



ComfortReady HOME

Real Comfort. Real Savings. Real Smart.

Residential Weatherization Contractor Infrastructure Assessment

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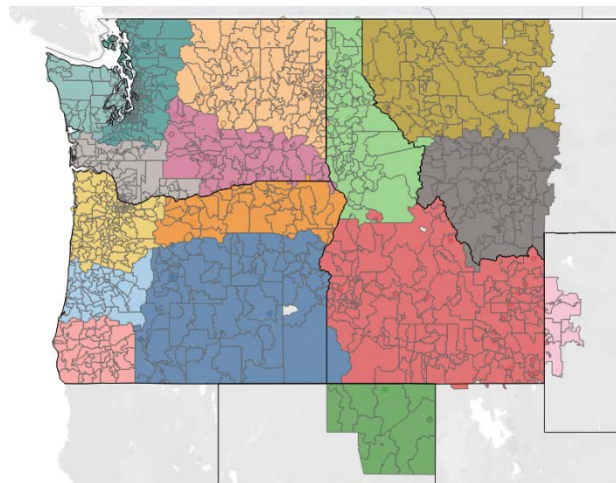
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Introduction

Beginning in winter of 2020/2021, Bonneville Power Administration (BPA) aims to dramatically increase energy savings from residential insulation, windows, HVAC and high-efficiency water-heating measures. To achieve these significantly increased goals, BPA is initiating an effort to support contractors to expand their activities in BPA customer utility territories. The primary focus is the Comfort Ready Home Program (the Program), which will create a contractor network and provide trainings, program participation support, and lead generation. The Program will operate in tandem with BPA's higher per-unit incentive rates for many residential measures, which were enacted to overcome a slowing in weatherization project savings due to past reductions in incentives. Weatherization programs, in particular, have historically seen a decrease in participation rates due to reduced incentives, along with a natural contraction in contractor program participation.

The Comfort Ready Home Program covers a broad territory and intends to greatly increase residential weatherization activity in partnership with customer utilities. As an initial step, the Program Team researched the strengths and weaknesses of the current weatherization contractor pool across sub-regions of the Northwest. When compared against past program activity, this research will identify strategic opportunities for increasing weatherization activity and guide Program strategies to address contractor shortcomings. These targeted recommendations will supplement the core functions of the Program: engaging with contractors, providing resources for program participation, and supporting the marketing of weatherization programs through the Comfort Ready Home brand.



Weatherization Opportunity Assessment

An assessment to determine the ability of a contractor pool to meet BPA's increased weatherization goals must begin with an understanding of future insulation and window project opportunities. BPA has maintained a weatherization program since the late 1980's, meaning that a significant portion of the low cost, high energy savings projects and motivated homeowners have already performed weatherization projects. The Team analyzed BPA's past program activity to estimate remaining opportunities by housing type and building component. In the context of the remaining areas of opportunity, the Team then analyzed contractor data to make recommendations for building up a work force that can effectively address the opportunities identified.

To estimate the remaining weatherization opportunity, the Team evaluated weatherization program activity occurring between 2012 and 2018 as an indication of contractor activity in each sub-region. Program activity is compared to household data from the census to generate a rate of activity per thousand households sorted by housing type. This analysis identifies opportunities for increasing activity but does not create a numerical target value for weatherization by housing type (single family, multifamily, or manufactured home) or by building component (attic, floor, wall, window).¹

¹ A numerical target would require data from pre-2012 utility program activity, weatherization occurring outside of utility programs, gas heating share, and as-built conditions of each home from date of construction and building code requirements. Such data is prohibitively difficult to acquire at the sub-regional level. Analysis at larger geographic scales – such as at the state or regional level – would not produce actionable information for the Comfort Ready Home Program.



Contractor Infrastructure Assessment

After conducting the weatherization opportunity assessment described above, the Program Team's next step was to assess the capacity for contracting firms to take on a larger number of projects while maintaining high quality of work and meeting the requirements of utility programs. The team started by analyzing the pool of contractors currently providing weatherization services to determine their ability to meet these expanded targets. To do this, the Team first gathered data to estimate the number of contractors that perform weatherization services in each sub-region. To put the raw number of contractors in context, the contractor count was compared to household data from the census. This household-weighted count gives a metric to understand the number of firms performing weatherization work in comparison to the number of households that are potential customers. The Team then compared the average number of employees per firm, where that information was available, to determine the relative capability to meet the increased scale of operation expected from BPA. The Team assumes that contracting firms with more employees have the capability to serve a larger quantity of projects.

The Team gathered data to indicate contractor quality, knowledge of weatherization best practices, and customer satisfaction. The data gathered included the percentage of businesses represented on a utility program preferred contractor list and ratings left on customer review websites. While the customer review data was inconclusive as discussed in the Findings and Recommendations section, analysis of utility program lists was useful in creating recommendations for the Comfort Ready Home Program. Sub-regions with a higher percentage of contractors represented on utility program lists will have less need to train those contractors on utility weatherization project specifications or orient them to participate in utility program requirements. Conversely, sub-regions with low representation will need greater support in the basic understanding of utility weatherization programs.

Methodology

The Project Team gathered data from multiple sources to assess the remaining weatherization opportunity and analyze the capabilities of the existing contractor pool at the sub-regional level. The BPA region was divided into 16 sub-regions, defined in Appendix A. Dividing the six Northwest states into sub-regions supports implementation of the Comfort Ready Home Program by allowing the Team to understand the specific opportunities and needs of each geographic area. The Program can use this precise understanding to craft strategy to take advantage of those opportunities and right-size the program effort in each sub-region. Furthermore, the sub-regions reflect the fact that contractors will offer services between many utility territories.²

Reporting Metrics and Data Sources

The Team developed a set of research questions and reporting metrics that are intended to allow for apples-to-apples comparisons of past program activity and contractor strength, described in Table 1. These metrics provide answers to the research questions for each sub-region, resulting in targeted recommendations for Program strategy within each sub-region.

² Historical weatherization activity will differ significantly between utilities within each sub-region, and so the Program will collaborate with specific utilities on measures and housing types to pursue within each service territory.



TABLE 1. RESEARCH QUESTIONS AND REPORTING METRICS

Research Question	Reporting Metrics
Remaining Weatherization Opportunity	Utility projects per 1,000 BPA households (lower rates → greater remaining opportunity)
Services Offered	Project volume per thousand BPA households
Number of Contractors	Number of contractors per 1,000 BPA households Number of contractors per 1,000 total households
Weatherization Volume	Average number of weatherization employees
Contractor Quality	Percentage of contractors on a utility contractor list ³ Star ratings on contractor review websites

The team compiled and analyzed data from the sources described in Table 2. In combination, these data informed the reporting metrics described above that serve as the basis for recommendations, which occur in the following section (Findings and Recommendations).

TABLE 2. DESCRIPTION OF DATA SOURCES

Source Name	Source Description	Geographic Resolution	Question Mapping
BPA Program Data	Number of projects by measure	Utility territory	Weatherization Opportunity Measure or Housing Type Opportunities Contractor Services Offered
Utility Contractor Lists	List of qualified contractors	Utility territory	Quality
Infogroup USA	List of contractors by SIC	Zip Code	Number of contractors Volume (by employees)
Census	Demographic information	Census track	All
Contractor Review Sites	Customer ratings of contractors	Zip Code	Quality Number of contractors

³ This metric indicates contractors that are familiar with utility program requirements and technical specifications. The Program will need to offer a greater level of training to sub-regions with a low percentage of contractors on utility lists.



Analysis

The Team analyzed data to generate the reporting metrics described above, then sorted the sub-regions into tiers based on trends of groupings that emerged in both the historical weatherization activity and contractor metrics. Rather than create specific numerical targets for each metric, the Team relied largely on relative comparisons between sub-regions as the basis for recommendations. The program will seek to expand upon strengths and address weaknesses in each sub-region, both in terms of weatherization program success and contractor capabilities.

Remaining Weatherization Opportunity

The Team estimated the remaining weatherization opportunity by ranking sub-regions with high, average, and low historical program activity, as defined in Table 3. Sub-regions with high program activity are expected to have less opportunity for scaling up the pace of weatherization projects due to a saturation of the marketplace, particularly with single family homes. However, these sub-regions are likely to have a higher starting point in terms of program awareness with contractors.

Households Weightings

The weatherization opportunity assessment compares past program activity to the number of households in each sub-region that exist *within the service territories of BPA customer utilities*. However, using that same data set for the contractor infrastructure assessment skews the number of contractors available in sub-regions with significant numbers of non-BPA households. The Program considers both metrics to be valuable:

BPA household weighted contractor volume reflects the quantity of contractors available to respond quickly to increased incentives offered by BPA customer utilities.

Total household weighted contractor volume indicates sub-regions where a large percentage of contractors are occupied with non-BPA work.

Different combinations of these metrics will result in different Program recommendations. Specifically, sub-regions with large quantities of contractors performing a large portion of work in non-BPA households indicates a simple recruitment of experienced contractors to serve new territories.

TABLE 3. TIERS OF HISTORICAL PROGRAM ACTIVITY

Tier	Range
High	More than 20 projects per thousand BPA households
Average	Between 8 and 19 projects per thousand BPA households
Low	Fewer than 8 projects per thousand BPA households

For all sub-regions, even those with high historical single family program activity, there is an opportunity to increase the pace of weatherization projects. Utility programs can reach these opportunities in collaboration with the Comfort Ready Home Program through increased incentives, contractor support, and homeowner marketing. For sub-regions with low historical activity, the Team recommends broad recruitment and training of contractors to meet the goals of the Program. For sub-regions with average to high rate, the Team analyzed data in greater detail to identify specific opportunities in building components or housing types, such as manufactured homes or multifamily properties.⁴

The Team used a combination of data analysis and professional judgement to determine specific housing and measure opportunities because they have additional economic or technical challenges. The Team, therefore, sought complementary evidence in the data that demonstrated the recommended measures would have receptive customers in the population of homeowners within the sub-region. For example, it is common for sub-regions to have experienced low uptake of manufactured home floor insulation due to low rates of investment in upgrading those building types. The Team recommends floor insulation measures for sub-regions that have had high rates of window projects in manufactured homes, indicating that there are homeowners willing to invest in energy upgrades. Furthermore, the success of window

⁴ Multifamily low-rise properties are defined in BPA’s residential energy efficiency programs as buildings that contain five or more dwelling units within the same structure that is no more than three stories high. Multifamily mid/high-rise is defined as buildings that contain five or more dwelling units within the same structure that is more than three stories high.



projects in those homes creates a two-fold opportunity to reach customers with other proposed measures. The homeowners that opted to upgrade their windows may be receptive to other energy efficiency upgrades, such as floor insulation or air sealing. The success of the windows contractors operating in the sub-region can be supported and leveraged to both increase overall project rates and to promote other measures with prospective clients.

Contractor Infrastructure Assessment

The capability of the existing contractor pool to increase the pace of weatherization activity in each sub-region is indicated by total contractor counts, size of firms where possible, and indicators of contractor quality. Sub-regions were compared and sorted into tiers to determine relative strengths and shortcomings, which correlate to targeted recommendations for the Program strategy. Table 4 defines the tiers of contractor quantity, with the total number of contractors weighted by BPA households.⁵ Specific recommendations for program strategy also consider the total-household weighted contractor volume as described in Table 7 in the Findings and Recommendations section.

TABLE 4. TIERS OF CONTRACTOR QUANTITY

Tier	Range
High	More than 0.30 insulation contractors per thousand BPA households*
Average	Between 0.10 and 0.30 insulation contractors per thousand BPA households
Low	Fewer than 0.10 insulation contractors per thousand BPA households

*For consistency with project count metrics, the Team weighted contractor counts by thousand BPA household even though the resulting metrics are less than 1.

Additionally, the Team was able to identify the number of employees for 13% of contractors (112 of 852) in the contractor database. Sub-regions were sorted into tiers of employee count. This data, though not comprehensive, supplements our understanding of the contractor capability in each sub-region. Contractors with more employees will be able to sustain a larger project volume and have greater capabilities through greater knowledge of installation techniques and potentially higher quality equipment. They are more likely to scale rapidly to meet increased project volume as employees will have clearer, more delineated roles and responsibilities, and because these firms tend to have more capacity to hire and train new technicians.

TABLE 5. TIERS OF CONTRACTOR EMPLOYEE COUNT

Tier	Range
High	10 employees per firm
Average	Between 5 and 9 employees per firm
Low	Fewer than 5 employees per firm or no data available

As a measure of quality, the Team evaluated the star rating of firms on contractor review sites such as Google and Angie’s list. Although this data was expected to illuminate contractor quality and commitment to customer service, it was ultimately not useful in comparing between sub-regions as discussed in Findings and Recommendations. However, the Team was able to compare the number of contractors listed on utility weatherization program preferred contractor lists to the total population and sort sub-regions into tiers defined in Table 6. This is an important metric for determining Program strategy during the initial phase, where some sub-regions will have a significant head start with contractors that are familiar with technical specifications and program participation requirements.

⁵ The Team chose to focus on insulation contractors because they are more likely to shift focus in response to economic conditions to other services like HVAC or drywall, while windows contractors generally only work on fenestration projects.



TABLE 6. TIERS OF CONTRACTOR PARTICIPATION

Tier	Range
High	More than 50% of contractors are on a utility program list
Average	Between 20% and 50% of contractors are on a utility program list
Low	Fewer than 20% of contractors are on a utility program list

Findings and Recommendations

The Comfort Ready Home Program represents an ambitious effort to increase the scale of weatherization energy savings in the Northwest. It will engage with utilities and contractors, providing technical training and education on program opportunities, and helping to reach homeowners with compelling messages of increased comfort and reduced energy bills. In the following section, the program has identified specific recommendations for targeted activities in each sub-region. These recommendations rely on the findings from the data analysis above. Specific sub-regional recommendations supplement the core activities necessary to broadly increase weatherization activity, such as establishing the contractor network or supporting contractors in scaling their businesses. The findings allow the Comfort Ready Home program to right-size the level of effort necessary in each sub-region and to strategically allocate resources, in order to meet the overall project goals.

General Findings

Findings will first be discussed generally, illustrating key learnings from the analysis of the data. Sub-regional profiles of findings and recommendations follow the general discussion.

Regional Weatherization Opportunities

Before evaluating BPA's weatherization program data, the Team reviewed the number of households by housing types in each sub-region. Household-weighted program data illustrates the pace of weatherization activity for a given housing type but obscures the overall opportunity represented in the absolute number of units within a sub-region. Low pace in program activity for a given housing type must also have a substantial number of total units in order to represent a viable opportunity. Figure 1, Figure 2, and Figure 3 display the number of both BPA and total households for single family, multifamily, and manufactured homes by sub-region.



FIGURE 1. NUMBER OF SINGLE FAMILY HOUSEHOLDS

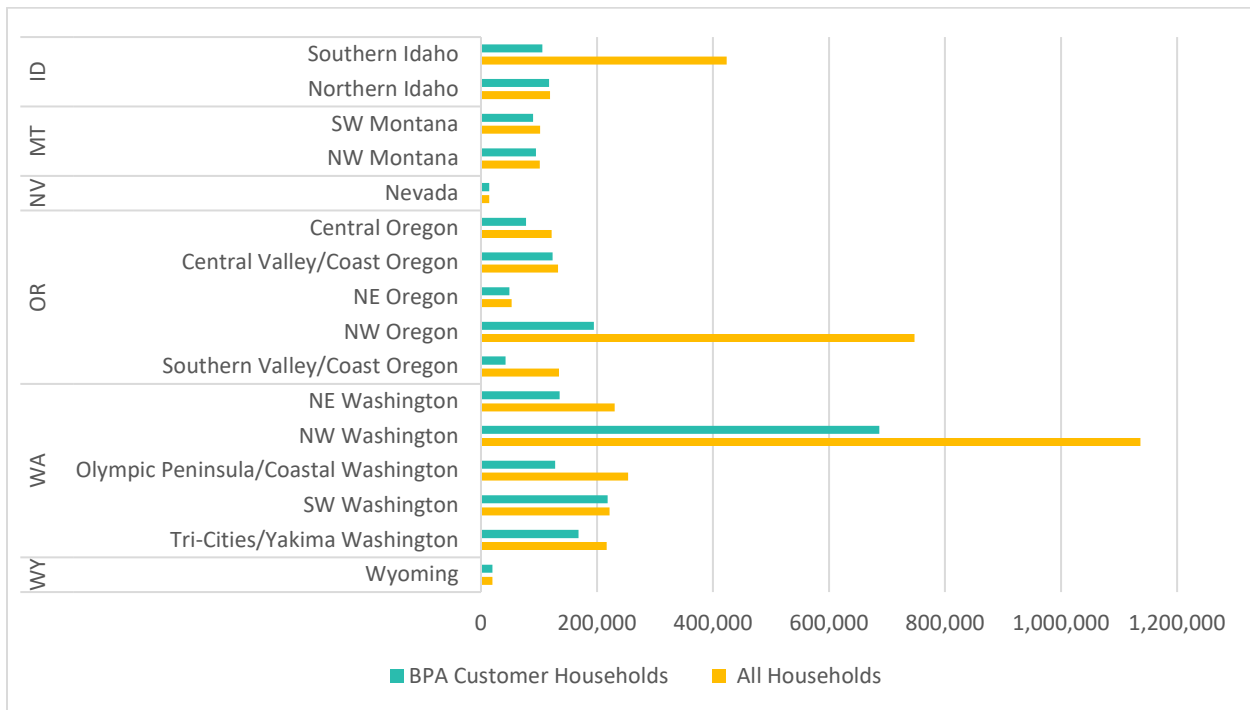


FIGURE 2. NUMBER OF MULTIFAMILY HOUSEHOLDS

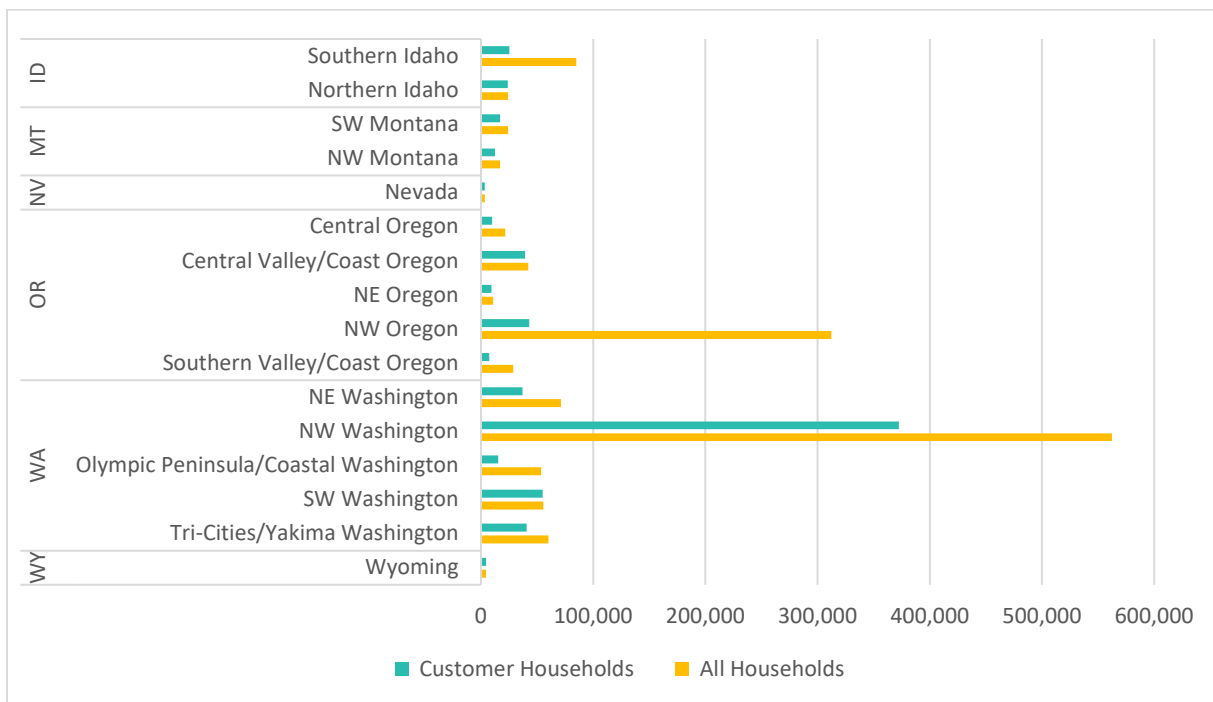
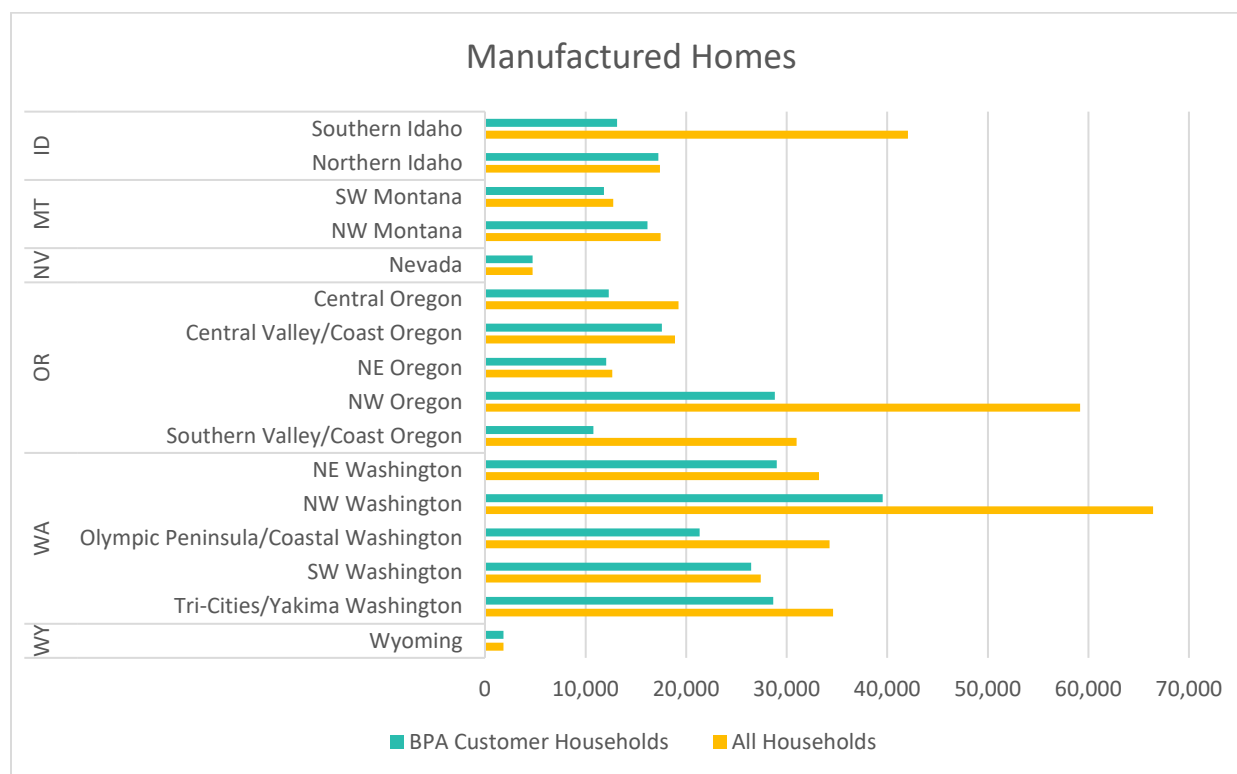




FIGURE 3. NUMBER OF MANUFACTURED HOME HOUSEHOLDS

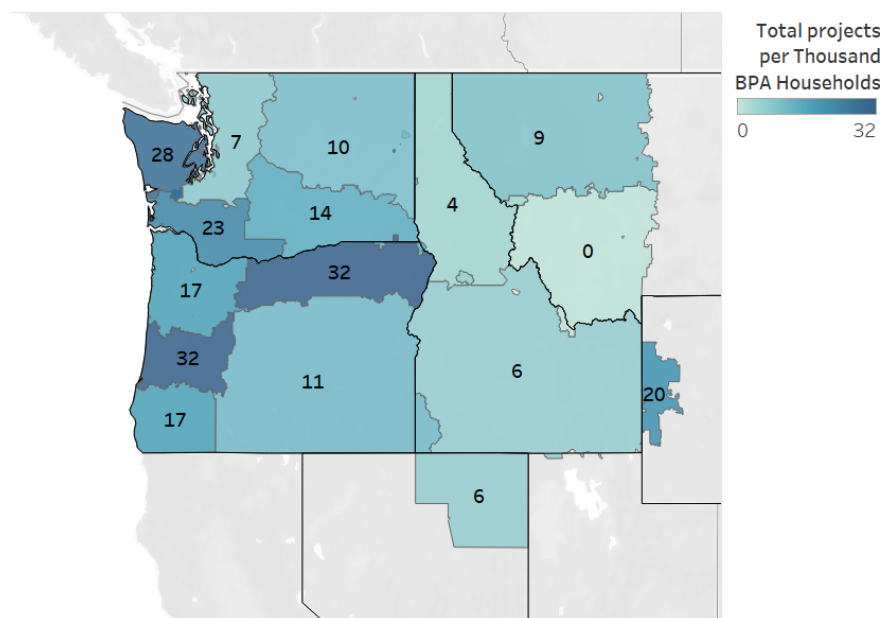


Single family homes comprise the largest quantity of homes and have generally been the main focus of weatherization programs. However, specific sub-regions have had a high level of success with manufactured homes and multifamily weatherization. Ultimately, the team decided to consider historical performance in all building types to estimate the remaining weatherization opportunities. While there are pockets of opportunity in multifamily buildings, many of those properties are found in urban regions covered by non-BPA electric utilities, with Northwest Washington as the main example.

Figure 4 displays the total number of weatherization measures for all building types by sub-region. Sub-regions with higher numbers have had more successful programs and are therefore assumed to have less remaining weatherization opportunity but a stronger starting point for initiating the Contractor Network. The Team then sorted sub-regions into tiers of past weatherization activity as illustrated in Figure 5 to inform specific recommendations.

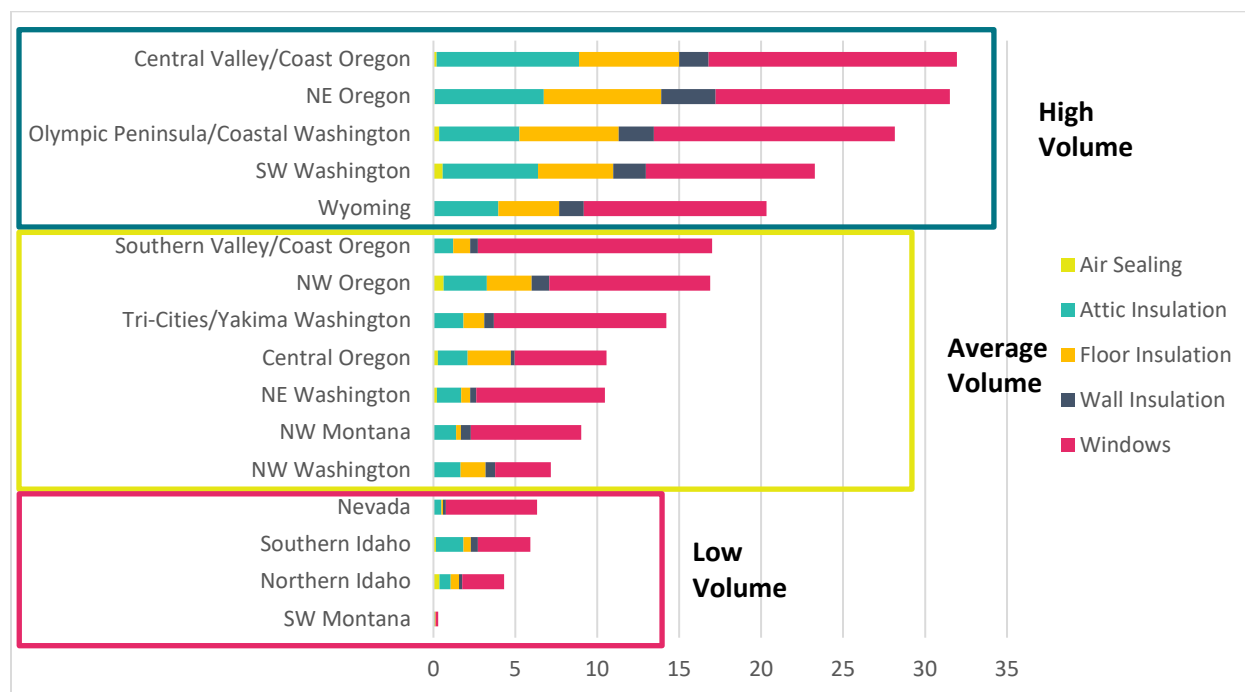


FIGURE 4. TOTAL PROJECTS PER THOUSAND HOUSEHOLDS



Generally, the Team recommends that the Program scales the current efforts of utilities in sub-regions in the higher tier of historical performance, making sure to spread effort across all utilities – both high and low performing – within a sub-region. Conversely, the Program will engage in the foundational work of building relationships with contractors, developing their skills and experience, and generating demand with homeowners in low-volume sub-regions.

FIGURE 5. TOTAL WEATHERIZATION PROJECTS PER THOUSAND HOUSEHOLDS



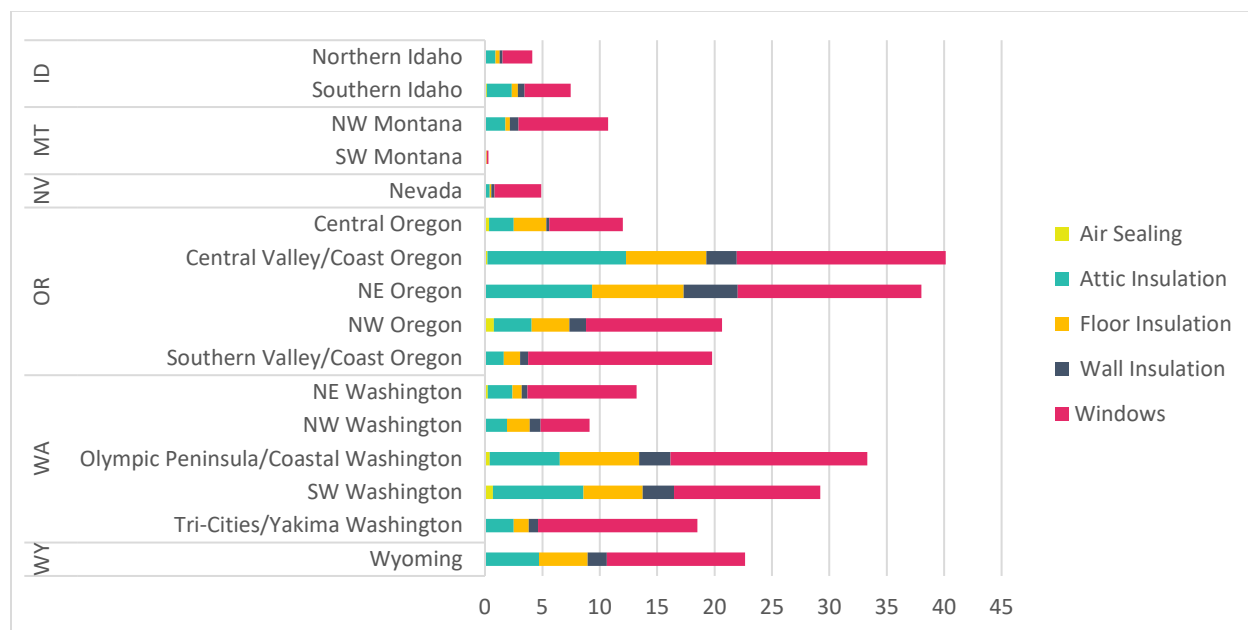
Most sub-regions have experienced uneven program activity, indicating additional opportunities to increase weatherization activity in specific building components or housing types. In these cases, either the homeowners have been unmotivated to upgrade these opportunities or contractors are not capable of providing those services. In single family homes, programs have typically been most successful with



windows and attic insulation, while air sealing, floor insulation, and wall insulation are generally less popular, as illustrated in Figure 6.

In virtually all sub-regions, windows projects outpace all other weatherization measures claimed. Windows have a different path to market than insulation and air sealing, often relying on marketing-heavy promotions, while insulation contractors typically experience smaller margins on their projects and therefore have lower marketing budgets. Windows are often what homeowners consider the most important variable for a home to be efficient and may even increase the value of a home or the rent that can be charged by a landlord. While the Program will seek to increase the pace of windows projects, the Team does not make recommendations to promote windows measures. This leads to two general, region-wide conclusions. First, homeowners that have received utility incentives for windows projects are an opportunity for marketing weatherization of other building components. Second, utilities can leverage windows contractors to generate new leads. The Team has explicitly made these recommendations where data show windows projects far outpacing other weatherization activity.

FIGURE 6. SINGLE FAMILY WEATHERIZATION PROJECTS PER THOUSAND SINGLE FAMILY BPA HOUSEHOLDS



Comparison between sub-regions show differing levels of success insulating attics, floors, and walls. The variation in popularity between these building components indicates an opportunity for the Program to train contractors and promote those measures more aggressively in specific sub-regions.⁶ In Figure 6, wall insulation significantly lags attic measures in Central Oregon, Central Valley and Coast Oregon, Northeast Washington, the Olympic Peninsula and Coast of Washington, Southern Idaho, and the Southern Valley and Coast of Oregon. The implication is that there are contractors available to do those wall projects, successful programs reaching customers, and a base of houses that may require upgraded insulation. However, either the contractor base lacks the training and resources to confidently promote wall insulation or homeowners are unaware or unconvinced of the value. The contractor network can address both obstacles.

Floor insulation activity varies greatly between sub-regions as well. Many sub-regions have similar rates of single family attic and floor projects. The success of the utility program and contractors with promoting floor insulation can be leveraged and expanded to increase the rate of multiple-measure projects.

⁶ While successful utility programs claimed equal volume of floor and attic insulation measures, there appears to be an upper limit of one wall insulation project per two attic insulation measures. This limit guided the Team's recommendations on wall insulation.



However, many sub-regions show much slower floor insulation activity compared to attic insulation, including Northeast Washington, Northern and Southern Idaho, and the Tri-Cities and Yakima Valley sub-region of Washington. The Team recommends that contractors in these regions are trained in floor insulation techniques and supported with marketing efforts to homeowners.

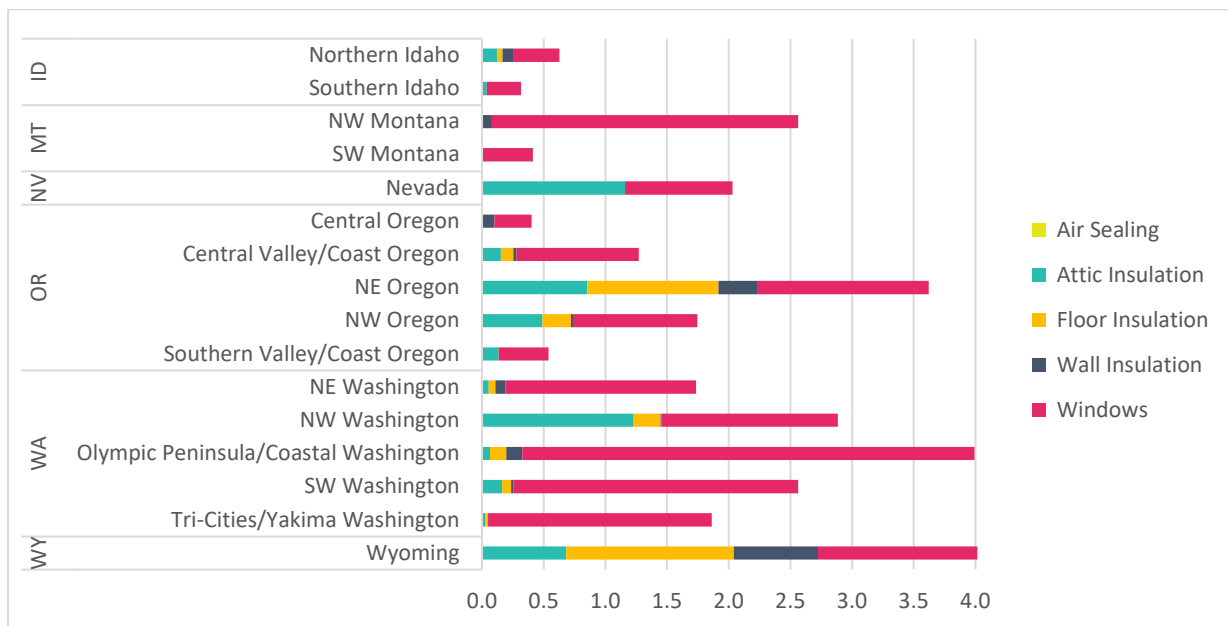
Similarly, sub-regions varied greatly with success in multifamily buildings.⁷ Since this is by far the least common residential building type in the Northwest, the Team compared historical volume of projects to the total number of units. The Team verified that the opportunity was significant before recommending increased Program attention to multifamily properties. Additionally,

multifamily homes typically suffer from the “principal-agent problem,” in which the owner of the asset (the building owner) does not pay for the cost of energy consumption (often paid by tenants). Weatherization upgrades are therefore harder to sell on economic

Recommendation: Promote multifamily attic insulation and manufactured home floor insulation in sub-regions with a strong history of windows or other measures in those building types

terms. To account for this conundrum, the Program Team only recommends effort to reach multifamily buildings when there was evidence of interest from property owners, such as a history of successful window measure uptake. Sub-regions that fall into this category include Central Oregon, the Olympic Peninsula and Coast of Washington, and Tri-Cities and Yakima Region of Washington.

FIGURE 7. MULTIFAMILY WEATHERIZATION PROJECTS PER THOUSAND MULTIFAMILY BPA HOUSEHOLDS⁸



The Team also considered other factors in the data when making specific recommendations for measures or building types with remaining opportunity. For example, multifamily weatherization faces specific economic challenges with building managers, who generally approve and pay for any building upgrades but are often not responsible for energy bills. Manufactured homes deteriorate more quickly and have lower average values compared to single family homes, meaning that homeowners are less motivated to

⁷ Multifamily households are represented by total number of units, while program data considers an entire building to be a single project. Program activity is therefore not comparable to single family and manufactured home program data, but the relative activity between sub-regions is useful for estimating opportunity.

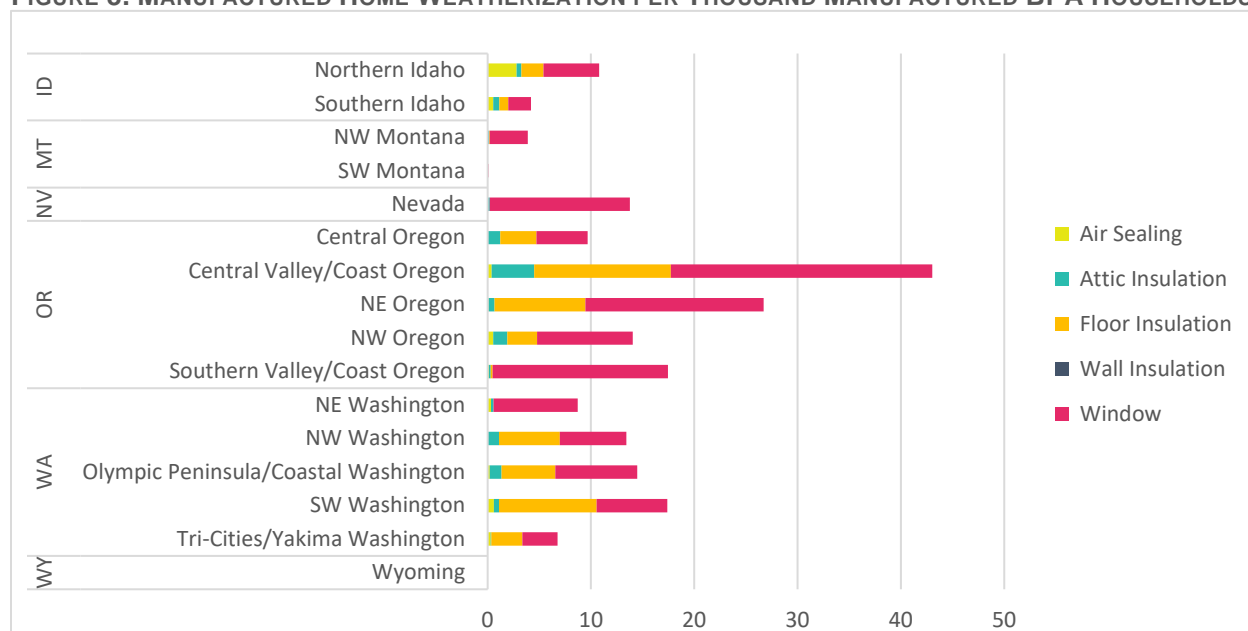
⁸ Wyoming is an outlier due to a much smaller population of multifamily units. There were only 31 windows measures installed in this building type.



invest in energy upgrades. The Team sought evidence of past program success with a building type before recommending that building type as an opportunity. However, the success reaching these building types in some sub-regions indicates that there are strategies for success that the Program can replicate across the Northwest.

Manufactured homes represent a larger share of homes in the Northwest compared to multifamily and are therefore a significant opportunity for increased weatherization activity. However, this building type presents significant technical challenges with weatherization projects, particularly with attic and wall insulation. Floor insulation and window upgrades are therefore the primary opportunity, along with air sealing. Additionally, manufactured home weatherization faces obstacles with homeowners as those homes generally have lower value and shorter lifespans than single family homes. As with the multifamily category, the Team compared the pace of past program activity to the number of units before considering this as a significant opportunity and looked for evidence of homeowner interest before recommending Program attention to this building type. The evidence in this case is the ratio of floor insulation to window measures. Sub-regions with both a significant number of windows installations and a relatively low rate of floor insulation projects, may find a receptive audience for additional weatherization. The Team recommends training contractors in manufactured home weatherization and promoting the Program with homeowners in NE Washington, Nevada, Northwest Montana, Southern Idaho, Southern Valley and Coast of Oregon, Southwest Montana, and the Tri-Cities/Yakima region in Washington.⁹

FIGURE 8. MANUFACTURED HOME WEATHERIZATION PER THOUSAND MANUFACTURED BPA HOUSEHOLDS



Contractor Infrastructure Assessment

In addition to past program data, the Program Team made targeted recommendations for each sub-region based on the number and quality of contractors offering weatherization services.

Contractor Quantity

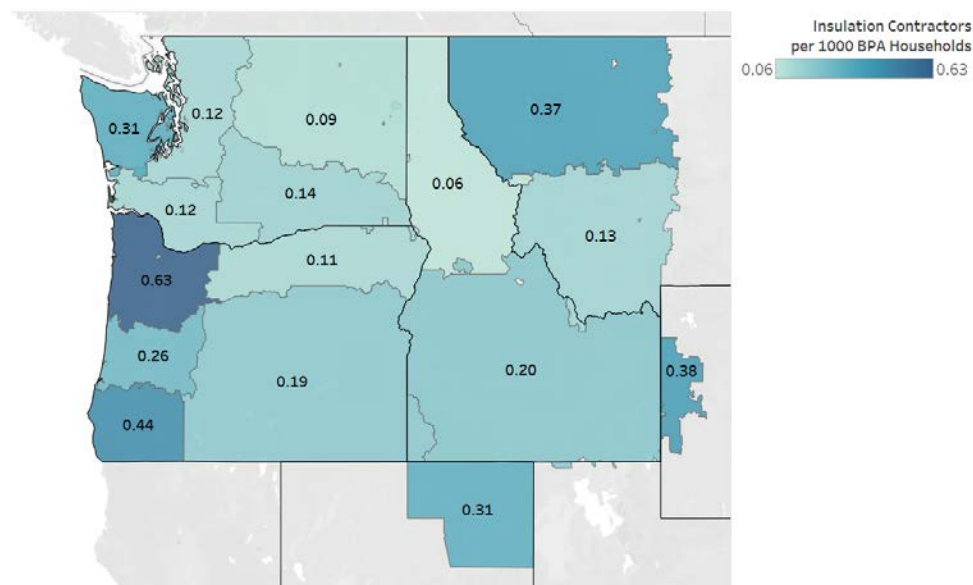
Figure 9 displays the quantity of contractors found within each sub-region, weighted by the number of households located in BPA customer utility territory. The Team sorted sub-regions into tiers, shown in Figure 10, based on quantities defined in Table 4 above. In sub-regions in the low tier, the Program will recruit and train new contractors. The Program will support contractors to scale project volume by offering

⁹ Although neither NW Montana nor Wyoming claimed any manufactured home measures, Wyoming contains significantly fewer units and therefore the Team does not consider this building type a worthwhile opportunity in that sub-region.



trainings and helping to generate leads through homeowner outreach for sub-regions with average contractor quantity.

FIGURE 9. CONTRACTORS PER THOUSAND BPA HOUSEHOLDS



Also relevant to this analysis is the disparity between the *BPA household* weighted contractor quantity and the *total household* weighted quantity. Table 7 describes recommendations associated with contractor quantity and the number of households, both within BPA customer utility territory and total. In sub-regions with a significant number of non-BPA households¹⁰, a large number of contractors are available to perform weatherization work but, presumably, are partially occupied by work in homes outside of BPA customer utility territory.¹¹ This situation results in a recommendation that the Program recruits these contractors to increase focus on BPA customer utility territories by making the business case describing increased incentives and resources. Otherwise, sub-regions with high contractor volumes receive no recommendation for addressing contractor volume due to past success of utility programs. The Team recommends strategies for adding capacity to meet increased project goals and generating additional demand with homeowners.

Recommendation: Recruit contractors by making the business case of greater incentives and resources in sub-regions where many contractors are available, but work outside of BPA customer utility territory.

¹⁰ Sub-regions in this category include NW Oregon, Southern Idaho, and Olympic Peninsula/Coastal Washington.

¹¹ Because the BPA customer utilities make up a portion of the total household count, the total household weighted volume will always be lower than the BPA household weighted count as the denominator for this metric is higher.

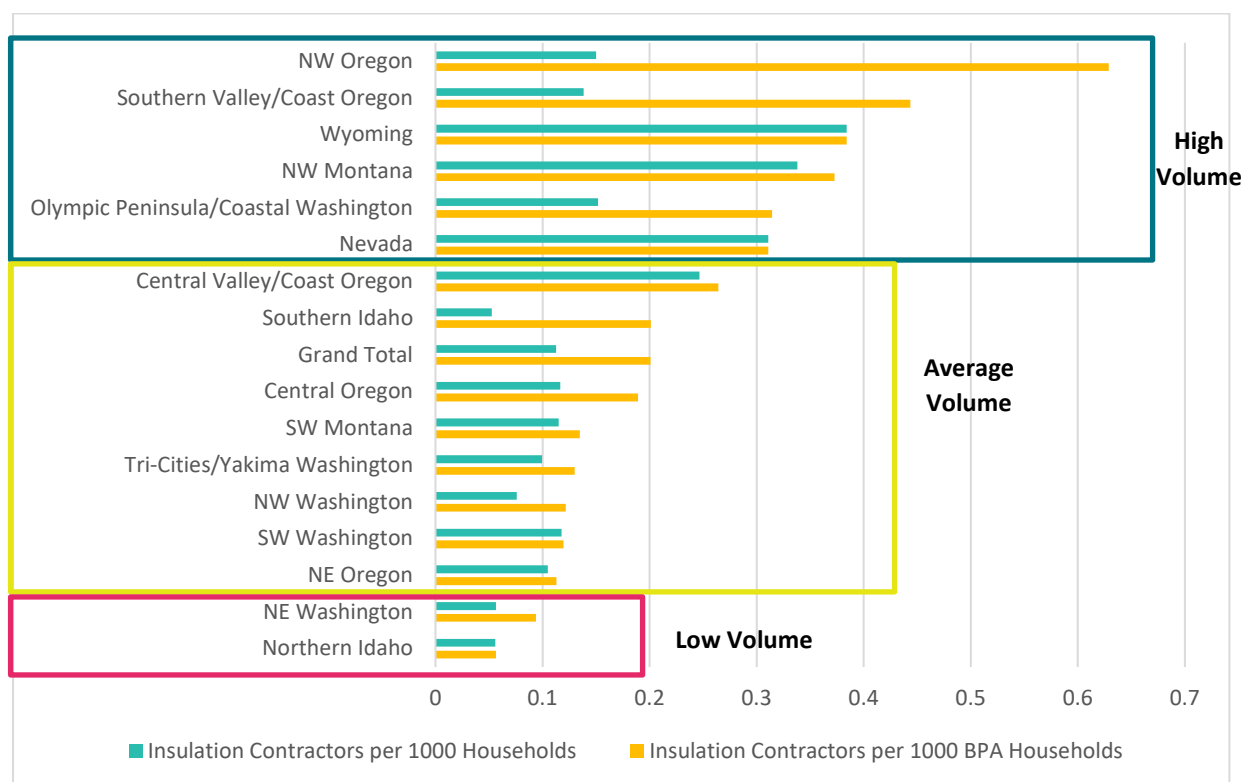


TABLE 7. CONTRACTOR QUANTITY RECOMMENDATIONS

BPA Household Weighted Volume	Total Household Weighted Volume	Recommendation
Low	Low	Recruit new contractors
Average	Low	Support existing contractors and increase training; Recruit contractors working in non-BPA territories
Average	Average	Support existing contractors and increase training
High	Low or average	Recruit contractors working in non-BPA territories
High	High	No recommendation

Figure 10 displays tiers of contractor quantity by sub-region and includes a comparison between the different household weightings as defined in Table 4. Tiers of Contractor Quantity. Detailed recommendations for each sub-region can be found in the following section. Notice that the greatest disparity between BPA and total household weightings are in sub-regions with significant non-BPA customer utility territories, such as Northwest Oregon and Southern Idaho. The implication is that there are a significant number of contractors available to help BPA accomplish its goals.

FIGURE 10. INSULATION CONTRACTORS PER THOUSAND HOUSEHOLDS



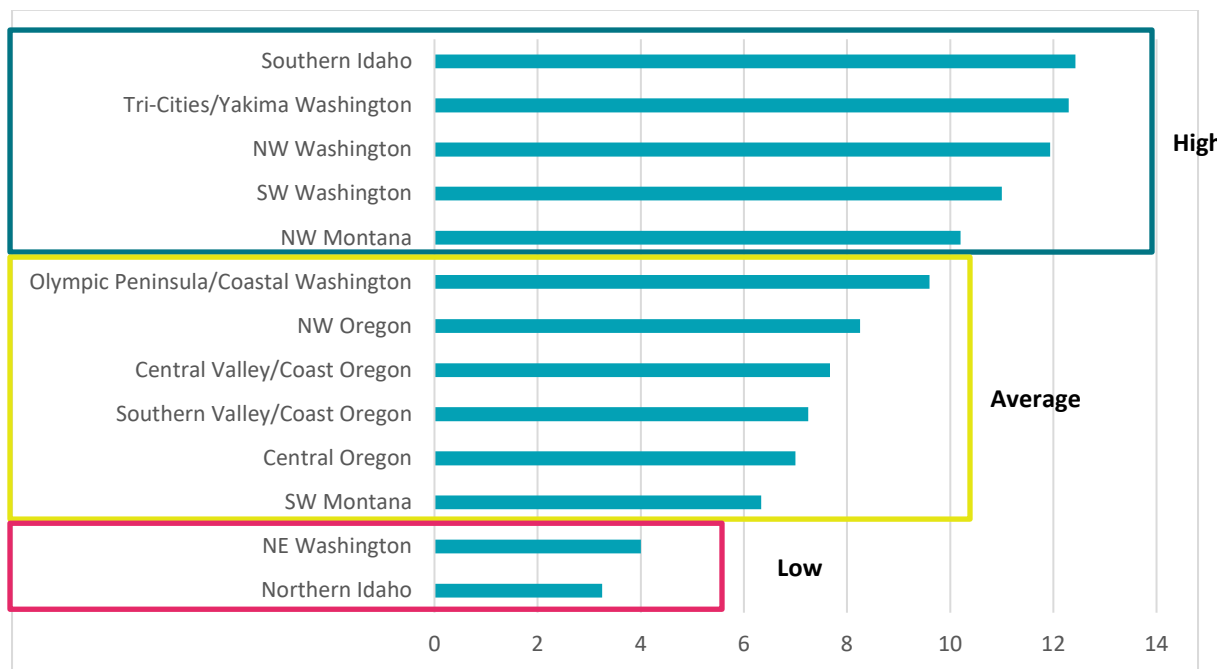
The Team further refined sub-regional recommendations for recruiting and supporting contractors by the average number of staff for each insulation contracting firm. The Team acquired employee counts for 13% (112 of 852) of the contractors in the database, shown in tiers in Figure 11. Average Number of Employees per Insulation Contractor. While not comprehensive, the number of employees does indicate sub-regions with the ability to sustain higher project volume, even with a relatively low total quantity of firms. Furthermore, those firms are likely to be more capable of scaling up volume in the future. The Team adjusted recommendations for sub-regions with low or average contractor quantity when their contractors fell into

Recommendation: Scale up capabilities in contractors with larger staff.



the high tier of employee count. In these cases, the Program will increase the capability of firms to increase project volume. Northwest Washington and Southwest Washington are notable sub-regions that fall into this category.

FIGURE 11. AVERAGE NUMBER OF EMPLOYEES PER INSULATION CONTRACTOR¹²



Contractor Quality

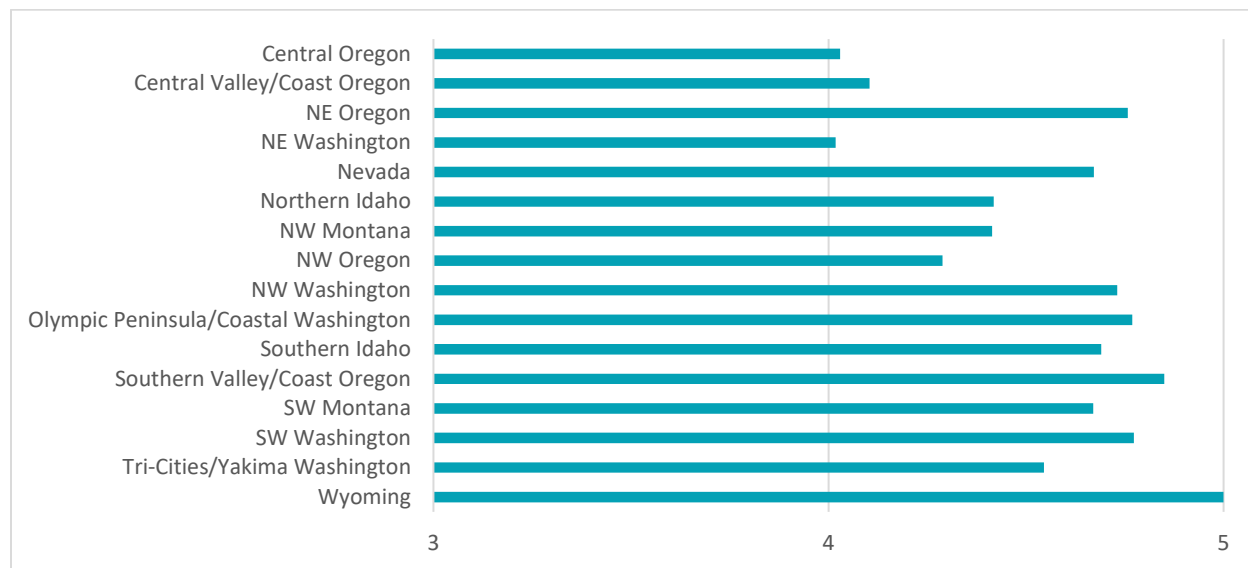
The final analysis performed by the Team to strategically target Program activities was an assessment of the quality of contractors. This activity is inherently uncertain without records of inspection results, but nevertheless provides a basis for actionable recommendations.

The Team acquired star ratings for a significant number of contractors in the database. However, the Team elected to omit analysis of this data for a number of reasons. First, the star ratings were very similar between sub-regions, leaving little room for comparison as shown in Figure 12. Second, sub-regions with lower ratings were dominated by a significant number of poor reviews for companies that offer services outside of insulation, such as drywall or HVAC equipment installations. The applicability of those ratings to the Comfort Ready Home Program is questionable. Finally, star ratings are a subjective measure not necessarily tied to the quality or level of customer service of a firm, but also including price and customer experience.

¹² No employee data was available for Northeast Oregon, Nevada, or Wyoming.



FIGURE 12. CONTRACTOR STAR RATINGS BY SUB-REGION



To generate an actionable assessment of contractor quality, the Team compared utility weatherization preferred contractor lists to the overall population of firms in the contractor database. Figure 13 displays the results, including four sub-regions that have no utility lists at all.¹³ This is an important metric for the operation of the Program during the startup phase, as there is a crucial difference in Program needs for contractors that are and are not familiar with the operation of utility weatherization programs. Contractors on utility lists are likely to be familiar with technical specifications and program participation requirements.

FIGURE 13. PERCENT OF CONTRACTORS ON A UTILITY PROGRAM LIST

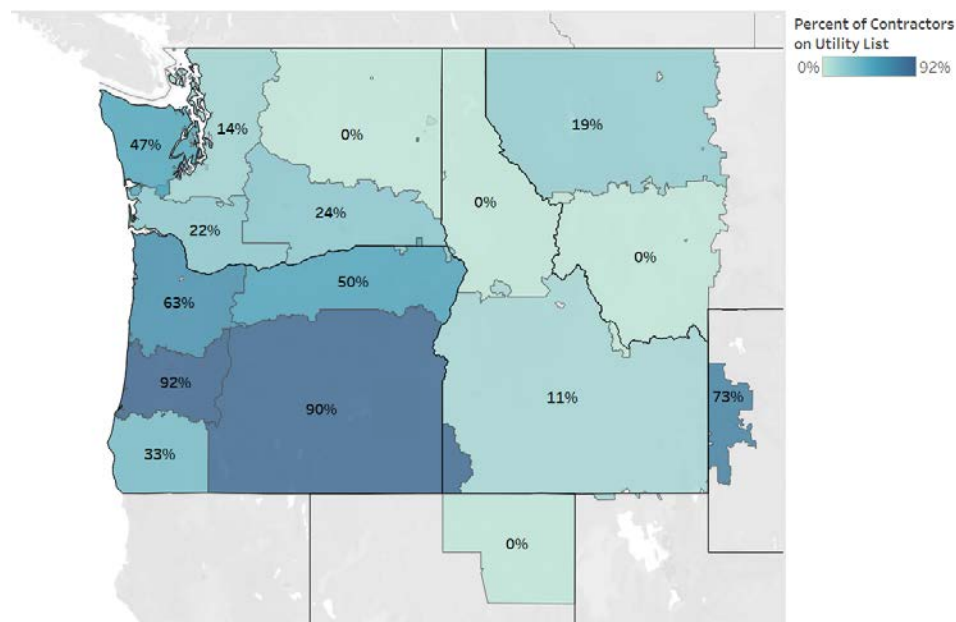


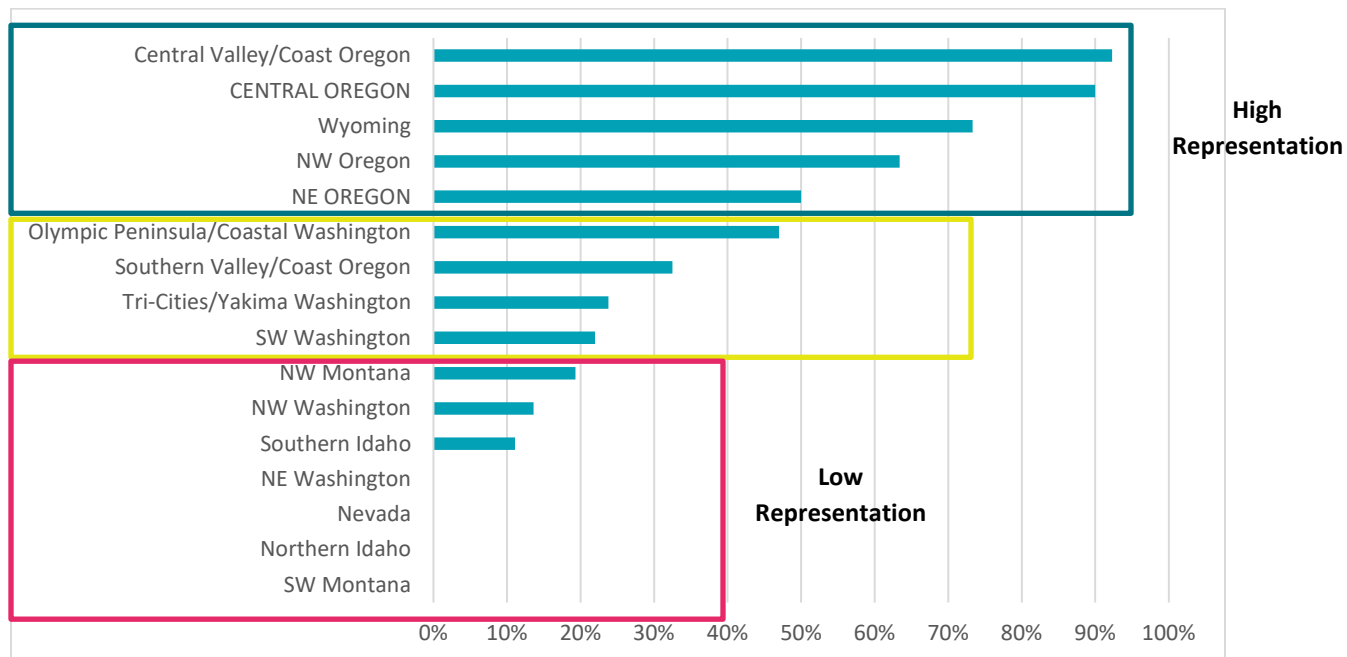
Figure 14 displays the sub-regions sorted into tiers of contractor representation on utility lists based on the percentage of contractors occurring on utility program lists. In sub-regions with low representation contractors, the Comfort Ready Home Program will focus on providing basic orientation to the Contractor Network participation requirements and training on installation technical specifications and best practices.

¹³ The analysis includes non-BPA customer utility lists. In the Northwest, most utility weatherization programs are substantially similar in technical specifications and programmatic requirements.



Conversely, in sub-regions with a high rate of representation, the Program can train contractors to expand their offerings in more difficult measures and supporting them with scaling project volume. Sub-regions with average contractor representation will need to provide specification training on a contractor-by-contractor basis but can focus the bulk of effort on scaling up capabilities and project volume.

FIGURE 14. TIERS OF CONTRACTOR REPRESENTATION



Conclusion

This Contractor Infrastructure Assessment goes beyond a simple analysis of the extent and scope of existing utility weatherization programs to find precise opportunities to increase weatherization activity and make targeted recommendations for supporting contractors, in order to scale up project volume. Profiles and specific recommendations for Program strategy in each sub-region follow this section. In many cases, utilities have been implementing highly successful weatherization programs for decades, resulting in high project volume and often excellent relationships between utilities and contractors. These programs leverage past successes to reach more customers with weatherization projects and increase energy savings from these homes. On the other hand, the success of these programs means much of the easiest weatherization opportunity has already been reached and finding more homes while increasing the pace of weatherization will be a challenge. The Program Team has analyzed program and contractor data to identify specific opportunities for the Program to find success. Table 8 summarizes the situations and recommendations for program strategy explored in this Assessment.

TABLE 8. SUMMARY OF RECOMMENDATIONS

Situation	Recommendation
History of high windows activity	Leverage contractors and past participants
Disproportionate measure activity	Promote multiple measures that have had slower volume, including single family wall insulation, multifamily attic insulation, and manufactured home floor insulation
Low quantity of contractors	Recruit contractors with business case of increased weatherization opportunity
High quantity of contractors working outside of BPA customer utility territory	Recruit contractors with business case of increased weatherization opportunity
Low rate of contractors represented on utility weatherization program lists	Train contractors on weatherization specifications and program participation requirements



Sub-Region Profiles

The profiles that follow describe the findings from the data analysis for each of the individual sub-regions and detail the recommendations informed by the data. For all sub-regions, even those with historically successful weatherization programs, achieving BPA's goals for weatherization energy savings will require additional resources to generate leads with homeowners and provide incentives, along with a coordinated effort to recruit and train contractors. The analysis and recommendations that follow inform and right size the strategy for the general region-wide effort to increase weatherization activity. The recommendations identify specific opportunities to address specific housing types or building components that were not historically addressed. Additionally, the Team identifies strategic leverage points in historical and ongoing successes with specific weatherization activities that will offer greater levels of success with marketing and lead generation activities.



Idaho Sub-Regional Profiles

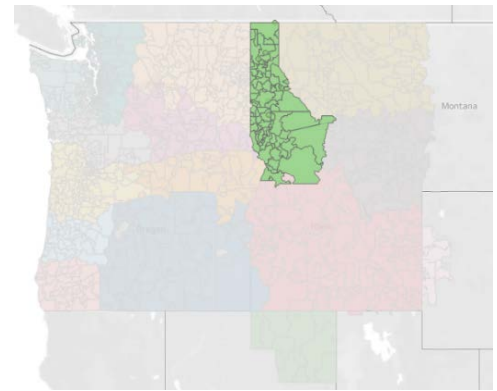


Sub-Region Profile



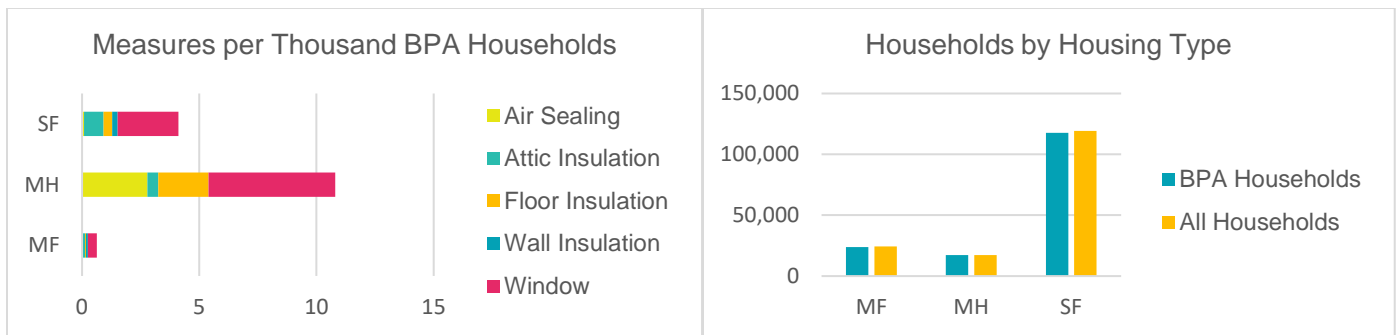
Northern Idaho

Weatherization Opportunity	High
Measures to Prioritize	Insulation
Priority Housing Type	Single Family Homes
Contractor Count	Low
Contractor Representation	Low
Priority Outreach Area	Windows Contractors



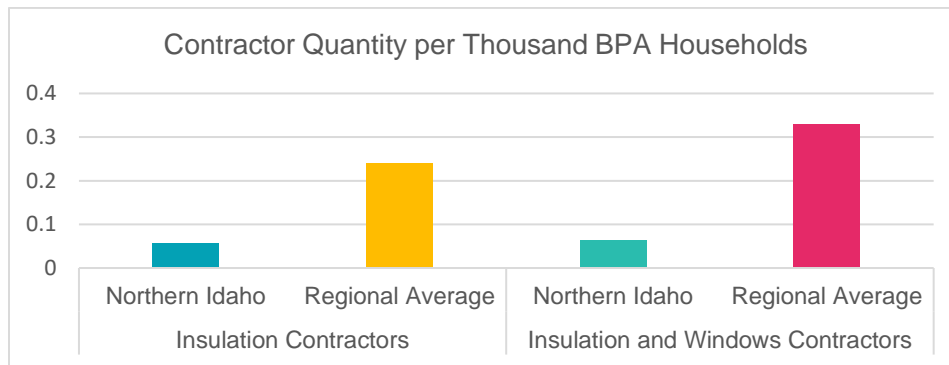
Weatherization Opportunity Assessment

Northern Idaho has a history of low program activity, but relatively strong performance in manufactured homes. There appears to be an opportunity to increase weatherization activity in single family homes, the dominant housing type in this sub-region. Additionally, Northern Idaho has seen greater success of windows contractors, who can be leveraged for leads in other weatherization measures.



Contractor Infrastructure Assessment

Northern Idaho has a low quantity of contractors compared to other sub-regions. Few contractors are currently listed on utility weatherization preferred contractor lists, meaning they will require training to understand program requirements and weatherization technical specifications.



Recommendations

Recruit contractors and train on specifications

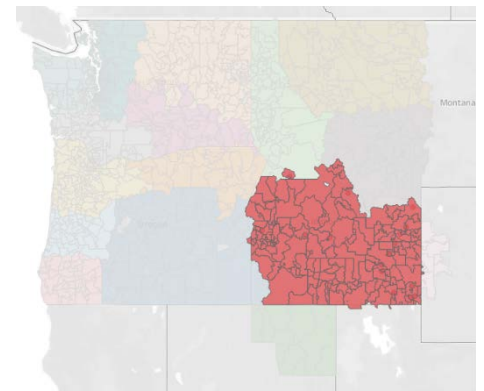
Train contractors on single family homes

Leverage windows contractors for leads

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 20

Sub-Region Profile

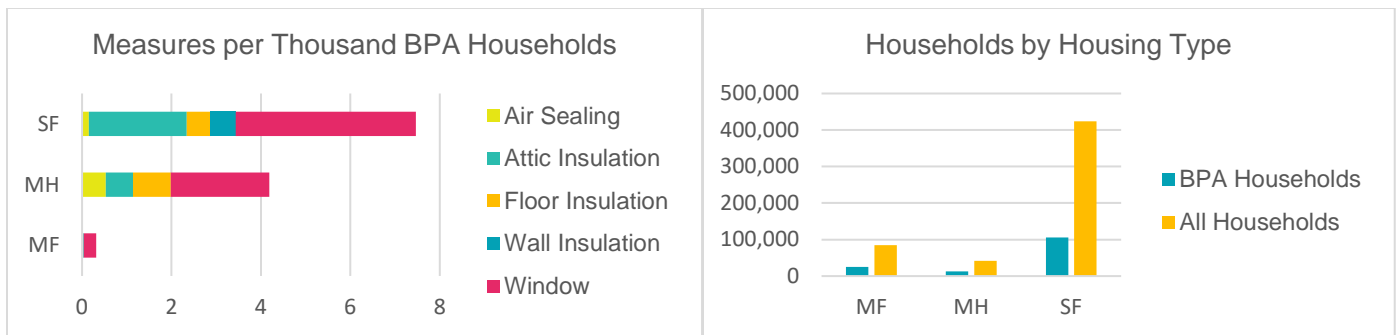
Southern Idaho



Weatherization Opportunity	High
Measures to Prioritize	Single Family Wall Insulation
Priority Housing Type	N/A
Contractor Count	Average
Contractor Representation	Low
Priority Outreach Area	Homeowner Outreach

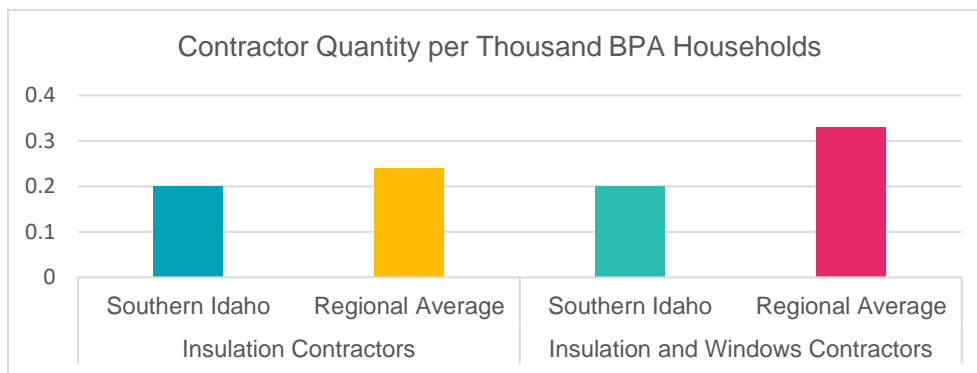
Weatherization Opportunity Assessment

Southern Idaho has a low history of program activity, indicating a large opportunity to increase weatherization volume. The significantly greater number of attic insulation projects compared to wall insulation shows an opportunity to direct contractor attention to wall insulation retrofits in single family homes.



Contractor Infrastructure Assessment

Southern Idaho has an average number of contractors compared to other sub-regions. However, few of these contractors are currently listed on utility weatherization preferred contractor lists, meaning they will need to receive training on technical specifications and program participation.



Recommendations



Recruit contractors and train on specifications



Train contractors on single family wall insulation



Generate leads with homeowner outreach

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 21

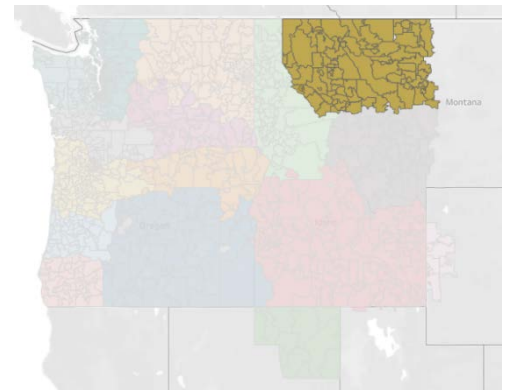


Montana Sub-Regional Profiles



Sub-Region Profile

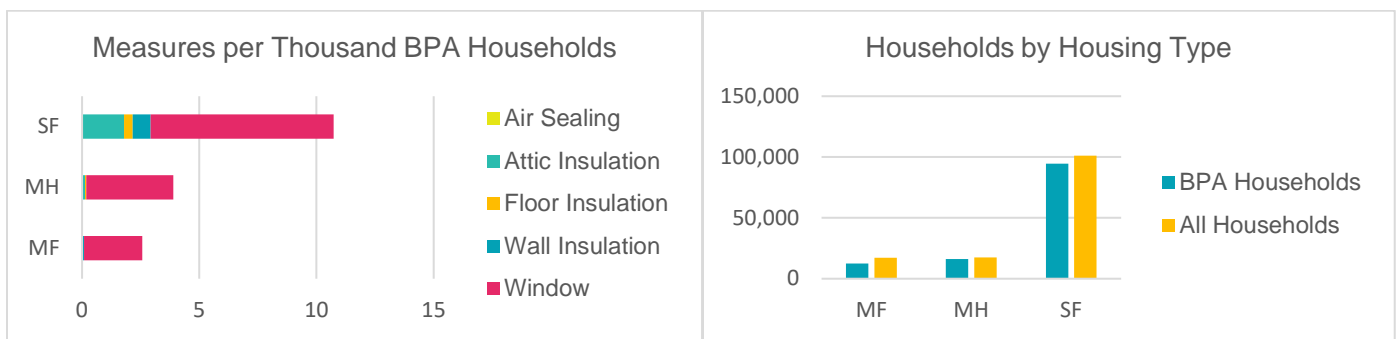
Northwest Montana



Weatherization Opportunity	Average
Measures to Prioritize	Single Family Wall Insulation
Priority Housing Type	Manufactured Homes
Contractor Count	High
Contractor Representation	Average
Priority Outreach Area	Windows Contractors

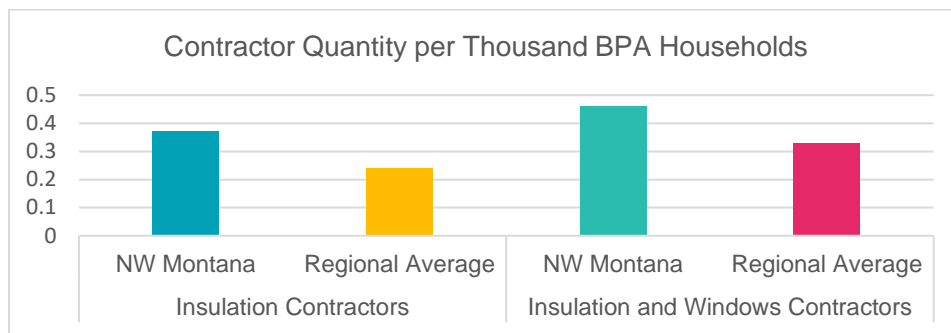
Weatherization Opportunity Assessment

Northwest Montana has a moderate history of program activity in single family homes, but shows a significant opportunity for increased activity on wall insulation. The significantly larger number of attic insulation projects compared to wall insulation shows an opportunity to direct contractor attention to the wall insulation retrofits. Similarly, high windows activity in manufactured homes indicates an opportunity to promote floor insulation with customers who have had positive experiences with utility weatherization programs in the past.



Contractor Infrastructure Assessment

NW Montana has a high quantity of contractors compared to other sub-regions, an average number of which are currently listed on utility weatherization preferred contractor lists. In addition to focusing on single family wall insulation and manufactured home floor insulation, the program will leverage the success of windows contractors in the sub-region to generate leads for other measures.



Recommendations



Train contractors on MH floor insulation



Train contractors on single family wall insulation

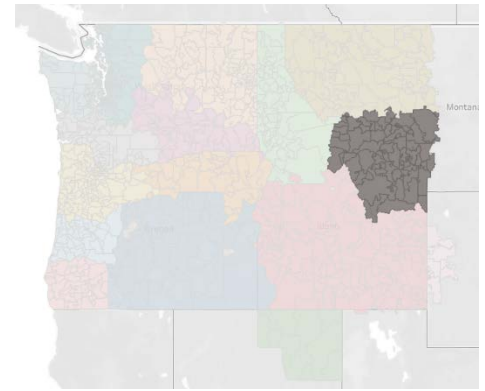


Leverage windows contractors for leads

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 23

Sub-Region Profile

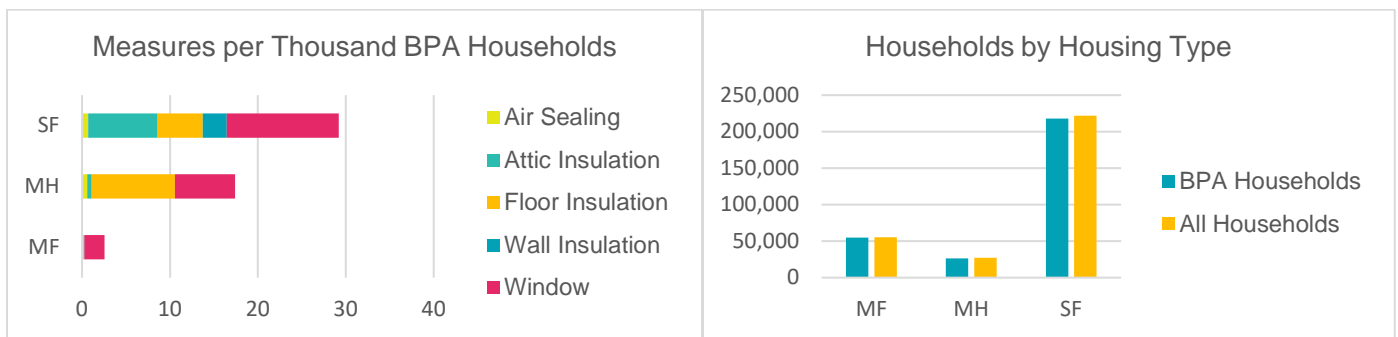
Southwestern Montana



Weatherization Opportunity	High
Measures to Prioritize	All
Priority Housing Type	Single Family Homes Manufactured Homes
Contractor Count	Average
Contractor Representation	Low
Priority Outreach Area	Homeowner Outreach

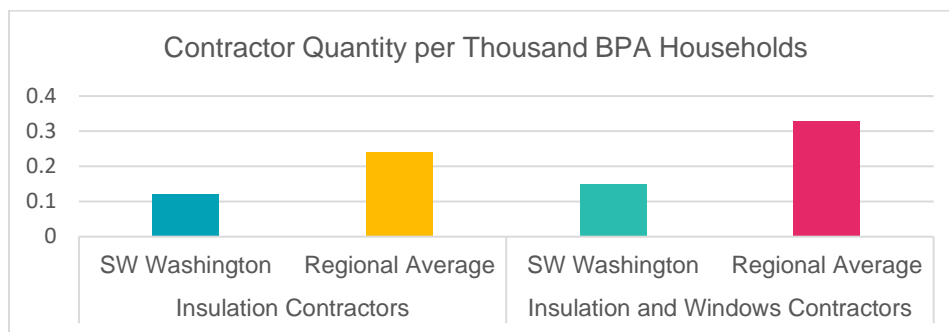
Weatherization Opportunity Assessment

Southwestern Montana has a below average history of weatherization program activity in single family homes, indicating significant opportunity to increase weatherization project volume. Single family, multifamily, and manufactured homes opportunities remain, and programs can leverage the success of windows contractors to increase uptake of other measures.



Contractor Infrastructure Assessment

Southwestern Montana has an average number of contractors compared to other sub-regions. However, few of these contractors are currently listed on utility weatherization preferred contractor lists, indicating a need to train on program requirements and weatherization technical specifications.



Recommendations



Recruit contractors and train on specifications



Generate leads with homeowner outreach



Leverage windows contractors to generate leads

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 24



Nevada Sub-Regional Profiles

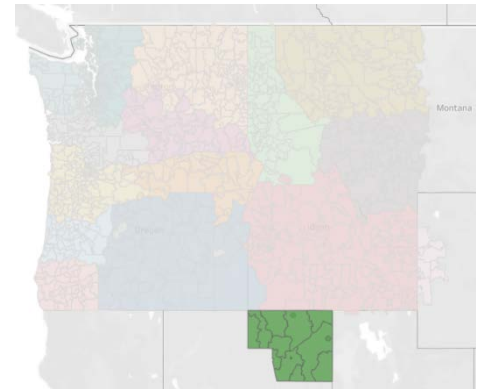


Sub-Region Profile



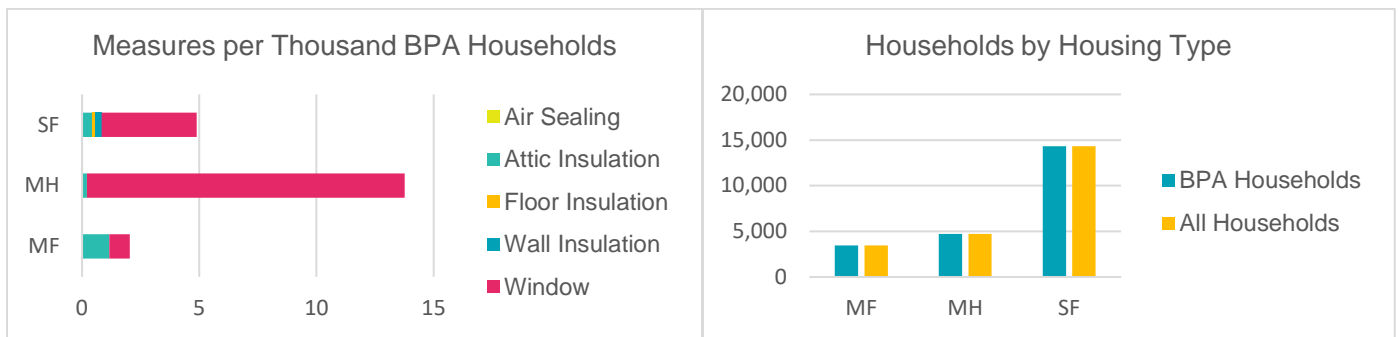
Nevada

Weatherization Opportunity	High
Measures to Prioritize	Insulation
Priority Housing Type	Single Family Homes Manufactured Homes
Contractor Count	High
Contractor Representation	Low
Priority Outreach Area	Windows Contractors



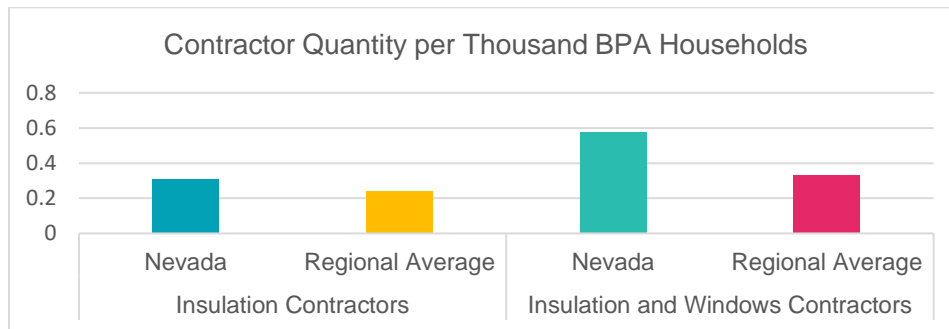
Weatherization Opportunity Assessment

Nevada has a higher opportunity for increasing weatherization projects, although a relatively small number of households. Past program activity is in the bottom tier of the region, and significant opportunity remains in single family and manufactured homes. The significantly larger number of window projects compared to insulation shows an opportunity to leverage those projects for leads.



Contractor Infrastructure Assessment

Nevada has a large quantity of contractors compared to other sub-regions. However, few of those contractors are currently listed on utility weatherization preferred contractor lists, indicating a need for training and support for participating in programs.



Recommendations



Train contractors on specifications



Train contractors on manufactured homes



Leverage windows contractors for leads

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 26

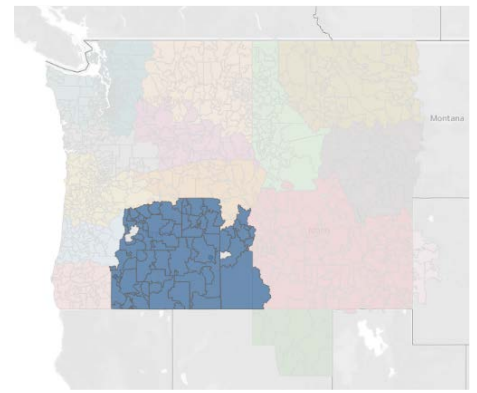


Oregon Sub-Regional Profiles



Sub-Region Profile

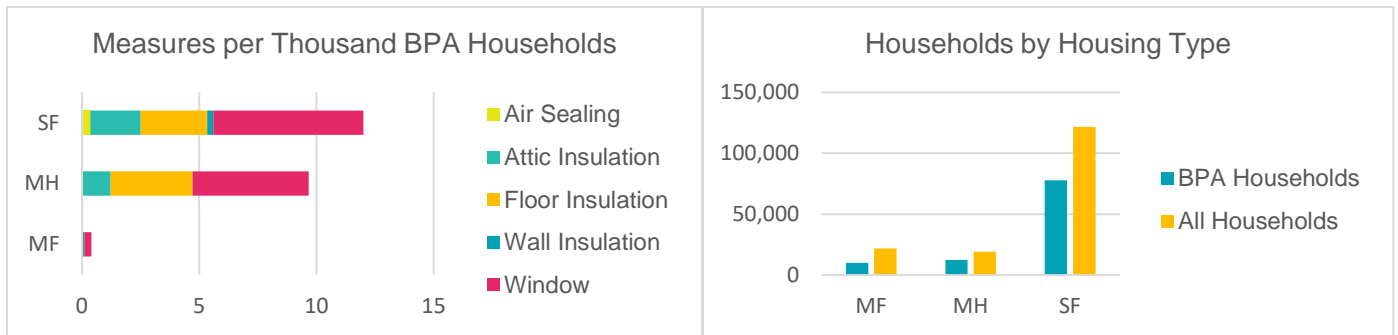
Central Oregon



Weatherization Opportunity	Medium
Measures to Prioritize	Single Family Wall Insulation Multifamily Attic Insulation
Priority Housing Type	Multifamily
Contractor Count	Medium
Contractor Representation	High
Priority Outreach Area	Homeowner Outreach

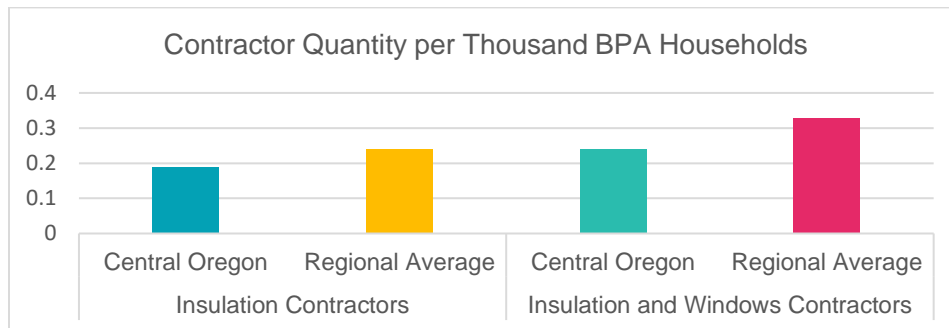
Weatherization Opportunity Assessment

Central Oregon has a moderate history of program activity and significant opportunity for continued weatherization remains, particularly with wall insulation. The significantly larger number of attic insulation projects compared to wall insulation shows an opportunity to direct contractor attention to wall insulation projects. Additionally, Central Oregon contains a significant share of low-rise multifamily homes that have not been addressed by weatherization programs.



Contractor Infrastructure Assessment

Central Oregon has an average number of contractors compared to other sub-regions, so more are needed to meet increased program goals. 80% of those contractors are currently represented on utility weatherization preferred contractor lists, indicating a high level of familiarity with program requirements and program technical specifications.



Recommendations



Train contractors on single family wall insulation



Generate leads with multifamily homes

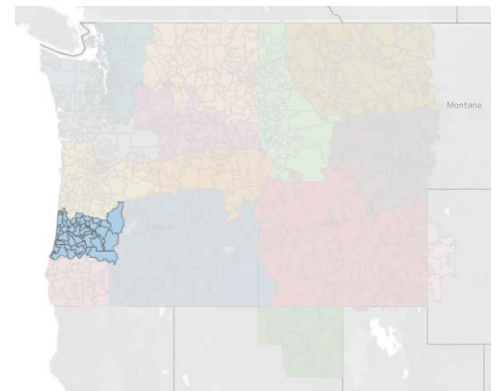


Recruit contractors and train on specifications

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 28

Sub-Region Profile

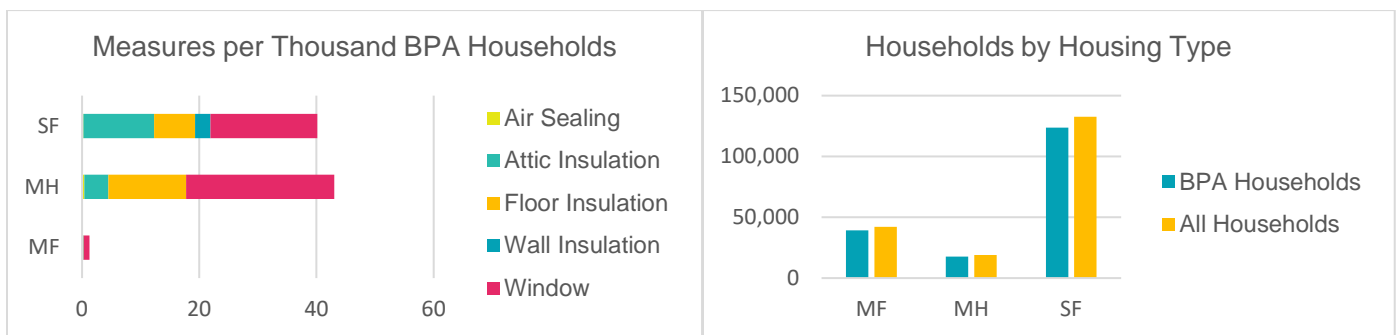
Central Valley and Coastal Oregon



Weatherization Opportunity	Low
Measures to Prioritize	Single Family Wall Insulation
Priority Housing Type	N/A
Contractor Count	Average
Contractor Representation	High
Priority Outreach Area	Homeowner Outreach

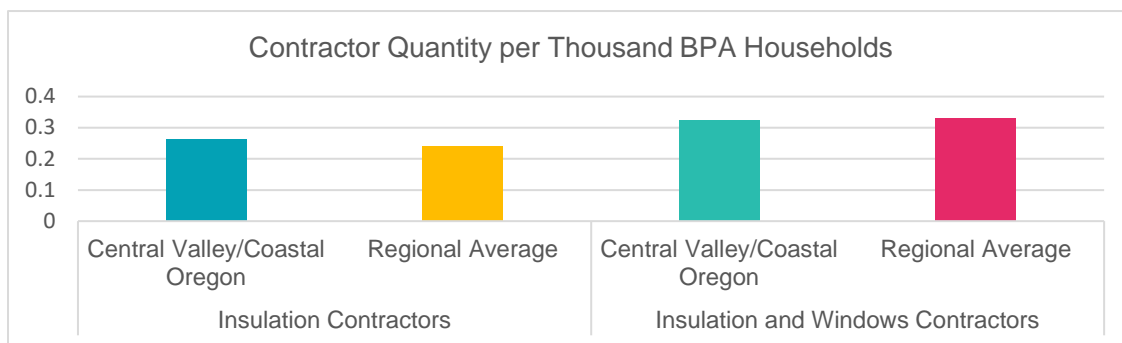
Weatherization Opportunity Assessment

Central Valley and Coastal Oregon has a strong history of program activity, meaning scaling up project volume will be challenging. The sub-region shows a significant opportunity for increased activity on wall insulation. The significantly larger number of attic insulation projects compared to wall insulation shows an opportunity to direct contractor attention to the wall insulation retrofits.



Contractor Infrastructure Assessment

Central Valley and Coastal Oregon has an average number of contractors compared to other sub-regions. However, 80% of contractors are currently listed on utility weatherization preferred contractor lists, indicating a high level of familiarity with program requirements and weatherization technical specifications.



Recommendations



Train contractors on single family wall insulation

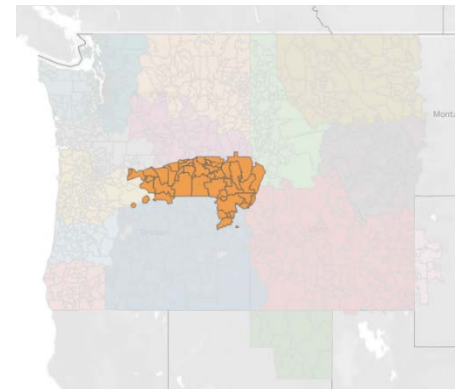


Leverage past participants to increase measures per home

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 29

Sub-Region Profile

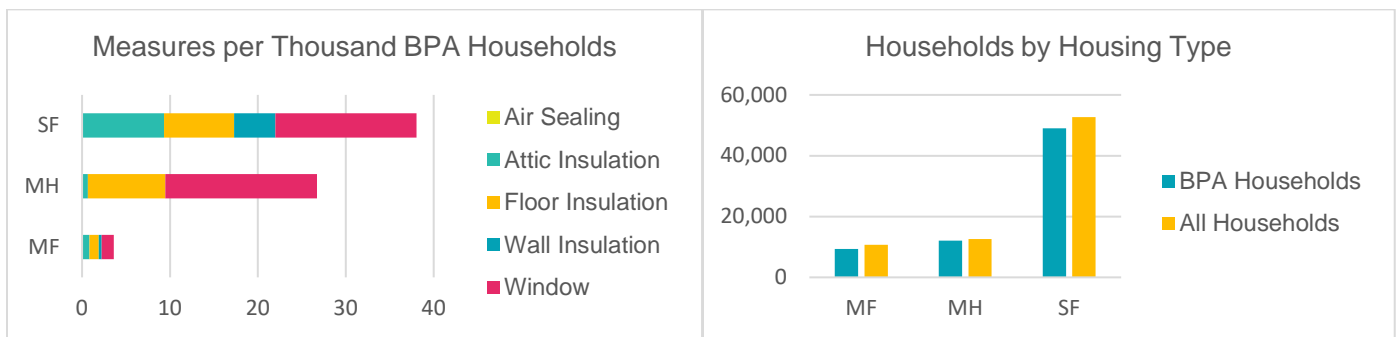
Northeast Oregon



Weatherization Opportunity	Low
Measures to Prioritize	N/A
Priority Housing Type	N/A
Contractor Count	Average
Contractor Representation	Average
Priority Outreach Area	Past Participants

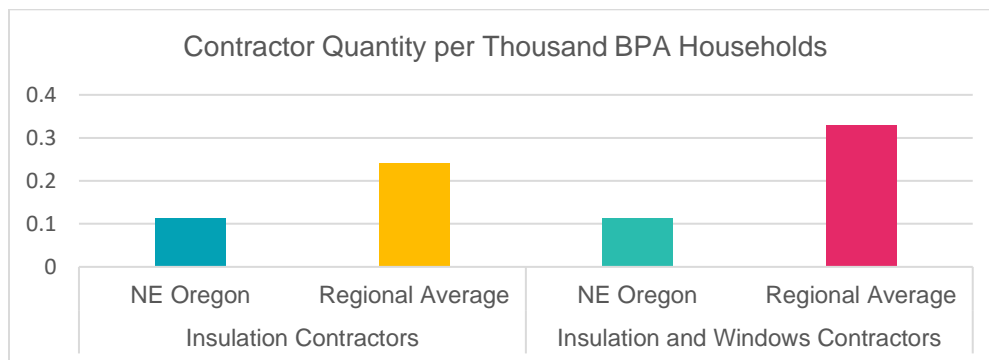
Weatherization Opportunity Assessment

Northeast Oregon has a strong history of program activity, indicating a challenging environment to increase weatherization project volume. Programs in this sub-region have been successful with most measures and building types, meaning that the main opportunity is to leverage existing program success.



Contractor Infrastructure Assessment

Northeast Oregon has an average number of contractors compared to other sub-regions. Additionally, an average number of those contractors are currently listed on utility weatherization preferred contractor lists, meaning some limited training may be necessary. Generally, the Program will seek to scale past success by providing resources to contractors and performing homeowner outreach.



Recommendations



Scale existing contractor capability

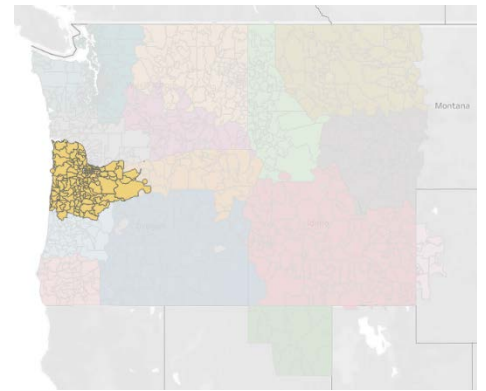


Generate leads with homeowner outreach

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 30

Sub-Region Profile

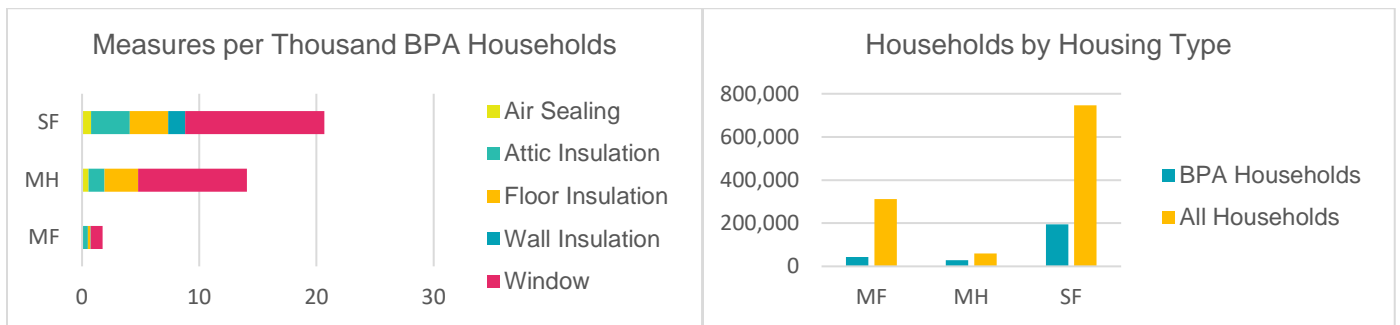
Northwest Oregon



Weatherization Opportunity	Average
Measures to Prioritize	N/A
Priority Housing Type	N/A
Contractor Count	High
Contractor Representation	High
Priority Outreach Area	Homeowner Outreach

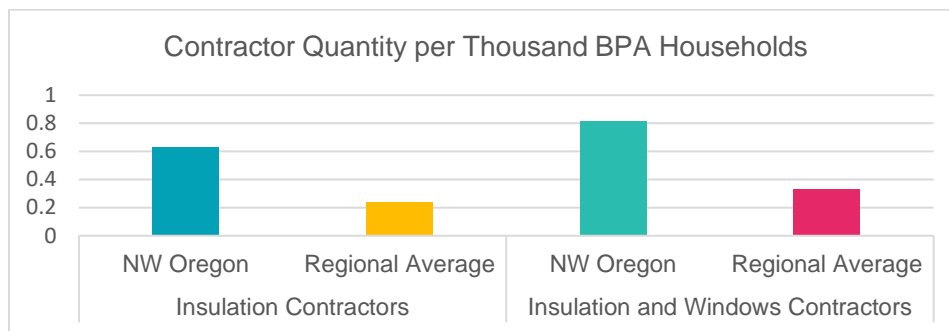
Weatherization Opportunity Assessment

Northwest Oregon has a moderate history of program activity in single family homes, which has been balanced across housing types and measures. There is no clear opportunity to make up for poor historical performance, but rather to scale up past success.



Contractor Infrastructure Assessment

Northwest Oregon has a high quantity of contractors compared to other sub-regions. Nearly all contractors are currently listed on utility weatherization preferred contractor lists, indicating a high level of familiarity with program requirements and weatherization. Many of these contractors are active in non-BPA customer utility territories, meaning there is an opportunity to recruit a highly trained base of contractors to increase work in BPA's territory by making a strong business case based on increased weatherization incentives.



Recommendations



Recruit contractors to work in BPA customer utility territory



Generate leads with homeowner outreach

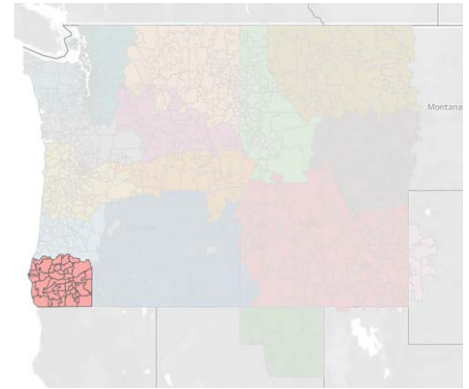
These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 31

Sub-Region Profile

Southern Valley and Coastal Oregon*

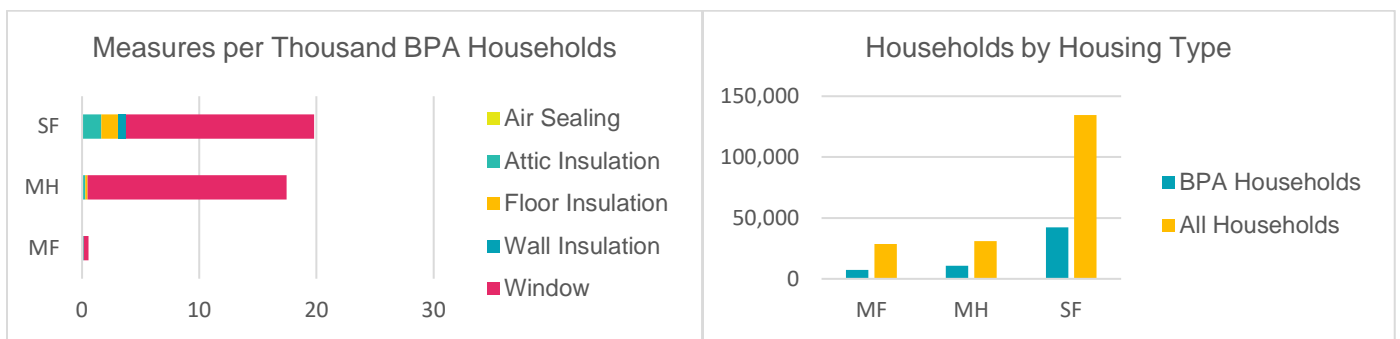


Weatherization Opportunity	Average
Measures to Prioritize	Single Family Wall Insulation
Priority Housing Type	Manufactured Homes
Contractor Count	High
Contractor Representation	Average
Priority Outreach Area	Windows Contractors



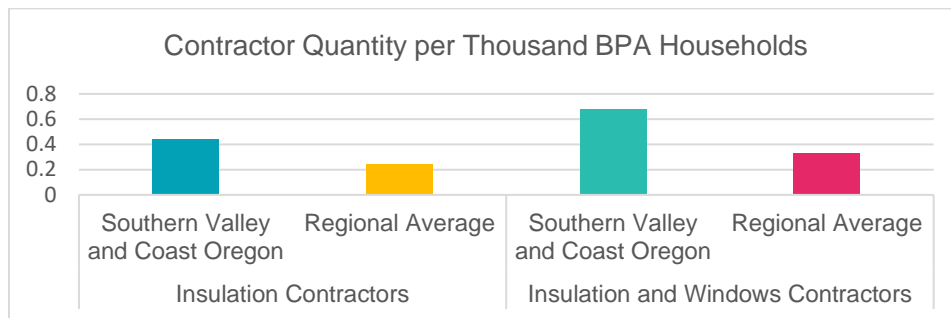
Weatherization Opportunity Assessment

Southern Valley and Coastal Oregon has a moderate history of weatherization program activity, but shows a significant opportunity for increased activity on wall insulation. The significantly larger number of attic insulation projects compared to wall insulation shows an opportunity to direct contractor attention to the wall insulation retrofits. Additionally, there is an opportunity to leverage past success with windows installations in manufactured homes to add insulation measures.



Contractor Infrastructure Assessment

Southern Valley and Coastal Oregon has a high quantity of contractors compared to other sub-regions. An average number of them are currently listed on utility weatherization preferred contractor lists, indicating a moderate need to train on program requirements and weatherization technical specifications. The program can leverage the success of windows contractors to generate leads for other weatherizing other building components with past participants or new customers.



Recommendations



Recruit contractors to work in BPA customer utility territories



Train contractors on manufactured homes



Train contractors on single family wall insulation



Leverage windows contractors to generate leads

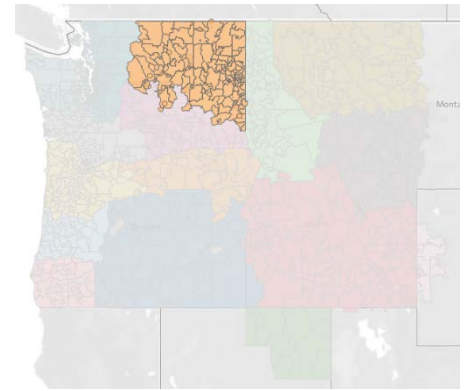
*Please note that Surprise Valley Electrification from Northern California serves this region.



Sub-Region Profile



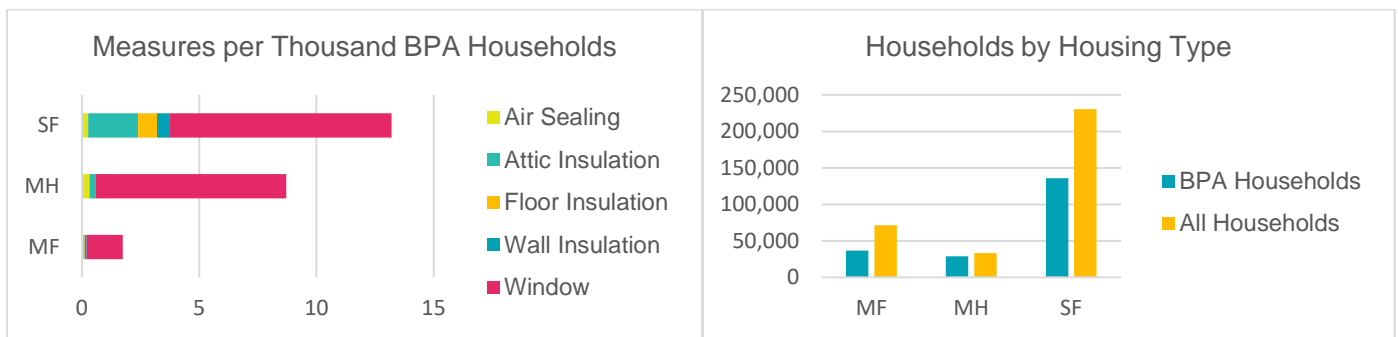
Northeast Washington



Weatherization Opportunity	Average
Measures to Prioritize	Single Family Wall Insulation
Priority Housing Type	Manufactured Homes
Contractor Count	Low
Contractor Representation	Low
Priority Outreach Area	Windows Contractors

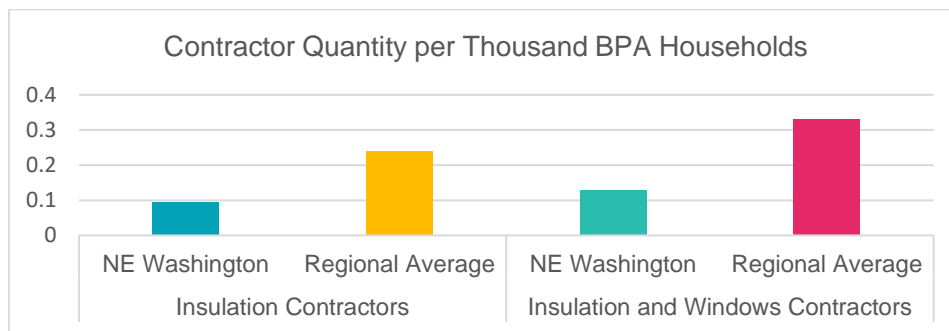
Weatherization Opportunity Assessment

Northeast Washington has a moderate history of program activity in single family homes, but shows a significant opportunity for increased activity on wall insulation. The larger number of attic insulation projects compared to wall insulation shows an opportunity to direct contractor attention to the wall insulation opportunity.



Contractor Infrastructure Assessment

Northeast Washington has a low quantity of contractors compared to other sub-regions. Very few of these contractors are currently listed on utility weatherization preferred contractor lists, indicating a need for training and education. Additional opportunities for generating leads include leveraging windows contractors, which have been disproportionately successful in this sub-region.



Recommendations



Train contractors on manufactured homes



Recruit contractors and train on specifications



Train contractors on single family wall insulation

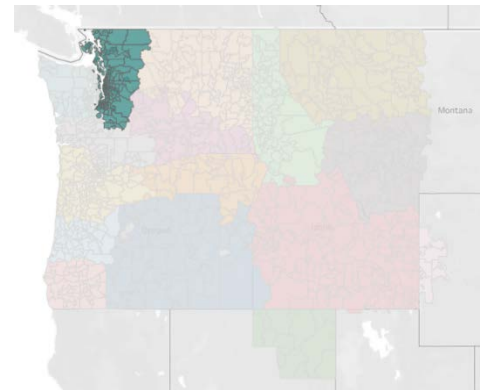


Leverage windows contractors for leads

Sub-Region Profile



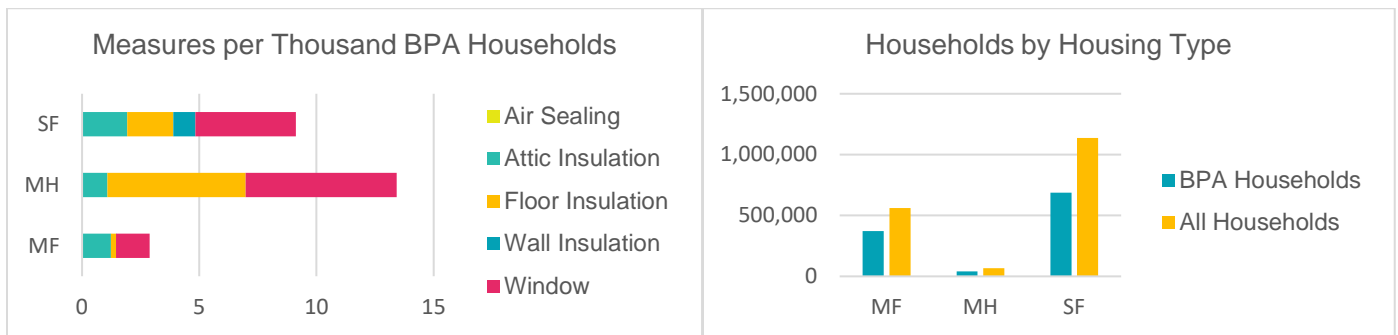
Northwest Washington



Weatherization Opportunity	Average
Measures to Prioritize	N/A
Priority Housing Type	N/A
Contractor Count	Average
Contractor Representation	Average
Priority Outreach Area	Past Participants

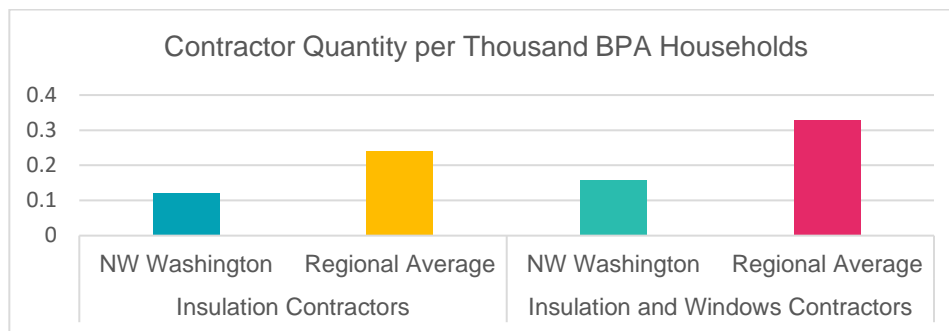
Weatherization Opportunity Assessment

Northwest Washington has a moderate history of program activity, which has been balanced across housing types and measures. There is no clear opportunity to make up for poor historical performance, but rather to scale up past success.




Contractor Infrastructure Assessment


Northwest Washington has an average number of contractors compared to other sub-regions. An average number of those contractors are currently listed on utility weatherization preferred contractor lists, indicating some need for training to program specifications. Given the large absolute number of both contractors and households in this sub-region, the focus should be on scaling up their capabilities and supporting them with generating new leads to add measures with past customers.



Recommendations



Support existing contractors and train on specifications

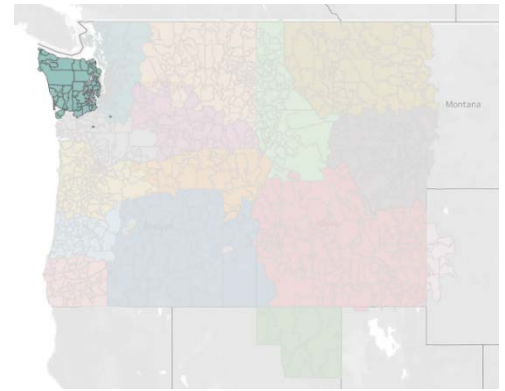


Generate leads with past participants

Sub-Region Profile



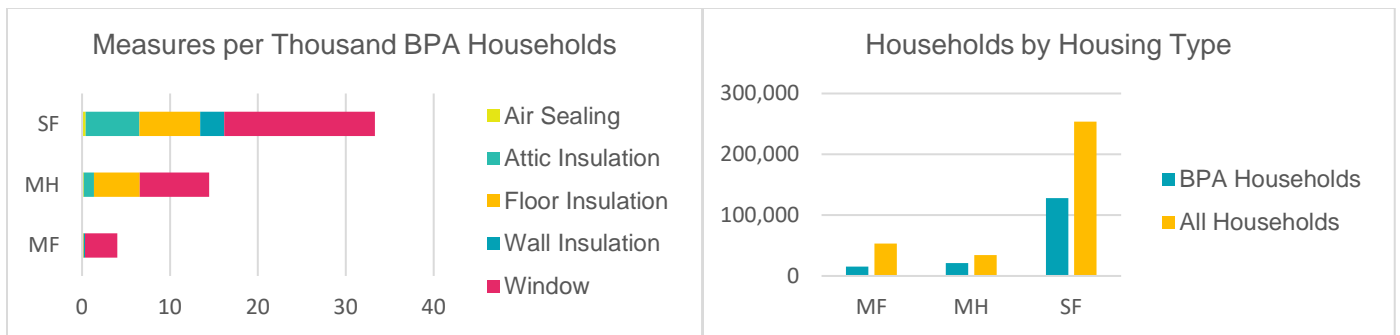
Olympic Peninsula and Coastal Washington



Weatherization Opportunity	Low
Measures to Prioritize	Single Family Wall Insulation
Priority Housing Type	N/A
Contractor Count	High
Contractor Representation	Average
Priority Outreach Area	Multifamily Buildings

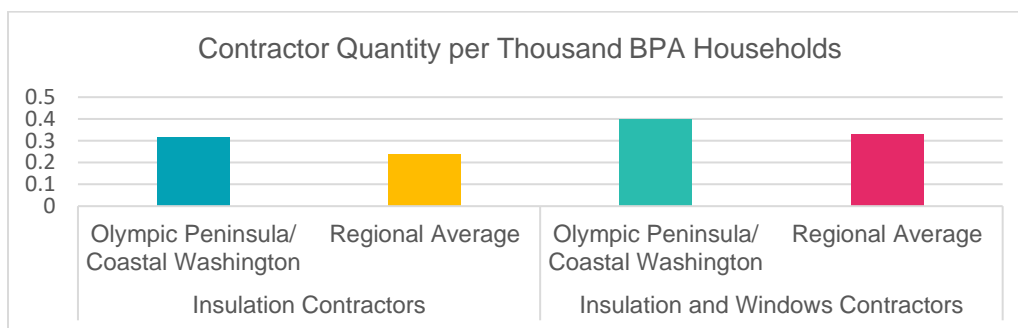
Weatherization Opportunity Assessment

Olympic Peninsula and Coastal Washington has a high volume of historical program activity, indicated a challenge to increase weatherization volume going forward. However, there is an opportunity for increased activity on wall insulation. The significantly larger number of attic insulation projects compared to wall insulation shows an opportunity to direct contractor attention to wall insulation.



Contractor Infrastructure Assessment

Olympic Peninsula and Coast of Washington has a high quantity of contractors compared to other sub-regions. An average number of these contractors are currently listed on utility weatherization preferred contractor lists, meaning some training on specifications will be necessary. Multifamily buildings have a history of successful window projects, which can be leveraged into additional upgrade with attic or floor insulation.



Recommendations



Support existing contractors and train on specifications



Train contractors on single family wall insulation

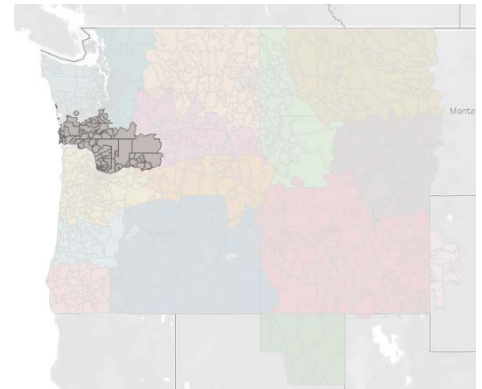


Leverage past multifamily window participants

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 36

Sub-Region Profile

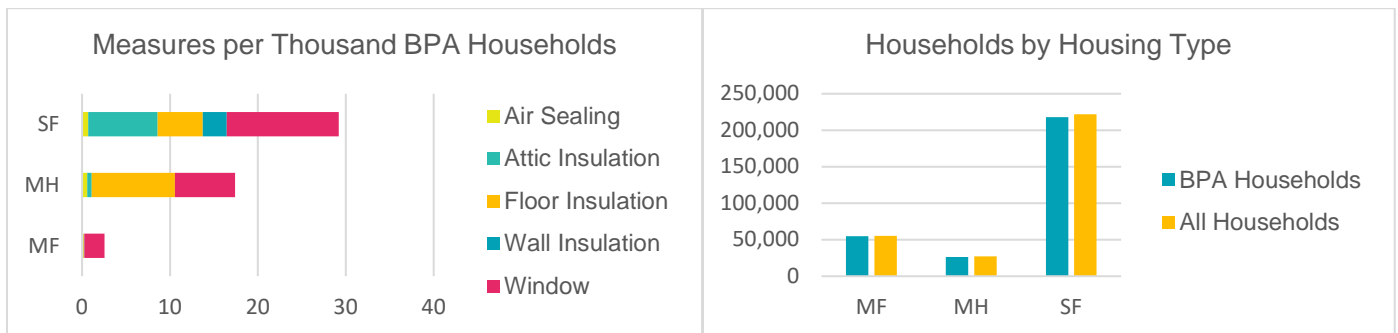
Southwest Washington



Weatherization Opportunity	Low
Measures to Prioritize	Multifamily Attic Insulation
Priority Housing Type	N/A
Contractor Count	Average
Contractor Representation	Average
Priority Outreach Area	Past Participants

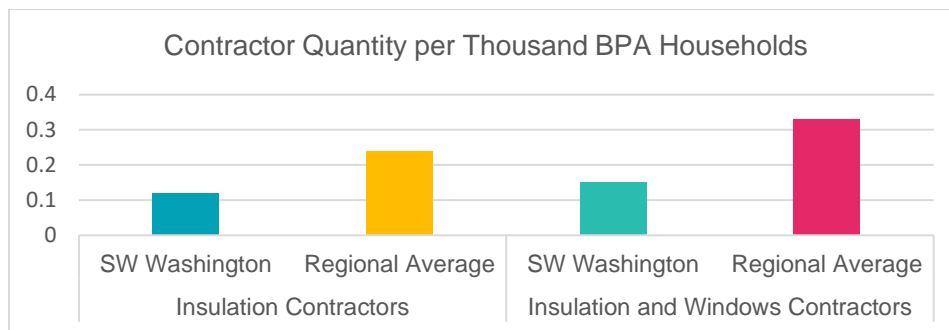
Weatherization Opportunity Assessment

Southwest Washington has a strong history of program activity, indicating a challenge to significantly scale up weatherization activity. The largest remaining opportunity is in multifamily, where a history of success with windows can be leveraged into other measures.



Contractor Infrastructure Assessment

Southwest Washington has an average number of contractors compared to other sub-regions. An average number of contractors are currently listed on utility weatherization preferred contractor lists, indicating a moderate need to train on program requirements and weatherization technical specifications.



Recommendations



Generate multifamily leads from window participants



Train contractors on technical specifications

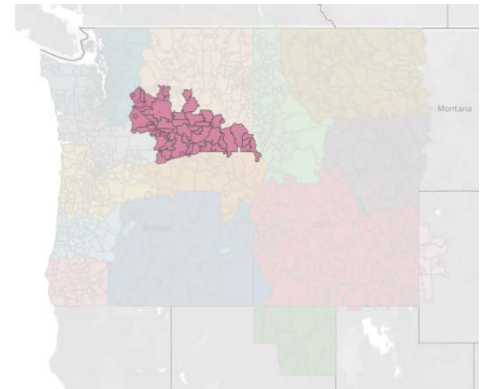


Generate leads with homeowner outreach

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 37

Sub-Region Profile

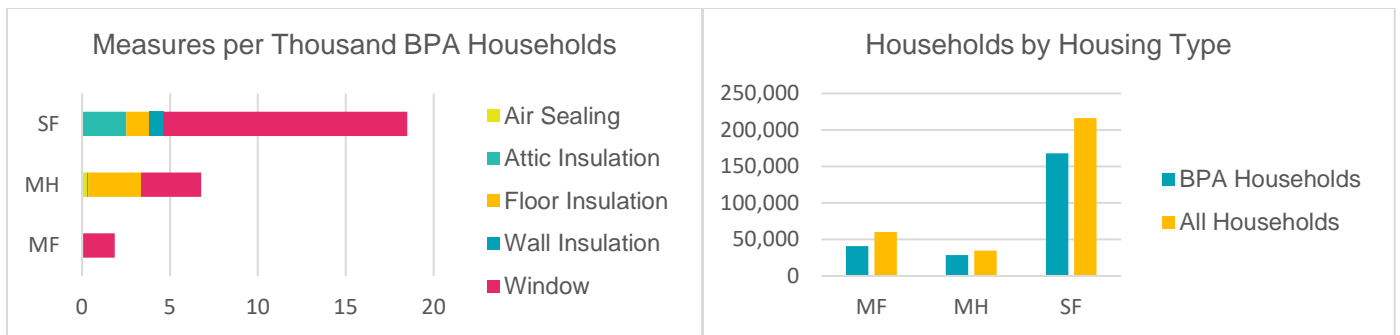
Tri-Cities and Yakima, Washington



Weatherization Opportunity	Average
Measures to Prioritize	Multifamily Attic Insulation
Priority Housing Type	N/A
Contractor Count	Average
Contractor Representation	Average
Priority Outreach Area	Past Participants

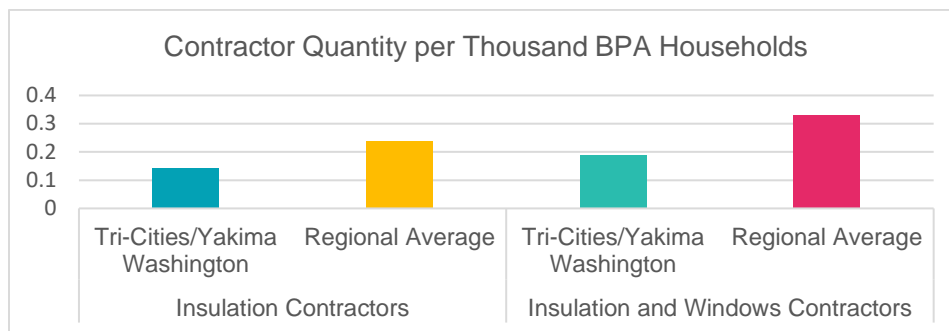
Weatherization Opportunity Assessment

The Tri-Cities and Yakima region of Washington has a moderate history of weatherization program activity. The strong performance of windows installations indicate a receptive customer base to other weatherization measures, and the strength of those contractors can be leveraged to generate leads for new weatherization measures in different building components.



Contractor Infrastructure Assessment

The Tri-Cities and Yakima region of Washington has an average number of contractors compared to other sub-regions. An average number of these contractors are currently listed on utility weatherization preferred contractor lists, indicating a limited need to train on technical specifications and program requirements. The focus in this sub-region will be scaling up the past success of utility programs.



Recommendations

Leverage windows contractors for leads

Generate leads in multifamily homes with past participants

Train contractors on technical specification

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 38

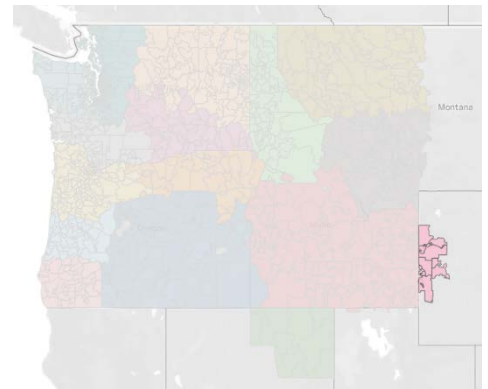


Wyoming Sub-Regional Profiles



Sub-Region Profile

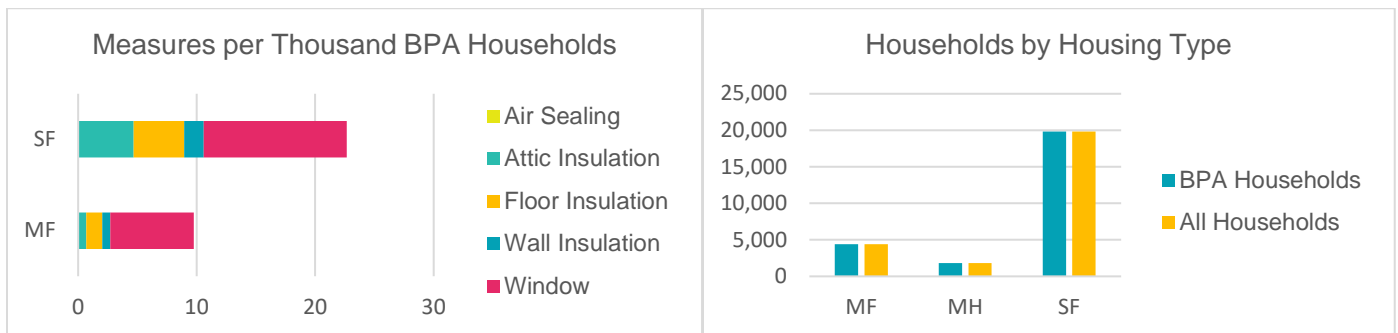
Wyoming



Weatherization Opportunity	Low
Measures to Prioritize	Multifamily Attic Insulation
Priority Housing Type	Manufactured Homes
Contractor Count	High
Contractor Representation	High
Priority Outreach Area	Homeowner Outreach

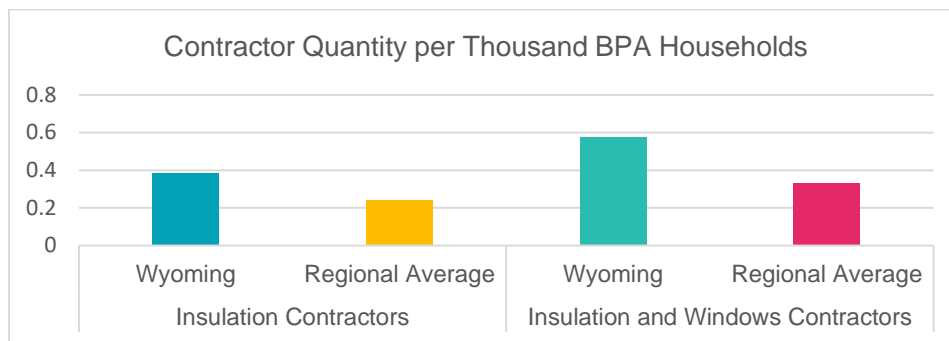
Weatherization Opportunity Assessment

Wyoming has a strong history of weatherization program activity with a small number of homes in the sub-region. The priority in this sub-region is scaling past success and extending to the remaining opportunity in multifamily and manufactured homes.



Contractor Infrastructure Assessment

Wyoming has a high quantity of contractors, most of whom are currently listed on utility preferred contractor lists. This strong starting point for the Contractor Network shows that the main focus will be scaling past program success to increase project volume.



Recommendations



Scale existing program



Generate leads through homeowner outreach

These recommendations are drawn from the analysis in the 2020 Residential Weatherization Contractor Infrastructure Assessment developed in partnership with BPA and Cadeo Group. That report looks historical weatherization activity and the number of existing insulation and windows contractors in geographical sub-regions. The purpose is to target activities for increasing weatherization and right-size program effort. In all sub-regions, the first step for broadly increasing the pace of weatherization activity will include recruiting contractors, offering training, and increasing incentives. 40



Appendix A. Utilities by Sub-Region

Sub-Region	Utilities
Central Oregon	Central Electric Cooperative Harney Electric Coop. Midstate Electric Cooperative
Central Valley and Coast Oregon	Blachly-Lane Electric Coop Columbia Power Coop Association Drain, City of Emerald PUD Eugene Water & Electric Board Lane Electric Coop. Springfield Utility Board
NE Oregon	Hermiston Energy Services Milton-Freewater, City of Northern Wasco County PUD Oregon Trail Electric Consumers Coop Umatilla Electric Coop Wasco Electric Coop
NE Washington	Cheney, City of Chewelah, City of Consolidated Irrigation District #19 Ferry County PUD Inland Power & Light Kalispel Tribal Utilities Modern Electric Water Nespelem Valley Electric Okanogan County PUD Okanogan Electric Coop. Pend Oreille PUD Vera Water & Power
Nevada	Wells Rural Electric Coop
Northern Idaho	Bonnars Ferry, City of Clearwater Power Co. Idaho County Light & Power Coop. Kootenai Electric Coop. Northern Lights Plummer, City of
NW Montana	Flathead Electric Glacier Electric Coop., Inc. Lincoln Electric Cooperative, Inc Mission Valley Power Missoula Electric Cooperative Troy, City of



Canby Utility Board
Cascade Locks, City of
Central Lincoln PUD
Clatskanie PUD
Columbia Basin Electric Coop.
Columbia River PUD
Consumers Power, Inc.
Forest Grove Light & Power
Hood River Electric Coop
McMinnville Water & Light
Monmouth, City of
Salem Electric
Tillamook PUD
West Oregon Electric Coop

NW Washington

Blaine City Light
Eatonville, Town of
Elmhurst Mutual Power & Light
Lakeview Light & Power
Milton, City of
OHOP Mutual
Parkland Light & Water
Port of Seattle
Seattle City Light
Snohomish County PUD
Steilacoom, Town of
Sumas, City of
Tacoma Power
Tanner Electric Coop.
Whatcom County PUD

Olympic Peninsula/Coastal Washington

Bremerton
Clallam County PUD
Grays Harbor PUD
Jefferson County PUD
Mason Co. PUD #1
Mason Co. PUD #3
McCleary, City of
Orcas Power & Light Coop.
Peninsula Light Company
Port Angeles, City of

Southern Idaho

Albion, City of
Burley, City of
Declo, City of
East End Mutual Electric
Fall River Rural Electric Coop.
Farmers Electric Company
Heyburn, City of
Idaho Falls Power
Lost River Electric Coop.



	Minidoka, City of
	Raft River Rural Electric Coop.
	Riverside Electric
	Rupert, City of
	Salmon River Electric Coop.
	Soda Springs, City of
	South Side Electric
	United Electric Cooperative
	Weiser, City of
Southern Valley and Coast of Oregon	Ashland, City of
	Bandon, City of
	Blachly-Lane Electric Coop
	Coos-Curry Electric Coop.
	Douglas Electric Coop.
	Surprise Valley Electrification
	Umpqua Indian Utility Coop.
SW Montana	Ravalli County Electric Coop
	Vigilante Electric Cooperative
SW Washington	Alder Mutual Light Company
	Centralia, City of
	Clark Public Utilities
	Cowlitz County PUD
	Klickitat PUD
	Lewis County PUD
	Pacific Co. PUD #2
	Skamania County PUD
	Wahkiakum PUD
Tri-Cities/Yakima Washington	Benton County PUD
	Benton REA
	Big Bend Electric Coop.
	Columbia REA
	Douglas County PUD
	Ellensburg, City of
	Franklin PUD
	Grant PUD
	Kittitas County PUD
	Richland, City of
	Yakama Power
Wyoming	Lower Valley Energy