to structures or dwellings used for, or once used for, commercial purposes. Removal of siding from these structures may be allowed once the applicable standards are determined and applied. If removal of asbestos-containing siding is not necessary, other weatherization measures may be applied to these structures.

Vermiculite insulation in attics is assumed to contain asbestos. Due to conflicting information on asbestos and the practice of treating the dwelling as a system, Commerce has determined that homes with vermiculite insulation in attics may, at the discretion of

the Service Provider, and in accordance with their policy manual, be deferred. DOE funds may be used for testing by an AHERA certified professional of vermiculite. Vermiculite, if removed, must be removed by a licensed abatement contractor. The cost of removal is not allowed using DOE funds. Once asbestos is properly removed, a previously deferred home can be weatherized.

There have been high numbers of deferrals based on vermiculite found in Minnesota homes. Service Providers will be encouraged, but not required to test homes where vermiculite is present and submit results to Commerce in order to develop a statewide knowledge of the potential presence of asbestos containing vermiculite.

Asbestos on Pipes, Furnaces and Other Small Covered Surfaces: Residential and multi-family heating plants may have asbestos-covered components. Asbestos encapsulation of components that will be disturbed as part of the heating plant replacement must be completed by an AHERA-certified asbestos control professional and is an allowed health and safety activity. When the heating plant itself contains asbestos components, the removal of the heating plant must be completed by an AHERA-certified asbestos control professional and is an allowed health and safety activity. Any additional asbestos removal may not proceed without Commerce approval. Clients are provided with asbestos safety information and are instructed not to disturb suspected asbestos-containing material.

Biologicals: Service Providers are continually alert to potential and actual problems with biological contaminants such as mold, moisture, odors, viruses/bacteria and rotting wood. Each energy audit contains a sensory assessment of these issues with photos and other documentation such as moisture meter readings, as needed. Auditors and inspectors are trained to identify mold and moisture problems. No testing for mold, mildew or other biological contaminants is allowed.

In addition, weatherization installers and contractors are also alert to the possibility that biological contaminant issues, not evident at the time of the energy audit, could arise in the course of installing weatherization materials. If post-audit problems are discovered, installers and contractors are required to notify Service Provider staff to determine if weatherization work can continue.

Remediation of odors, viruses/bacteria problems is beyond the scope of weatherization and is not allowed with USDOE funding. If a known agent in a dwelling may create a serious risk to occupants or weatherization workers, then deferral may be necessary. This applies to inaccessible crawlspaces.

However, Service Providers are allowed to assess moisture sources and address those issues using Health and Safety or general (incidental) repair dollars within Commerce-

prescribed requirements and cost averages or limits. See Mold and Moisture.

Building Structure and Roofing: Energy audits include a visual assessment of the existence of any roofing and/or structural problems with photos and other documentation as needed. Repairs are allowed in order to protect the safety of clients and installers both during and after the weatherization process. Repairs must be allowable Incidental Repairs as defined by WPN 12-9 and be within the cost limitations as defined by the current DOE state plan. Dwellings in need of rehabilitation beyond the scope and cost limits of weatherization (e.g. more than 100 square feet of missing sheetrock) are referred to other programs and funding sources. Weatherization activities are either deferred until rehabilitation activities are complete or, in some instances, are completed simultaneously with rehabilitation activities.

Code Compliance: All weatherization work in Minnesota is required to be completed to the standard contained in the applicable code. This applies in places where codes are actively enforced and as a work standard where code enforcement is lacking. Service Provider staff and contractors are expected to be aware of health and safety issues regarding code.

Correction of pre-existing code compliance issues is not an allowable expense other than where weatherization measures are being conducted. State codes must be followed when installing WAP measures.

Combustion Appliances/Gases: Testing of combustion appliances, including heating plants, water heaters, kitchen ovens (including burners), and space heaters, is required during the energy audit. Acceptable test procedures are included in the Minnesota Field Guide (2015), the Minnesota Policy Manual, and supplemental documents that can be found on the Department of Commerce website. The policy manual, field guide and supplements provide standards that must be met before weatherization can proceed.

The Minnesota Policy Manual requires that naturally-drafting appliances are tested for spillage under worse case Combustion Appliance Zone (CAZ) conditions and are verified to be operating safely before and after any weatherization activities that change the pressure balance in the dwelling such as: air sealing, increasing exhaust ventilation, duct sealing, insulating, etc. Mechanical work and air sealing/insulation may be completed simultaneously. In extreme cases, a family may be asked to leave the dwelling until a problem is remedied. USDOE funds cannot cover costs for temporary relocation in these instances. Due to the impacts that weather conditions can have on spillage, in cases where combustion appliances ultimately pass the worst case CAZ spillage test, but are found to be spilling combustion gasses into the dwelling for more than 50% of the testing period the auditor or QCI, has the discretion to take action to correct the spillage issue.

Minnesota also requires the measurement and recording of the pressure in the CAZ under worst case conditions. This information is collected as part of the worst case CAZ spillage test. The worst case CAZ pressure is compared to the CAZ limit defined in SWS 2.0299.1 for each appliance. Measured CAZ pressures that exceed the CAZ limit may, depending on the situation, require action to correct. Due to the impacts that weather conditions can have on CAZ pressures these measurements are intended as guidelines as to when action may be needed to correct an issue and not a hard limit that requires corrective action in all cases. Minnesota will work with technical experts in the area of building diagnostics throughout PY16 to provide clarity to Service Providers about how CAZ pressure measurements can be understood in context and effectively utilized.

When all weatherization activities are completed, testing is repeated at final inspection. Tests performed at the audit and the final inspection includes: carbon monoxide in the flue, worst case CAZ spillage, CAZ pressure, and fuel leaks. Every dwelling must pass a worst case CAZ spillage test during the energy audit, before the installers begin work, daily while completing work, once installers complete work, and again at final inspection.

Required Weatherization Tests: Required tests are detailed in Appendix D of the WAP Policy Manual. In compliance with Minnesota law and in accordance with the Minnesota Building Code, carbon monoxide monitors and smoke detectors are installed as needed in all dwellings. Clients are presented with information on combustion safety and hazards, including the importance of using exhaust ventilation when cooking as a part of client education on combustion appliances.

Drainage: DOE funds may be used to remedy moisture issues resolved by repair or replacement of; gutters, downspouts, grading, flashing, or sump pumps where the total cost is less than $400.00. Drainage issues above that cost are beyond the scope of the Weatherization Assistance Program. Homes with such conditions may create a serious health problem and work must be deferred until these issues are addressed by the client or by other funding sources. Clients are notified of such problems in writing. See Mold and Moisture.

Electrical – Other Than Knob and Tube: Weatherization audits in Minnesota assess and document electrical hazards, especially as they pertain to weatherization activities. Both the policy manual and the field guide contain information on how to identify and address electrical issues. Wires are inspected to ensure that they are not bare or frayed. Service boxes are inspected to ensure that they have secure covers.

Correcting general electrical wiring problems is generally not an allowable weatherization measure, however, in instances where electrical issues are directly related to the

weatherization process, health and safety funds may be used for repairs. If it is determined that a hazardous situation exists, the problem is corrected before weatherization work commences. If a hazardous situation is discovered during weatherization work, all work must cease until the hazardous situation is corrected.

If repairs are beyond the scope of the weatherization program to address, Service Providers refer clients to rehabilitation programs and other fund sources where possible. A licensed electrical contractor must perform any electrical work needed to correct a problem.

Electrical – Knob and Tube: Minnesota uses health and safety dollars to address knob-and- tube wiring when it has a direct impact on weatherization activities. Any insulation activities completed where knob-and-tube wiring is present must conform to applicable codes. Knob- and-tube wiring repairs/replacements in attics and walls are completed before insulation activities begin. In consultation with Minnesota Board of Electricity, the following are followed:

- Service Providers must verify if the knob-and-tube system is in service before proceeding with any additional measures.
- Service Providers must inspect the wiring that will be covered to determine the type(s) of wiring present, the circuit protection, wiring condition, and to identify any other hazards.
- Service Providers must obtain permission from the homeowner or authorized agent to install proper over-current protection. If permission is not given, insulation cannot be installed.
- Install insulation only as follows:
    - In those areas where knob-and-tube wiring is active, circuits must be protected by properly sized over-current protection;
    - Insulation is to be placed up to a depth of two inches from the underside of the knob-and-tube wiring, provided that an open air space is permanently maintained above such wires; OR
    - Barriers must be installed in such a manner around knob-and-tube wiring to ensure that the insulation shall not directly cover the wiring, and that an adequate air space of at least one inch on all sides is maintained.
    - Document whether sidewall cavities are insulated. Sidewalls containing live knob-and-tube wiring are not allowed to be insulated.
- When knob-and-tube wiring is replaced it must be done in accordance with all state building codes and statutes.

The presence of knob-and-tube wiring may dictate that some insulation activities may not

be completed. Clients receive education on the dangers and implications of knob-and-tube wiring in their homes. If knob-and-tube repairs or replacements are beyond the scope of the weatherization program to address, Service Providers refer clients to rehabilitation programs and other funding sources as feasible.

Fire Hazards: All energy audits include an assessment of fire hazards within the dwelling. This assessment may include, but is not limited to, clearances to combustibles, creosote build-up, and storage of flammable materials in proximity to combustion appliances.
Resolution of these types of hazards may include health and safety measures before or during weatherization activities, depending on the nature and severity of the problem. Clients are educated and informed in writing by all Weatherization staff and workers about potential hazards. Inspectors and auditors are trained on fire hazards.

VOCs: Volatile Organic Compounds (VOCs) are widely used as ingredients in many household products, such as paints, varnishes, fuels, and many cleaning, disinfecting, cosmetic, and hobby products. These products can release organic compounds as vapor when they are used and, to some extent, when they are stored. Formaldehyde is a volatile organic compound found in many building materials and household products, such as new carpets and plywood. These products release the organic compounds over time. Organic compounds sometimes have adverse health effects on people. At this time, Commerce does not allow the removal of materials deemed to contain excessive amounts of VOCs.

Because of the potential adverse health effects, local Service Providers must take this into consideration when air-sealing and when deciding on the need for ventilation. Clients must be informed and educated about this potential health issue. If it is not possible to control the VOCs, weatherization work must be deferred. Testing for VOCs is not allowed using DOE funds.

Prevention of Injury to Occupants: Service Provider staff is instructed to be alert to any possible client health issues relevant to a broad range of potential weatherization activities. Energy auditors are the primary staff responsible for identifying such issues, either as a part of the actual energy audit and/or by required interviews with household members. Because these issues may also arise when installers are in the dwelling, they are also trained to identify health and safety issues. Once an issue is identified, Service Provider staff works with the client to address the hazard either directly, through referrals, or deferral of work. All issues and efforts to resolve them must be documented in the household file and must include a client signature.

In some instances uncorrected hazards could result in injury to weatherization workers or preclude the completion of weatherization measures. In these instances Service

Providers are allowed to make repairs to enable weatherization activities to be completed with incidental repair dollars, provided they are within the Allowable Measures Chart and within required cost limits. Health and Safety dollars may also be utilized with prior written approval from Commerce. Photos and other documentation of the hazard are required.

Lead-based Paint: Commerce requires that all Service Providers use only contractors and installers trained in Lead Safe Work (LSW) in accordance with EPA-certified curricula by EPA- certified trainers. It is the responsibility of Service Providers to maintain documentation that the requirements for LSW Practices have been met. Commerce monitors Service Provider compliance with these requirements through training reports and as a part of regular administrative and field monitoring.

Commerce also requires that Service Providers contract lead renovators who have been trained in accordance with EPA-certified curricula taught by EPA-certified trainers. It is the responsibility of Service Providers to maintain documentation that lead renovators have met criteria enabling them to oversee the lead-safe setup, work, and clean up. Commerce monitors Service Providers compliance with these requirements through training reports and as a part of regular administrative monitoring.

Appropriate containment and clean up procedures must be used to protect occupants from lead-based paint hazards while weatherization work is in progress, using appropriate containment strategies. Proper notification of the existence of these hazards must be provided to the occupants.

When weatherization work is in progress the following must be followed, as referenced in WPN 11-6, WPN 09-6, WPN 08-6, and WPN 02-6.

- Renovations must be completed by Certified Renovation firms
  Crews and contractors must use containment procedures to ensure protection of the occupants.
- Occupants, especially young children or pregnant women, may not enter the work site.
- Occupants are allowed to return only after the work is completed and the dwelling has passed a visual inspection or a wipe test, if applicable.
- Occupants' belongings must be protected from lead contamination.
- The work site must be set up to prevent the spread of lead dust and debris.
- Warning signs must be posted at entrances to the worksite when occupants are present; at the main and secondary entrances to the building; and at exterior work sites. The signs must be readable from 20 feet from the edge of the

worksite. Signs should be in the occupants' primary language, when practical.

- The work area must be contained.
- If containment cannot be achieved with occupants in the unit, occupants must move out of the unit or the work must be deferred until containment can be achieved. Minnesota does not use USDOE funds for temporary relocation of clients.
- Measures to ensure that containment procedures do not interfere with occupant and worker egress in the case of an emergency must be established.
- Photos of LSW containment procedures and other documentation are required in all dwellings where LSW is used.

Containment procedures must ensure that any dust or debris will not be spread beyond the work area to non-work areas. The level of containment must be determined by the auditor/inspector or supervisor before work is assigned to a crew or contractor.

The level of containment is based on the hazards present, the age of the home, the scope of work activities, and any customer health issues. LSW generally falls into two levels of containment. Level 1 and Level 2 containment and their related standards are outlined in WPN 08-6.

Level 1 containment is required in pre-1978 homes when *less than* 6 ft^2 of interior painted surface per room, or 20 ft^2 of exterior painted surface will be disturbed. Level 1 containment consists of methods that prevent dust generation and contains all debris generated during the work process. The containment establishes that the work area which must be kept secure. Measures that *may* fall within this guideline include:

- Installing or replacing a thermostat
- Drilling and patching test holes
- Replacing HEPA filters and cleaning HEPA vacuums
- Changing a furnace filter
- Removing caulk or window putty (interior)
- Removing caulk or window putty (exterior)
- Removing weather-stripping

Level 2 containment is required when Weatherization activities will disturb *more than* 6 ft^2 of interior surface per room, or 20 ft^2 of exterior surfaces in homes built prior to 1978. Level 2 containment consists of methods that define a work area that will not allow any dust or debris from that work area to spread. Level 2 containment requires the covering of all horizontal surfaces, constructing barrier walls, sealing doorways, covering HVAC registers with approved materials, and closing windows to prevent the spread of

dust and debris.
Measures requiring Level 2 containment *may* include:

- Drilling holes in interior walls
- Drilling holes in exterior walls
- Removing siding
- Cutting attic access into ceiling or knee walls
- Planing a door in place
- Replacing door jambs and thresholds
- Replacing windows or doors
- Furnace replacements

Level 2 containment must always be used where any of the following is conducted even if the activities will disturb less than the minimum hazard levels within the Level 1 category:

- Window replacement
- Demolition of painted surfaces
- Using open-flame burning or torching
- Using machines to remove paint through high-speed operation without HEPA exhaust control
- Operating a heat gun at temperatures at or above 1100 degrees Fahrenheit

Proper LSW clean-up and disposal of debris is required to adequately clean up the job site. All dust, dirt, material scraps, containers, wrappers, and work-related debris must be removed from the client's home. A HEPA vacuum must be used to clean up the work areas. Further cleaning may be necessary, based on the hazard. Disposal of debris must meet federal, state and local regulations.

A visual inspection by the crew or contractor must be completed to ensure that the cleaning process is complete. A wipe may be necessary to meet EPA requirements. Verification is conducted by the QCI at the time of final inspection of the weatherization work. If debris, paint chips, or dust is observed, the weatherization crew or contractor must repeat the cleaning process.

Notification of a lead hazard must be given to all clients in dwellings that come under the LSW guidance. All agencies must give each client the lead notification publication, "Renovate Right – Important Lead Hazard Information for Families, Child Care Providers and Schools". A signed certification of receipt of this notice must be present in the client file.

Monitoring of LSW practices to verify compliance with minimum standards will be completed by review of client files for proper documentation, current certification of workers and client interviews during on-site monitoring visits. Agencies found not to be in compliance with the minimum LSW standards will be provided with the requirements and the appropriate training opportunities to bring them into compliance.

Minnesota will use EPA-certified curriculum and trainers for implementation of the LSW standards stated.

Minnesota follows the EPA requirements under Lead: Renovation, Repair and Painting Program (RRP). Training is required and a certificate is presented upon successful completion. Service Providers may use T&TA funds to attend a qualified training program of their choice.

Mold and Moisture: An indoor air quality problem is excess moisture or humidity in a home. Too much moisture may result in moisture penetration, condensation, and build-up in walls and ceilings. Moisture accumulation may also cause wood rot. Too much indoor moisture or humidity can also lead to the growth of mold and mildew which can cause adverse health effects for the occupants.

Energy auditors use the following to identify potential moisture problems when assessing a client's home:

- Damp atmosphere or a musty smell in the dwelling, basement, or crawlspace
- Client complaints of allergy-like symptoms
- Mold growth on walls and ceilings, especially in bathrooms and kitchens
- Mold growth on attic roof sheathing
- Signs of condensation on walls or windows
- Water damage or mold on the underside of roof decking
- Evidence of crawlspace moisture
- Rusted metal in basements, crawlspaces, bathrooms and/or kitchens
- Efflorescence (white, powdery deposits) on concrete or masonry surfaces
- Water stains on foundation walls

All homes are visually inspected for existing mold. Although the entire dwelling is inspected for mold, particular attention is paid to the following areas: bathrooms, kitchens, laundry areas, basement walls, ceilings next to exterior walls, attics, and crawlspaces. The mold assessment, completed in tandem with the moisture assessment, is performed by the auditor. Auditors document the presence of visible mold. Details are

filed in the client file and the WA software. The existence of mold is documented to confirm that mold was pre- existing and that weatherization activities were not the cause of mold growth.

When a moisture problem is identified, energy auditors determine the source of the problem and outline solutions or generate specific work order measures to mitigate the problem.
Energy auditors inform clients of any mold that is found and of its location. Auditors explain to clients that the auditor is not a mold expert and that the mold assessment was a visual assessment only and that no testing for mold was completed.

Auditors use forms provided by Commerce and the WA software to document and generate specific health and safety measures that address or alleviate moisture problems. Whole Dwelling, Equipment, and Building Shell tabs within WA detail 41 individual remedies, all addressing health and safety concerns. Many of these concerns are related to moisture issues.

Identifying and solving the source of moisture problems is the first priority when a problem is discovered. The following are possible solutions to moisture problems:

- Mechanical Ventilation. One of the main strategies for solving moisture problems in a home is mechanical ventilation. Installing intermittent or continuous ventilation is allowed and may be paid for with Health and Safety funds. Moisture problems may be reduced or eliminated by ventilating areas that routinely generate large moisture loads such as bathrooms, kitchens and laundry areas. Commerce requires Service Providers to implement ASHRAE 62.2 2016 on all dwellings weatherized, effective July 1, 2017. Clients are reminded of the importance of using kitchen exhaust fans while cooking and using bathroom exhaust fans after showers or baths. Clients are instructed how to operate the fans properly.
- Plumbing/Sewer Repairs. Leaking water pipes and sewer lines cause moisture and pose serious health problems for affected dwellings. Auditors carefully note any problems. Minor repairs, costing less than $400.00 related to plumbing and sewer repairs, may be completed as a part of the weatherization process, provided the repairs are necessary to weatherize the home . Referrals are made to non-weatherization resources that may assist the household in making more substantial repairs to pipes or sewer lines. Cleanup of any unsanitary conditions due to plumbing leaks is the responsibility of the client.

  Attic Bypass Sealing. Attic bypass-sealing must be completed on all homes, with the exception of homes that have vermiculite insulation present in the attic. One of the most important benefits of attic bypass-sealing is that it prevents the migration of moisture into the attic where it could cause ice dams, wood rot, and

mold growth. Pressure diagnostic measurements are taken on both a 'pre' and 'post' basis to ensure and measure bypass-sealing effectiveness. Bypass-sealing is completed as an air-sealing measure when it achieves a SIR of one or more. Health and Safety funds are used only in dwellings where necessary bypass sealing has an SIR of less than one.

- Crawlspace Ground Moisture Barriers. Crawlspace moisture can lead to condensation, mold, and rot. Air passing through the soil can contain radon and pesticides. It is important to prevent moisture, radon and other soil gasses from entering the dwelling. This is accomplished by covering the crawlspace ground with a vapor barrier with a perm rating of less than 0.1. This vapor barrier must be installed continuously over the top of the exposed soil with all seams and penetrations sealed to establish a continuous air barrier to seal out water vapor and soil gasses.
- Bulk Water Control. Health and Safety dollars may be used to make repairs to deteriorated roofs and other framing members where such repairs are needed to eliminate or prevent moisture or water from entering the dwelling. These repairs are allowed when necessary to address moisture sources that create health/safety hazards in the dwelling. Doors, window sash or total window replacements are not allowable health and safety activities.

Client Education: Auditors provide one-on-one general education to all clients regarding high indoor moisture levels or actual moisture penetration, including the cause of moisture problems and how to avoid moisture problems. Clients are taught how to maintain acceptable relative humidity levels in the dwelling and how to operate any newly-installed bath and/or kitchen fans.

Energy auditors educate clients on moisture if they identify practices that might result in high moisture levels in the home. In PY16, energy auditors will be encouraged to utilize moisture meters to help quantify the moisture content of suspect building components. The following are client practices which may have an effect on the moisture levels:

- Cooking and use of kitchen exhaust fans
- Bathing, showering and use of bathroom exhaust fans
- Proper use and placement of humidifiers and dehumidifiers
- Indoor plants
- Aquariums
- Storage of firewood inside the dwelling or attached garage
- Plastic window covers
- Keeping gutters clean
- Leaky plumbing or fixtures

- Site drainage
- Sump Pumps

Correction of moisture and mold-creating conditions are allowed when it is necessary to ensure the long term stability and durability of the measures in weatherizing the home. Commerce therefore allows the treatment of moisture sources and drainage issues (see Drainage) when such actions are either necessary to effectively perform weatherization work to ensure the work will be lasting and effective OR are necessary, as a result of weatherization work, so as not to create a health or safety problem for the occupant. Activities, as outlined in WPN 11-6a are limited to those that are conducted where efficiency measures are identified for installation. Installation of these items must be pre-approved by Commerce.

If moisture problems in a dwelling are severe and cannot be resolved under existing allowable Health and Safety measures or repair allowances, Service Provider auditors must explain to clients that weatherization measures could make the situation worse (e.g. attic and wall insulation and high-efficient furnace installation) and may not be completed until moisture problems are remedied by the client or landlord. Weatherization measures that do not disturb mold or exacerbate existing moisture problems may be completed with prior approval from Commerce in certain circumstances.

Mold Remediation: Controlling moisture is critical to controlling mold. If mold is found in a home, it is likely the result of moisture, excessive humidity or water intrusion. Moisture problems must be solved before any mold problem is addressed.

If the auditor determines that moisture problems can be solved satisfactorily, the Service Provider may determine that the mold will not be disturbed by weatherization activities and work may proceed without the need for remediating the mold.

The Service Provider may defer any work on the home until the mold is remediated by the client or landlord. This policy is recommended if there are large areas of mold growth. If the auditor determines the moisture problem cannot be satisfactorily eliminated, weatherization work must be deferred.

Mold Clean-up Information and Referral: If the weatherization work can be completed without disturbing mold/mildew, or if cleanup is not required, work may be completed at the discretion of the auditor or program manager. If cleanup is required, information and cleanup procedures will be provided to the client.

Information sources for mold clean up include but are not limited to the University of

Minnesota Extension Service, FEMA, Minnesota Department of Health, and Canada Mortgage and Housing Corporation. Procedures are designed to protect the health of the occupants and cleanup personnel during remediation.

Existing Occupant Health Problems: Service Provider staff is instructed to be alert to any possible client health issues relevant to a broad range of potential weatherization activities. Every energy audit includes a client interview aimed at identifying existing or known client health problems. Energy auditors are the primary staff responsible for identifying health issues either as a part of the actual energy audit and/or by required interviews with household members. Because these issues may also arise when installers are in the dwelling, installers are trained to identify health and safety issues. Once an issue is identified, Service Provider staff works with the client to deal with the hazard through referrals or deferrals of work. All issues and efforts to resolve health hazards are documented in the household file.

OSHA: Minnesota Service Providers must comply with OSHA (29 CFR 1910 and 1926) regulations, local health and safety plans, and use of Material Safety Data Sheets. Commerce currently performs monitoring for OSHA rules and regulations, as it pertains to the SWS, when performing monitoring on in-progress units.

Pests: A Service Provider may choose not to weatherize a dwelling unit if there are vermin, unsanitary conditions, or other health and safety problems present that pose a hazard to the weatherization workers. Pest removal and clean-up of pest deposits are not allowed activities with weatherization funds. Service Providers are encouraged to defer weatherization until the problem can be resolved. Example: Stinging insects are not active in colder weather so weatherization may be deferred until after temperatures are consistently at or below freezing if stinging insects are found.

If there is a menacing domestic animal in a dwelling or if the worker is uncomfortable around the animal, weatherization workers may require the client to restrain the animal before proceeding with weatherization. If the client refuses, weatherization workers may document the situation and defer the work until the situation is resolved.

Animal bites should be immediately responded to and reported. If necessary, workers seek medical care. If a worker is bitten by a bat, an attempt should be made to kill the bat without destroying the head. The bat should be placed in plastic and shipped to a local lab to test for rabies.

Radon: Radon assessments are not part of weatherization in Minnesota. Dwellings with previously identified radon problems should not be left with an increased negative pressure in the contaminated area after weatherization work. Vapor barriers are installed

in dwellings with accessible crawlspaces where there is exposed soil.

Refrigerant Issues: Refrigerator replacements may be completed using USDOE funds. The cost of disposal of the appliance (including refrigerant) may be included in the replacement measure providing it does not drop the measure SIR below one. If the replacement measure SIR drops below one, the cost of reclaiming the refrigerant may be covered as a health and safety cost. Refrigeration appliances that are replaced must be disposed of according to the environmental standards in the Clean Air Act (1990), Section 608, as amended by the Final Rule, 40 CFR 82, May 14, 1993. The party recovering the refrigerant must possess an EPA- approved Section 608 Type II license or an approved universal certification. Clients should be cautioned not to disturb refrigerant.

Smoke, Carbon Monoxide (CO) Detectors: Installation of individual or combination smoke and CO detectors and/or alarms is required when absent, inoperable or expired. Replacement of operable non-expired units is not allowed. Service Providers are required to meet State and local fire codes for the number and placement of installed units. Energy Auditors are required to educate the client on operating procedures, care and replacement of units.

Solid Fuel Heating: Commerce allows the replacement or repair of indoor primary solid fuel heating plants only with prior approval from Commerce and only if occupant Health and Safety is at risk. Only repairs are allowed for secondary units and must be justified for documented health and safety reasons.

Space Heaters - Electric Stand Alone: Commerce does not allow repairs or replacements of electric standalone units. Energy Auditors are strongly encouraged to educate clients about their high cost and safety issues related to their use.

Space Heaters – Vented: Replacement of vented primary heat space heaters are allowed only with prior approval from Commerce. When permitted by the state, repairs may be completed using Health and Safety funds.

Space Heaters – Unvented: Repair or replacement of unvented space heaters is not allowed using USDOE funds. Units not meeting the ANSI. Z 21.11.2 standard must be removed prior to beginning weatherization activities. Weatherization activities must be deferred until the removal is complete.

Spray Polyurethane: Commerce allows the use of spray polyurethane, particularly in rim joists, as long as it is installed in compliance with the applicable building codes and statutes. Per the SWS, moisture meter readings will be taken before the installation of spray

polyurethane to determine if the moisture conditions are appropriate for Spray Polyurethane. Service Providers are required to use the EPA-recommended installation process in all instances. Prior approval from Commerce must be obtained for the use of spray polyurethane on foundation walls and crawl spaces.

Ventilation: One of the main strategies for solving moisture problems in a home is mechanical ventilation. Installing intermittent or continuous ventilation is allowed and may be paid for with Health and Safety funds. Moisture problems may be reduced or eliminated by ventilating areas that routinely generate large moisture loads such as bathrooms, kitchens and laundry areas. Minnesota WAP utilizes the ASHRAE 62.2-2013 standard, as required by USDOE. By July 1, 2017, Minnesota will update Weatherization Assistant to comply with ASHRAE 2016 calculations.

Window and door replacement: Window and door replacement, repair, or installation is not an allowable health and safety.

Deferral/Walk-away: All weatherization staff is trained to identify actual and potential hazards in client dwellings. Service Provider staff is allowed to walk away from any dwelling that is unsafe, or to defer the work so that reasonable efforts can be made to correct the hazard (either directly or via referral) so that weatherization of the dwelling may proceed.

The Minnesota Policy Manual contains a deferral/walk-away policy that delineates the circumstances in which a Service Provider may choose to defer or walk away, when necessary. The policy requires that a Service Provider make a documented determination that circumstances exist which prevent weatherization activities from proceeding.

The policy also requires that the Service Provider inform the client and landlord (if rental property) of the problem in writing. The notice must specify what corrective actions will be required in order for weatherization to proceed. Generally speaking, all corrective actions must be completed within the program year as stated in the written notice. If corrective actions are taken after the program year, client eligibility will need to be again verified. The written notice must inform the client of their right to appeal the local decision. A copy of the written notice and any other notes or communication related to the circumstances of the case must be placed in the household file.

There have been high numbers of deferrals based on vermiculite found in Minnesota homes. Service Providers will be encouraged to test homes where vermiculite is present and submit results to Commerce in order to develop a statewide knowledge of the potential presence of asbestos containing vermiculite.