



2024

EPA Climate Prevention & Reduction Grant

Application for Energy Efficiency Improvements for  
Low-Income Households

## Overall Project Summary and Approach

Our proposal is to utilize Community Pollution Reduction Grant funding to directly implement reduction of local greenhouse gas emissions from residential energy use, significantly increase residential energy efficiency for low-income residents, promote growth of financial and climate resiliency for our low-income tenants, strive to eliminate natural gas in our affected properties, and mitigate the local urban heat island effect. We will do this by increasing the capacity of our municipal Asset Management programs overseeing the maintenance and repair of publicly owned housing for low-income residents. Our coalition represents three independent Housing Authorities in the Portland-Vancouver Metro area, with a combined portfolio of 907 units in need of proactive, energy efficient improvements currently outside our financial abilities. This request speaks to issues of equity and access for low-income renters to technological developments in the field of residential energy efficiency.

### Total amount of funding requested:

Number of Homes = 907

\$49,235 per home = \$44,655,750

+ \$3,901,128 Direct Staffing, Supplies, and Subcontract/Sub-award costs

+ \$587,674 Indirect & Overhead Costs

Total Costs = **\$49,144,552**

(\$54,183 per home)

### Lead Applicant:

Washington County, Oregon

Responsible for organizing the coalition and leading the application efforts. As the lead applicant, Washington County will be accountable for all funding allocations to subrecipients and verification of work performed. Annual reporting, budget monitoring, and project oversight for subrecipients all fall under this organization's purview. Washington County's Sustainability Coordinator will collect the monthly utility information from each Housing Authority needed for monitoring and tracking of energy savings and GHG emissions. In addition to managing the grant administration to sub-recipients, the Housing Authority Asset Management Program will execute the assessments, labor contracts, and installations for their portfolio of qualifying properties. By or before July 1st, 2024 Washington County will submit an Intergovernmental Memorandum of Agreement signed by all coalition members.

### Subrecipients:

Clackamas County, Oregon (Clackamas Housing Authority)

Clark County, Washington (Vancouver Housing Authority)

Each subrecipient's Asset Management program is responsible for assessing their portfolio of qualifying properties to establish a quantified scope of components. They are responsible for hiring additional personnel to accommodate this increase in capacity per the budget allotted. They are also responsible for managing the subcontractors charged with executing installations at their properties, coordinating construction schedules and verifying work performed. Each subrecipient will provide monthly financial reports to Washington County and submit all documentation required for tracking and reimbursement of funds and impacts on energy use.

The reduction measures we propose are all proven best practices to reduce residential energy consumption, utility costs, and associated greenhouse gas emissions in alignment with the stated goals of the Portland-Vancouver Metro PCAP Residential Strategy 1.

<b>Res-1: Expand existing residential energy efficiency retrofit programs, with a focus on low-income households</b>	
Emission Reductions Estimate Method:	<ul style="list-style-type: none"> <li>Residential building emissions were broken down by fuel, and energy end-uses were estimated based on US EIA <a href="#">Residential Energy Consumption Survey (RECS)</a>. The measure specifically entails adding a ductless heat pump, weatherizing, and adding more energy efficient water heaters for each housing unit.</li> <li>Assumptions for energy reduction are from the <a href="#">Northwest Power Plan</a>, residential supplement. Additional electricity use from new electric heat pumps is accounted for.</li> </ul>
Emission Reduction Estimate Assumptions:	<ul style="list-style-type: none"> <li>Household energy end-uses were estimated based on <a href="#">EIA Residential Energy Consumption Survey (RECS)</a> Table CE4.5 (2015, released May 2018) for Marine climate region housing where data was available for electricity and natural gas, and using Pacific Census Division data for propane and fuel oil.</li> <li>Measure reduction potential for the <a href="#">Northwest Power Plan</a>, residential supplement.</li> <li>Additional electricity use from new electric heat pumps is accounted for using end-use US EIA <a href="#">Residential Energy Consumption Survey (RECS)</a> data combined with current GHG inventory data.</li> <li>Applied to 26% of housing units in the MSA.</li> </ul>

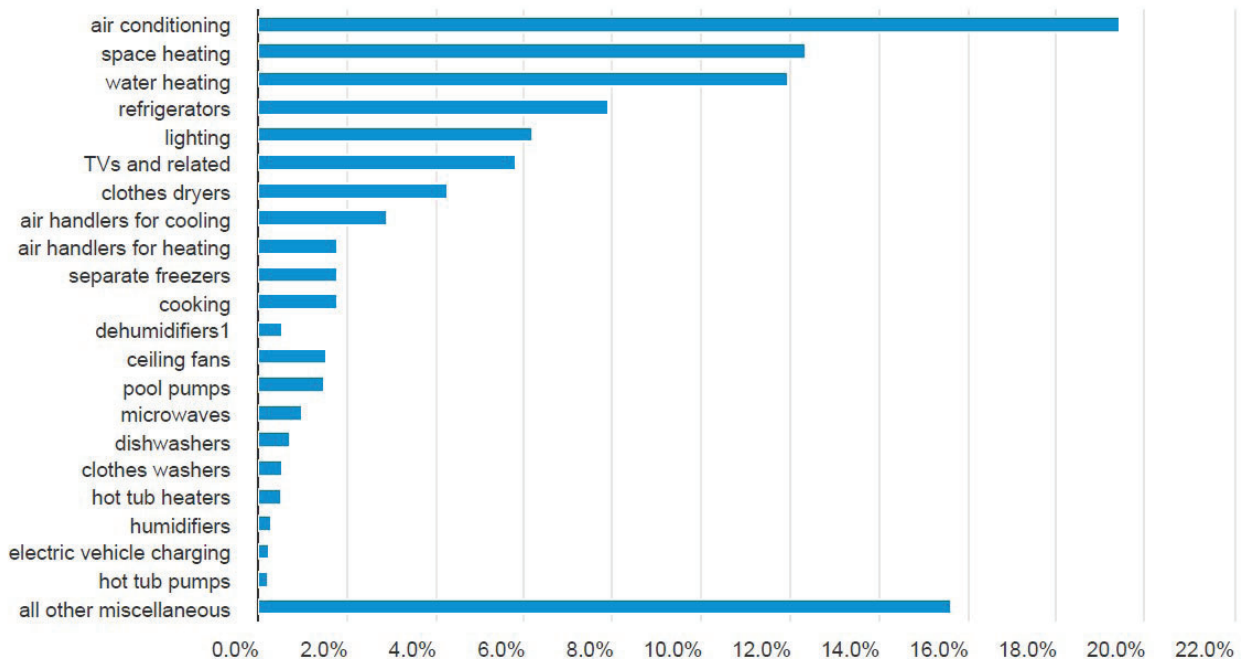
The full scope of proposed work consists of both active and passive improvements to the residence. This includes replacing outdated and inefficient furnaces (gas and electric), baseboard and zonal heaters, and water heaters (gas and electric) with the most efficient heat pump units available. This not only reduces the energy use of the home but, and equally as important, takes the foundational step necessary to support transitioning to a fully sustainable grid by transitioning off our residential reliance upon natural gas. As the graph below shows, our proposed scope of work addresses five of the top ten most energy intensive residential uses (air conditioning, space heating, water heating, air handlers for cooling, air handlers for heating), while our leveraged scope expands this to seven (refrigerators & clothes dryers). We calculate that these active measures will reduce each home's energy use by 40-60%.

The average American home is two to four times leakier than a new home built to current energy code.

Our proposed passive measures target the efficiency of the building's envelope and thus its ability to contain heat. Since buildings function as a cohesive system we must implement improvements that address both the construction and operation of the unit to maximize GHG reductions. By increasing the insulation value of the exterior wall cavity, windows, and attic insulation values to 2024 energy code standards while decreasing air leaks and drafts, we create a much more efficient indoor environment, decreasing energy usage by another 10-20% annually. Combining our active, passive, and expanded scope measures we expect a combined reduction of each home's total energy use by 45-65%.

## Residential site electricity consumption by end use, 2020

percent of total



Data source: U.S. Energy Information Administration, 2020 Residential Energy Consumption Survey

### Active measures include:

Conversion from gas to electric mechanical systems

Current estimates show that 59.8% of our units utilize gas for either their heat or water heating, or both

Replace existing space heating units with the latest heat pump technology

(SEER Value of >22 HSPF2 rating of > 10)

Replace existing water heaters with the latest heat pump technology (> 3.0 UAF)

### Passive measures include:

Increase the insulation value of the envelope to meet/exceed current Oregon residential energy code

Replace all windows and doors with more than 40% glazing, with ones having a minimum U-22 insulation value

Air seal the home's envelope

Plant 2 Trees at each property

### **Space Heating**

In most homes in our region heating is the largest energy expense and can account for up to

40% of a household's annual spending on energy costs. When combined with traditional air conditioner units these mechanical systems account for roughly 441 million tons of carbon dioxide emissions annually in the US alone. Our plan is to significantly reduce both the financial cost to our residents and the energy usage necessary to heat their homes by replacing all heat sources with high efficient electric heat pumps. This technology also allows us to provide air conditioning to all our residents at no additional cost thus improving their climate resiliency as our summer temperatures continue to increase.

Heating energy efficiency (HSPF2 rating); primary factor for heating. The higher the HSPF2 rating, the less wattage a heat pump will draw. Lower wattage also means lower electricity or kWh use per month, and lower heating costs. DOE current minimum HSPF2 rating for an air source heat pump is 7.5, we plan to install units with an HSPF rating of 10 or higher. In the air source heating cycle an HSPF2 rating of 10 would only take 1 KW to produce 10,000 btu/hr of heat (10,000 BTU/HR / 1,000 watts = 10 BTU/watt-hr).

Seasonal Energy Efficiency Rating (SEER value); primary factor for cooling. Just like the HSPF, the higher the SEER value the more efficient the unit performs. Minimum requirements for Oregon residential energy code for heat pump SEER value is 16, we will install units with a minimum rating of 22.

#### Electric Furnace to Ducted Heat Pump

Current Oregon Residential Energy code requires a minimum SEER2 rating (Season Energy Efficient Ratio v2) of 14, however the most efficient units on the market operate at an SEER2 rating of just above 30. While HSPF2 ratings range from 8 (lowest “energy efficient” unit) to 13 or above. For our upgrades we plan to install units with a SEER2 value of 22 and an HSPF2 rating of 10 or more. Assuming most of the electric furnaces in our units are ~10 years old (although the lifespan of an electric furnace is typically 20-30 years), with an average HSPF2 rating of 4.5, we will be improving the energy efficiency of the equipment by an estimated 60%. We anticipate this upgrade to be the easiest and most straightforward as the electrical capabilities are already in place, all that’s required is the physical exchange of the unit. We called several contractors to estimate the cost of purchase and installation for a unit meeting the required energy efficiency specs and came to an average estimate of \$15,500 per unit. For the 602 units with electric furnaces we anticipate a cost of \$9,331,000 to replace them with heat pump technology.

#### Natural Gas Furnace to Ducted Heat Pump

A new study shows that a typical U.S. home can cut its heating-related climate pollution by 45 percent to 72 percent by swapping out a gas-fired furnace for an efficient, all-electric heat pump. This study used a SEER value of 16 whereas we plan to install units with a minimum SEER2 rating of 22, so our planned improvements are expected to exceed the 45-72% reductions measured by this study. Our initial inventory assessment shows that we have around 254 units currently heated with gas furnaces. Replacing these units with heat pump technology will result in a significant annual reduction of local natural gas combustion and the reduction of harmful co-pollutants such as Particulate Matter, Nitrogen Oxide, Carbon Monoxide, Ammonia, and Volatile Organic Compounds. Several co-pollutants are ozone precursors, the reduction of which is increasingly important in an area striving to remain in attainment for ozone and PM. The estimates proposed Natural Gas reduction and subsequent co-pollutant reductions are listed in section 3.

This upgrade will require the termination of a gas line, which involves a plumber or a general contractor with a plumbing certification. Otherwise it shouldn’t necessitate additional amperage or electrical upgrades, but if that upgrade is necessary it’s usually included in the installation cost. Due to the addition of gas termination these installations cost a little more than replacing an electric furnace, putting our estimate for materials and labor, per unit, at \$16,000. That means that for the execution of this aspect of the scope we estimate a total cost of \$4,064,000

(Theresa Pistochini, Mitchal Dichter, Subhrajit Chakraborty, Nelson Dichter, Aref Aboud, Greenhouse gas emission forecasts for electrification of space heating in residential homes in the US, Energy Policy, Volume 163, 2022, 112813, ISSN 0301-4215, <https://doi.org/10.1016/j.enpol.2022.112813>)

#### Zonal electric heat to Ductless Heat Pump

Baseboard and cadet zonal heaters are the most energy intensive and least efficient heat sources in use.

On average, homes that use baseboard heat and window air conditioner units spend \$1300 more per year than homes with heat pumps, colder climates will see larger savings. This means each residential unit that converts from baseboard to ductless heat pump can reduce their carbon emissions by 7.6 metric tons per year. A single, 1500 watt electric baseboard heater consuming 240 volts is only enough to cover 150 square feet, so even a small 400sf studio apartment requires 3 baseboard heaters and still has no air conditioning. Whereas a single head, ductless heat pump with an HSPF value of 10 and a SEER2 value of 22, can heat the entire studio apartment using only 1200 watts/hour and cool using only 600 watts/hour. This is beyond a 70% reduction in energy usage.

This upgrade will require more labor and materials than the other heating upgrades as it includes not just the installation of new equipment, but also requires envelope penetration, and removal of wall units necessitating drywall patching and electrical reconfiguration. Ductless heat pump units cost less than ducted units for a single head, around \$7000. This is suitable for a studio or small 1 bedroom apartment, for larger units we would need to install 2 heads, so these would cost \$14,000 each. This does not include the removal of the old units or wall patching, we anticipate that to cost around \$2000 per unit. We are not sure exactly how many of the electric heat units have baseboard/zonal heaters, but our initial estimates are around 8% or 77 units. The execution of this part of the scope is expected to cost \$726,750.

#### **Water Heating**

Accounting for roughly 13% of a home's total energy use, regardless of the season, and the third most energy intensive home appliance, water heaters are seeing a surge in energy efficiency with the increased adaptation of heat pump technology. A water heater's energy efficiency is determined by the uniform energy factor (UEF), which is based on how much energy the heater uses and how much energy is used to power the water heater itself. The higher the uniform energy factor, the more efficient the water heater. Even Energy Star certified units only have UEFs ranging from roughly 0.6 to 0.95 for gas and electric models while heat pump models see a rating of up to 3.75. The units we install will have a minimum UEF rating of 3.0.

#### Electric to Heat Pump upgrade

By replacing electric water heaters with heat pumps our residents will see a significant drop in both their energy use and monthly expenses. For comparison, a typical 50 gallon heat pump water heater uses about 2.5 kWh/day (912.5 kWh/year), which is equivalent to \$137 per year at 15 cents/kWh utility rates. Contrast that with a >5 year old standard electric 50 gallon water heater that uses about 10 kWh/day (3,650 kWh/year) at an annual cost of \$547. The investment in transitioning to heat pump technology translates to an energy and cost savings of around 75% for water heating. Since this installation is replacing one ducted electric unit for another it should be simple and straightforward requiring few, if any, supporting



measures like increasing ampage or adding electrical outlets. To replace the 485 existing electric water heaters with new electric heat pump versions we estimate a cost of \$5,500 each for a total of \$2,667,500.

#### Natural Gas to Heat Pump conversion

By replacing natural gas water heaters with electric heat pump models we will remove an average of 35 therms a year per household. Of our 907 units included in this proposal we calculate 57% of units, or 515, have gas powered water heaters. According to EnergyStar.gov a current energy star approved model, 50 gallon gas tank heater, uses 188 therms per year. So, if our 515 homes had brand new, energy star rated appliances with a UEF of .9, our heat pump replacements would reduce natural gas consumption by 96,820 therms/year.

An estimate of \$6,500 per unit for the purchase and installation of a new heat pump water heater means that to fully execute this aspect of the scope will cost \$3,367,000

#### **Envelope Weatherization**

As of 2021, buildings account for 39.1% of total U.S. primary energy use and 75% of total U.S. electricity use. Much of this energy is used to maintain a comfortable indoor environment (USEIA). The building envelope consists of both transparent and opaque elements that serve as a controllable barrier to help maintain the indoor environment regardless of external conditions. The envelope also allows the exchange of light and air, as well as other transfers with the external environment when it is beneficial for the building occupants. By leveraging desirable external environmental conditions (e.g., fresh air and natural light) and mitigating the influence of undesirable conditions (e.g., moisture, hot or cold temperatures, wind), the building envelope can reduce the need for space conditioning and electric light, and thus reduce energy use associated with lighting and heating, cooling, and ventilation equipment. In turn, high performance building envelopes can significantly reduce the substantial CO2 emissions associated with energy use to satisfy heating, cooling, and lighting needs in buildings.

(Chan, W., J. Joh, and M. Sherman. 2013. "Analysis of Air Leakage Measurements of US Houses." *Energy and Buildings* 66 (November): 616–25. doi.org/10.1016/j.enbuild.2013.07.047.)

(Harris, Chioke;vLaFrance, Mark; Narayanamurthy, Ram. 2022 "Pathway to Zero Energy Windows: Advancing Technologies and Market Adoption". US Department of Energy; National Renewable Energy Lab)

(U.S. Energy Information Administration (2021). *Annual Energy Outlook 2021*. Washington, D.C. URL: <https://www.eia.gov/outlooks/aeo/>)

#### Insulation & Air sealing

Current Oregon residential energy code stipulates an attic insulation value (R value) minimum of 49, whereas homes built even 10 years ago have values almost half that. To help our residences retain heat and require less energy we plan to increase the attic, walls, and floor insulation of scattered site units as we are able. By this we mean, if a home sits on a concrete slab foundation we cannot insulate the subfloor, however if a home's foundation includes a crawl space or basement then we are able to add insulation beneath the main floor. When we add attic insulation we can also confirm that the exhaust vents are terminating outside the attic space and check for signs of water penetration. To increase the

insulation value in the walls contractors typically cut small holes in the drywall and blow in a cellulose material to fill the cavity. This is a minimally invasive and incredibly effective method for increasing the efficiency of the home's envelope. The other part of this scope is air sealing. This entails using caulk, weather stripping, door sweeps, etc to literally seal the gaps in the envelope that permit drafts, helping contain the conditioned interior air. This is by far the least expensive and most effective action any homeowner can take to reduce their home's energy use for heating & cooling. Since each home is a different size and configuration we can't establish a definitive cost for this aspect of the scope, especially since insulation is priced per square foot. Based on our industry experience and current prices, we anticipate an average cost of \$11,000 for each scattered site property.

For our multifamily properties increasing the insulation value in the envelope isn't as easy. Due to issues of access and permits we may only be able to address "attic" insulation in these buildings, however even this alone can make a noticeable difference by reducing energy usage by 12-18%. For our multifamily properties we estimate a cost of \$6500 per home. The estimate for insulation, air sealing, and general weatherization of all 907 homes comes to \$7,437,000.

### Windows

While envelope insulation values are measured in R values, with a higher value reflecting a larger degree of insulation; window values are the reciprocal of that. This means that the smaller the U value the larger the insulative properties. Studies from the Department of Energy (Sullivan) confirm that windows with higher U-values conduct more heat from inside the residence to the outside during morning and evening hours when the outside air temperature is often lower than the inside air temperature; and, a lower U-value window conducts less heat from outside to inside during summer afternoon peak cooling hours. Just like with wall cavity and attic insulation, the more we improve the insulative value of the windows the more we increase the energy efficiency of the home, reduce the operating costs, and in turn reduce the GHG emissions.

Executing this element of the scope requires the most labor and therefore the most time, we anticipate crews to take up to two days on site for a full window replacement of each unit. Since we aren't changing any of the window sizes and therefore not changing the size of the opening in the exterior wall, no permit is required. The only scheduling complication we anticipate involves coordinating the window replacements during the summer when Oregon is mostly free of rain. This is the only part of the scope that has any restraints upon the time of execution, which means it won't conflict with the implementation of the other improvements.

The quantitative aspect of this scope is the most difficult to estimate due to the variability in unit size, type, and exterior walls. Single family, scattered site units have more exterior walls and therefore more windows than multi-family units. While the exact number of windows isn't known at this time we are going to use an estimated average of 8 windows per unit. At a general cost of \$2400 for each window replacement, installation, and disposal we estimate a total of \$17,414,000. (Sullivan, R, Frost, K, Arasteh, D, & Selkowitz, S. Window U-value effects on residential cooling load. U.S. Department of Energy, United States.)

### **Tree Planting**

At each of our 417 scattered site properties we intend to plant 2-3 trees, depending upon property needs and space. Urban trees offer great promise to improve residents' daily lives and make communities more resilient to the impacts of



climate change. Benefits to residents include cleaning the air, improving mental and physical health, and mitigating the urban heat island impact during increasing summer temperatures. A recent study out of Minnesota showed how trees planted adjacent to homes contribute to a reduction of the home's energy usage in both winter and summer. In a heating dominated climate, like our region of Oregon, neighborhood trees reduce the speed of winter winds. Lower wind speeds against a house reduces the amount of heat loss through air exchange. Likewise, tree shading in the summer reduces the amount of heat entering the home directly through solar radiation and also reduces the amount of heat stored in asphalt and concrete. More trees = lower energy costs, year around. Not to mention that in just one year a mature tree will absorb more than 48 pounds of carbon dioxide from the atmosphere and release oxygen in exchange. This means that in 5 years, when our trees are "mature", they will be pulling between 87,072 - 130,608lbs of carbon out of the atmosphere every year.

We plan to engage with current tenants to inquire about their preference, providing a selection of native trees to choose from including: conifer, fruit, nut, flowering, etc - and engage with arborists to choose the best location for planting. For our multi-family properties we will plant as many trees on site as is prudent and ensure that the remaining trees are planted on other municipally owned property. We expect to spend no more than \$300 per unit for implementation of this scope element for a total cost of \$272,100.

(Philip J. Potyondy<sup>1</sup> and Gary Johnson<sup>2</sup>, Influence of Urban Tree Canopy on Single-Family Residential Structure Energy Consumption at the Community Scale in Hutchinson, Minnesota; Forestry Department Minneapolis, Minnesota)

## **Implementation**

We anticipate the first year of the five year implementation timeline to involve hiring new staff positions and conducting quantitative assessments of each property to determine, how many windows at what sizes are being replaced, what size water heaters each unit has/needs, etc. Once those numbers are solidified we will issue RFP's and prepare to begin installations in year two. Years two, three, and four will each see completion of installations in 33% of the 907 properties in the combined portfolio. This leaves us with one year in the implementation period to allow for unforeseen delays or complications. An example might be another extreme fire season that limits our ability to replace windows during the summer months due to the high exposure risk to smoke and associated air pollution.

At this time our plan for scope execution involves the lead applicant, Washington County, taking on the primary role of fiscal management, with each of the two subrecipients coordinating the contract execution and construction scheduling associated with their specific properties. This means that funding allocations will be issued as reimbursements once contractors are approved through a competitive RFP process. For instance, Washington County will approve the RFP language for Clackamas Housing Authority- to hire a contractor to exchange the 84 natural gas water heaters in their scattered site properties. Once this contract is awarded Clackamas County engages in a labor agreement directly with the winning contractor and submits paid invoices to Washington County for reimbursement. The new project manager hired by Clackamas County for the execution of this grant then coordinates the installation timeline for each property, providing verification of appliance specifications, proper installation, and termination of the gas line. This verification is included in the monthly reporting that the Clackamas County Asset Management team issues to the Washington County Financial Analyst. This process will be the same for each component of the scope, with the RFP written, issued, awarded,

and executed by the implementing authority for work to be completed on their properties. By breaking the scope down and executing implementation by component we can better maintain cost controls and budgets for each aspect. This also translates to easier reporting as the individual elements are independently priced.

We intend to issue multiple RFPs for the same scope component. This means instead of just breaking the 7,256 windows down by County, we could then break each county's window scope into 4 different RFPs. This allows smaller companies, more likely to be owned by a woman or person of color, the ability to respond because the smaller scope is more in line with their capacity. This also allows for quicker implementation as four separate companies can work simultaneously on installations during the summer months. This will be the same for the space & water heater conversions and weatherization.

We don't anticipate encountering any real barriers to implementation of these strategies as the sites are all currently under the control of the participating Housing Authorities and none of these measures require a building permit. In some situations we may need to obtain electrical and HVAC permits which can be pulled "over the counter" to maximize efficiency of service delivery. Besides the window replacements, none of these installations are impacted by the weather and can be scheduled throughout the year. In addition, none of the installations interfere with each other so there is no reason multiple scopes of work cannot be completed at the same time, on the same residence. None of these measures require tenant relocation, all the work can be performed while the unit is occupied.

#### **Demonstration of Funding Need.**

Inflation impacts everyone, even owners of Affordable Housing. Unlike other service providers however, we cannot increase the cost of our services (rent) to offset the rise in expenses since rents are set by the government based on local income. To be specific, in 2015, real estate industry experts were projecting 3.0% annual growth in multifamily property operating expenses. Instead, costs at Oregon properties zoomed up at a median annual rate of 4.0% in the seven years from 2015 to 2022, according to CohnReznick's 2023 Affordable Housing Credit Study. Cumulatively, that annual 1.0% difference had a big effect; operation expenses increased 31.6% over seven years, far more than the 23.0% most asset managers projected. In many Oregon counties, expenses grew even faster—averaging 5.51% growth per year in Marion County and 6.46% in Multnomah County. In Washington County specifically we saw a 36% increase in operations expenses for our Public Housing stock from 2022 to 2023.

On top of inflation we've experienced an increase in extreme weather events driving up utility costs along with insurance premiums. Today, customers of the largest energy provider in the Portland Metro Area (PG&E) pay 33% more for electricity than they did in 2022. All key drivers of cost growth are beyond our control as property owners. Unlike expense growth, revenues for most properties lag behind projections. Revenue shortfalls across the board are impacting already tight profit margins. Due to the pandemic rent increases and evictions were paused for a few years, resulting in financial losses and cash-flow problems still felt today. Similar to cost growth, a combination of social, economic, and policy factors contribute to the divergence from expectations.

As such, our current Asset Management programs have extremely limited capacity for proactive energy efficient upgrades. This funding would change that, it would help us not only reduce operational expenses for both the participating Housing Authorities and tenants, but also create a healthier environment and more sustainable power grid. This EPA grant is unique from all other Federal funding opportunities because it does not explicitly exclude publicly owned housing, like HUD's GRRP grant. While an increasing number of funding opportunities for residential energy efficient initiatives are coming online, the vast majority either specifically exclude Public Housing stock or only offer rebates covering less than 20% of our estimated costs. As a municipal agency, we do not pay income taxes so the multiple programs offering tax incentives for homeowners conducting these improvements also do not apply to us.

We are pursuing local and State funding options/programs for projects that involve solar installations and other interior renovations to eliminate indoor allergen and asthma triggers (Oregon Healthy Homes Grant), but neither of these opportunities provides for the full scope of energy efficient appliance improvements our properties need the most. Other programs, like the Oregon Multi-family Energy Program with an annual budget of around \$2M, also do not have the funding capacity to accommodate our request. We also looked into the new energy Efficiency and Conservation Community Block Grant, however the allocation to Washington County is only \$324,000 and thus not nearly enough to accommodate our scope. In addition, our Community Development Department has indicated that they are pursuing these funds to help support energy efficient upgrades for lower income homeowners.

One opportunity we are pursuing is with the Energy Trust of Oregon. Enrolling as a Community Partner with their organization allows us to leverage the EPA funding and expand the impact of our scope by using reimbursement for qualifying installations to purchase additional home appliances. This means replacing the refrigerator and clothes dryer with Energy Star models and replacing the stove/oven for units transitioning from gas to electric. n. As a Community Partner, Washington County has access to monetary incentives not available to market rate service providers. This means that for every electric furnace we replace with an expanded capacity ducted heat pump, we will receive a \$6000 reimbursement. Without the CPRG funding though we are unable to utilize these incentives as we cannot afford the proactive upgrades on our own. Based on preliminary estimates for heat pump space heaters, windows, and attic insulation, we conservatively calculate a total financial incentive of \$2.5M for the purchase of Energy Star appliances and fulfillment of our expanded scope achieving maximum energy savings.

### **Transformative Impact**

A hard-to-abate sector where we see very slow adoption of GHG emission reduction measures and lack of access to Energy Efficiency technology is low-income residential rental properties targeting residents making less than 60% of the local AMI. While new residential development is required to meet current energy code, bringing older housing stock up to current energy code standards is much more difficult. More than one-third of Americans rent their homes, despite living in homes that consume 15 percent more energy per square foot than owner-occupied homes," Americans who rent their homes often face significant barriers to participating in energy efficiency and clean energy programs compared to homeowners, according to a new report from the Smart Energy Consumer Collaborative (SECC). Lower income renters are the least able financially and legally to adopt energy efficient technologies to lower their GHG emissions. As the price of consumer goods

and housing costs continue to outpace the increase in wages (minimum wage has not increased in 15 years) lower income renters have little ability to increase the energy efficiency of their homes due to budgetary and legal restrictions. Renters in general cannot or make improvements to their units as contractors can legally only work with the property owner directly.

Traditionally pacific northwest residences do not have air conditioning due to the mild summer temperatures, however the past fifteen years have brought warmer and warmer weather necessitating the opening of 'cooling stations' by local governments for residents without access to air conditioning. Those who do benefit from air conditioning largely rely on energy intensive window units. An additional risk exposure for our area due to climate change is the increasing occurrence of forest fires. These events result in very dangerous air quality issues when people must take refuge in their homes. Without air conditioners providing cool, filtered indoor air, many residents, often the most vulnerable, cannot avoid exposure. By providing heat pump space conditioning units we are also providing the most energy efficient form of air conditioning to our residents, increasing their climate resiliency and protecting them from significant health risk due to air pollution.

The impact of our proposed scope doesn't just benefit the environment, it extends to our resident's bank accounts. By dramatically reducing the unit's monthly utility costs, we are increasing the financial resilience of our residents by allowing them to save over \$1000 a year. This comes at a time when local utility providers are announcing another upcoming increase in their rates by 17%.

We believe our targeted improvements over 900 properties can serve as a model for energy efficient upgrades in similar Public Housing Authorities. By documenting an implementation plan and dramatic reduction in energy use and GHG emissions we will show how these investments pay off considerably for both the local government, low-income residents, and the environment.

### **Impact of GHG Reduction Measures**

The CPRG dollars provided by EPA for this energy efficiency and electrification proposal will go directly towards emission reduction activities. The combined total of energy efficiency upgrades is projected to result in a 40-60% decrease in energy consumption and a 100% switch from natural gas to electric mechanical systems. All upgrades exclusively benefit low-income households occupying Public Housing units who are responsible for paying the monthly utility bills; a direly needed improvement to energy equity in the area.

Our methodologies for calculating energy savings are derived from manufacturer specifications for mechanical systems and appliances using federally mandated ratings. Therefore we can easily quantify the reduction in kWh by calculating the energy use based on the SEER or UEF rating of the old appliance to the new one. For estimating the passive energy savings from updating windows, insulation, and air sealing we pulled data from existing studies and reports from Energy. Gov, the Department of Energy, and the National Renewable Energy Laboratory. To translate the calculated energy savings into GHG emissions we relied upon data from market based emission factors from local electricity providers as well as standard emission factors from EPA resources such as the Wagon Wheel tool for co-pollutant estimates and EPA's Climate Leadership GHG Emissions Factor HUB for estimated GHG emissions for natural gas. 100 year IPCC 5th edition values were used to estimate carbon equivalency for methane and nitrous oxide.

A summary of the complete scope of proposed upgrades consists of:

Natural Gas Furnace to 22 SEER2 Ducted Heat Pump

Electric Furnace to 22 SEER2 Ducted Heat Pump

Zonal Electric Heat to 22 SEER2 Ducted Heat Pump

Gas & Electric water heater to UEF 3.0 Heat Pump Water Heater

Building Envelope Sealing and attic Insulation to R-49

Windows upgraded to a U value of 22 and Solar Heat Gain Coefficient of less than .5

Refrigerators and clothes dryers upgraded to energy star models, replacement of gas stoves with electric

2-3 Trees Planted at most properties

With an estimated 45-65% reduction in electricity consumption and complete conversion from natural gas energy to electricity, direct Greenhouse Gas emission reductions are estimated based on a 5 year implementation (33% of project scope per year after the first year of planning). Please see GHG Reduction Calculator for additional details. The estimates assume constant emission factors over time for the market based electricity and natural gas combustion.

2025-2030 Emissions Reduction Estimate 5,238.24 MTCO<sub>2</sub>e

### **Magnitude of GHG Reductions from 2025 through 205**

Based on the assumptions and resources outlined in section 2a related to the energy efficiency measures and conversion to GHG reductions the long term GHG mitigation impacts have been estimated. A lifetime impact of 15 years has been assumed based on the average lifetime of the equipment described above and taking into account the age of the building stock. As in the short term estimates, a rollout time frame of 5 years is assumed, upgrading 25% of the project scope per year with a 15 year expected lifetime.

The total GHG mitigation through 2050 is estimated to be 21,368.96 MTCO<sub>2</sub>e

### **Cost Effectiveness of GHG Reductions**

The cost to upgrade one unit within this project scope is estimated to be \$48,872. This cost includes labor and installation costs as well as the cost of equipment. To further stretch dollars, staff will be using additional funding from the Energy Trust of Oregon on qualifying upgrades to replace outdated appliances and procure additional energy saving items like programmable thermostats. This additional funding opportunity is not included in the cost effectiveness calculation but is noted here to demonstrate effective use of dollars to receive the largest impact to the residents.

At \$48,872 dollars per unit and with the near term GHG mitigation estimates described in section 2a the average cost effectiveness for the proposed project is estimated to be \$8,462.18 per MTCO<sub>2</sub>e in 2030 and \$2,074.36 per MTCO<sub>2</sub>e in 2050 (lifetime of the project scope). While this is more expensive than the PCAP Residential 2 strategy calculated, we believe the difference derives from their cost not including additional staff or the indirect overhead associated with execution.

## Documentation of GHG Reduction Assumptions

### GHG Emission Factors

#### Electricity

Emission factors are 2022 market based values for the region directly from electricity providers and estimated at 0.000199 MTCO<sub>2</sub>e/MWH

Emission factors are assumed to remain constant over time, implementation renewable electricity into local portfolios is not clearly established

#### Natural Gas

0.00533237 MTCO<sub>2</sub>e/therm

Emission factors are assumed to remain constant over time

Assumed 100% conversion of natural gas consumption to electricity consumption upon project completion

### Co-Pollutants (Natural Gas Combustion)

Ammonia - 20 lbs/E6FT<sup>3</sup>

Carbon Monoxide- 40 lbs/E6FT<sup>3</sup>

Nitrogen Oxides- 94 lbs/E6FT<sup>3</sup>

PM Condensable - 0.32 lbs/E6FT<sup>3</sup>

PM 10 Filterable - 0.2 lbs/E6FT<sup>3</sup>

PM 10 Primary (Filt + Cond) - 0.52 lbs/E6FT<sup>3</sup>

PM 2.5 Filterable - 0.11 lbs/E6FT<sup>3</sup>

PM 2.5 Primary (Filt + Cond) - 0.43 lbs/E6FT<sup>3</sup>

Sulfur Dioxide 0.6 lbs/E6FT<sup>3</sup>

Volatile Organic Compounds - 5.5 lbs/E6FT<sup>3</sup>

### Carbon Sequestration (Tree Planting)

2-3 trees will be planted at each upgrade location. Trees are assumed to take 5 years to reach full maturity and absorb 48 pounds of CO<sub>2</sub>e per mature tree per year. Addition of at least 1814 new trees in the urban canopy provides a carbon sequestration of 124. 84 MTCO<sub>2</sub>e after 5 years of planting.

Total carbon sequestration for 2025-2050 = 913 MTCO<sub>2</sub>e

Source: US Department of Agriculture <https://www.usda.gov/media/blog/2015/03/17/power-one-tree-very-air-we-breathe>

The basic assumptions of the project include the installation of each item listed in section 2a. The heating fuel type in each unit is known and the GHG mitigation estimates of shifting from gas to electric heat have a high level of accuracy assumed. The emissions factors for electricity are calculated using market based methodologies specific to the geography the units are located in. The electricity providers of individual units is not known, therefore the weighted average of electricity providers in the area still provides a high level of accuracy. A 45-65% reduction in energy consumption at each unit is based on all upgrades successfully being applied. This also assumes that the base level electricity consumption at each unit is



within the average range for single family and multifamily homes in the area. After estimating the total kWh saved we use the EPA Greenhouse Gases Equivalencies Calculator to translate energy savings directly into quantified GHG emissions. As discussed in previous sections the assumed timeline for GHG reductions implies a 5 year total implementation time for the project as well as a minimum 15 year expected lifetime on mechanical equipment upgrades, whereas the benefits from new windows, insulation, air sealing, and trees will long out last the mechanical equipment.

## Environmental Results

### Outputs:

- 907 heat pump space heaters (ducted & ductless units)
- 907 heat pump water heaters
- 7,256 (estimated) new U-22 windows
- 1,269,800 square feet (estimated) of interior space insulated
- 1814-2700 new trees

### Outcomes:

Less air pollution, less energy consumption so less coal burned, reduced demand for natural gas, and more trees to combat warmer temperatures.

The following co-pollutant reductions are assumed for the project scope based on reduction in local natural Gas consumption. Co-pollutant emissions reductions were estimated using values referenced from the EPA Wagon Wheel Tool.

Reductions values are in lbs.

Ammonia	3,507.35
Carbon Monoxide	7,014.70
Nitrogen Oxides	16,484.55
PM Condensable	56.12
PM10 Filterable	35.07
PM10 Primary (Filt + Cond)	91.19
PM2.5 Filterable	19.29
PM2.5 Primary (Filt + Cond)	75.41
Sulfur Dioxide	105.22
Volatile Organic Compounds	964.52

## Performance Measures and Plan

The proposed performance measures to track, measure, and report our reductions in energy use and GHG emissions are pretty straightforward. Since all the documentation for the energy reductions resulting from our proposed measures are maintained by the public utility companies, we simply use each home's monthly billing statements and records of consumption to track these changes. The Asset Management teams for each Housing Authority will receive copies of all utility billing for their properties for 2024 to establish a baseline of annual kWh and natural gas consumption for each residence, excluding months with vacancies. This information will be maintained in spreadsheets and submitted on a

regular basis to the Washington County Sustainability Coordinator for quantification and tracking. Our teams will continue recording each month's energy use through 2030 to document the lasting reductions in energy use, GHG emissions, and associated co-pollutants.

Each coalition member's Asset Management program is responsible for executing the scope of work for their portfolio of properties. Washington County however maintains ultimate control over the specific language contained in and approval of individual RFP's since, as the lead applicant, we execute financial oversight. All RFPs will be competitively bid with the lowest bidder awarded the contract provided the stipulated cost does not exceed the per unit cost estimate for the quantity specified as established in the budget. Each coalition member independently engages in a labor contract with the winning bidder(s). Washington County will track and account for the fulfillment of each labor contract within the designated time frame, providing reimbursements as requested. Since each coalition member currently has the authority necessary to implement these improvements on their properties no permission or outside approval is required. We anticipate a 2-3 month timeframe at the onset of the grant period to hire for the new positions necessary to support full implementation. Once these staff members are onboard and up to speed we will begin the assessment of each individual home in our housing portfolios. This assessment will result in a quantified scope broken down by implementation measure and county then further broken down by year with  $\frac{1}{3}$  of the properties completed every year for years 2, 3, & 4.

Right now we expect the implementation timeline will look like this:

- July 2024

- Upon notification of award each coalition member will begin the process of recruiting and hiring staff.

- October 2024 - July 2025

- Coalition members assess the individual needs of each qualifying property in their portfolio. This results in a quantified scope establishing the exact number and types of components required for implementation (e.g. number, size, and type of windows). 2024 Utility bills for each home are collected and recorded.

- August 2025

- RFPs issued for the first round of installations covering  $\frac{1}{3}$  of the 907 properties

- October 2025

- RFPs are awarded and labor contracts are signed by implementing County and contractor

- December 2025

- Installations begin

- Except for window replacements, all aspects of the active and passive measures can start implementation

- April 2026

- Scheduling for window installation begins

- June-August 2026

- First round of window installations

- August 2026

- Second round of RFPs are issued for installation of each scope element for another  $\frac{1}{3}$  of the properties

- October 2026

- RFPs are awarded for round two and labor contracts signed by implementing County and contractor.

- November 2026

First round of installations are complete, 33% of the full scope of work is complete and documentation for Energy Trust of Oregon incentives is submitted by each county PM to the Washington County PM.

- December 2026

Documentation of qualifying installations submitted to Energy Trust of Oregon by Washington County for financial incentives. Documentation for the first round of energy savings incurred by completed installations is calculated based on monthly utility bills. Second phase of installations begin.

- March 2027

First round of Energy Trust incentives received and distributed for appliance purchases in homes with completed installations

- April 2027

Scheduling for the second round of window installation begins.

- June-August 2027

Second round of window installations

- August 2027

Second round of RFPs issued for final 1/3 of the homes

- October 2027

RFPs are awarded and labor contracts signed by implementing County for final phase of installations.

- November 2027

Second round of installations are complete, 2/3 of the full scope of work is complete and documentation for Energy Trust of Oregon incentives is submitted by each county PM to the Washington County PM.

- December 2027

Documentation of qualifying installations submitted to Energy Trust of Oregon by Washington County for financial incentives. Documentation for the second round of energy savings incurred by completed installations is calculated based on monthly utility bills. The final phase of installations begins.

-March 2028

Second round of Energy Trust incentives received and distributed for appliance purchases in homes with completed installations.

- April 2028

Scheduling for the final round of window installation begins

- June-August 2028

Final round of window installations

- November 2028

Final round of installations is complete

- December 2028

Documentation of qualifying installations submitted to Energy Trust of Oregon by Washington County for financial incentives. Documentation for the final round of energy savings incurred by completed installations is calculated based on monthly utility bills.

- March 2029

Final round of Energy Trust incentives received and distributed for appliance purchases in homes with completed installations.

- November 2029

All appliance upgrades (refrigerator, clothing dryer, and gas stove where applicable) included in the expanded, leveraged scope are complete. Monthly November 2024 through December 2030, energy use at each home is documented and recorded for quantification of total energy, cost, and GHG reductions.

### **Low-Income and Disadvantaged Communities**

Our proposal exclusively benefits low-income and disadvantaged communities by directly targeting residents of Public Housing. As such, 68% of our properties are located in or adjacent to CEJST census tracts and 100% of the residents earn 60% AMI or less. The demographics specifically for Washington County Public Housing residents include:

68% BIPOC residents

25% experience a disability

65% make less than 30% of the local AMI

The Portland-Vancouver Metro area CEJST tracts impacted by our scope of work, along with the property's full address, are included in a separate spreadsheet file; "CEJST Census Tracts". While the majority of our scope of work will have an incredible impact on the individual residential units' energy efficiency and the residents' quality of life, our contribution to the urban tree canopy will directly impact the community at large. The addition of over 1,814 new trees will contribute to the creation of micro-climates creating cleaner air, cooler shade, and the absorption of around 40 tons of carbon from the atmosphere every year. Considering that the impacted CEJST tracts score very high for diesel particulate air pollution, tree planting is the most practical, cost-effective measure at our disposal to combat this risk factor. By adding a minimum of 1814 new trees to the urban canopy we are also helping to mitigate climate impacts and increase resilience to climate change by reducing the impact of the "urban heat island" effect. By reducing residential energy use and GHG emissions while also providing air conditioning to 907 homes, we are also helping to reduce the health impacts caused by exposure to extreme heat. As a benefit of reducing GHG emissions we also see a reduction in associated co-pollutants and ideally a reduction in asthma related health complications for our residents at large. All of this because we are improving the quality, comfort, and energy efficiency of our public housing.

Throughout the grant period and in years following, staff will continue to report on the estimated co-pollutant reductions from the items described in this application. The direct co-pollutant reductions described in section 3 will be identified for the scope of the project through the grant period. In pursuit of an outcomes based approach relevant benefits to pollution reduction will be reported on an annual basis through the grant period and in the following years. These metrics include but are not limited to, regional Air Quality Index (AQI) values for particulate matter and ozone and respiratory related ER visits and hospitalizations. These values will be reported in the hopes of demonstrating continued improvement in air quality and public health outcomes. While large regional variables exist in these metrics they continue to be signals of improvement for ongoing improvement projects such as those described in the scope of this grant. With improvements

scattered across a large Metro area and 2 states, the impact to regional metrics will likely be reduced and difficult to track. The goal of the proposed scope is to have a measurable impact on the energy efficiency and quality of life for our publicly owned housing and low-income tenants, prioritizing this over concentrated geographic efforts leads to a large but diluted impact that is more challenging to detect through typical channels.

In addition to the co-benefits of pollution reduction, the residents of upgraded buildings can expect to see reduced energy costs. The project scope focuses exclusively on publicly owned properties with low-income residents. A reduced energy burden provides numerous co-benefits related to quality of life, health outcomes, and economic growth. The metric of average energy costs for the units in the project scope will be tracked and reported annually for the grant period.

### **Community Engagement**

At the outset of the PCAP process Metro conducted a literature review of MSA-specific equity- and environmental justice-focused plans and documents to create a list of documented community priorities that are relevant to this grant to identify the climate action priorities that best support marginalized communities in the MSA. From there, the project team developed an engagement approach that focused on speaking with key non-government partners that are involved in parallel climate justice work to further develop the equity-related information included in this PCAP

The Housing Authority of Washington County values the input of our residents and participants, as well as low-income community members who may need our assistance in the future. Our advisory bodies include representatives of low-income households at several levels. Our Housing Advisory Committee bylaws specify that two members must be current low-income housing residents and recipients of our rent assistance. Our Housing Authority Board of Directors also includes one seat that is dedicated to a resident of public housing or a Housing Choice Voucher recipient. Additionally, we engage our Resident Advisory Board, which is entirely comprised of low-income households who are receiving some sort of assistance in our community. These advisory committees work in combination to advise the work of the Housing Authority. In particular, our Housing Advisory Committee was presented with information about this proposal during their March 2024 meeting. Feedback from the committee was supportive, recognizing the need for energy efficient upgrades in affordable housing. Due to the meeting schedule of our Resident Advisory Board, we will engage their input as part of the implementation process. Subrecipients will also plan to engage their resident boards as planning begins. Members of these committees live in the impacted areas and are deeply familiar with the needs for improvements. Committees may be asked to provide feedback and input on targeted geographical areas or individual initiatives. Moreover, committees will be asked to advise on the communication and engagement plans with residents, to ensure accessibility and trauma-informed communication.

Renovations and upgrades in resident units can often bring anxiety, even when the changes will result in improvements. The Housing Authority of Washington County has a dedicated Community Engagement Coordinator who closely reviews communication and engagement plans, with extra consideration for reading accessibility, language requirements and the lived experiences that may lead to feelings of instability or disempowerment in processes. As we move through implementation, we will execute an engagement plan that will include written communication (letters via US mail), posted

updates, site visits, resident meetings, individual outreach, and opportunities for feedback. Project managers and our Community Engagement Coordinator will work closely with residents to empower them in decision making and ensure they are informed and in partnership at each step.

### **Job Quality**

As lead implementer, Washington County has extensive experience with contracting, procuring and executing complex federally funded projects that support family-wage jobs for our trade partners working to build and rehabilitate our critical affordable housing infrastructure. The County is both a successful implentor and a key policy contributor for emerging and women, veteran and minority-owned small businesses. This includes a deep commitment to policy development with traditionally underserved communities.

Washington County has partnered with nine local/regional community-based organizations to provide workforce development services in the transition out of the COVID-era. These ARPA-funded services include employment training, career development, and wrap-around supports that connect residents to quality jobs. The services are focused on workers displaced by the pandemic and, with a centering of equity, tailored to communities that have been marginalized. Washington County has an on-going partnership with Worksystem's Inc—the regional workforce investment board—to provide career advancement opportunities for youth and young adults in the construction trades. This program is centered on a pre-apprenticeship program that prepares participants for entering the construction industry. They also submitted a letter of support for Washington County to accompany this application.

The County's Procurement team has an FTE who represents the regional Construction Career Pathways Program connecting Black, Indigenous, Latina/o/x and communities of color in the trades with opportunities in the construction industry within the County's procurement process and beyond. Washington County participates in the Results for America Good Jobs & Equity Project as fellows focusing on strengthening our supplier diversity program. The County received a \$25,000 dollar grant from Family and Workers Fund to complete a supplier diversity assessment, launching this Spring. Through our Lottery 156 dollars we support business support organizations as members and sponsors including Latino Built, Professional Business Development Group (PBDG), National Association of Minority Contractors (NAMC), Oregon Association of Minority Entrepreneurs (OAME), and the local area and culturally specific chambers of commerce to strengthen access for businesses to connect with government contracting. The County's Economic Development Program convenes the Washington County Small Business Support Network on a quarterly basis, including dozens of business support and workforce development organizations that support the local ecosystem of small businesses and workers, many who focus on government contracting. The County hosts the West Side Open House on an annual basis for small businesses to connect with contracting opportunities at local jurisdictions as well as small business support resources.

### **Programmatic Capability and Past Performance**

Below are four recent federal grants administered to Washington County that have been successfully implemented



Project Title: Coronavirus Relief Fund (US Treasury)

Assistance agreement number : SLT0208

Federal or non-federal funding agency and assistance listing number: 21.019

Brief description: Federal funding from the Coronavirus relief program assisted with expenditures including, but not limited to: the provision of grants to small businesses to cover lost revenue caused by mandated closures, establish temporary public medical facilities and other measures necessary to increase COVID-19 treatment capacity, care expenses for homeless populations, pandemic related unemployment insurance costs.

Contact from organization that funded the assistance agreement. (No specific Contact) <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/coronavirus-relief-fund> ;

Washington County successfully expended all of the \$104M provided under this award, while maintaining compliance with regularly changing guidance and reporting requirements. We were able to successfully meet demanding reporting deadlines of 7 days after-quarters-end. These funds were part of our Fiscal-year 2020-2021 Single Audit and no material weaknesses or significant deficiencies were found. The County successfully met all quarterly reporting requirements for this award, including the final close-out report submitted in July of 2022.

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Project title: Emergency Rental Assistance 1.0

Assistance agreement number: ERA0183

Federal or non-federal funding agency and assistance listing number: 21.023

Brief description: The ERA 1 Program funding assists eligible households with rent payments, rental arrears, residential utility/energy costs, and other relevant expenses related to housing and housing stability service costs. This funding also extends to residents of Affordable Housing.

Contact from organization that funded the assistance agreement. <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/emergency-rental-assistance-program>

The County was able to successfully expend over 99.85% of the \$18.1M in awarded funds within the period of performance, which ended Dec 2022. This grant had demanding spending and obligation requirements, which the county was able to successfully meet, as well as complicated demographic and financial data reporting requirements on monthly, and then quarterly bases. We were successful in our application for additional funds, receiving approximately \$175,000 additional funds (although we requested multiple million on 3 separate occasions) through this program's reallocation process; where other jurisdictions that did not meet the stringent obligation and expenditure deadlines had their award partially de-obligated through the reallocation process. This was part of our Fiscal Year 2021-2022 Single audit, where no significant deficiencies or material weaknesses were found. This grant has been closed out.

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Project title: Emergency Rental Assistance 2.0

Assistance agreement number: ERAE0090 & ERAE0402

Federal or non-federal funding agency and assistance listing number: 21.023

Brief description: The ERA 2 Program funding assists eligible households with rent payments, rental arrears, residential utility/energy costs, and other relevant expenses related to housing and housing stability service costs. This funding also extends to residents of Affordable Housing.

Contact from organization that funded the assistance agreement: <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/emergency-rental-assistance-pr>

The county has successfully expended 95% of the \$19M in funds from this agreement and expects to expend the remaining funds in the first half of Fiscal-Year 2024-25. As with the above ERA1 grant, we have maintained tight controls on internal and external partner operations for verifying eligibility, distributions of payment, documentation and data collection, and reporting. This program was part of our Fiscal Year 2021-2022 Single audit and no significant deficiencies or material weaknesses were found. We have been successful in meeting all of our expenditure and obligation requirements under this award to avoid having any reallocation, and have successfully completed all of the quarterly financial and demographic reports required so far. This award is still in progress so no final report has been submitted.

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Project title ARPA: Coronavirus State and Local Fiscal Recovery Fund

Assistance agreement number: SLFRP0228

Federal or non-federal funding agency and assistance listing number: 21.027

Brief description: SLRF funds will be used to (1) provide the necessary assistance for households, small businesses, nonprofits, and impacted industries such as tourism, travel, and hospitality in response to the negative impact of the COVID-19 public health emergency and subsequent negative financial repercussions. (2) Cover premium pay to eligible workers of the government performing essential work during the COVID-19 pandemic, or used to provide grants to eligible employers that have eligible workers who perform essential work. (3) Provide government services to the extent COVID-19 caused a reduction of revenues collected in the most recent full fiscal year of government operations. (4) Make necessary investments in water, sewer, or broadband infrastructure.

Contact from organization that funded the assistance agreement. (No Specific Contact) <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/state-and-local-fiscal-recovery-funds>

The County is continuing to administer the ARPA-SLFRF grant through our Board-authorized 2023-2026 work plan, and have currently expended approximately 40% of the \$116M in funds with approximately two and a half years left in the period of performance. We have successfully completed and closed out over 200 subaward/subcontracts under this award within over 70 sub-projects. The County has been able to successfully navigate the complex eligibility requirements, regularly changing guidance from US Treasury, and continued quarterly and annual reporting that requires detailed reporting for subawards/subcontracts with spending greater than \$50,000, with additional programmatic and progress data points also required for each project. This program was also part of our Single Audit in Fiscal Year 2021-2022 where no significant deficiencies or material weaknesses were identified. This program is still ongoing so we have not completed a final report on this yet.

## Staff Expertise

As the lead applicant, Washington County will administer the grant funding and manage the execution of the energy efficiency reduction measures outlined in the previous scope of work. The department directly responsible for managing the finances, budget, and implementation is the Housing Authority and their Asset Management team.

The Housing Authority of Washington County was formed on August 4, 1970, by the Washington County Board of County Commissioners, to provide affordable housing opportunities to help break the cycle of poverty and improve the quality of life in our community. The goal of the Housing Authority of Washington County is to provide decent, safe, and affordable housing for low-income families, veterans, elderly, disabled and homeless persons residing in Washington County.

The Board of Directors (HABOD), made up of the members of the Washington County Board of Commissioners, plus two additional members oversees all activity, policy, and strategy of the Housing Authority. The HABOD created a Housing Advisory Committee (HAC) to advise on affordable housing and related issues. The HAC consists of 15 volunteer members representing various interest groups. HABOD members are invited to attend any monthly HAC meetings and the annual forum held in October. Currently the Housing Authority owns and operates 244 units of Public Housing and over 600 units of Affordable Housing located throughout the County. The amount of rent the tenants pay is calculated based on income, usually about 30% of household adjusted income. There are approximately 1,850 people living in our affordable housing portfolio.

Washington County's Asset Management team is led by Leslie Johnstone, with supervisory support provided by Molly Rodgers and Jill Chen. Administrative and programmatic support is provided by Adriana Moran, Andrew Crampton, Laura Jackson, and a new staff member yet to be hired (all resumes are included in the attached Appendix).

Leslie Johnstone has over 30 years of experience in property and asset management, with 23 of those years exclusively working in affordable housing. With decades of experience developing budgets and contracts in the role of leasing agent, site manager, property manager, and asset manager, Leslie has had a hand in every type of residential real estate operations. Leslie's experience with contract execution spans the range from tenant leases through to the execution and management of capital improvement projects. She directly managed a \$1.5 million rehab on 100 units in Astoria, OR and smaller projects in the \$500-\$750,000 range that included the replacement of roofing, siding, windows, decks/stairwells, concrete, and interior remodels and exterior painting. A key part of contract management is the development and tracking of budgets, which Leslie knows firsthand. Along with contract execution, construction coordination, and budget tracking Leslie is also great at managing people and leading her team. To assist in the execution of this specific scope of work a new team member will be added and provided with the support and guidance necessary to successfully implement our energy efficient installations through construction coordination and budget tracking.

As previously described, the individual elements of our proposed scope of work all fall under standard maintenance and incorporate industry proven best practices. Our team knows how to manage and execute contracts for equipment upgrades and improvements for our properties, it's what Asset Management is all about. We aren't proposing any untested, risky, or difficult strategies for these energy efficient improvements, simply the intention to proactively implement them across our property portfolios within a few years.