

JANUARY 2024

The logo for the Thurston Climate Mitigation Plan is composed of four stacked, overlapping rectangular boxes. From top to bottom, the boxes are: a teal box with the word 'THURSTON' in white, a dark red box with 'CLIMATE' in white, a dark blue box with 'MITIGATION' in white, and an orange box with 'PLAN' in white. To the right of these boxes is a vertical green bar.

THURSTON
CLIMATE
MITIGATION
PLAN

ADVANCING ENERGY EFFICIENCY IN RESIDENTIAL BUILDINGS

Next Steps for Implementing the Thurston Climate Mitigation Plan
Developed for the Climate Action Steering Committee

THURSTON REGIONAL PLANNING COUNCIL

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1. Overview

The Thurston Climate Mitigation Plan (TCMP) set a regional goal of reducing locally generated greenhouse gas emissions 85 percent below 2015 levels by 2050. One of the key strategies to achieve this target is reducing energy use in existing residential buildings. This report outlines existing information, resources, and options for policymakers and staff to consider in addressing this strategy for the Thurston region.

Findings from this report include:

- Increasing residential energy efficiency is critical to meeting both local and state targets for climate mitigation.
- Since 2015, the amount of energy used to power homes across the Thurston region has increased. Residential electricity use increased 13 percent, while natural gas use rose 22 percent – both rates outstripped the county’s population growth over the same period (10 percent), but are more consistent with annual changes in temperature.
- In Thurston County, the average household spends \$1,712 annually on home energy costs. Low-income households spend a larger proportion of their incomes on homes energy bills than more affluent households. Countywide, 13 percent of households have a high energy burden, meaning they spend more than 6 percent of their income on energy costs, and 7 percent of households are severely energy burdened. Low-income and other historically disadvantaged populations face barriers to participating in energy efficiency programs that can reduce their energy costs.
- There are many federal, state, and local policies and programs that can be leveraged to address residential energy efficiency in existing homes.
- TCMP partners can choose from a range of policies and programs to increase residential energy efficiency. A potential area for initial focus is providing targeted outreach and technical support to connect residents with financial resources.

“While there are many ways for countries to address the current crisis, focusing on energy efficiency action is the unambiguous first and best response to simultaneously meet affordability, supply security and climate goals.”

- International Energy Agency (IEA), 2022

2. Energy Efficiency as a Climate Mitigation Strategy

Energy use in buildings accounts for more than half (54 percent) of all local greenhouse gas emissions in the Thurston region (TRPC 2022). Residential buildings make up the largest proportion of that sector, and contribute nearly a third (32 percent) of the region's greenhouse gas emissions—the largest source of emissions by sub-sector.

Energy efficiency means using less energy to perform the same task or achieve the same result. Energy efficient homes use less energy to heat, cool, and run appliances and electronics. Increasing home efficiency often is cited as one of the easiest and most effective climate mitigation strategies available, for the following reasons:

Energy efficiency directly reduces greenhouse gas emissions. As long as power suppliers continue to use coal, natural gas, and oil in their energy supply mix, reducing energy consumption results immediately in fewer of these fossil fuels being burned to meet that demand. Its benefits are scalable – even small improvements in efficiency add up over time.

Energy efficiency supports a transition to renewable energy. Within the next two decades, electric utilities that serve customers in Washington State are required to shift to renewable energy sources through the state Clean Energy Transformation Act (CETA) and other climate legislation.¹ Energy efficiency is a critical tool to help smooth this transition—reducing energy demand for some activities can help utilities balance the increased demand for energy from electric vehicles and other electric appliances, and allow clean energy investments to go further.

Energy efficiency addresses existing building stock. Nearly 90 percent of the housing units that will exist in Thurston County in 2030 and two-thirds of the units in 2050 already exist today, but changes to development codes that require greener building practices and materials only affect new buildings. Retrofitting existing buildings to make them more efficient addresses the existing source of emissions.

Energy efficiency can help support a more just and equitable approach to climate action. Nationwide, many vulnerable and historically disadvantaged communities – including lower-income people, immigrants, and people of color – are more likely to live in older homes that were constructed to meet less efficient building standards, and spend a higher proportion of their incomes on home energy costs. These populations are less likely to see immediate benefits from changes to building codes that only impact new buildings. If designed thoughtfully and effectively, programs that improve home efficiency can help ensure the benefits of climate action extend to underserved communities, by reducing energy burdens and creating local jobs.

Energy efficiency has many co-benefits. Energy-efficient buildings cost less to operate, are more comfortable to live in, and are more resilient during extreme weather conditions. Communitywide, investing in efficiency improvements can create employment and economic opportunities and improve public health and resilience.

¹ Under the Clean Energy Transformation Act (CETA) utilities that supply electricity to customers in Washington State must eliminate coal-fired electricity from their mix by 2025, become greenhouse-gas neutral by 2030 (using offsets, if necessary), and provide 100 percent renewable energy by 2045. The Washington Utilities and Transportation Commission (UTC) is currently studying decarbonization pathways for electric and natural gas systems, with a report due in June 2023.

3. Residential Energy Efficiency Strategies and Targets

The TCMP identified five actions aimed at reducing residential energy use, and the analysis completed for the plan estimated these actions have the potential to substantially reduce both electricity and natural gas demand across the region (Hammerschlag, 2020).

At the time the TCMP was developed, the project team working on the plan indicated these actions likely would be best addressed by action at the state level, either because it was thought that enabling legislation would be required before local governments would have authority to act or because the scope of the action was considered more effective if conducted at the state level. The plan did not include extensive research into the feasibility of individual actions, and since the TCMP's completion, there has been significant policy action on residential energy efficiency at both the state and federal level. This report is a preliminary assessment that can be used as a starting place to frame regional discussions about the role of residential energy efficiency in climate mitigation and next steps for reducing emissions through this strategy.

TCMP Residential Energy Efficiency Actions & Targets

STRATEGY & ACTIONS

Strategy B1. Reduce energy use in existing residential buildings.

- **Action B1.1 – residential energy performance ratings.** Require energy performance ratings and disclosures for homes at time of sale, lease, or rent so that owners, tenants, and prospective buyers are informed before making purchasing or rental decisions.
- **Action B1.2 – residential energy audits.** Develop and adopt policies that require residential properties to undertake an energy audit at the time of sale or during a substantial remodel. Work with financial institutions to develop mortgage products that incorporate audited energy efficiency recommendations.
- **Action B1.4 – rental housing energy efficiency incentives.** Provide incentives such as property tax breaks for landlords who install energy conservation measures in rental housing.
- **Action B1.5 – property tax credit.** Create incentives such as a property tax credit for property owners who participate in energy efficiency.
- **Action B1.6 – rental housing energy efficiency baseline.** Require rental units to meet baseline levels of energy efficiency and make more stringent over time.

TARGETS

- Reduce residential electricity consumption 20% by 2030 and 30% by 2050.
- Reduce residential natural gas consumption by 20% by 2030 and 50% by 2050.

Washington State Energy Strategy

The 2021 State Energy Strategy developed by the Washington State Department of Commerce (Commerce) lays out a roadmap to achieve state climate goals. This analysis identified a combination of energy efficiency and electrification strategies as the least-cost pathway to meet the state's greenhouse gas targets, and estimated such an approach would reduce total statewide energy loads 26 percent by 2050. It also found that improved efficiency will be necessary to support increased demand for electricity (Commerce 2020). The State Energy Strategy includes recommendations to maximize energy efficiency and electrification in buildings that could also support the TCMP's goals for residential buildings, including:

- **Strengthen and expand energy codes and standards**, including through adopting a residential performance standard for both rental and owner-occupied homes, and customizing standards to support increasing efficiency in affordable and rent-stabilized housing.
- **Align utility programs with state mandates**, to ensure that conservation programs and incentives offered by utilities and regulated through the Utilities and Transportation Commission (UTC) are positioned to optimize energy use, reduce greenhouse gas emissions, and improve public health, rather than focusing solely on cost reduction.
- **Create a high-efficiency electrification program**, that uses funds from the statewide cap-and-invest system established by the Climate Commitment Act to incentivize the adoption of heat pumps and other efficiency upgrades.
- **Broaden the scope and scale of low-income household energy programs**, including by expanding funding to the state Weatherization Plus Health program and ensuring universal access to broadband, so more customers can use smart technology tools that optimize and reduce energy use.

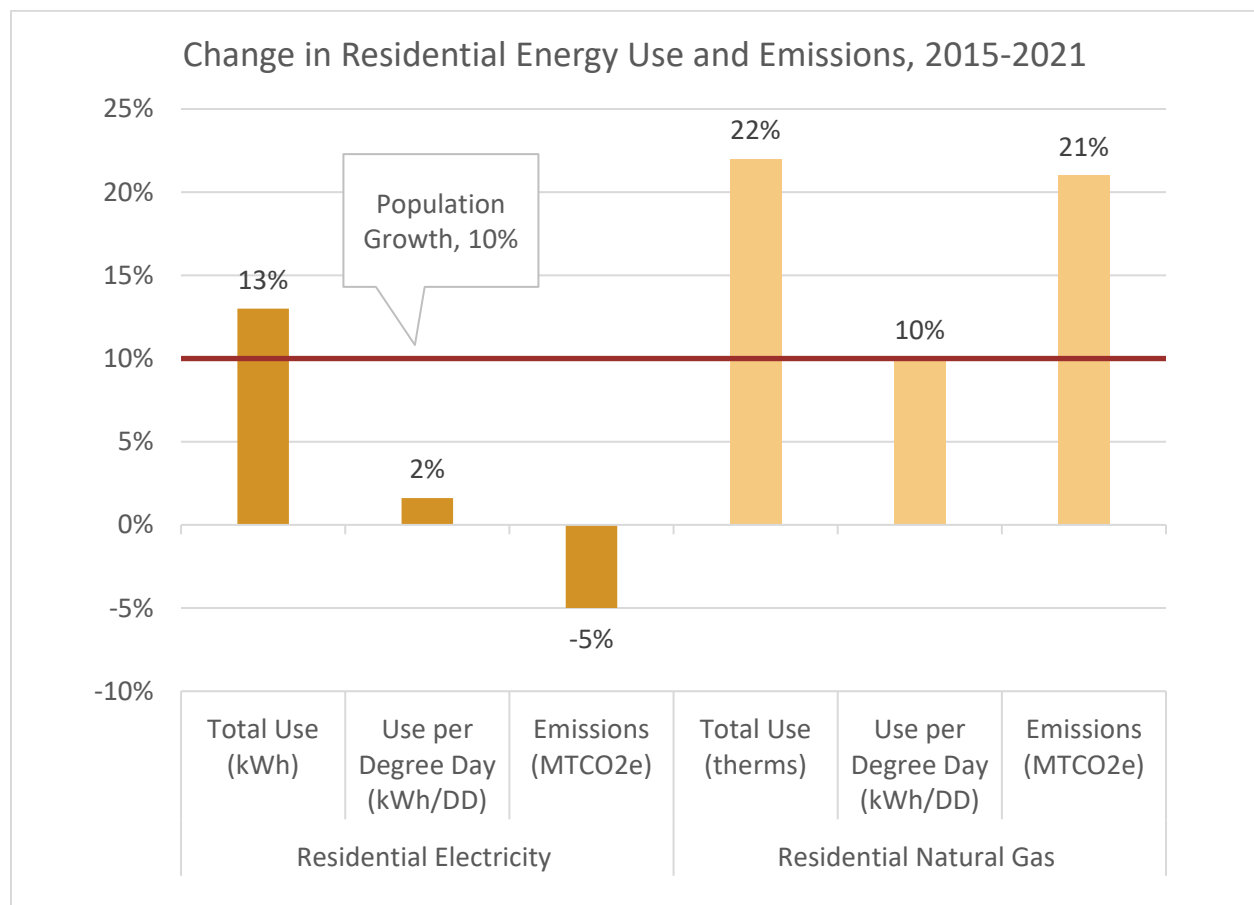
This strategy has informed state activity in the past two years, including agency requested legislation, budgets, and changes to the state building and energy codes. It is likely the strategy will continue to direct state priorities and investments in the near future.

4. Thurston County Context

Residential Energy Use and Emissions

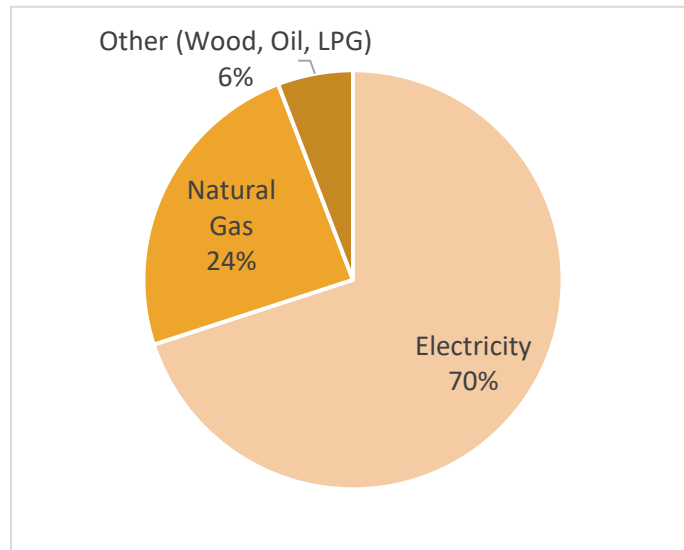
Since 2015, the annual amount of energy used to power homes across the Thurston region has increased, with residential electricity use growing by 13 percent, while natural gas use rose 22 percent – both rates outstripped the county’s population growth over the same period (10 percent). When compared against annual variations in temperature, which can impact heating and cooling needs, the change is less pronounced. When normalized by temperature, residential electricity use increased two percent between 2015 and 2021, while natural gas use increased in line with the county’s population growth over the same period (10 percent).

Figure 1. CHANGE IN ENERGY USE AND EMISSIONS ACROSS THE THURSTON REGION, COMPARED TO POPULATION GROWTH, 2015-2021.



Source: Puget Sound Energy; TRPC (2022). Note: Degree days (DD) measure the amount of heating or cooling necessary at a property. Degree days are measured relative to a base of 65°F(18°C). Above 65°F(18°C) it is assumed that a property will need to have cooling and below 65°F(18°C) it is assumed that a property will need to have heating. Degree days for the Thurston Region were provided by the Energy Star Portfolio Manager for zip code 98501, corresponding to the Olympia Regional Airport, which is the site of the county’s main temperature station.

Figure 2. THURSTON COUNTY 2021 RESIDENTIAL EMISSION SOURCES. SOURCE: TRPC 2022



Residential emissions have not increased at the same pace, rising only 2 percent overall since 2015. This disparity reflects progress made in reducing the emission intensity of Puget Sound Energy’s electricity supply – emissions from electricity use have decreased 5 percent since 2015, while emissions from natural gas tracked with the increase in use of that fuel (21 percent increase). Electricity still makes up the largest portion of the region’s residential emissions (70 percent), though this proportion is down from 75 percent in 2015. While this trend toward reduced emissions is important, it

can mask the rise in overall energy use, especially of natural gas, that will make it increasingly challenging to achieve the reduction targets set in the TCMP for 2030 and 2050.

Existing Residential Building Stock

The Thurston region has a combined housing inventory of 124,400 dwelling units. The cities of Lacey, Olympia, and Tumwater and their urban growth areas make up 70 percent of that total. Single family homes are the most common type of housing across all jurisdictions, and account for 65 percent of housing countywide. Multifamily units make up an increasing share of housing, especially in the incorporated portions of each city. Manufactured homes make up a small portion of the housing stock (11 percent), and most are in areas under Thurston County jurisdiction, including Urban Growth Areas and the rural county.

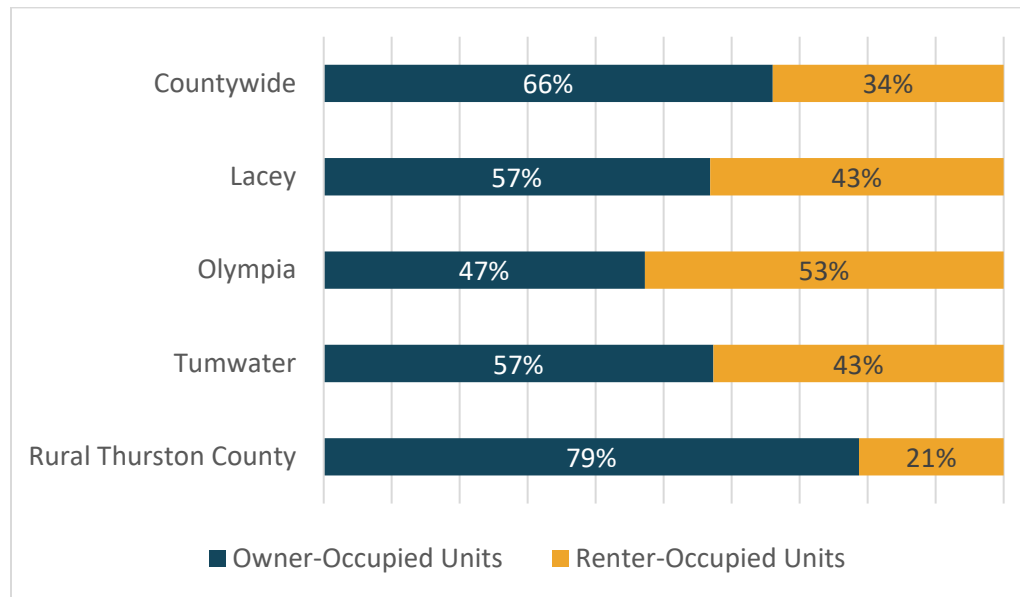
Table 1. Thurston County Housing Units by Jurisdiction and Dwelling Type, 2022

Jurisdiction		Single-family	Multifamily	Manufactured Home	Total
Lacey	City	14,090	8,130	1,220	23,450
	UGA	10,380	2,100	1,160	13,640
Olympia	City	13,180	12,090	950	26,220
	UGA	3,710	1,270	80	5,060
Tumwater	City	6,770	4,180	760	11,710
	UGA	740	130	510	1,390
Thurston County	Rural	27,480	730	7,860	36,070
Countywide Total Units		81,300	29,800	13,300	124,400

Source: Thurston Regional Planning Council, Small Population Estimates. Note: Multifamily includes townhomes, duplexes to fourplexes, and accessory dwelling units, in addition to apartment buildings. Countywide units include housing in Bucoda, Rainier, Tenino, and Yelm.

Nearly half of Lacey, Olympia, and Tumwater households rent, while only a fifth of rural residents do so. According to the 2021 Housing Needs Assessment, about 60 percent of renters are in multifamily units (duplex, triplexes, and apartments) with the remainder in single-family or manufactured homes. Single family dwellings, townhouses, and manufactured and mobile homes are predominantly owner-occupied while buildings with two or more units are almost exclusively rented. Households headed by a person of color are more likely to rent and have lower incomes than white households in the region (TRPC 2021).

Figure 3. Occupancy Status of Housing Units in the Thurston Region



Source: U.S. Census Bureau, American Community Survey 2016-2020 Average.

Around a third of households in Thurston region rely on natural gas as a primary source of heat—the vast majority of these are single family homes. Across TCMJ jurisdictions, natural gas use is most common in Lacey homes (44 percent of homes), although the greatest number of households that heat with gas are in unincorporated Thurston County (around 12,500 homes).

Table 2. Primary Fuel Type in Thurston County based on Jurisdiction

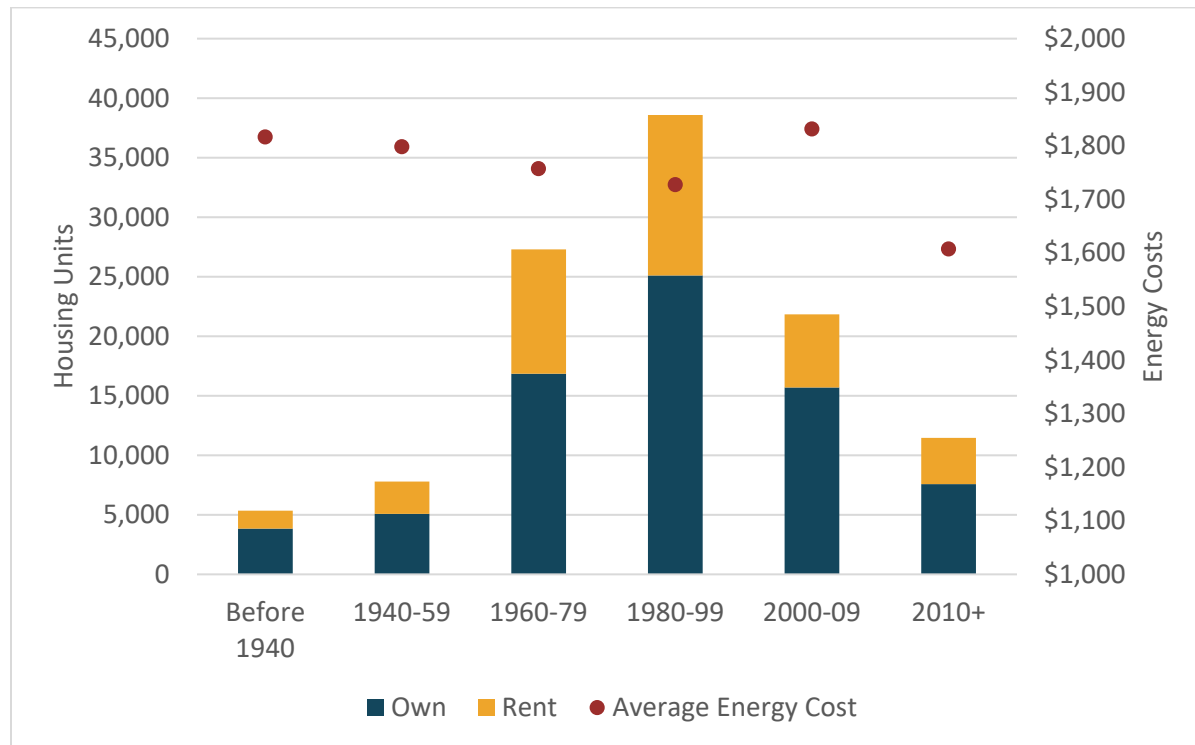
Location	Percentage of Homes with Each Primary Fuel Type						
	Electricity	Natural Gas	Wood	Fuel Oil	Propane Gas	Solar	Other
Lacey	52%	44%	2%	0%	2%	0%	0%
Olympia	57%	40%	1%	1%	1%	0%	0%
Tumwater	60%	35%	3%	0%	2%	0%	0%
Unincorporated Thurston County	57%	26%	8%	1%	7%	0%	1%

Source: TRPC, 2022; U.S. Dept of Energy, 2020

Detailed information on factors that affect the energy efficiency of residences in Thurston County is limited. The Northwest Energy Efficiency Alliance conducts a residential building stock assessment that characterizes three housing types: single-family homes, manufactured homes, and multifamily buildings. The most recent assessment found that across Washington State, older homes (built pre-1980) have less

insulation, allow more air leakage, and have higher heat-loss rates than homes constructed in more recent decades (NEEA 2019). A quarter of homes have attics and walls with very little or no insulation (average R-value less than R-11²). Just 3 percent of homes have installed mini-split heat pumps, a highly efficient option for heating and cooling. While efficient compact fluorescent (CFL) and LED lights now make up the majority of light bulbs used in homes, homeowners are more likely than renters to have installed efficient lighting.

Figure 4. Age of Thurston Region Housing Stock, by Tenancy and Average Annual Energy Costs



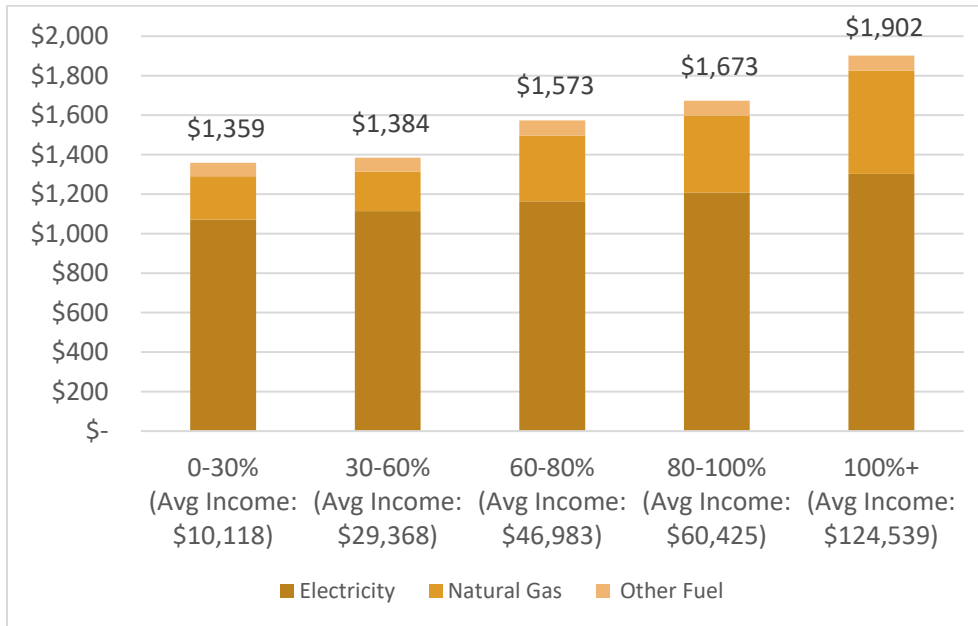
Source: U.S. Census Bureau, American Community Survey 2016-2020 Average; U.S. Department of Energy 2020.

Energy Costs and Energy Burden

In Thurston County, the average household spends \$1,712 on home energy costs per year, an amount that increases slightly as household income increases. Older buildings tend to have higher costs per square foot, though this is offset somewhat by the larger size of newer homes, which have more space to heat and cool.

² R-Value is a measure of insulation’s ability to resist heat flow—the higher the R-value, the greater the effectiveness of the insulation. The 2018 Washington State Residential Energy Code which went into effect in 2021 requires new construction meet insulation standards of R-38-49 for attics and R-21 for wood-framed walls.

Figure 5. Average Annual Cost of Energy in Thurston County based on Area Median Income Bracket. Each bracket also includes the average household income.



Source: TRPC, 2022; U.S. Dept of Energy, 2020

Countywide, residents spend an average of two percent of their annual income on energy costs. This rate is slightly lower than the national average (3 percent), likely because average energy costs are lower in the Northwest than nationally (U.S. Dept. of Energy, 2020). Roughly 13 percent of Thurston County’s households have a high energy burden, meaning they spend more than 6 percent of their income on energy costs, with 7 percent facing a severe energy burden.

Understanding energy burden in a community can help target policies and programs to people who can benefit most from energy efficiency upgrades. Energy costs are influenced by physical factors, such as the age and type of housing and what type of fuel a house uses for heating. Socioeconomic factors also contribute: lower income households often cannot afford the upfront costs of energy efficiency investments and systemic issues affecting people of color contribute to higher energy costs—including exclusionary loan practices that have historically limited their opportunities to purchase or retrofit homes. Nationwide, 67 percent of households below the federal poverty level have a high energy burden. Households of color and residents of manufactured homes, older buildings, and multifamily housing face disproportionately high energy burdens (Drehobl et al., 2020).

Energy Burden

Energy burden is the percentage of a household’s income spent on home energy bills.

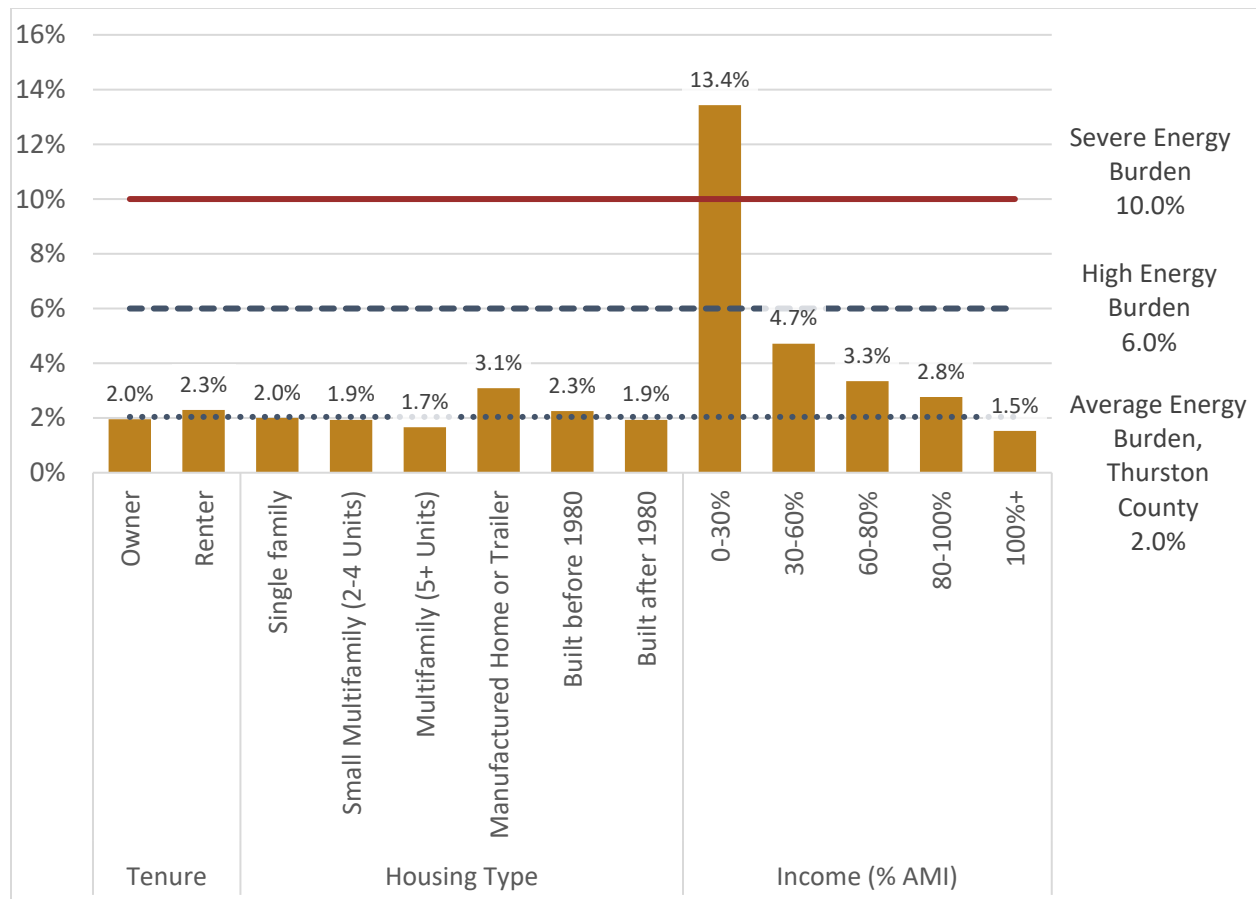
High energy burden – Households that spend 6% or more of their annual income on home energy costs.

Severe energy burden – Households that spend 10% or more of annual income on home energy costs.

Source: APPRISE, 2005

In Thurston County, income is the greatest predictor of a household’s energy burden.³ Households that make less than 30 percent of the Area Median Income (AMI) spend an average of 13 percent of that income on energy costs, compared to households at or above the AMI, which spend less than 2 percent of their annual income on energy. Building type and heating fuel are two physical factors that affect a household’s energy burden. Renters have a slightly higher energy burden than homeowners—in general, renters have lower energy costs than owners, but also have lower incomes on average, so energy costs take up more of that share. People living in manufactured homes and older buildings carry larger energy burdens than those in homes built since 2010 (TRPC, 2020). Households with solar, natural gas, and electricity face lower energy burdens than households that use fuel oil, wood, or liquid petroleum gas as their primary heating fuel.

Figure 6. Average Energy Burden for various subgroups in Thurston County



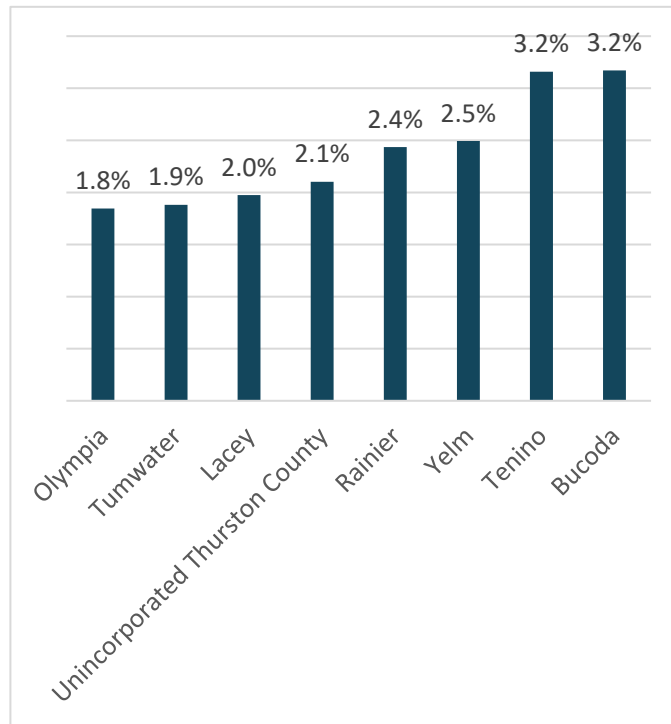
Source: TRPC, 2022; U.S. Dept of Energy, 2020

Geographically, residents of South County cities and unincorporated Thurston County experience greater energy burdens, with Bucoda and Tenino having the highest average burden (greater than 3 percent). Residents of Olympia, Tumwater, and Lacey have lower energy burdens, ranging from 1.8-1.9 percent. This variation is likely caused by differences in building supply and fuel type between the county’s urban areas and smaller cities. South County cities and rural areas of the county have a higher

³ The energy burden of some demographic categories in Thurston County, including race and ethnicity, could not be assessed, due to a lack of reliable data at an appropriate scale.

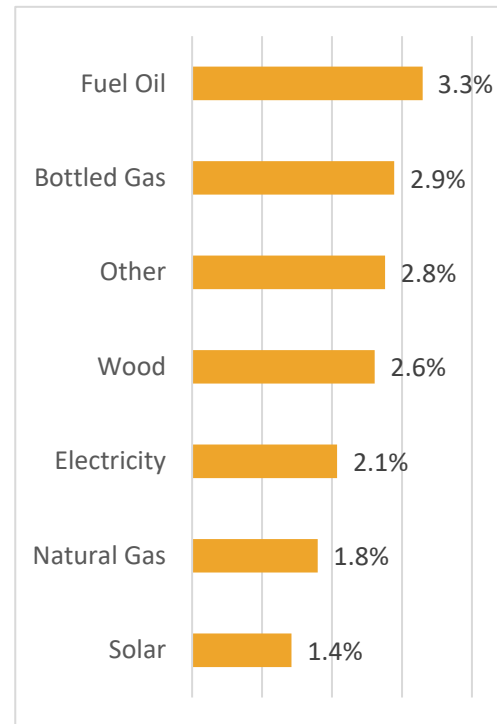
proportion of households that use wood, propane gas, and fuel oil as their primary fuel type, and fewer households rely on natural gas.

Figure 7. Energy Burden by Jurisdiction



Source: TRPC, 2022; U.S. Dept of Energy, 2020

Figure 8. Energy Burden by Fuel Type



Local information on energy use and housing stock can help TCMP partners design energy efficiency policies and programs that best address conditions in their community. Nationwide and local data suggest partners should focus programs on reducing energy burden for low-income households and older homes, and make a targeted effort to reach historically marginalized groups, including residents of color. Other factors differ among TCMP jurisdictions, including share of renters, building condition, and fuel use—this variation means jurisdictions may have different priorities for next steps.

6. Existing Resources

Local partners have a historic opportunity to leverage federal, state, and local policies and programs to address residential energy efficiency in existing homes (see box below). New and expanded resources set in motion by recent federal and state legislation will significantly change the landscape of opportunities for this sector—the details on many of these programs are just starting to come into focus, and TCMP partners will need to continue to track opportunities as they emerge.

Energy Retrofit and Weatherization Programs

Home energy retrofits modify existing buildings to reduce energy use. Weatherization programs are a type of retrofit program that emerged from the oil crisis of the 1970s and typically focus on upgrades to reduce heat loss, such as by installing insulation, sealing air leaks, and updating heating systems. Some of these programs are now being broadened to address other community and climate goals, and include water conservation, health and safety, fuel switching, and renewable energy infrastructure.

- The [Washington State Department of Commerce](#) (Commerce) distributes federal funding for weatherization upgrades, including through the **Weatherization Assistance Program (WAP)** and a portion of the **Low Income Home Energy Assistance Program (LIHEAP)**. Both programs received substantial increases in funding through recent federal legislation and budgeting. In Thurston County, Commerce contracts with the [Community Action Council](#) to distribute these funds – the programs are only available to low-income households. Demand for these programs typically outstrips available funding, and in the past few years, weatherization work has been limited due to pandemic-related restrictions on in-person work, as well as supply chain and workforce challenges.
- The [Weatherization Plus Health program](#) (also operated through the Washington Department of Commerce) is a state-funded program that builds on basic weatherization approaches to include a wider range of social services and respiratory health concerns. The program started as a limited pilot program in 2016, but Commerce began rolling the program out statewide with supplemental funding in 2022, and received funding for a substantial expansion of the program in this year’s budget, including \$35 million from the new Climate Commitment Account. The Weatherization Plus Health program is only available to low-income households. The new iteration of the program is likely to address some gaps of traditional weatherization programs that can help accelerate energy efficiency improvements, such as improvements that are needed to tackle substandard conditions in homes that might preclude energy retrofits (weatherization readiness) and fuel switching.
- The Inflation Reduction Act established the **Home Owner Managing Energy Savings (HOMES) rebate program** to fund retrofits that achieve modeled or measured energy savings across a whole home. The rebates cover up to \$4,000 or 50 percent of project costs, an amount increased to \$8,000 or 80 percent for low-income households. The program will be funded through grants to state energy offices – in Washington State, this office is within the Department of Commerce. It is not clear at this time how a HOMES program will be integrated with Commerce’s existing weatherization programs.

Utility Incentives

Utilities that provide electricity and gas to customers in Washington State are highly regulated, and must develop integrated resource plans that demonstrate how they will meet energy needs and conservation targets at the least cost to ratepayers. The [Washington Utilities and Transportation Commission](#) (UTC) regulates investor-owned utilities that serve Thurston County⁴. Utility conservation programs include consumer incentives, such as rebates on more efficient lighting, appliances, space and water heating, windows, and insulation. While rebate programs can drive consumer choices, they typically underserve low-income and multifamily housing, which face larger barriers to accessing these incentives. Utilities often have separate programs for low-income customers designed to reduce these barriers, but the state does not require a minimum level of support for these categories. Utility regulations and conservation programs are often siloed by fuel type, which makes it challenging to offer incentives to support a switch from natural gas to electricity. Utility programs have traditionally focused on activities that reduce energy costs; this can restrict incentives that prioritize improving public health or reducing emissions, but may have higher costs.

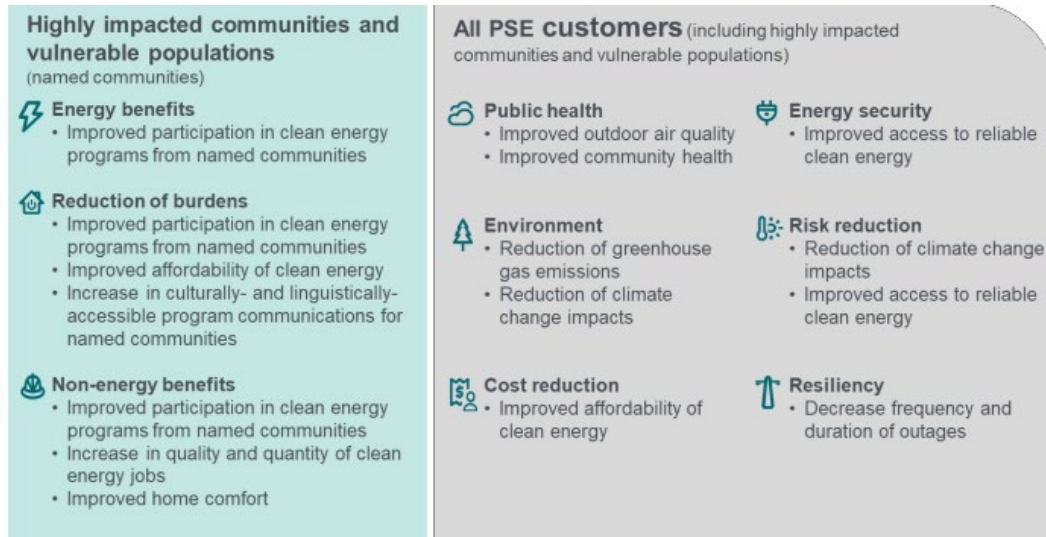
Some states have adjusted their regulated efficiency programs to better support climate goals – including setting fuel neutral and peak demand targets that allow flexibility to track energy savings holistically. Beginning with 2019’s Clean Energy Transformation Act (CETA), Washington utilities are reorienting to address a new state regulatory structure focused on decarbonization and equity.

- [Puget Sound Energy](#) (PSE) and [Cascade Natural Gas](#) currently offer a range of consumer rebates for single-family homes. PSE increases those rebates for low-income ratepayers through their Efficiency Boost program. They offer more targeted programs for multifamily units and manufactured homes, and in Thurston County, they contract with the [Community Action Council](#) to administer weatherization improvements for low-income households.
- PSE recognized in its [2021 Integrated Resource Plan](#) that the utility will need to make “aggressive, accelerated investment in helping customers use energy more efficiently” to meet its requirements. The company’s first [Clean Energy Implementation Plan](#) (2022) includes a new set of customer benefit indicators that will help track how well their programs address a wider range of goals, including their benefit to highly impacted communities and vulnerable populations, which are defined and mapped. The plan also includes specific actions the utility will take over the next four years to increase residential energy efficiency, including expanding equipment and weatherization incentives, launching demand response and time-varying rate programs, and other pilot programs. PSE’s Clean Energy Implementation Plan was approved by the UTC in June 2023.
- In December 2022, the UTC approved a rate increase for PSE customers that also requires the company to improve incentives for low-income conservation and weatherization upgrades and conduct a pilot electrification program that will include fuel switching rebates.

⁴Puget Sound Energy is a private investor-owned electric and natural gas utility providing electricity to the entirety of Thurston County and natural gas to a large portion of the County. Cascade Natural Gas is a private investor-owned natural gas utility which services a small portion of western Thurston County along SR-8.

- As of January 2024, PSE provides rebates for residential customers to switch from gas-powered to electric heat pump appliances, and has launched a free home electrification assessment program.

Figure 9. Puget Sound Energy’s Proposed Indicators. Source: PSE 2022



Tax Incentives

Tax incentives attempt to influence behavior voluntarily, rather than through regulations or technical support. **Tax credits** reduce the amount of tax an individual or household owes – this means they have wide application, but often do not benefit lower-income individuals who annually owe little or no taxes. They also require individuals to complete the appropriate forms to claim the credit as part of their tax filing – another potential barrier. **Tax rebates** are generally applied at the time of sale or transaction, as a reimbursement. They are a more immediate incentive, and in some cases, filing may be handled directly by a contractor as part of their service, so the burden on the individual to claim the rebate is minimal. Appendix A includes additional information on the feasibility of property tax incentives for energy efficiency improvements.

Federal

The federal Inflation Reduction Act (IRA) extended [some existing incentives for residential energy efficiency and created several new ones](#).

- The **Energy Efficiency Home Improvement Credit** covers up to 30 percent of the costs for a variety of energy improvement equipment and services, including home energy audits, building envelope improvements, and heating equipment upgrades. Energy efficiency credits can be combined up to a yearly maximum of \$3,200. This income tax credit is available through 2032 to both homeowners and renters who make qualifying improvements (no income limits), but cannot be claimed by landlords for improvements to buildings that are not their primary residence.
- The **Residential Clean Energy Property Credit** covers up to 30 percent of the costs of installing solar, wind, fuel cell, geothermal, and battery storage technology in a home. This income tax

credit is available through 2032 to both homeowners and renters who make qualifying improvements (no income limits), but cannot be claimed by landlords for improvements to buildings that are not their primary residence.

- The **High-Efficiency Electric Home Rebate** is a point-of-sale consumer rebate that covers 100 percent of electrification costs for low-income households and 50 percent of costs for moderate-income households – in both cases up to a maximum \$14,000. The rebate can cover both equipment and labor, and includes things like heat pumps, electric stoves, and enabling improvements like upgraded circuits, and other energy efficiency measures. These rebates will be distributed through contractors, via the State Energy Office, and are likely to be aligned with the HOMES rebate program discussed above – they will not be available to consumers until Commerce develops its own rules and processes.

State

Currently, there are no state tax credits or rebates specific to residential energy efficiency improvements, outside of those offered through utilities. Washington State does offer a **property tax exemption for improvements to single-family dwellings** (RCW 84.36.400 and WAC 458-16-080). This exemption applies to “any addition, improvement, remodeling, renovation or structural correction” that adds permanent value to the home—this broad definition could apply to some types of energy efficiency upgrades, as long as they are not considered repairs or ordinary maintenance. The exemption lasts for three years, but the property owner must file a claim with the county assessor’s office in advance of the renovation. According to a 2020 report from the Department of Revenue, this tax exemption is underutilized and “not effective in encouraging homeowners to make improvements to their residences.”

Benchmarking and Performance Standards

Home energy rating programs, also known as benchmarking or energy labeling programs, measure a building’s energy use and compare it to similar buildings or a reference Building Performance Standard. These programs help building owners and occupants understand when they may be able to save energy and money through efficiency upgrades. There are many examples of local governments that have established either voluntary or mandatory benchmarking programs. A handful of states and local governments require that existing buildings meet specific performance standards.

- Washington State’s [Evergreen Sustainable Development Standard](#) (ESDS) is a building performance standard that applies to all affordable housing projects that receive funds from the state Housing Trust Fund and many other local housing funds. The standard includes minimum requirements for energy efficiency among its criteria. The standard was first created in 2015, and last updated in 2022.
- In 2022, the Washington State legislature approved an expansion to the 2019 Clean Buildings Act, which established a [Building Performance Standard](#) for larger commercial buildings in Washington State. With the expansion, multifamily buildings larger than 20,000 square feet will need to complete mandatory reporting on their energy use beginning in 2027 and meet an adopted performance standard by 2031. Though not required to comply with the Clean Building Standard currently, multifamily buildings are eligible to apply for the [Early Adopter Incentive](#)

[Program](#), which awards payments to buildings that voluntarily conduct an energy audit and meet the standard.⁵ High energy users, rural communities, and multifamily affordable housing receive preference for incentive funding through the program. While most housing in the Thurston region is not large enough to meet the program threshold, there are approximately 180 apartment buildings that could be eligible for the early adopter incentives.

Other Funding Opportunities

- The federal Bipartisan Infrastructure Law revived the [Energy Efficiency and Conservation Block Grant Program \(EECBG\)](#) first enacted in 2007. The U.S. Department of Energy will award formula grants directly to larger local governments, states, and Tribes to implement strategies to reduce fossil fuel emissions, decrease total energy use and improve efficiency. There will also be a competitive grant process for cities that do not meet the program’s formula threshold. Partners can apply to use these funds for a wide range of activities - relevant eligible residential energy efficiency activities include building audits and retrofits, efficiency and electrification campaigns, building performance standards, workforce development, and financial programs (loans, performance contracting, rebates, or other incentives).
- The federal Inflation Reduction Act created a new [Greenhouse Gas Reduction Fund](#) under the Clean Air Act which will distribute \$27 billion through competitive grants to reduce greenhouse gas emissions, with a focus on benefits to low-income and disadvantaged communities. The U.S. Environmental Protection Agency (EPA) currently is developing program specifics.
- The IRA created the [Climate Pollution Reduction Grants](#) (CPRG) program at EPA, which will provide grants to states, territories, tribes, air pollution control agencies, and local governments to develop and implement plans for reducing greenhouse gas emissions and other harmful air pollution. The first phase of funding will distribute \$250 million for planning grants, and a second stage will fund implementation of plans developed in the first round.
- EPA has an unprecedented amount of funding to distribute through its [Environmental Justice programs](#), including \$2.8 billion through Environmental Justice Community Block Grants to community-based organizations. Eligible activities for this funding include projects to reduce indoor air pollution (which could include programs focused on electrification and weatherization) and workforce development. While local governments are not eligible to apply

Table 3. Formula Grant Funding Allocations to TCMP local governments for the Energy Efficiency and Conservation Block Grant (EECBG)

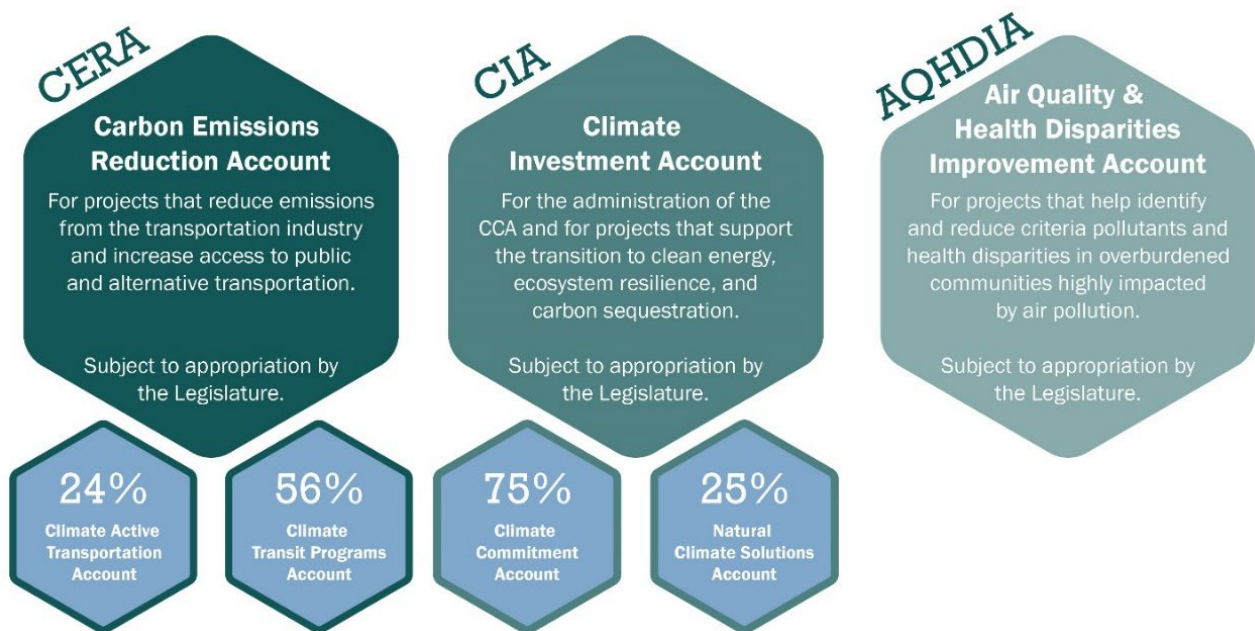
Local Government	EECBG Formula Allocation
Thurston County	\$81,040
Lacey	\$115,460
Olympia	\$122,030
Tumwater	Not eligible for formula funding, but could apply for competitive grant program.

⁵ Through the Early Adopter incentive program, multifamily buildings larger than 50,000 square feet can receive payments of \$0.85 per gross square foot of floor area, while multifamily buildings between 20,000 and 50,000 square feet can receive an incentive payment of \$0.30 per gross square foot of floor area.

for these grants, they could partner with a local organization to propose a project that helps achieve TCMP strategies.

- Proceeds from the state [Climate Commitment Act](#) cap-and-invest program will support a variety of potential climate activities, including building energy efficiency and electrification through the Climate Commitment Account. The first auction was held in February 2023 and sold just under \$300 million in allowances. The Washington State Department of Ecology oversees the allocation of these funds, with direction from the state legislature, but at least 35 percent of funds collected from the emission allowance auctions will be invested in projects that benefit overburdened communities.

Figure 10. Accounts that receive cap-and-invest auction proceeds. Source: Washington State Department of Ecology.



Strategies for Leveraging State and Federal Funds

Local partners have an unprecedented chance to tap into state and federal resources to address climate change and promote energy efficiency, but accessing those funds will take some pre-work on the part of TCMP partners. Funders want to fund projects that are supported, thought out, and likely to succeed. Here are five strategies to make the most of this opportunity – many are already in place or underway in the Thurston region.

- ✓ **Align goals.** Look for funding opportunities that align with adopted goals and targets, such as those in the Thurston Climate Mitigation Plan, and show the link to your community's priorities in applications.
- ✓ **Do your research.** Gather background data to characterize and understand local conditions, such as demographics, housing supply, market conditions, underrepresented and disadvantaged communities, and current workforce needs. Be ready to tell the story of why the Thurston region is the right place for investment – the information in this report is a start.
- ✓ **Lay the groundwork.** Develop a plan to meet community needs before chasing funding. Identify multiple and diverse community benefits that can be achieved through each project, and vet the project idea with relevant stakeholders. Match funding opportunities with identified needs.
- ✓ **Assemble a team.** Build relationships and identify common goals with internal departments, neighboring jurisdictions, funders, community organizations, and stakeholders, so they are ready to support an application. Many federal programs will be allocated through the state – get to know those program contacts.
- ✓ **Identify matching funds.** Many funding programs require a local match, often up to 20 percent of the request. Even if not required, documenting local investment in a program can make applications more appealing to funders. Think creatively about potential resources that could be used as match, and understand the administrative implications and timing of these sources ahead of time – this will simplify the work when it comes to developing a funding request:
 - **Local taxes and revenue** – Can a portion of local taxes or revenue sources be earmarked for use to support climate activities?
 - **General fund** – Can a portion of general fund be earmarked to support climate activities?
 - **Staff time** – Do any existing or planned staff positions support the climate work?
 - **Volunteer time** – Are there any existing or planned advisory groups or volunteer activities that could be tracked as match?
 - **State funds** – Are there any relevant state funding sources that could be layered as match with a federal source (ex., Climate Commitment Act funds)?
 - **Private funds** – Are there any local foundations or businesses that share the goals of the program and might be interested in providing supporting match?

Resources

Alliance for a Sustainable Future (2022) [Cities Advancing Climate Action: Leveraging Federal Funds for Local Impact, A Resource Guide](#)

7. Policy Options

TCMP partners have many directions they could take to increase residential energy efficiency and meet targets outlined in the TCMP. TRPC staff developed a list of potential policy options based on a review of literature and case studies, including the American Council for an Energy-Efficient Economy (ACEEE) State and Local policy database and the North Carolina Clean Energy Technology Center’s Database of State Incentives for Renewables & Efficiency (DSIRE). Additional details of each action are included in Appendix B.

Cost Estimates

- \$ = less than \$100,000
- \$\$ = \$100,000-\$1,000,000
- \$\$\$ = \$1,000,000

More detailed cost estimates are included with the description of each action.

Staff Requirements

- Low = less than 1 FTE for limited duration, across all partners
- Medium = 1 FTE for longer duration, across all partners
- High = More than 1 FTE, for indefinite duration, across all partners

Action	Initial Cost	Ongoing Costs	Staff Requirements	Potential Lead
Outreach and Technical Support				
State and Federal Program Tracking and Advocacy	\$	\$	Low	Thurston County, Lacey, Olympia, Tumwater
Energy Navigator Program (State)	\$	-	Low	WA Dept Commerce
Energy Navigator Program (Local/Regional)	\$\$	\$\$	Medium-High	Thurston County, Lacey, Olympia, Tumwater, local NGO
Financial Incentives				
Single Family Home Improvement Tax Incentive Amendment	\$	\$	Low	Thurston County, Lacey, Olympia, Tumwater
Multifamily Housing Tax Exemption Amendment	\$	\$	Low	Thurston County, Lacey, Olympia, Tumwater
Alternative Property Tax Incentive	\$	\$	Low	Thurston County, Lacey,

Action	Initial Cost	Ongoing Costs	Staff Requirements	Potential Lead
				Olympia, Tumwater
Alternative Financial Incentives	\$	\$	Medium	Thurston County, Lacey, Olympia, Tumwater
Regulatory Approaches				
Energy Performance Rating and Disclosure (State Program)	\$	\$	Low	WA Dept of Commerce
Energy Performance Rating and Disclosure (Local/Regional Program)	\$\$	\$\$	Medium-High	Thurston County, Lacey, Olympia, Tumwater
Performance Standard (State Program)	\$	\$	Low	WA Dept of Commerce
Performance Standard (Local/Regional Program)	\$\$	\$	Medium	Thurston County, Lacey, Olympia, Tumwater
Supporting Actions				
Block Grant Coordination	\$	\$	Low	

8. Setting an Equitable Course on Residential Energy Efficiency

Existing inequities in our society mean some people are more vulnerable to climate impacts like increased heat, flooding, food insecurity, air quality, and public health impacts. These communities may benefit the most from climate solutions that improve livelihoods, services, and human health, but only if such interventions are developed in a way that considers and accounts for the specific needs of these communities. Local, state, and federal policies and programs can help move the region toward the home energy improvements necessary to meet climate goals, however, there is a growing body of literature demonstrating that benefits of such programs will be inequitably distributed unless carefully designed (Brown et al. 2020).

Equitable climate action begins with the principle that everyone, regardless of background or circumstances, has the right to benefit from climate mitigation solutions. Actions taken by local partners to improve residential energy efficiency should recognize the disparities that make it more difficult for some populations to participate and strive to remove those barriers. To help achieve a more equitable outcome, local jurisdictions can take the following steps when moving ahead with any of the policy options identified in the previous section.

Step 1: Recognize and understand the needs of specific impacted and vulnerable populations.

Clearly identify and define the populations that programs or actions are intended to serve. For example, avoid setting a goal to serve “marginalized” households without clearly stating which households fall under that designation. The groups identified will likely differ depending on the action being considered and the intended outcome.

✓ *Get Started*

- Tailor programs to reach one or more of three populations that researchers have identified as having higher energy burdens that are typically underserved by energy efficiency programs: multifamily and rental markets, rural communities, and manufactured and mobile homes (Drehobl and Ross 2020, Brown et al. 2020).
- Review demographic data and/or environmental justice screening tools to better understand the distribution and characteristics of populations who may be affected by a policy decision (see Resources section). Recognize that these tools can provide some context, but should be used in tandem with consideration of local context.
- Review local and national data on the housing market to better understand the housing and energy needs of any targeted population. For example, if targeting low-income renters, use Census data to identify neighborhoods with large shares of renters, where the number of renter households is rising or declining, and where high proportion of income is spent on housing and utility costs.

Prioritize robust community engagement and allow disinvested communities to drive decisions. Impacted communities should be involved in designing solutions that affect them. This means projects need to allow sufficient time and opportunity for those community’s contributions to influence regulatory decisions or program design, and implementors should ensure outreach to impacted populations is effective and culturally appropriate. This can include making targeted efforts to reach those who have language barriers, lack internet access, live in more isolated areas, and may be less socially connected. To be successful, partners will need to spend time identifying and building relationships with contacts

within impacted communities, while recognizing that representatives of these communities often have limited capacity.

✓ *Get Started*

- Identify key community leaders, community-based organizations, service providers, events, or locations that serve target communities. Before approaching, consider how your organization will bring support to the community, not only solicit support from it.
- Review project concepts and proposals with standing equity committees, recognizing they have limited time, and cannot fully represent all communities.
- Build capacity among identified communities by providing compensation to support their participation and developing mentorship and leadership opportunities within the program design.
- Report back on project progress and outcomes, including how the community's input influenced decisions or program design. Be accountable and acknowledge when outcomes fall short of intent.

Assess and document how the policy or program will address or exacerbate existing inequities. Spend time at the start of the program thinking through its desired and undesired impacts. This includes short-term outcomes, such as benefits to program participants, as well as indirect or delayed effects, such to housing affordability, neighborhood investment, and job opportunities.

✓ *Get Started*

- The equity assessment resources described below provide a starting place for an assessment. This information should be supplemented with background data and community perspectives specific to the proposal.
- Co-create a vision with community representatives for how the initiative should work to improve residents' lives. This vision may not be primarily focused on climate outcomes—it should center the community's needs, which may focus more on factors like health, housing and economic stability, and quality of life. Meeting local governments' greenhouse gas reduction targets may be a secondary co-benefit.

Step 2: Design actions to deliver positive impacts and minimize and mitigate burdens and barriers to identified populations.

Build flexibility into program design. The most successful residential energy efficiency programs employ multiple initiatives to ensure residents in the target population stay included – for example, providing financial support for health and safety home improvements that may be needed before energy efficiency upgrades can be considered, or pairing regulatory approaches with robust technical assistance and outreach and allowing long compliance timelines to help overcome barriers.

✓ *Get Started*

- Map out ways potential participants could be disqualified or fail to move ahead in the proposed program; then identify strategies that would help keep them enrolled.

Look for opportunities to auto-enroll targeted communities in energy efficiency programs by piggybacking on services provided to these communities by other agencies. Partner with service providers identified through Step 1 to reach target populations as an added benefit through programs

they already know and trust. This may mean working through new partners that have strong community connections, like schools, churches, utilities, healthcare providers, and grocery stores. It may also mean building capacity within these service providers to administer and deliver programs directly. Another strategy is to have program staff complete enrollment information, to remove the barrier of filling out an application.

✓ *Get Started*

- Make a list of programs or requirements that already serve the target population, and consider whether any are positioned to implement or promote the new initiative. Consider the potential risks and rewards of partnership, compared to the vision co-developed in Step 1.

Avoid creating barriers between targeted communities and new services. For example, many energy efficiency programs require an up-front investment to access incentives, which can be a barrier for low-income households, or operate on a first-come, first-serve basis, and so see lower participation from groups that are less socially connected to traditional government communications or have less capacity to initiate participation. Instead, dedicate a set portion of program funds for the communities identified in Step 1, and offer no-cost or deferred cost options and technical support. Instead of tax incentives, which target wealthier people who have greater tax burdens and can wait for reimbursement, employ up-front rebates at time of purchase.

✓ *Get Started*

- Review program designs with contacts identified in Step 1 to identify potential blocks.

Reduce the potential for displacement of lower income and vulnerable communities due to energy efficiency upgrades. Energy efficiency improvements add value to homes, in part because they often address general maintenance issues that add to the comfort and livability of the home beyond its energy use—this can have the unintended consequence of driving up rents and housing prices. Responding to new requirements can be especially challenging for smaller landlords that offer much of the naturally occurring affordable housing in communities (units that were not created through a public subsidy)—without some flexibility, complying with the requirements can drive these operators and their units out of the affordable housing market. When creating energy efficiency incentives, such as tax incentives, consider pairing the incentive with an affordability covenant that places a legal requirement on the property that limits the resale price or ties future rents to specific incomes for a set period of time. If establishing a performance standard or retrofit requirement, pair it with robust assistance and incentives to ensure a high rate of willing compliance.

✓ *Get Started*

- As part of an equity assessment in Step 1, identify the potential for increasing displacement of target population due to the program being considered.

Look for opportunities to pair energy efficiency upgrades with workforce development opportunities. Design, construction, manufacturing, and maintenance are all vital to increasing energy efficiency, and historically, this type of work flows through small businesses. Consider how local workforce development can help address potential supply and labor shortages, and options for directing benefits to specific communities. For example, some communities set contracting targets for minority- and women-owned businesses or set hiring expectations when contracting for services.

✓ *Get Started*

- Make a list of local workforce development programs, and reach out to identify existing programs that support energy efficiency and opportunities to partner.

Step 3: Embed accountability, including benchmarks, metrics, and evaluations, into all actions.

Track and report out on the distribution of program spending and energy saving benefits from federal, state, and private programs to targeted communities. Many of the new legislative programs noted in the previous section include provisions to target investments and improvements to vulnerable and impacted communities—for example, CETA requires that utilities’ Integrated Resource Plans direct a portion of energy resource investments in areas that will provide energy benefits to impacted communities. As these policies move ahead, it will be helpful to track how they are driving investments in the Thurston region, the type of benefits being generated, the populations or communities that are benefitting, and influence on local planning and programs.

✓ *Get Started*

- Identify performance metrics to include in monitoring program and/or annual reports. Consider applicability to the vision and intent of the program, as well as the commitment required to collect updates of the data over time.
- Establish a baseline for identified performance metrics.
- Establish expectations and protocols for collecting any necessary data up front,
- Budget for data collection and reporting in program scopes and funding requests.

Set goals for investment in impacted and vulnerable communities. Defining targets will help direct efforts, communicate program outcomes, and highlight needed course correction. Recognize that connecting with disadvantaged and disconnected communities often requires a greater and more sustained investment of time and resources. Programs that tie effectiveness only to return on investment (i.e., energy reductions compared to program costs) can inadvertently make populations that are harder to engage less of a priority. Be clear about what the target is measuring—stating that a certain percentage of a program will benefit communities identified in Step 1 could mean the proportion of participants in a program, the proportion of program funds spent on technical assistance and direct support to those communities, or the share of another metric (such as reduced energy costs or reduced greenhouse gas emissions) can be tied to work with the identified communities. All these goals have merit, but create different emphases and messages.

✓ *Get Started*

- Use community demographics as a basis for defining representation. For example, nearly a quarter of Thurston County households are considered extremely or very low income,⁶ so initiatives could set a goal that a minimum 25% of programs benefit households in this category. [TRPC’s Profile](#) lists many types of demographic information for all communities in Thurston County.
- If there isn’t an obvious local target, start with the goal set by the federal Justice40 initiative – that 40% of benefits flow to disadvantaged communities.

⁶ Source: U.S. Census, 2016-2020 American Community Survey; HUD Comprehensive Housing Affordability Strategy (CHAS) data. 12% of Thurston County households earn 0-30% HUD Area Median Income; 11% earn 30-50% AMI.

Thurston Climate Mitigation Plan Equity Assessment: Resources

Community partners seeking to take an equitable approach to implementing actions from the Thurston Climate Mitigation Plan can use the following assessment questions to begin to identify and address potential disparities. Achieving equity is a process, and this assessment should be treated as a starting place for that ongoing conversation.

- What impacted or vulnerable communities could benefit from or be burdened by this strategy or action?
 - **Existing disparities** – How does the strategy or action connect to existing disparities or inequities, such as: access to or cost of housing, access to or cost of transportation, access to open space, food security, health outcomes, economic opportunities
 - **Financial vulnerabilities** – Does the strategy or action impact low-income populations?
 - **Social/demographic vulnerabilities** – Does the strategy or action impact Black, tribal citizens and indigenous people, people of color, older people, youth, people with limited English proficiency, recent immigrants, unsheltered people, people with disabilities, and/or people with health concerns?
 - **Geographic vulnerabilities** – Does the strategy or action impact rural populations, those living in proximity to environmental hazards, and/or those dependent on natural resources?
- How could the strategy or action benefit or burden vulnerable populations, increase or decrease equity? Any unintended consequences?
 - **Wealth** – will the action affect the wealth of target populations/participants?
 - **Health** – will the action have any positive or negative health effects?
 - **Accessibility** – will the action create improvements or reductions in access to services?
- What are ways to enhance positive impacts or reduce negative impacts of the strategy or action?
 - What would mitigate unintended negative consequences?
 - Can resources be targeted to benefit or reduce inequities for impacted communities?
 - How can impacted communities and stakeholders be involved in designing actions?
 - Could existing partnerships be strengthened to maximize impact in the community?

An initial equity assessment for residential energy efficiency actions in the Thurston Climate Mitigation Plan is provided below, along with several tools and data sources for gathering background demographic information. To fully consider the impacts of a specific proposal, this assessment should be supplemented with additional information gathered in Step 1, especially the perspectives of impacted communities.

Thurston Climate Mitigation Plan Equity Assessment: Resources

Table 4. Example equity assessment for actions under the residential energy efficiency strategy in the Thurston Climate Mitigation Plan. Should be supplemented with input from impacted communities.

TCMP Strategy	B1 – Reduce energy use in existing residential buildings.
Potential disparities or inequities	<ul style="list-style-type: none"> • Housing and energy cost burden • Housing age and condition (older, less-efficient homes) • Housing quality (indoor air quality, thermal comfort) • Access to/awareness of incentive programs • Access to initial capital and/or lending/financial • Representation of impacted communities in building trades occupations/contracting opportunities
Potential benefit to impacted communities	<ul style="list-style-type: none"> • Reduced energy costs • Improved comfort • Improved indoor air quality and health outcomes • Increased home value • Workforce/economic opportunities
Potential burdens to impacted communities	<ul style="list-style-type: none"> • Increased cost of housing (buyers and renters) • Retrofitting construction or improvements leads to tenant displacement • Incentives that reduce property taxes may reduce funding base to schools or other supportive social programs
Ways to enhance positive and/or reduce negative impacts	<ul style="list-style-type: none"> • Target outreach about and/or access to programs to impacted communities. • Develop incentives with input from impacted communities. • Include anti-displacement measures to support and protect tenants. • Pair broad requirements or regulations with targeted funding, resources, or allowances for impacted communities • Set contracting/hiring targets for underrepresented populations

Demographic and Environmental Justice Screening Tools

There are an increasing number of tools available to help local jurisdictions identify, understand, and characterize existing inequities that can inform the design of policies and programs. Here are a few resources to consider:

- [Climate and Economic Justice Screening Tool](#) (federal) – Developed by the White House Council on Environmental Quality; highlights census tracts considered overburdened and underserved.
- [Equitable Transportation Community Explorer](#) (federal) – Developed by US Department of Transportation to explore cumulative burden on communities and highlight underinvestment.
- [Washington Environmental Health Disparities Map](#) (state) – Developed by the Washington State Department of Health with the University of Washington to identify health disparities.
- [Racial Equity in Thurston Region](#) (local) – Section of TRPC’s online Profile with demographic data that explores racial and ethnic inequities in Thurston County.

9. Conclusions

This report outlines existing information and resources for policymakers and staff to consider for increasing residential energy efficiency in line with targets set in the Thurston Climate Mitigation Plan.

Based on this report's review, local partners may wish to consider the following priorities in developing their next steps:

- Focus strategies on residents facing the greatest energy burdens, especially lower income households that struggle disproportionately with energy costs. People living in manufactured homes, renters, and rural residents all experience higher than average energy burdens in the Thurston region, and could benefit from programs targeted to their needs.
- Focus interventions in areas with higher energy costs, including neighborhoods with greater concentrations of older homes (built before 2010), as well as South County communities and rural areas.
- Include strategies that support electrification, especially switching home heating and other appliances from natural gas to electric.
- Pursue actions that fill gaps in the existing policy structure, such as outreach and technical support to connect residents to available state and federal resources or aligning incentives to appeal to target communities.
- Leverage existing and new state and federal resources for residential energy efficiency to the maximum benefit for Thurston County residents by dedicating resources to track funding opportunities, clarify and align goals, develop partnerships, and gather background information.

The most effective residential energy efficiency programs, such as those offered in Colorado and Minneapolis, employ a full suite of integrated programs where financial incentives are paired with regulatory approaches (ex., as a reward for meeting or exceeding a building performance standard) and non-regulatory technical support (ex., as part of a navigator program that conducts outreach to households, and connects them with appropriate resources). Therefore, TCMP partners may wish to lay out a phased or layered strategy for achieving energy efficiency goals.

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