MEMORANDUM

TO: Thurston Climate Mitigation Collaborative Community Advisory Workgroup

FROM: Thurston Climate Mitigation Collaborative Staff Team:

Linsey Fields, City of Lacey
Pamela Braff, City of Olympia
Alyssa Jones Wood, City of Tumwater
Rebecca Harvey, Thurston County

DATE: June 20, 2024

SUBJECT: Home Energy Assessment (HES) Model Ordinance Policy Review, Version 2

Actions Taken

At the May 7, 2024 and June 4, 2024 Community Advisory Workgroup (CAW) meetings, the CAW members reviewed an earlier version of this memorandum. By the end of the June meeting, the CAW had reached consensus with all Staff Team recommendations included in this memorandum.

Following those CAW meetings, and utilizing better and more recent data, this memorandum has been updated.

Home Energy Assessment (HES) Model Ordinance Policy Review and Recommendations

A review of policy considerations for a residential home energy assessment and disclosure policy to support the implementation of the Thurston Climate Mitigation Plan and 2024 Thurston Climate Mitigation Collaborative Regional Initiative.

CONTENTS

1. BACKGROUND

Purpose

Energy use in residential buildings accounts for 32 percent of inventoried greenhouse gas emissions in the Thurston region (TRPC, 2022). While recent updates to the Washington State Building code significantly increase energy performance requirements for new residential development, these requirements do not address existing homes, many of which were built to less efficient standards. More than 50% of the homes in Thurston County were built before 1990, with nearly 20% built at least 50 years ago (U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates). The large proportion of older homes in the region suggests that many would benefit from energy- and cost-saving retrofits. Additionally, more than two-thirds of the housing units that will exist in 2050 already exist today, so retrofitting existing homes to improve energy efficiency is a key strategy to meet regional climate mitigation goals (TRPC, 2020).

One of the barriers to improving the energy efficiency of existing housing units is lack of homeowner awareness and information on the energy performance of their properties. Without this information, it is challenging for consumers to prioritize energy efficiency in home purchasing and improvement decisions. To address this challenge, several cities and states have developed residential home energy assessment and disclosure policies/programs. These policies and supporting programs provide homebuyers and occupants with an assessment of home energy performance, expected energy costs, and recommendations for cost-effective improvements to reduce energy use and cost.

A home energy assessment and disclosure program provides homeowners and homebuyers with an assessment of home energy performance, expected energy costs, and cost-effective improvements to reduce energy use and costs. Similar to vehicle mile-per-gallon ratings and home appliance energy guide labels, the home energy label provides a consistent metric to easily compare the energy efficiency of multiple homes. Homeowners and homebuyers can use this information to estimate energy use and costs and identify energy efficiency upgrades to make their homes more comfortable and affordable. By making energy costs transparent to consumers, these types of home energy labeling programs also provide a mechanism for the real estate market to value both energy performance and home energy improvements that reduce the total cost of home ownership.

Long-standing home energy assessment policies have shown that mandatory disclosure successfully encourages investments in energy efficiency and that the policy increases investments made by both sellers and homebuyers (Myers, Puller, & West, 2019). These existing programs and policies provide a valuable foundation for designing and implementing a local disclosure policy in Thurston County (Table 1). The policy research and recommendations included within this report aim to build upon the success of existing programs through the U.S., to design an effective model ordinance for home energy assessments in Thurston County.

Table 1. Review of existing home energy score disclosure policies and programs in the United States.

City/State	Disclosure Policy	Energy Label Used	Notes
Fort Collins, CO (electric utility)	Voluntary	Epic Certificate	Provided by electric utility
State of Connecticut	Voluntary	HES	
State of Massachusetts	Voluntary	Home MPG	
State of Missouri	Voluntary	Home Energy Certification	
Columbia, MO (electric utility)	Voluntary	Efficiency Score	Provided by electric utility
State of Oregon	Voluntary	HES	
Association of Bay Area Governments (through BAYREN)	Voluntary	HES	Program is offered across 9 counties in the Bay Area
Eugene, OR	Voluntary	HES	
Berkeley, CA	Mandatory, Time of Listing	HES	Sellers may defer the assessment requirement to the buyer or complete an energy efficiency or electrification update for alternative compliance
Portland, OR	Mandatory, Time of Listing	HES	
Minneapolis, MN	Mandatory, Time of Listing	Energy Disclosure Report	Combines both energy and water consumption
Austin, TX	Mandatory, Time of Listing	Energy Disclosure Report	Program is offered through Austin Energy Utility
Chicago, IL	Mandatory, Time of Sale	Utility Bills	Program is available to homeowners and renters
Montgomery County, MD	Mandatory, Time of Sale	Utility Bills	
State of Kansas	Mandatory, Time of Sale	Energy Checklist	Only for new construction.
State of South Dakota	Mandatory, Time of Sale	Energy Checklist	Only for new construction.
Hillsboro, OR	Mandatory, Time of Listing	HES	
Milwaukie, OR	Mandatory, Time of Listing	HES	
Bend, OR	Mandatory, Time of Listing	HES	

Key Terms

Home Energy Score (HES): a rating of home energy efficiency developed by the U.S. Department of Energy (US DOE) that is based on physical inspection of the home or design documents used for the home's construction. The HES is an asset rating, which quantifies the energy efficiency of a building based on the home's physical assets rather than occupant behavior.

HES Assessor: a qualified professional who collects information about a home and then utilizes the US DOE Home Energy Score energy modeling software to estimate the annual energy use of the home based on standard methodology and operations as well as local weather patterns. The US DOE certifies Assessors utilizing existing credentials, a simulation, exam, and mentored scoring. Those who have completed the DOE certification are called referred to as a HES Certified Assessor.

Home Energy Performance Report: the report prepared by a Certified home energy Assessor using either the US DOE reporting template or a regionally created custom reporting template.

Policy Goals

By working together to design and propose a regional home energy assessment and disclosure policy for consideration by the Thurston Climate Mitigation Collaborative (TCMC) Jurisdiction Parties, the TCMC aims to achieve the following goals:

- Develop and adopt a regionally consistent policy for the assessment and disclosure of residential energy performance ratings and reports. Note: this initiative only includes the development of a model ordinance. The Jurisdiction Parties (Lacey, Olympia, Tumwater, and Thurston County) may individually consider adoption of the proposed policy in early 2025.
- Provide a framework for Thurston residents residing in single-family, duplexes, triplexes, courtyard apartments, and townhomes to learn about their home energy performance, expected energy costs, and cost-effective improvements to reduce energy consumption and the cost of home ownership/occupancy.
- Connect single-family, duplex, triplex, courtyard apartment, and townhome homeowners/occupants to existing and forthcoming resources, guidance, and incentives to simplify energy efficiency retrofits.
- Capitalize on the unprecedented federal and state funding available to make energy efficient home improvements.
- Support energy equity and housing affordability by providing subsidized home energy assessments and additional resources for low- and moderate-income homeowners.
- Increase implementation of home energy efficiency and electrification upgrades and retrofits.
- Develop a monitoring and reporting system to track implementation of home energy assessments and energy efficiency upgrades.
- Provide a mechanism for the real estate market to value both home energy performance and home energy improvements that reduce the cost of homeownership/occupancy.

It is important to acknowledge that no single policy or program can achieve all necessary reductions in residential energy use. The proposed home energy assessment and disclosure policy is one of many strategies that can assist with reducing energy use and greenhouse gas emissions from residential buildings.

2. POLICY CONCEPTS

Key considerations for the design of a home energy score policy include the type of information that is disclosed, the timing of disclosure, suitable use cases and exclusions, and any provisions for low-income subsidies. This section describes options and staff recommendations for these policy parameters. A summary of key policy concepts and recommended approaches is provided in Table 2, followed by a description of each policy option in the sections below.

Background and recommendations for the design of this policy were informed by resources from the "Home Energy Labeling Partnership" developed by Rocky Mountain Institute and Earth Advantage, the Urban Sustainability Directors Network, as well as conversations with staff from local governments (Portland, OR, Milwaukie, OR, Ann Arbor, MI, Beaverton, OR, Ashland, OR) and partner organizations (Earth Advantage, Washington State Housing Finance Commission) experienced in home energy labeling programs.

Table 2. Key policy concepts and recommendations for a Home Energy Score model ordinance.

Policy Concept	Recommendation
This section summarizes the staff recommendations for key policy concepts associated with a home energy assessment and disclosure policy.	
Regional Coordination	• To provide consistent standards across jurisdictions and ensure that energy performance information is easily comparable across the Thurston region, partner jurisdictions should prioritize the development of a regionally coordinated home energy score policy and program.
Assessment Type	• **Asset Ratings**: To provide consistent and objective energy performance information that can be easily compared across multiple homes, energy performance information should be disclosed in the form of asset ratings. • **DOE Home Energy Score (HES)**: To provide the most affordable and easily implemented energy assessment, home energy performance should be assessed using the US Department of Energy's Home Energy Score (HES).
Energy Performance Reports	• **Custom Energy Reports:** To maximize the potential for implementation of identified cost-effective improvements, the Thurston Region should design and standardize the use of a custom Energy Report (example Appendix C) that goes above and beyond the US DOE standard Energy Performance Report (Appendix B). Additional information that could be included on the Custom Energy Reports include the carbon footprint of the home, indoor air quality or resilience improvements, and information about local, state, and federal incentive programs to facilitate some of the cost-saving measures and/or electrification options. • **Energy Report Disclosure**: To provide prospective buyers with a high level of access to home energy and cost savings information, HES reports should be made widely available. HES reports should be disclosed through the

	multiple listing service (MLS)[1], included on real estate listings (printed advertisements, internet postings, and third-party listing services) via listing marketing remarks, and provided to real estate agents and prospective buyers as a supplement.
Trigger Event	• **Time of Listing**: To ensure prospective buyers can compare the energy efficiency of all homes and integrate energy efficiency upgrades within home financing, home energy information should be disclosed at the time of listing.
Compliance	• **Mandatory Disclosure**: To ensure widespread adoption of the home energy score, staff recommend adopting a mandatory disclosure policy, with a non-compliance penalty of $500 or greater. • **Non-Compliance Warning**: To ensure that all homes disclose a home energy score before being purchased by a new buyer, warning letters for non-compliant listings should be sent as soon as possible after listing. The frequency with which staff can provide warnings will depend on staff workload and capacity. • **Non-Compliance Timeline**: Given that the time to sell a house in Thurston County is between 35 and 47, the timeline to trigger non-compliance penalties should be no longer than 30 days of receiving a written warning.
Applicability and Exemptions Note: Assumes use of DOE Home Energy Score. Suitable use cases may vary for different energy assessment tools.	• **Suitable Housing Types**: To ensure energy performance information is widely available, the policy should be applied to all suitable existing homes. The current HES tool can be applied to the following housing types: detached single dwelling units and any attached single dwelling unit, where the unit extends from foundation to roof, such as row house, attached house, duplex, or townhouse. Housing types not suitable for the HES tool, including mobile homes, manufactured homes, or floating homes, and units in a stacked configuration should be exempt. • **New Construction**: To increase consumer awareness of energy performance and better allow comparison of multiple homes, staff recommend that newly constructed homes also be required to disclose a home energy score. • **Exemptions for Certified High-Efficiency Homes**: Homes already certified to a high-efficiency standard may be exempt[2]. These standards will need to be explicitly defined.

[1] The Staff Team received feedback from a CAW member with experience in real estate that the HES score should be added as a voluntary green field within the NWMLS. There should be a Yes/No checkbox to state if there is a HES score, the date in which the score was obtained, and an entry for the score. Additional access to the HES Performance Report could be requested by a buyer.

[2] What standards would be accepted still needs to be determined.

	• **Exemptions for Distressed Sales**: Certain distressed sale situations should be exempt from the energy disclosure policy. These exemptions will need to be explicitly defined. • **Low-Income Sellers**: Rather than exempting low-income households, jurisdictions should subsidize the cost of obtaining a home energy score for low-income sellers.
Low-Income Assistance	• To ensure energy performance assessments are not overly burdensome to low-income sellers, staff recommend contracting with a community partner, to provide free home energy assessments for income-qualified sellers (and/or identifying other mechanisms to prevent barriers for low-income households).
Effective Date	• The Staff Team recommends that the model ordinance include an effective date one calendar year from the date the ordinance is passed by any jurisdiction. A one-year delay would provide sufficient time for stakeholder outreach to inform community members of the upcoming requirement and ensure the availability of certified energy assessment providers.

Regional Coordination

Regional Coordination Options

A residential energy performance rating disclosure policy could be developed and adopted by individual jurisdictions or as a regionally coordinated policy across all partner jurisdictions.

- **Individual jurisdictions develop and adopt unique home energy score policies**. Individual jurisdictions may choose to develop their own energy score policy, with unique policy requirements, exceptions, and procedures, or opt out entirely. While this approach would allow jurisdictions to develop custom policies that best suit their individual needs or goals, the local housing market is not constrained to individual jurisdictions. Inconsistent policies and requirements would likely it would likely result in substantial confusion for local home buyers, sellers, realtors, and energy assessors.
- **All TCMC partners develop and adopt a consistent home energy score policy**. A unified approach would provide consistent requirements that are easy to understand, and ensure that energy performance information is widely available and easily comparable across jurisdictions. A large regional program would also support the development of a robust energy assessor market to provide the required home energy score assessment.

  Several regions have implemented regionally coordinated Home Energy Score disclosure programs. For example, the Bay Area Regional Energy Network (BayREN) has developed a voluntary HES program, which includes a $200 rebate. BayREN is a regional collaborative serving the nine counties across California's Bay Area. The BayREN collaborative is funded by utility ratepayer funds through the California Public Utilities Commission and is intended to fill service gaps for "hard to reach" customers that the investor-owned utility does not intend to reach or isn't currently reaching.

While not initially coordinated as a regional effort, Portland, OR and two of its suburbs (Hillsboro and Milwaukie) have all adopted similar HES policies. After the City of Portland's early success with HES, the neighboring City of Milwaukie adopted its own ordinance in January 2020. The City of Hillsboro adopted its own ordinance in 2021. The three jurisdictions all use HES as their standard rating system, use similar and in many cases identical Ordinance language, and subsidizes HES assessments for income qualified households through the same nonprofit community partner.

Staff Recommendation

- To provide consistent standards across jurisdictions and ensure that energy performance information is easily comparable across the Thurston region, partner jurisdictions should prioritize the development of a regionally coordinated home energy score policy and program.

Assessment Type

Energy Disclosure Options

Home energy performance can be evaluated and reported as operational data or asset ratings.

- **Operational data use the home's past utility bills as an indication of home energy use and costs**. Although operational data is often simple to provide and may be more familiar to consumers, it is heavily dependent on occupant behavior and therefore a poor predictor of future energy costs. Operational data also does not include recommendations for cost-effective energy improvements.
- **Asset ratings quantify the energy efficiency of a building based on the home's physical assets (e.g., size, envelope, and heating/cooling equipment).** Asset ratings are typically completed by professional energy assessors through on-site evaluations. This approach provides objective energy efficiency information that is independent of occupant behavior. An asset score allows prospective buyers and homeowners to compare the energy performance of multiple homes based on their assets, rather than how they are operated by current occupants. Asset ratings are generally considered to be a more effective representation of home energy performance but require developing a trained assessor workforce to ensure effective service delivery.

Asset Rating Tool Options

If home energy performance is disclosed in the form of asset ratings, a consistent rating tool must be selected. The two most common rating tools are the Home Energy Score (HES) and the Home Energy Rating System (HERS) Index.

- **Home Energy Score (HES)** is a nationally standardized home energy rating tool geared towards existing homes, administered by the US Department of Energy. HES assessments typically take 1 hour and cost about $150-$300 per assessment.
- **Home Energy Rating System (HERS**) is a nationally standardized home energy rating tool geared towards new homes, administered by the Residential Energy Services Network. HERS assessments typically take 2-4 hours and cost about $500-$1,000. While commonly used for new construction, the HERS system can be challenging and expensive to implement in older homes.

Table 3. Comparison of home energy assessment asset rating tools.

Asset Rating System	Time to Complete Assessment	Typical Cost	Type of Home	Administered by
HES	~ 1 hour	$150 - $300	Existing	US Department of Energy (DOE)
HERS	2 – 4 hours	$500 - $1,000	New Construction	Residential Energy Services Network (RESNET)

The HES system is the most commonly utilized asset rating for local government home energy assessment and disclosure policies in the United States (Table 1). Virtually all municipal-level, mandatory home energy disclosure programs that are carried out by local governments (as opposed to an energy utility) utilize HES. Two anomalies exist: Chicago and Minneapolis. Minneapolis, MN created a report that integrates water conservation with energy conservation. Chicago opted to disclose operational data (energy bills) as opposed to an asset rating. Most voluntary programs at the municipal level also utilized HES. For more details about what elements are considered in an HES assessment[3], please see Figure 1.

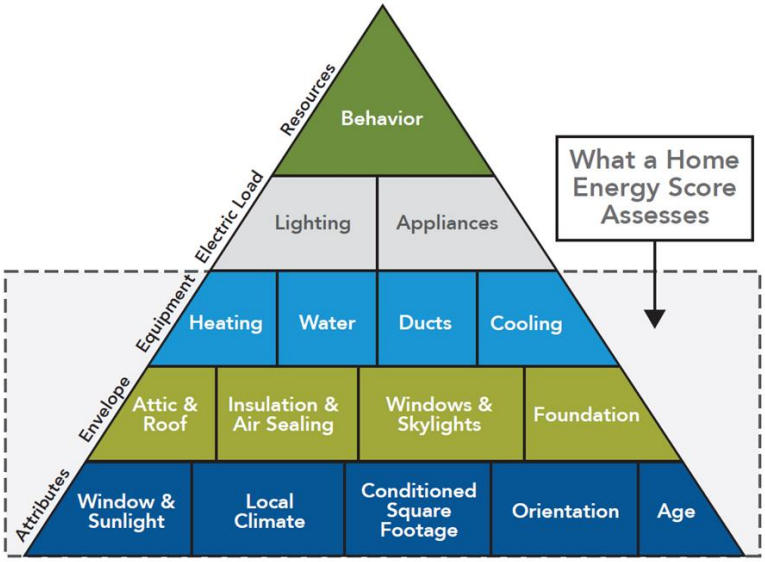


Figure 1: Components included in the HES model.
Source: U.S. Department of Energy

Staff Recommendation

- To provide consistent and objective energy performance information that can be easily compared across multiple homes, energy performance information should be disclosed in the form of asset ratings.
- Staff recommend that the model ordinance utilize the US DOE HES rating tool, which is an asset-based rating system. HES is the most commonly used rating system in local government energy

[3] To review the full methodology utilized in calculating a Home Energy Score see Home Energy Score Scoring Methodology (2021).

assessment and disclosure policies, can be easily applied to existing homes, and has a lower cost than other assessment types. Furthermore, the 2024 Regional Initiative selected by the TCMC explicitly identified the Home Energy Score (HES) as the preferred assessment tool.

- To ensure consistency with state legislative efforts, Staff further recommend the US DOE HES rating tool. In both the 2023 and 2024 Legislative Sessions, bills have been introduced to designate HES as the statewide home energy assessment tool for any local policy.

Energy Performance Report

Report Options

The Home Energy Performance Report can be documented used the standard DOE HES Report or a through a custom-designed Report.

- **Standard DOE Report Template.** The Standard US DOE Home Energy Performance Report (see Appendix B) includes:
    - An energy efficiency score based on the home's envelope;
    - A total energy use estimate and estimates by fuel type;
    - Recommendations for cost-effective improvements and associated annual cost savings estimates (estimated at a 10-year payback period); and
    - A "score with improvements" reflecting the home's expected score if cost-effective improvements are implemented.
- **Custom Report Template.** Most jurisdictions with HES ordinances have created improved custom report templates which meet and exceed the standard US DOE required information. Additional information included in these custom report templates include recommended improvements linked to local utility program incentives, the carbon footprint of a home, and follow-up steps or resource links. Custom reports may be able to factor in the cost-savings of local, utility, state, and federal incentives into determining cost-effective improvements, which the Standard DOE Report Template does not currently consider. See Appendix C for an example of a customized HES report.

In most examples, printed and electronic Home Energy Performance Reports expire eight years from the date of the assessment. Additionally, Home Energy Performance Reports are void and invalid after an alteration or remodel of the home that affects the heated square footage, the quality and type of windows, insulation, HVAC equipment, or remodeled spaces such as basement or attic, or other changes that are reasonably expected to impact the HES and associated estimates of energy use.

Once a Home Energy Performance Report has been completed, in the case of Portland, Bend, Milwaukie, and Hillsboro, the HES Performance Report must be publicly disclosed on the Green Building Registry website and then it is the responsibility of the seller to ensure the listing agent also includes the Home Energy Performance Report in the real estate listing. Through efforts by the Northwest Energy Efficiency Alliance, the Greater Puget Sound region's Northwest MLS includes green fields, including those for inputting various energy scores. Requiring both the disclosure on the Green Building Registry website and in all real estate listings ensures that even if the seller is non-compliant with including the information on the real estate listing, the Home Energy Performance Report is still publicly available should a prospective buyer search for the address. Additionally, disclosure on the website also allows

future tenants of any property that has undergone the HES process to also access that information regardless of ownership.

Staff Recommendation

- The Staff Team recommends that the TCMC develop a report template unique to Thurston County which includes a carbon footprint calculation and incentive/rebate information in addition to all required US DOE information. Incentive/Rebate information would include national, utility, and local incentives.
- Staff recommend that any report should have an expiration date of 8 years, unless a remodel or alteration has taken place on any elements included in the HES assessment (see Figure 1).
- To provide prospective buyers with a high level of access to home energy and cost savings information, HES reports should be made widely available. HES reports should be disclosed through the multiple listing service (MLS), included on real estate listings (printed advertisements, internet postings, and third-party listing services), and provided to real estate agents and prospective buyers.

Trigger Event

Tigger Event Options

Trigger events refer to the time at which disclosure of home energy information is required. Trigger events are typically at time of listing or time of sale.

- **Disclosure at time of sale requires energy information to be disclosed to the expected home buyer at or before time of closing.** Providing energy information at the time of closing (i.e., beginning of a new homeownership cycle) can increase the likelihood of a new homeowner investing energy efficiency upgrades. However, a time of sale disclosure is too late in the real estate transaction to include energy improvements in mortgage products. It is also too late to allow prospective buyers to compare homes and make informed decisions. Time of sale disclosure policies may also complicate or delay real estate closings.
- **Disclosure at time of listing requires energy information to be disclosed at the earliest possible stage in the real estate transaction process, making the information more actionable for prospective buyers and the market.** Early disclosure allows buyers to compare the energy performance, expected energy costs, and recommended efficiency upgrades for all prospective homes. The disclosure should be available to any interested buyers as a supplement to the listing. With early access to home energy scores, buyers can finance recommended energy improvements as a part of a new mortgage with Fannie, Freddie, and FHA products. By disclosing energy information as soon as possible, this approach provides a direct link to home valuation and market transformation, and will not interfere with or delay closings.

Staff Recommendation

- To ensure prospective buyers can compare the energy efficiency of all homes and integrate energy efficiency upgrades within home financing, staff recommend that home energy information should be disclosed at the time of listing.

Compliance

Compliance Options

Energy information may be disclosed through voluntary or mandatory policies and programs.

- **Voluntary disclosure programs can offer energy reports at any time for voluntary use in the real estate market, but may be targeted towards specific trigger events**. Voluntary programs generally achieve significantly lower levels of market adoption than mandatory policies and require significant incentives, subsidies, and marketing to drive demand. Historically, no jurisdiction has been fully successful at creating a functioning voluntary market based only on consumer demand for energy labels.
- **Mandatory disclosure policies require home energy information to be provided and specify what information, when, and to whom it must be disclosed**. Mandatory programs generally achieve much higher levels of market adoption and better support market transformation by making home energy information widely available. Mandatory programs are also typically less expensive to administer if customers pay for the cost of the energy labels.

Non-compliance Penalty Options

Mandatory home energy labeling policies typically include non-compliance fines or penalties. Important considerations for determining non-compliance penalties include the local housing market and average cost of home energy score assessments.

- **Non-compliance penalties should be strong enough to encourage compliance (i.e., greater than the cost of obtaining the assessment), but not overly burden low- to moderate-income households**. The most common approach is to set a standard rate, typically about $500 (Table 2). This is about twice the cost of typical home energy score assessments ($150-$300). Non-compliance fines can also be set as a percentage of the home listing price. This approach may help encourage compliance for all sellers, while reducing the burden on lower-income sellers, but can complicate program design and enforcement.
- **The timeline to trigger non-compliance penalties should be determined based on market trends (i.e., average days on market).** Listed homes in Thurston County remain on the market between 35 and 47 days, depending on the location, so a short timeline is critical to ensure compliance before homes are purchased by a new buyer. Warning notices for non-compliant homes should be sent as soon as possible so sellers have time to act and disclose a score to prospective buyers.

Staff Recommendation

- To ensure widespread adoption of the home energy score, staff recommend adopting a mandatory disclosure policy, with a non-compliance penalty of $500.
- To ensure that all homes disclose a home energy score before being purchased by a new buyer, warning letters for non-compliant listings should be sent as soon as possible after listing. The frequency with which staff can provide warnings will depend on staff workload and capacity.
- Given that the average number of days from listing a home for sale and entering contract is 35 days, the timeline to trigger non-compliance penalties should be no longer than 30 days of receiving a written warning.

- Staff recommend that the ordinance also grant discretion to the jurisdiction's Authorizing Official (such as a City/County Manager or Planning Director) to adjust the penalty in the event of extenuating circumstances (e.g., availability of HES Assessors).

Table 4. Examples of non-compliance fines and disclosure requirements for jurisdictions with mandatory home energy scoring policies.

Jurisdiction	Trigger Event	Non-compliance Fines	Time to trigger penalties	Disclosed information
Austin, TX	Time of sale	$500 - $2,000	By time of sale	Audit of home conditions that influence energy performance, not a Home Energy Score or asset rating.
Berkeley, CA	Time of listing	$110 fee to defer to buyer and $85 late fee	If deferred, buyer has 6 months to complete energy assessment.	Custom Energy Score Report based on the DOE Home Energy Score.
Portland, OR	Time of listing	$500	90 days from written warning	Custom Energy Score Report based on the DOE Home Energy Score.
Milwaukie, OR	Time of listing	$500	30 days from written warning	Custom Energy Score Report based on the DOE Home Energy Score.

Applicability and Exemptions

Applicability and Exemption Options

Energy score requirements typically apply to most homes able to be scored with the selected home energy rating tool. Certain homes may be exempted from an energy score policy due to the suitability of the energy rating tool, previous certification of high energy efficiency, or distressed sale situations.

- **Considerations for exemption of certain home types.** The recommended HES rating tool is suitable for detached single-dwelling units and attached dwelling units that extend from foundation to roof (e.g., duplex, rowhouse, or townhome). The tool is not suitable for homes in a stacked configuration with other units above or below. It is also not suitable for mobile, manufactured, or floating homes.
- **Considerations for exemption of homes already certified to high-efficiency standards.** Many jurisdictions exempt homes that have already received home energy scores through an alternative energy audit or scoring program. For example, Berkeley, CA exempts homes participating in the Energy Upgrade California Program, and Portland, OR exempts homes that have received an Energy Trust of Oregon Energy performance score.

  Homes may also be exempted if they have already been certified to meet high energy efficiency standards through other certification programs. For example, the City of Berkeley's Building Energy Saving Ordinance (BESO), exempts buildings that have completed a verified home energy upgrade or rating such as Net Zero Energy or Passive House. In Portland, high-performance homes that are certified by other green building programs like LEED, may apply for a waiver for two years.

- **Considerations for exemption of new construction.** Some home energy score policies may exempt new construction under the assumption that new homes are more energy efficient. For example, in Austin, TX HES audits are only required for homes that are 10 years old or older.

  However, the purpose of a home energy score is not just to encourage energy efficiency improvements, but also to inform prospective buyers of energy performance and expected energy costs. Exempting new construction prevents prospective buyers from comparing the energy performance and cost of new and existing homes. Most of the home energy score policies evaluated for this review also apply to new construction (e.g., Berkeley, Portland, and Milwaukie).

  In Portland and Milwaukie, newly constructed (in the current year) identical homes—meaning the floor plans, amount and type of insulation, windows, attic fans, heating and cooling systems, hot water heaters, and appliances are 100% identical—may use the same Home Energy Performance Report. HES for new homes can be obtained pre-construction using construction plan sets.

- **Considerations for exemption due to distressed sale situations.** Many energy disclosure policies include exemptions for distressed sale situations. For example, the cities of Portland and Milwaukie exempt the following transactions "trustee's sales, deed-in-lieu of foreclosure sales, and pre-foreclosure sale in which the seller has reached an agreement with the mortgage holder to sell the property for an amount less than the amount owed on the mortgage". Rather than providing exemptions for low-income sellers, many jurisdictions subsidize the cost of home energy assessments for low-income constituents.

Staff Recommendation

- To ensure energy performance information is widely available, staff recommend that the HES Policy apply to all suitable building types. This includes all detached single dwelling units and any attached single dwelling unit, where the unit extends from foundation to roof, such as row house, attached house, duplex, or townhouse.
- Housing types not suitable for the HES tool, including mobile homes, manufactured homes, or floating homes, and units in a stacked configuration should be exempt.
- Homes already certified to a high-efficiency standard may be exempt. These standards will need to be explicitly defined.
- To increase consumer awareness of energy performance and better allow comparison of multiple homes, staff recommend that newly constructed homes also be required to disclose a home energy score.
- Certain distressed sale situations should be exempt from the energy disclosure policy. These exemptions will need to be explicitly defined.
- Rather than exempting low-income households, jurisdictions should subsidize the cost of obtaining a home energy score for low-income sellers.

Low-Income Subsidies

Home energy scores provide energy cost visibility, so that all households, including low-moderate income households, are better informed of the total cost of home ownership. This can help prevent scenarios where new occupants are unprepared for unaffordable utility bills. To ensure that energy

performance information is widely available, and not overly burdensome to obtain, many jurisdictions with residential energy performance disclosure policies provide financial assistance for low-income residents to obtain a Home Energy Performance Report.

Subsidy Options

Options for subsidizing the cost of home energy assessment for low-income households meeting certain criteria include:

- **Directly covering the cost of the home energy assessment.** In Portland, energy assessments for income qualified sellers are completed by authorized Home Energy Assessors under an agreement with the Community Energy Project. In the first 30 months of the program, 89 sellers applied for this service and 80 met the eligibility requirements, well-below 1% of total homes scored in this time-period (City of Portland, Oregon Bureau of Planning and Sustainability, 2020).
- **Encouraging realtors/selling agents to provide financial incentives.** Anecdotal evidence from Portland suggests that in some cases, real estate agents will obtain the home energy score on behalf of their clients.
- **Partnering with a local utility or third-party provider to offer free assessments.** In Minneapolis, low-income sellers can access a free energy inspection through an existing utility energy audit program (this program is already free for low-income households). In the Thurston County region, Puget Sound Energy previously offered a home energy assessment program, but it was discontinued in July 2020.

Table 5. Examples of home energy assessment financial assistance programs for low-income households.

Jurisdiction	Subsidy Program	Notes
BayREN, CA	$200 rebate not tied to income	BayREN's program is voluntary.
Berkeley, CA	Alternative compliance pathway	Offers compliance with the ordinance if the seller can demonstrate participation in income-qualified Weatherization Assistance programs, Low-Income Home Energy Assistance Programs (LIHEAP), the US DOE Weatherization Assistance Program, or utility Energy Saving Assistance Programs.
Portland, OR	Free HES in partnership with local non-profit for residents with household incomes at 60% or below area median income for the Portland metropolitan statistical area	Subsidy program is entirely managed by a third-party non-profit, Community Energy Project, but funded by the City of Portland.
Bend, OR	Free HES in partnership with local non-profit for residents with household incomes at 80% or below area median income	Subsidy program entirely managed by a third-party non-profit, Neighbor Impact.
Hillsboro, OR	Free HES in partnership with local non-profit for residents with household incomes at 80% or below area median income	This subsidy is available to homeowners at any time and is also available to renters, with written landlord approval. Hillsboro works with the same non-profit that Portland does.
Milwaukie, OR	Free HES in partnership with local non-profit for residents with household incomes at 80% or below area median income.	Subsidy program is entirely managed by a third-party non-profit, Community Energy Project. The non-profit also provides free education opportunities, supplies, and home energy upgrades and repairs for qualifying residents. Milwaukie works with the same non-profit that Portland does.

Staff Recommendation

- To ensure energy performance assessments are not overly burdensome to low-income sellers, staff recommend contracting with a community partner, to provide free home energy assessments for income-qualified sellers (and/or identifying other mechanisms to prevent barriers for low-income households).
- Income qualification scenarios will need to be explicitly defined.
- Rather than collecting and assessing income information, eligibility for low-income subsidies may be determined based on participation in existing programs. Examples of accepted forms of eligibility proof may include a copy of the participant/family's free or reduced lunch letter,

DSHS/SNAP/TANF food assistance letter, SSI documentation, DSHS Respite Care documentation, Income Verification, or Lifeline Utility bill.

4. EXPECTED IMPACTS

Expected impacts of the recommended program design were calculated using the Home Energy Labeling Program Impact Calculator provided by Rocky Mountain Institute and Earth Advantage.

Workforce

HES and Home Energy Performance Reports can only be completed by HES Certified Assessors. To become a Certified Assessor, one must:

1. Hold a relevant credential[4];
2. Complete the HES Simulation training and exam; and
3. Score their first home with a mentor within six months of passing the simulation and exam.

Depending on the compliance rate, the number of homes rated annually is expected to range from 2,4341 to 3,245 and would require 6 to 8 full-time assessors to meet the demand for energy scores.

While several companies in Thurston County provide home energy assessment services, there is currently only one HES Certified Assessor in Washington State[5]. This is typical for a region without a Home Energy Assessment policy or program. Most regions that have implemented HES disclosure policies have seen a significant increase in the number of local certified energy assessors, following the adoption of a new HES policy or program. Supporting this workforce development is a critical step to ensure the success of any new HES policy.

Most jurisdictions depend on the private sector to respond to the demand for HES Assessors. Thurston County's local workforce development agency, Pacific Mountain Workforce Development, has expressed interest in helping grow a workforce to meet this future need. Several local nonprofits, including Olympia Community Solar[6] and South Puget Sound Habitat for Humanity, are also currently working to certify some of their employees for HES assessments.

Other cities have utilized a public model to provide home energy assessments. For example, the City of Ann Arbor, MI has hired two full-time Home Energy Assessors (funded by the City's climate tax revenues) to provide assessment free of charge. Residents of Ann Arbor are also welcome to hire outside private Home Energy Assessors if they choose.

---

[4] To see a full list of relevant credentials visit https://betterbuildingssolutioncenter.energy.gov/home-energy-score/become-assessor

[5] Puget Sound Energy (PSE) previously provided free home energy assessments to residential utility users; however, as of 2024 this program is longer active. However, PSE has recently launched a Home Electrification Assessment program for PSE natural gas customers which results in an energy saving home improvement plan with guidance on how to go electric.

[6] Olympia Community Solar has reported that their costs to become a Home Energy Score Certified Assessor is $1,400 per person for training and $12,000 for startup equipment.

Housing and Climate Impacts

The number of homes retrofitted each year could range from 367 to 1,468 homes, resulting in up to $820,304 in total energy cost savings and 2,933 tons of CO_2 emissions avoided. Total energy cost savings and greenhouse gas reduction would compound annually as an increasing percentage of homes are assessed and retrofitted. Energy performance upgrades would also increase business for local builders and home performance contractors.

Table 6. Expected year 1 results of a home energy disclosure policy.

	Estimated Value		
Year 1 Results	**Low Impact**	**Moderate Impact**	**High Impact**
Homes Rated	2,434	2,840	3,245
Minimum Energy Raters Required	6	7	8
Homes Retrofitted	243	568	649
Energy Savings (MmBtu)	2,819	13,157	15,036
Energy Cost Savings	$67,787	$316,339	$361,530
Carbon Reduction (mtCO2)	126	586	670
Increased Real Estate Value	$4,965,173	$14,481,754	$19,860,691

Source: Values estimated using local data with the Home Energy Labeling Impact Calculator provided by Rocky Mountain Institute and Earth Advantage. Calculator and sources available upon request.

The estimated low impact scenario assumes a low retrofit rate (10%), a low energy savings rate (10%), a low value increase for retrofitted homes (4%), and low compliance with the regulation (60%).

The estimated moderate impact scenario assumes a moderate retrofit rate (20%), a moderate energy savings rate (20%), a moderate value increase for retrofitted homes (5%), and moderate compliance with the regulation (70%).

The estimated high impact scenario assumes a high retrofit rate (30%), a high energy savings rate (30%), a high value increase for retrofitted homes (6%), and high compliance with the regulation (80%).

Mortgage and Tax Benefits

A HES Home Energy Performance Report can serve as documentation for federal lending products. FannieMae's HomeStyle Energy Mortgage allows borrowers to finance energy efficiency improvements, using the Home Energy Performance Report as the basis. Borrowers can also qualify for a stretch on their debt-to-income ratios for HomeStyle Energy and other Federal Housing Administration loan products.

The Washington State Housing Finance Commission also offers an "Energy Spark Home Loan" which dovetails with the First Time Homebuyer program providing downpayment assistance. Homebuyers must have a household income under $180,000 and be purchasing a home that can be upgraded for 10% energy savings over its current use based on a home energy assessment.

In 2023 the Internal Revenue Service released guidance on how taxpayers may claim the "Energy Efficient Home Improvement Credit" for Home Energy audits, made possible through the Inflation Reduction Act. The home energy audit tax credit offers 30% of the cost of a home energy audit, up to $150 per year. HES audits completed by a HES Certified Assessor qualify for this tax credit. Additional

rebates and incentives created through the Inflation Reduction Act may help homeowners pay for the cost-effective improvements identified through their HES audit.

Impacts on Home Sales and Loan Delinquency

Researchers studying the Energy Conservation and Audit and Disclosure ordinance in Austin, Texas, which has been in place for more than 10 years, found that mandatory disclosure created a premium for energy-efficient homes by daylighting the value of these attributes and lead to higher participation in energy efficiency programs (Portland, 2020). Researchers have found that a one-point increase in HES was associated with a 0.5% increase in sale price, and likewise higher estimated annual energy bills were associated with a decrease in sales price (Pigman, Season, Wallace, et al., 2023).

A study of Portland, OR's program between 2018 and 2021 found that buyers are willing to pay more for energy efficiency when purchasing a home and that buyers are willing to pay more for energy efficiency when the assessment is published in real estate listings (Breshears, 2022).

Researchers also found that a one-point increase in HES was associated with a 5.5% reduction in the odds of a loan going 30 days delinquent if the loan originated after an assessment occurred (Pigman, Season, Wallace, et al., 2023). Similarly, researchers found that a $100 decrease in estimated annual energy bills was associated with a 2.3% decrease in the odds of a loan going delinquent if it originated after the assessment occurred (Pigman, Season, Wallace, et al., 2023).

REFERENCES

Breshears, E. (2022, November). Is Mandatory Disclosure Really Mandatory? An Evaluation of the Home Energy Score Program.

Carroll, J., Araven, C., Boeri, M., et al. (2022). Show me the energy costs: short and long-term energy cost disclosure effects on willingness-to-pay for residential energy. Energy Journal 43(2).

City and County of Denver. (2019). Home Energy Score Pilot Evaluation Report.

City of Austin, Austin City Code Chapter 6-7 Energy Conservation Audit and Disclosure, (2008).

City of Bend, Municipal Code Chapter 18.10 Residential Energy Performance Rating and Disclosure. (2023).

City of Berkeley, Municipal Code Chapter 19.81 Building Emission Saving. (2020).

City of Hillsboro, Ordinance No. 6376 Residential Energy Performance Rating and Disclosure, (2021).

City of Portland, Municipal Code Chapter 17.109 Residential Energy Performance Rating and Disclosure. (2016).

City of Milwaukie, Residential Energy Performance Rating and Disclosure Ordinance, (2020).

Myers, E., Puller, S. L., & West, J. D. (2019). Effects of mandatory energy efficiency disclosure in housing markets (No. w26436). National Bureau of Economic Research.

Pacific Northwest Energy Efficiency Alliance. (nd). Home energy labels: A Policy Playbook.

Portland. (2020, October). Report to Portland City Council on Residential Energy Performance and Disclosure (Ordinance No. 188143).

Pigman, M., Deason, J., Wallace, N., & Issler, P. (2022). How Does Home Energy Score Affect Home Value and Mortgage Performance?.

Rocky Mountain Institute. (2019). Home Energy Labeling Program for Cities: A National Opportunity for Local Governments to Take Action.

TRPC. (2020, December). Thurston Climate Mitigation Plan. Thurston Regional Planning Council. https://www.trpc.org/DocumentCenter/View/8322/TCMP_Chapters?bidId=

TRPC. (2022, October). 2021 Greenhouse Gas Emissions Inventory for Thurston County. Thurston Regional Planning Council. https://www.trpc.org/DocumentCenter/View/11400/2021-Thurston-GHG-Inventory-TRPC-2023-01-06pdf?bidId=

U.S. Census. (n.d) Housing. U.S. Department of Commerce. Retrieved April 8th, 2024, from Housing (census.gov)

APPENDIX A

LOCAL HOUSING MARKET

Housing Type, Occupancy, and Ownership

There are 118,571 housing units across Thurston County (U.S. Census Bureau, 2022). Most dwelling units are detached single-family (U.S. Census Bureau, 2022), and nearly two-thirds of housing units were owner-occupied in 2020. The largest owner-occupied housing type in Thurston County is single-family detached (87%). Buildings with two or more units, most of which would be excluded from the recommended program design, due to limitations of the recommended assessment tool, are almost exclusively rented.

Note: The recommended program design (described in Section 2) would apply only to dwelling units that own the space from foundation to attic (i.e., most single-family homes, including attached duplex and townhouse-style units). Mobile homes and stacked multifamily homes would be exempt as they are not suitable for the recommended DOE Home Energy Score (HES) tool.

Table A1. Thurston County housing units by building and occupancy type in 2020.

Building Type	Number of Housing Units	Percent	Occupancy Type	
			Owner (%)	Renter (%)
Single Family Detached	80,215	68%	86.7%	13.3%
Single Family Attached	4,705	4%	2.2%	97.8%
Duplex	2,867	2%	0.5%	99.5%
Multi-family	21,303	18%	0.7%	99.3%
Manufactured Homes	9,481	8%	9.9%	90.1%
Total Occupied Units	**109,983**	**100%**	**65.8%**	**34.2%**

Source: U.S. Census Bureau, 2022

Housing Age

More than 50% of the homes in Thurston County were built before 1990, with nearly 20% built at least 50 years ago (U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates). The large proportion of older homes in the region suggests that many would benefit from energy- and cost-saving retrofits.

Table A2. Age of Thurston County housing units.

Home Built	Number of Units	Percentage of Total Housing Units in Thurston County
1939 or earlier	5,288	4.5%
1940 to 1959	8,123	6.9%
1960 to 1979	25,808	21.8%
1980 to 1999	37,639	31.7%
2000 to 2009	23,438	19.8%

2010 to 2019	16,569	14.0%
2020 or later	1,706	1.4%

Source: U.S. Census Bureau, 2022

Energy Source

The table below shows the number of housing units in Thurston County that utilize each energy source for home heating. With the Washington Clean Energy Transformation Act, all electricity will be 100% clean and carbon-free by 2045. Transitioning home energy types to electricity will help to reduce future greenhouse gas emissions.

Table A3. Energy sources of Thurston County housing units.

Energy Type	Number of Units	Percentage of Total Housing Units in Thurston County
Utility Gas	35,759	30.2%
Bottled Tank or LP Gas	4,264	3.6%
Electricity	72,885	61.5%
Fuel Oil, kerosene	1,005	0.8%
All other fuels	4,170	3.5%
No fuel used	488	0.4%

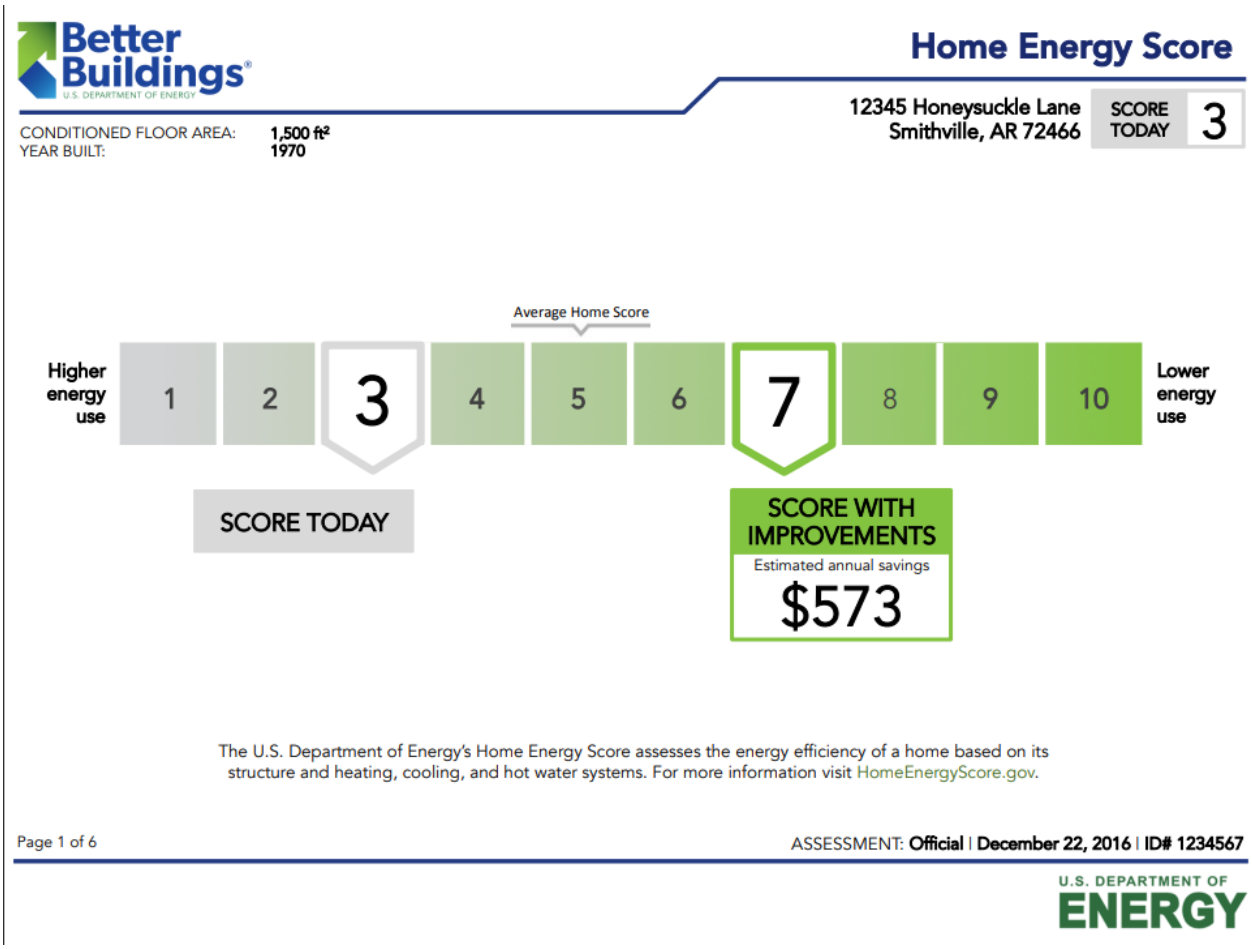
Source: U.S. Census Bureau, 2022

Home Sale Trends

During the year 2023, there were 3,377 residential homes sold in Thurston County with another 3,409 pending. The average price of a residential unit sold in Thurston County in 2023 was $551,127, a 3% increase from 2022's average sale price of $535,016 (Northwest Multiple Listing Service, 2024). Depending on the location of the home the average number of days on the market ranged from 35 to 47.

APPENDIX B

STANDARD HOME ENERGY SCORE REPORT



Better Buildings
U.S. DEPARTMENT OF ENERGY

Home Energy Score

CONDITIONED FLOOR AREA: 1,500 ft²
YEAR BUILT: 1970

12345 Honeysuckle Lane
Smithville, AR 72466

SCORE TODAY 3

Average Home Score

Higher energy use | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Lower energy use

SCORE TODAY

SCORE WITH IMPROVEMENTS
Estimated annual savings
$573

The U.S. Department of Energy's Home Energy Score assesses the energy efficiency of a home based on its structure and heating, cooling, and hot water systems. For more information visit HomeEnergyScore.gov.

Page 1 of 6

ASSESSMENT: Official | December 22, 2016 | ID# 1234567

U.S. DEPARTMENT OF ENERGY

Better Buildings
U.S. DEPARTMENT OF ENERGY

Home Energy Score

12345 Honeysuckle Lane
Smithville, AR 72466

SCORE TODAY 3

Home Facts

The Home Energy Score's Home Facts includes details about the home's current structure, systems, and estimated energy use. For more information about how the score is calculated, visit our website at HomeEnergyScore.gov.

About This Home

ASSESSMENT

Type	**Official**
Assessor ID	**#1234567**
Scoring tool version	**v2016**

HOME CONSTRUCTION

Year built	**1970**
Number of bedrooms	**3**
Stories above ground level	**1**
Interior floor-to-ceiling height	**10**
Conditioned floor area	**1,500 ft²**
Direction faced by front of house	**North**
Air sealed?	**No**
Air leakage rate	**6,500 CFM50**

Estimated Annual Energy Use

ENERGY BY TYPE

Total	**204 MBtus**
Score basis	**141 MBtus**
Electricity	**11,956 kWh**
Natural gas	**519 therms**
Propane	**226 gallons**

COST BASIS

Electricity	**$0.091 / kWh**
Natural gas	**$1.153 / therms**
Propane	**$2.171 / gallon**
Energy cost per square foot	**$1.45 / ft²**

DEFINITIONS & CONVERSIONS

MBtu	**Million British thermal units; generic energy unit**
kWh	**Kilowatt-hour; electricity unit**
Therm	**100,000 Btu; heat energy unit**
Electricity conversion	**1 MBtu = 293 kWh**
Heat conversion	**1 MBtu = 10 therms**

Better Buildings
U.S. DEPARTMENT OF ENERGY

Home Energy Score

12345 Honeysuckle Lane
Smithville, AR 72466

SCORE TODAY 3

Home Facts

The Home Energy Score's Home Facts includes details about the home's current structure, systems, and estimated energy use. For more information about how the score is calculated, visit our website at HomeEnergyScore.gov.

Roof / Attic

ROOF / ATTIC 1

Attic floor area	500 ft²
Roof construction	Roof with Radiant Barrier / Composition Shingles or Metal / R-0
Roof color	Medium dark
Attic: ceiling type	Unconditioned attic
Attic floor insulation	R-25

ROOF / ATTIC 2

Attic floor area	1,000 ft²
Roof construction	Standard Roof / Composition Shingles or Metal / R-0
Roof color	Medium dark
Attic: ceiling type	Unconditioned attic
Attic floor insulation	R-9

Foundation

FOUNDATION / FLOOR 1

Floor area	500 ft²
Foundation type	Slab-on-grade foundation
Foundation walls insulation	R-0

FOUNDATION / FLOOR 2

Floor area	1,000 ft²
Foundation type	Unconditioned basement
Floor insulation above foundation	R-0
Foundation walls insulation	R-0

Walls

WALL CONSTRUCTION	TYPE / EXTERIOR FINISH	INSULATION VALUE
Front	Wood frame with Optimum Value Engineering (OVE) / Brick Veneer	R-19
Back	Wood frame / Wood, Asbestos, Fiber Cement, Shingle, or Masonite	R-0
Right	Concrete block or stone / Stucco	R-3
Left	Wood frame with rigid foam sheathing / aluminum siding	R-3

ASSESSMENT: Official | December 22, 2016 | ID# 1234567

U.S. DEPARTMENT OF ENERGY

Better Buildings
U.S. DEPARTMENT OF ENERGY

Home Energy Score

12345 Honeysuckle Lane
Smithville, AR 72466

SCORE TODAY 3

Home Facts

The Home Energy Score's Home Facts includes details about the home's current structure, systems, and estimated energy use. For more information about how the score is calculated, visit our website at HomeEnergyScore.gov.

Windows & Skylights

WINDOW AREA			
Front	70 ft²		
Back	90 ft²		
Right	40 ft²		
Left	30 ft²		
WINDOW CONSTRUCTION	**PANES**	**FRAME**	**GLAZING or U-VALUE & SHGC**
Front	Single	Aluminum	Clear
Back	Double	Wood or Vinyl	Solar-controlled low-E
Right	Double	Aluminum w/ thermal break	Insulating low-E, argon gas fill
Left	Triple	Wood or vinyl	Insulating low-E, argon gas fill
SKYLIGHTS ROOF / ATTIC 1			
Present?	Yes		
Area	30 ft²		
Type	Single	Aluminum	Tinted
SKYLIGHTS ROOF / ATTIC 2			
Present?	No		

ASSESSMENT: Official | December 22, 2016 | ID# 1234567

Better Buildings U.S. DEPARTMENT OF ENERGY

Home Energy Score

12345 Honeysuckle Lane
Smithville, AR 72466

SCORE TODAY 3

Home Facts

The Home Energy Score's Home Facts includes details about the home's current structure, systems, and estimated energy use. For more information about how the score is calculated, visit our website at HomeEnergyScore.gov.

Systems

HVAC SYSTEM 1	
Percent conditioned area served	**33%**
Heating type	**Electric heat pump**
Heating efficiency value	**7.8 HSPF**
Cooling type	**Electric heat pump**
Cooling efficiency value	**12 SEER**

DUCT SYSTEM 1	INSULATED?	SEALED?	PERCENT OF DUCTS IN THIS LOCATION
Unconditioned attic	**Yes**	**No**	**100%**

HVAC SYSTEM 2	
Percent conditioned area served	**67%**
Heating type	**Central gas furnace**
Heating installation year	**2009**
Cooling type	**Central air conditioning**
Cooling installation year	**2009**

DUCT SYSTEM 2	INSULATED?	SEALED?	PERCENT OF DUCTS IN THIS LOCATION
Unconditioned basement	**No**	**No**	**50%**
Unconditioned attic	**No**	**No**	**25%**
Conditioned space	**No**	**No**	**25%**

HOT WATER	
System type	**LPG storage**
Installation year	**1997**

Better Buildings
U.S. DEPARTMENT OF ENERGY

Home Energy Score

12345 Honeysuckle Lane
Smithville, AR 72466

SCORE TODAY 3

Recommendations

The Home Energy Score's Recommendations show how to improve the energy efficiency of the home to achieve a higher score and save money. When making energy related upgrades, homeowners should consult with a certified energy professional or other technically qualified contractor to ensure proper sizing, installation, safety, and adherence to code. Learn more at HomeEnergyScore.gov.

REPAIR NOW. These improvements will save you money, conserve energy, and improve your comfort.

- **Air Tightness:** Have a professional seal all the gaps and cracks that leak air to save $110 / year
- **Ducts 1:** Add insulation around ducts in unconditioned spaces to at least R-6 to save $43 / year
- **Attic 2:** Increase attic floor insulation to at least R-19 to save $57 / year
- **Ducts 2:** Add insulation around ducts in unconditioned spaces to at least R-6 to save $23 / year
- **Ducts 2:** Have a professional seal all the gaps and cracks that leak air to save $74 / year

REPLACE LATER. These improvements will help you save energy when it's time to replace or upgrade.

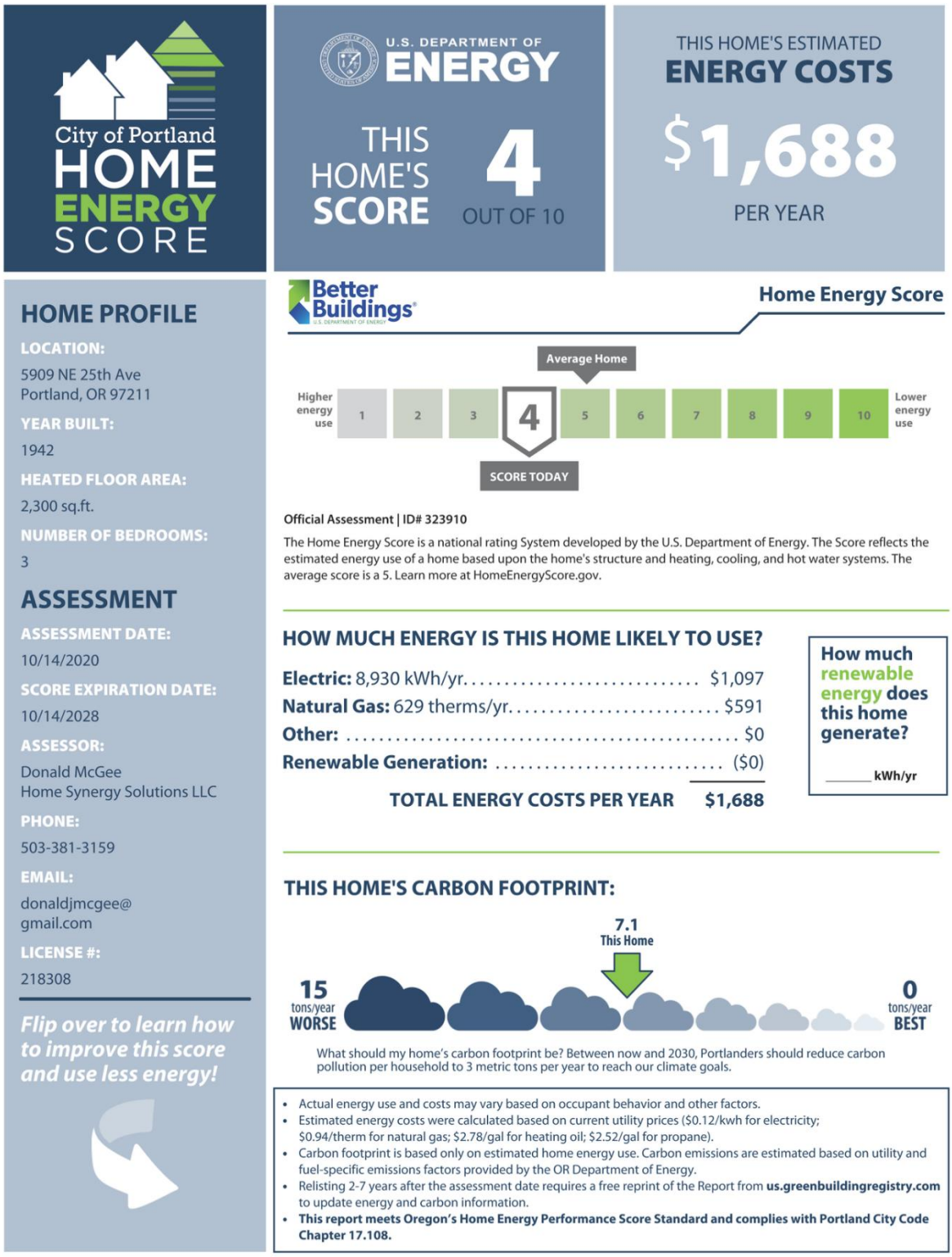
- **Windows:** Choose those with an ENERGY STAR label to save $61 / year
- **Water Heater:** Choose one with an ENERGY STAR label to save $159 / year
- **Electric Heat Pump:** Choose one with an ENERGY STAR label to save $32 / year

Comments

Current local incentives may make this house a good candidate for a new water heater.

APPENDIX C

CUSTOM HOME ENERGY SCORE REPORT



City of Portland HOME ENERGY SCORE

U.S. DEPARTMENT OF ENERGY

THIS HOME'S SCORE 4 OUT OF 10

THIS HOME'S ESTIMATED ENERGY COSTS $1,688 PER YEAR

HOME PROFILE

LOCATION:
5909 NE 25th Ave
Portland, OR 97211

YEAR BUILT:
1942

HEATED FLOOR AREA:
2,300 sq.ft.

NUMBER OF BEDROOMS:
3

ASSESSMENT

ASSESSMENT DATE:
10/14/2020

SCORE EXPIRATION DATE:
10/14/2028

ASSESSOR:
Donald McGee
Home Synergy Solutions LLC

PHONE:
503-381-3159

EMAIL:
donaldjmcgee@gmail.com

LICENSE #:
218308

Flip over to learn how to improve this score and use less energy!

Better Buildings

Home Energy Score

Average Home

Higher energy use 1 2 3 **4** 5 6 7 8 9 10 Lower energy use

SCORE TODAY

Official Assessment | ID# 323910

The Home Energy Score is a national rating System developed by the U.S. Department of Energy. The Score reflects the estimated energy use of a home based upon the home's structure and heating, cooling, and hot water systems. The average score is a 5. Learn more at HomeEnergyScore.gov.

HOW MUCH ENERGY IS THIS HOME LIKELY TO USE?

Electric: 8,930 kWh/yr.	$1,097
Natural Gas: 629 therms/yr.	$591
Other:	$0
Renewable Generation:	($0)
TOTAL ENERGY COSTS PER YEAR	**$1,688**

How much renewable energy does this home generate?

_____ kWh/yr

THIS HOME'S CARBON FOOTPRINT:

7.1 This Home

15 tons/year WORSE — 0 tons/year BEST

What should my home's carbon footprint be? Between now and 2030, Portlanders should reduce carbon pollution per household to 3 metric tons per year to reach our climate goals.

- Actual energy use and costs may vary based on occupant behavior and other factors.
- Estimated energy costs were calculated based on current utility prices ($0.12/kwh for electricity; $0.94/therm for natural gas; $2.78/gal for heating oil; $2.52/gal for propane).
- Carbon footprint is based only on estimated home energy use. Carbon emissions are estimated based on utility and fuel-specific emissions factors provided by the OR Department of Energy.
- Relisting 2-7 years after the assessment date requires a free reprint of the Report from **us.greenbuildingregistry.com** to update energy and carbon information.
- **This report meets Oregon's Home Energy Performance Score Standard and complies with Portland City Code Chapter 17.108.**

Score **today:**	Score **with priority improvements:**	Estimated **energy savings** with priority improvements:	Estimated **carbon reduction** with priority improvements:
4	6	$159 PER YEAR	11% PER YEAR

TACKLE ENERGY WASTE TODAY!

Enjoy the rewards of a comfortable, energy efficient home that saves you money.

- ☑ Get your home energy assessment. Done!
- ☐ Choose energy improvements from the list of recommendations below.
- ☐ Select a contractor (or two, for comparison) and obtain bids. If a new home, discuss with the builder. Checkout **www.energytrust.org/findacontractor** or call toll free **1-866-368-7878.**
- ☐ Explore financing options at **communityenergyproject.org** or **energytrust.org.**
- ☐ Visit the following resources to learn about easy changes you can make today: **communityenergyproject.org/our-services** or **energytrust.org/solutions/insulation-and-air-sealing/**

PRIORITY ENERGY IMPROVEMENTS [1]

FEATURE	TODAY'S CONDITION[4]	RECOMMENDED IMPROVEMENTS[3]
Air Conditioner	10 SEER	When replacing, upgrade to ENERGY STAR
Heating equipment	Natural gas furnace 80% AFUE	When replacing, upgrade to ENERGY STAR
Water Heater	Natural gas	When replacing, upgrade to ENERGY STAR, (EF>=0.67 or UEF>= 0.64)

ADDITIONAL ENERGY RECOMMENDATIONS [2]

FEATURE	TODAY'S CONDITION[4]	RECOMMENDED IMPROVEMENTS
Attic insulation	Ceiling insulated to R-19	Insulate to R-38 or R-49 if code requires it
Envelope/Air sealing	Not professionally air sealed	Professionally air seal
Solar PV	N/A	Visit www.energytrust.org/solar to learn more
Wall insulation	Insulated to R-0	Fully insulate wall cavities
Windows	Multiple types	When replacing, upgrade to ENERGY STAR
Basement wall insulation	Insulated to R-0	
Cathedral Ceiling/Roof	Roof insulated to R-30	
Duct insulation	Un-insulated	
Duct sealing	Un-sealed	
Floor insulation	Insulated to R-0	
Foundation wall insulation	N/A	
Skylights	Double-pane	

1. To achieve the "Score with Priority Improvements" all recommended improvements in the Priority Energy Improvements section must be completed. All together, these priority improvements have a simple payback of ten years or less.
2. Additional energy efficiency improvements may take longer than ten years to make a return on investment but can have a significant impact on the comfort, efficiency and environmental impact of your home.
3. If your home has an oil furnace it is recommended you replace it with a high efficiency electric heat pump.
4. Today's Condition represents the majority condition for that feature in the home.