



THURSTON
CLIMATE
MITIGATION
PLAN

Climate Mitigation Actions
for Thurston County, Lacey, Olympia & Tumwater

August 2020 DRAFT – Steering Committee Review

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DRAFT

1. Introduction

Climate change is already affecting our communities. Impacts like hotter summers, wildfire smoke, and flooding endanger our homes and affect public health and local business. The *Thurston Climate Mitigation Plan* is a continuation of the efforts of the Thurston Regional Planning Council (TRPC), Thurston County, and the cities of Lacey, Olympia, and Tumwater to prepare for and reduce the impacts of climate change. This plan presents a framework for climate mitigation in the region, and includes actions these local governments can take to make measurable progress toward greenhouse gas emission reduction goals, while maintaining—and even improving—quality of life in our region.

Transforming our community to meet the challenge of climate change will require participation from every segment of society—public agencies and private businesses, parents, students, scientists, artists, producers, and consumers. This plan is not intended to be the last word on climate action, and it doesn't have all the answers. Instead, it is the start of a conversation about how local governments can best enable and empower their citizens to build a future in which we all have the prospect to thrive. While that future brings risk and uncertainty, it also promises great opportunity.

We have one planet but many climate solutions, so let's get to work.

What is Climate Mitigation?

Climate mitigation refers to actions that take heat-trapping greenhouse gases like carbon dioxide out of the atmosphere or prevent them from entering the atmosphere in the first place. The amount of greenhouse gases we emit is directly related to how warm the planet will get. The more emissions we produce through our activities, the more severe and damaging the climate change impacts.

Reducing, or mitigating, our emissions locally will help to limit the amount of warming we will experience globally and will mean fewer negative impacts on our community and region. Reducing emissions can help protect our region's infrastructure and the health and safety of our families.

A Foundation of Regional Sustainability Planning

The *Thurston Climate Mitigation Plan* builds on many years of sustainability work across the region. Prior to this planning effort, Thurston County, Lacey, Olympia, and Tumwater all had adopted plans or resolutions expressing their commitments to address climate change by reducing greenhouse gas emissions. Past planning efforts in the region include:

- ***Sustainable Thurston (2013)***: This plan set a priority goal for the Thurston region to “move toward carbon neutrality,” and it identified “find resources to work on climate change” as a first action step.
- ***Tumwater Climate Action Plan (2008)***: This plan measured and projected the city's municipal emissions, identified existing mitigation actions, and proposed additional measures to reduce emissions from municipal operations.
- ***Lacey Carbon Reduction and Resiliency Plan (CR2) (2016)***: This plan identified climate risks to the city and outlined actions to mitigate those impacts through preparedness and greenhouse gas reductions. The CR2 plan was adopted as an appendix to the Lacey Comprehensive Plan.

- ***Olympia Sea Level Response Plan (2019)***: This plan was developed in partnership with the City of Olympia, LOTT Clean Water Alliance, and the Port of Olympia to identify strategies for minimizing and preventing flooding in the downtown area due to sea level rise.

Climate Adaptation Plan

In 2018, TRPC adopted the [Thurston Climate Adaptation Plan](#), which includes a summary of observed and projected impacts from climate change on the Thurston region, a vulnerability assessment of the risks those changes pose to community goals, and a list of more than 90 actions to help the region prepare for and adjust to climate impacts. This Mitigation Plan builds on that same science-based foundation, to address local contributions to the causes of climate change. Together, the two documents form a comprehensive Climate Action Plan for the Thurston Region.

What is in this Plan...and What is Not

The *Thurston Climate Mitigation Plan* is the sum of many parts completed over a more than year of conversations, research, and analysis. Those pieces include:

- A shared vision for how climate mitigation activities align with community goals. (See Chapter 2—Vision, Goals & Guiding Principles)
- An understanding of the activities in our community that contribute greenhouse gas emissions that cause climate change. (See Chapter 3—Background)
- A list of communitywide actions that aim to lower greenhouse gas emissions and help the region progress towards its adopted reduction targets. (See Chapter 5—Strategies & Actions)
- An estimate of how those actions can, collectively, enable the region to achieve the substantial emission reductions targeted by the four partner jurisdictions. (See Chapter 4—Plan Development, Emissions Target Analysis)
- A strategy for continuing climate mitigation actions (See Chapter 6—Implementation Strategy)

Taken together, this plan lays out a road map for continuing regional collaboration on reducing local contributions to climate change.

While we learned a lot through this process, it also revealed many gaps in our knowledge that we'll need to fill as we move ahead. This plan is intended to provide local jurisdictions with a suite of solid next steps, not lock them into tasks that may not make sense as we work out the details. We'll need to do more to understand the potential costs of actions, how they may impact different parts of our community, and the tools and resources available to get the work done. We'll need to continue listening to what our community needs and wants, and bring even more voices into those conversations.

Our plan was completed as Thurston County grappled with the impact of the COVID-19 pandemic. This global public health emergency has revealed how fast, and how thoroughly, our expectations about the future can be upended. The analysis we used is based on assumptions about what the future will look like and what we can or cannot do to change it. But in the coming years, new laws, technologies, scientific discoveries, or economic and social disruptions will undoubtedly shake up the options for addressing climate change in ways we can't predict today. The project partners acknowledge that successful implementation will require adapting to changing conditions and new information as we go.

We also recognize that though this plan focuses on what local governments can do to reduce greenhouse gas emissions, that is only a portion of the change that will be needed across our society to

avoid the most severe impacts of climate change. According to a recent survey, while seven in ten Americans say they wish there were more they could do to combat climate change, more than half say they don't know where to start¹. Throughout this plan, we highlight climate mitigation efforts already underway in our community. These examples demonstrate just a fraction of the incredible energy and ingenuity that people in Thurston County are bringing to this global challenge.

¹ American Psychological Association, February 2020

poses to our community’s economy, public health, public safety, and environment. We will work together to identify and boldly implement the most effective, efficient, and equitable actions to reduce locally generated greenhouse gas emissions to protect current and future generations from the most severe impacts of climate change.”

This statement, coupled with that from the *Thurston Climate Adaptation Plan*, constitute an overall vision for climate action in Thurston County.

“In addition to doing its part to reduce greenhouse gas emissions, the Thurston County region will remain resilient in the face of climate change impacts during the 21st century and beyond.”

2.2 Emissions Targets and Project Goals

The primary focus of the Thurston Climate Mitigation Plan is to identify actions that will enable our region to work collectively to minimize the causes of climate change. To that end, in 2018 the four jurisdictions adopted shared emissions reduction targets. These targets are in line with those set by other countries and communities around the world and ensure that our community does its part to address global climate change.

Emissions Reduction Target

Reduce net communitywide greenhouse gas emissions 45% below 2015 levels by 2030 and 85% below 2015 levels by 2050 to ensure that our community does its part to keep the global average temperature from rising more than 2° Celsius (3.6° F) above historic levels.

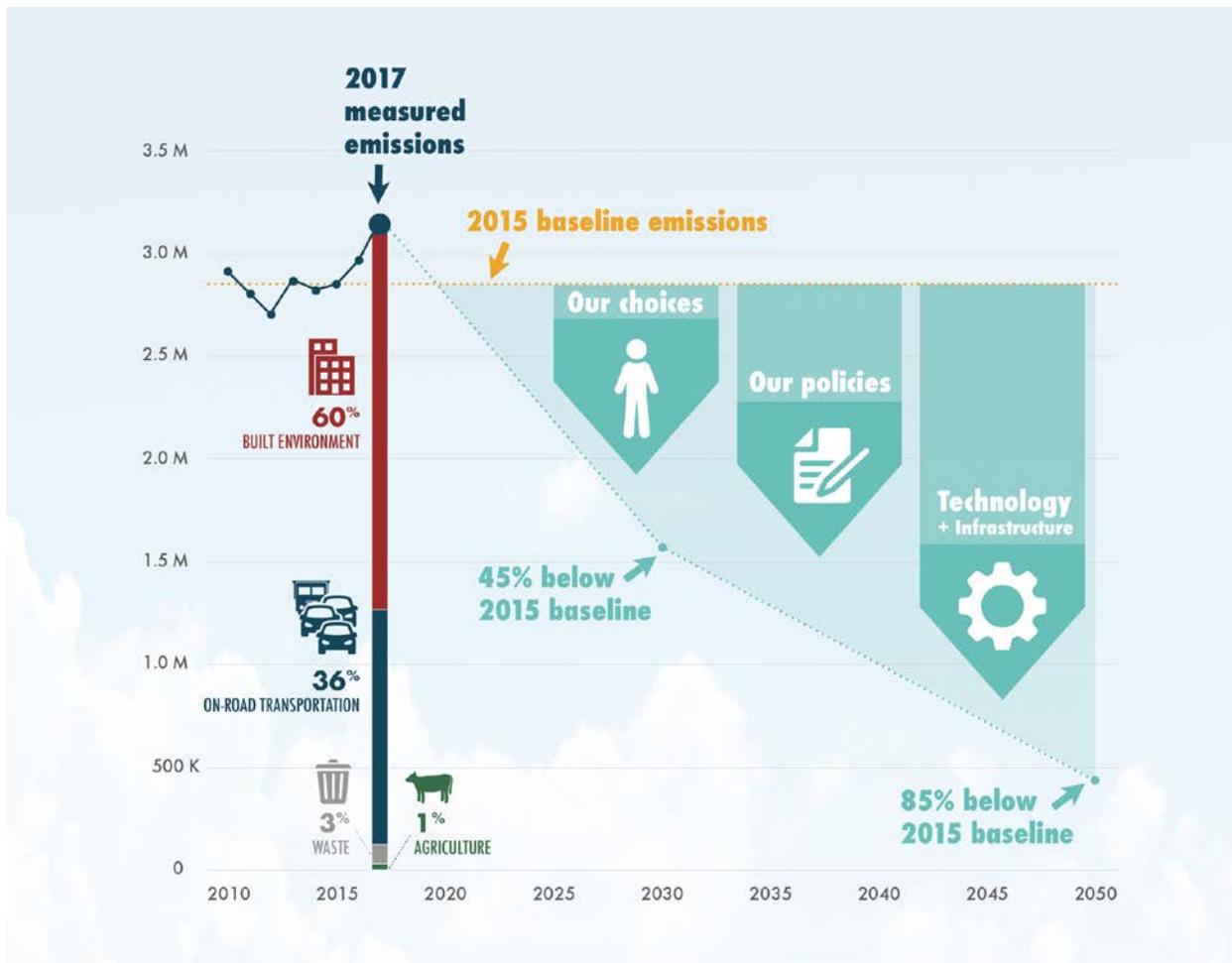


FIGURE 2. GREENHOUSE GAS EMISSIONS REDUCTION TARGETS FOR THE THURSTON CLIMATE MITIGATION PLAN. CREDIT: CASCADIA CONSULTING GROUP

Along with the emissions targets, the Steering Committee adopted regional goals that emphasize the co-benefits of climate action in supporting the strength and resilience of the broader community. These 12 goals are drawn from TRPC’s 2013 *Creating Places – Preserving Spaces: A Sustainable Development Plan for the Thurston Region* (Sustainable Thurston), and guided the *Thurston Climate Adaptation Plan*.

Regional Goals

1. Create vibrant centers, corridors and neighborhoods while accommodating growth;
2. Preserve environmentally sensitive lands, farmlands, forest lands, prairies, and rural lands, and develop compact urban areas;
3. Create a robust economy;
4. Protect and improve water quality, including groundwater, rivers, streams, lakes and Puget Sound;
5. Plan and act toward zero waste in the region;
6. Ensure that residents have the resources to meet their daily needs;

7. Support a local food system to increase community resilience, health and economic prosperity;
8. Ensure that the region’s water supply sustains people in perpetuity while protecting the environment;
9. Move toward a carbon-neutral community;
10. Maintain air quality standards;
11. Provide opportunities for everyone in the Thurston Region to learn about and practice sustainability;
12. Make strategic investments to advance sustainability regionally.

How do our emissions reduction targets compare to international and state targets?

In 2014, the Intergovernmental Panel on Climate Change (IPCC) concluded that the United States and other industrialized countries need to reduce emissions 85-90 percent from 1990 levels by 2050 to stabilize atmospheric concentrations of carbon dioxide and other heat-trapping gases at 450 parts per million. Achieving this target will likely keep the global average temperature from rising 2° Celsius above pre-industrial levels by the end of this century, and thus avoid the most severe climate impacts. These are the goals that were included in the 2016 Paris Agreement, which has been signed by 194 individual countries and the European Union. The IPCC has further recommended that countries aim to limit global warming to 1.5° Celsius by accelerating reductions in the coming decades – reducing emissions by 45 percent from 2010 levels by 2030 and achieving “net zero” by 2050.

In 2020, as this plan was being developed, Washington State adopted updated greenhouse gas emission limits for consistency with the most recent science assessments:

- *By 2020, reduce emission to 1990 levels*
- *By 2030, reduce to 45% below 1990 levels*
- *By 2040, reduce to 70% below 1990 levels*
- *By 2050, reduce to 95% below 1990 levels, and achieve net zero greenhouse gas emissions*

Washington State also adopted strong emission reduction targets for the operation of state agencies, many of which are based in Thurston County, and make up a significant portion of the local employment base.

Going forward, actions at the state, national, and international level will influence the Thurston region’s ability to achieve its goals. Successful implementation of this plan will include periodically reviewing and revising its goals and targets as new information expands our understanding of the best routes to address climate impacts.

2.3 Guiding Principles

In addition to the project goals, ten guiding principles governed the planning process. These principles build on those from the *Thurston Climate Adaptation Plan*, and influenced all pieces of this climate mitigation strategy.

1. **Holistic.** Think in terms of multiple generations and connected built and natural systems, as well as view local and regional decisions through the lens of social, economic, and environmental sustainability;

2. **Action-oriented.** Develop actions and strategies that are meaningful and realistic: go beyond general guidance to identify the specific steps needed to make changes that are effective at reducing greenhouse gas emissions below the emission targets;
3. **Adaptive.** Consider both the short- and long-term impacts of climate change, regularly report on progress, and review and revise targets and approaches as needed to address emerging information about the timing and severity of climate impacts or the effectiveness of policies;
4. **Co-benefits.** Identify and leverage climate change mitigation strategies and actions that offer other benefits to the community, such as increasing resilience or access to resources, reducing energy or other costs, improving health outcomes, or addressing equity;
5. **Science-based.** Utilize sound scientific research, modeling, economic analysis, and other tools to understand the outcomes of strategies to reduce greenhouse gas emissions;
6. **Track record.** Incorporate and complement work produced by others, including successful examples from existing local and regional climate action plans;
7. **Equity.** Consider how the costs and benefits of mitigation actions will be shared across all communities: including both urban and rural areas, low-income households, communities of color, and other populations that historically have been impacted by environmental hazards or are otherwise vulnerable to climate impacts;
8. **Tribal sovereignty.** Recognize and support protection of local indigenous tribes' community health and well-being, including natural resources security and self-determination;
9. **Public engagement.** Seek broad community input, educate residents about climate change, and inspire them to take action.
10. **Readiness.** Consider and prioritize strategies that can be launched and realized quickly using existing resources and/or networks.

3. Background

Every kilowatt we use, mile we travel, and ounce of food and waste we produce—either directly or indirectly—contributes to our carbon footprint. As the Thurston region grows, more buildings, more vehicles, and more requirements for goods and services come at a cost we’ll eventually pay in impacts from climate change. Bringing down concentrations of carbon dioxide, methane, and other heat-trapping gases in the atmosphere is the most important action we can take to slow the warming of our planet. That’s why the Thurston Climate Mitigation Plan sets ambitious goals to reduce local generation of greenhouse gases. This chapter describes what we know about our current contributions to climate change and presents success stories of how our community is already working to reduce our impact.

3.1 Greenhouse Gas Emissions

Sources of greenhouse gas emissions in Thurston County include:

- **Buildings and energy**, including electricity and natural gas consumption.
- **Transportation and land use**, including vehicle travel and fuel consumption.
- **Waste and wastewater**, including solid waste management and wastewater treatment.
- **Agriculture and forests**, including animal farming and land fertilization.
- Other sources such as refrigerant use, street lighting, and deforestation.

Currently, the majority of our region’s contributions to climate change come from powering, heating, and cooling our buildings and driving vehicles. The built environment and transportation account for 90 percent of Thurston County’s total emissions. Emissions related to solid waste disposal, wastewater treatment, agriculture and land use, and refrigerant leakage also contribute to the county’s total.

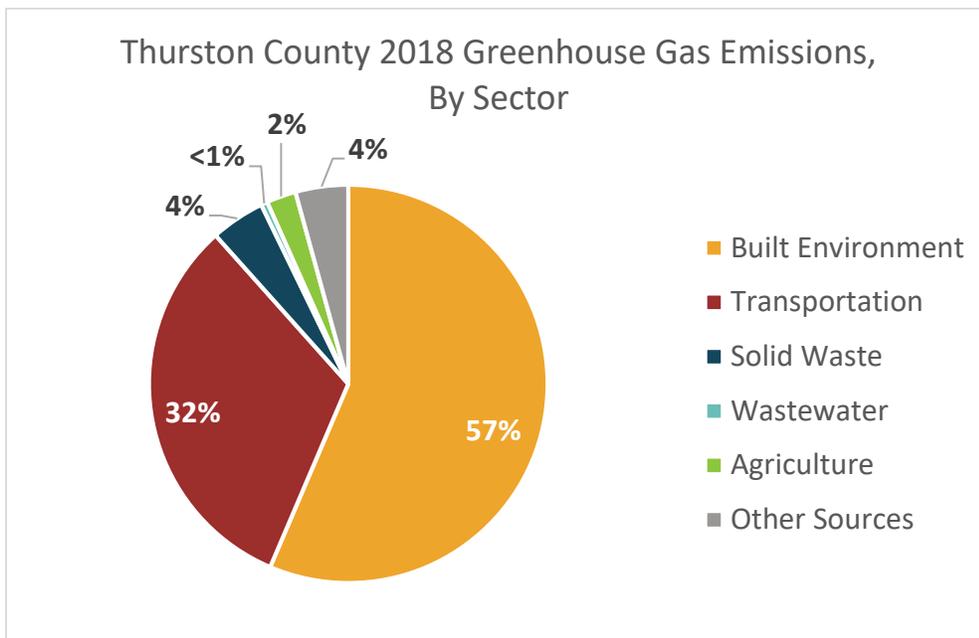


FIGURE 3. SOURCES OF THURSTON COUNTY GREENHOUSE GAS EMISSIONS, 2018. SOURCE: TCAT 2020

Thurston County’s total carbon footprint in 2018 was 3,207,845 metric tons of carbon dioxide equivalent (MTCO₂e)—that amount is equivalent to the emissions from nearly 700,000 passenger vehicles in a year.

While annual emissions have gone up or down over the past decade, our total emissions have been increasing over time—including by more than 7 percent since our target baseline year 2015. This upward trend in emissions will make our emissions targets that much more challenging to reach.

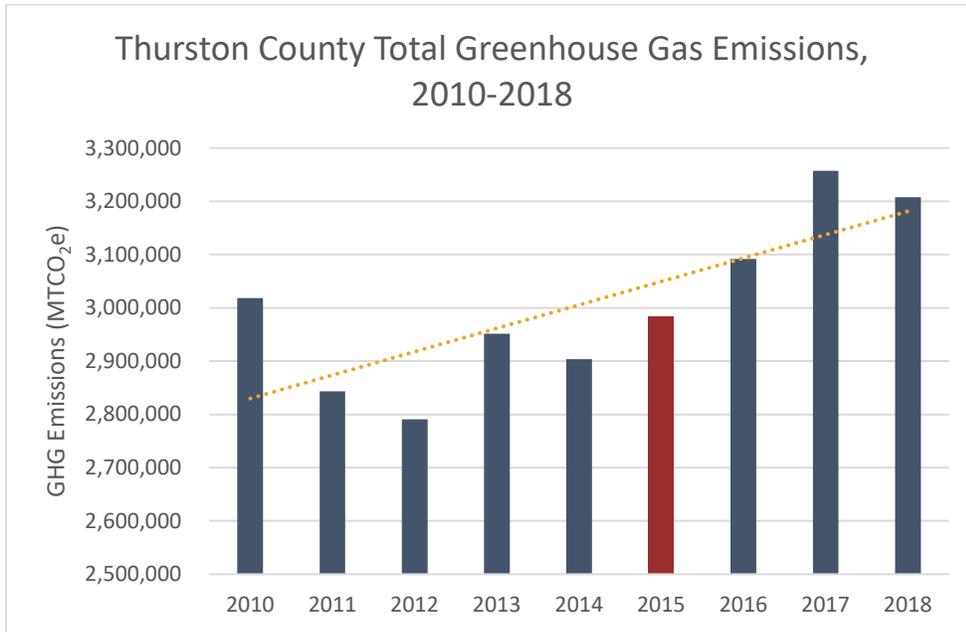


FIGURE 4. TOTAL THURSTON COUNTY GREENHOUSE GAS EMISSIONS, 2010-2018. THE BASELINE TARGET YEAR 2015 IS HIGHLIGHTED. SOURCE: TCAT, 2020.

On a per-capita basis, each person emitted an average of 11 MTCO₂e in 2018. By comparison, the average Thurston County resident contributes fewer emissions than residents of Washington State as a whole, and less than the average American, but more than residents of King, Kitsap, Pierce, and Snohomish Counties. While emissions per person has held relatively steady over the past decade, Thurston County is one of the fastest growing regions in Washington. That population growth accounts for some of our increases in emissions.

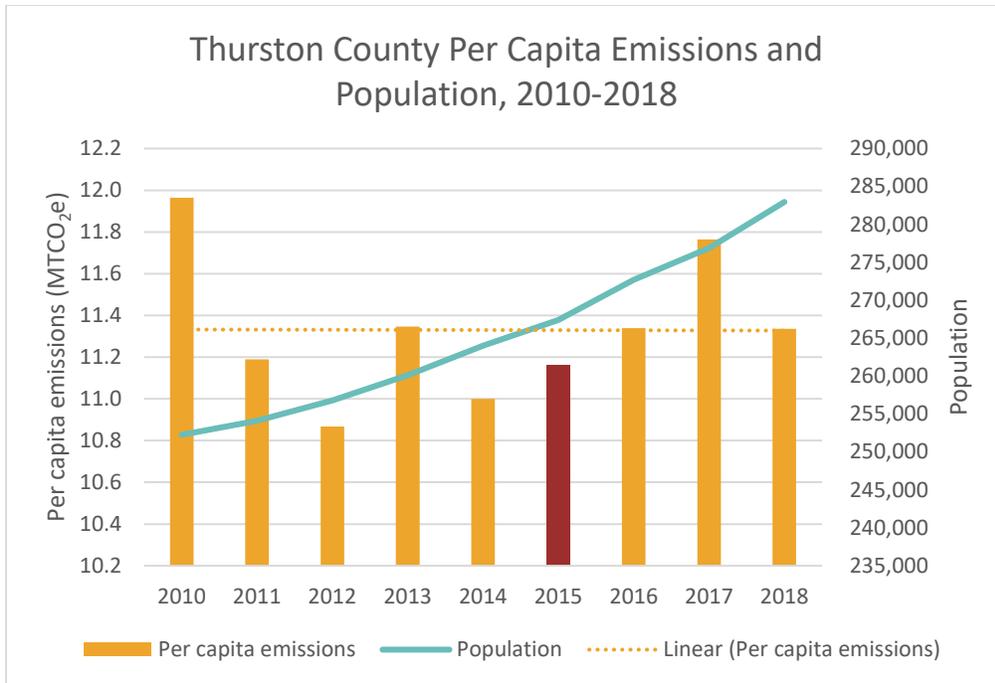


FIGURE 5. THURSTON COUNTY PER CAPITA EMISSIONS AND POPULATION, 2010-2018. THE BASELINE TARGET YEAR 2015 IS HIGHLIGHTED. SOURCE: TCAT, 2020.

Greenhouse Gas Inventory

The Thurston Climate Action Team (TCAT) has tracked our regional carbon footprint regularly since 2010. TCAT is a local non-profit made up of experts and members of the public who develop data and advocate for climate change action in our community. TCAT uses a protocol developed by the International Council of Local Environmental Initiatives (ICLEI) and the World Resource Institute to calculate our regional carbon footprint. For more information on the Greenhouse Gas Inventory, see Appendix 10.2.

What about emissions from goods and other sources produced outside Thurston County?

The method we currently use to develop the Greenhouse Gas Inventory only tracks emissions from activities that occur within Thurston County. That means it does not measure the impact of many choices made by people in Thurston County that contribute to global emissions, such as travel beyond the county boundary (including all air travel) and goods purchased and consumed here that are manufactured elsewhere. This is why solid waste and agriculture make up such a small proportion of the current emissions inventory. A full account of the community’s climate impact should recognize these consumption-based emissions. While we currently lack a reliable way to accurately measure consumption-based emissions, the partners involved in this project recognize the large role they play in our region’s carbon footprint. These activities may be incorporated into future updates of the plan as better information becomes available.

3.2 Emissions Sectors

We can't mitigate climate change if we don't know what behaviors and choices need to change. What activities are contributing the most to our regional carbon footprint? The following sections describe key sectors in more detail to help identify our options to reduce regional greenhouse gas emissions and help to limit climate change impacts.

Buildings & Energy

When we turn on the lights, turn up the heat, or power up an appliance in our homes and workplaces, we are tapping some source of energy. The Buildings and Energy sector includes the generation, transmission, and distribution of electricity and natural gas for heating, cooling, lighting, and other uses. Greenhouse gases are released during the combustion of fossil fuels—such as coal, oil, and natural gas—to heat buildings and produce electricity.

- The buildings and energy sector is the greatest contributor to emissions in the Thurston region, accounting for around 57 percent of total emissions. Residential buildings are the largest source of emissions within this sector, followed by commercial and government buildings, industrial facilities, and outdoor lighting.
- Electricity accounts for the largest portion of this sector's emissions—about 76 percent. Most Thurston County residents get electricity from Puget Sound Energy, and coal-fired power plants make up over a third of the utility's current fuel mix (see sidebar).
- Natural gas is the second biggest portion of emissions at 21 percent, and a growing proportion. Other fuels such as fuel oil, liquid petroleum gas (LPG), and wood make up a much smaller part—about 3 percent combined.

Reducing emissions from this sector will require expanding renewable energy generation and use, as well as improvements in building materials and management that increase energy efficiency. Engaging and empowering individuals and organizations to make changes in the way they use energy can also lead to considerable reductions, and actions related to demand response can reduce energy emissions during peak times.

Greening Our Grid

Most people in Thurston County get electricity from Puget Sound Energy, which uses a mix of different fuel sources to provide a reliable source of power to its customers. Hydroelectricity has long produced a portion of that energy mix, and renewable sources like wind are increasing, but fossil fuels like coal and natural gas still supply the majority of power to our electrical grid. This reliance on fossil fuels leads to the high levels of emissions we see in our building sector.

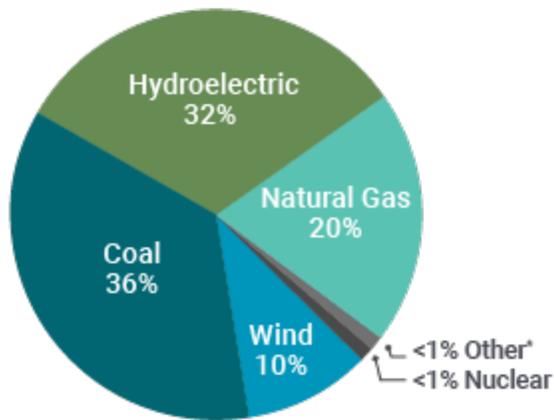


FIGURE 6. PUGET SOUND ENERGY 2018 ELECTRICITY FUEL MIX. SOURCE: WASHINGTON DEPARTMENT OF COMMERCE AND PUGET SOUND ENERGY

In 2019, Washington State passed the Clean Energy Transformation Act (CETA), which sets milestones for utilities like Puget Sound Energy to transition toward a clean fuel standard. Under CETA, utilities 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. Other recent state legislation lays out steps toward production of renewable natural gas and greater energy efficiency.

Supporting the transition of our electrical grid to clean energy is one of the most powerful things we can do locally to achieve our greenhouse gas reduction targets (see Chapter 6).

SUCCESS STORY: CLIMATE CHANGE MITIGATION BY SUPPORTING EFFICIENCY

The Community Action Council of Lewis, Mason, and Thurston Counties is a regional non-profit whose Weatherization Program helps low-income households make their homes more energy efficient. Weatherization efforts can include weather-stripping and caulking to improve air seals, installing or replacing insulation, replacing windows, and similar repairs. The Weatherization Program helps these households decrease energy use by providing many services free of charge. This work also supports the health and safety of families by helping identify and repair heating system troubles and indoor air quality issues. Programs like this one reduce our local contributions to climate change while also increasing the distribution of resources among people who might otherwise find energy efficiency improvements out of their reach.

Transportation & Land Use

Moving people and goods efficiently is a key function of a thriving community, however, all that driving, and sitting in traffic, adds up to a big emission bill we'll pay in climate impacts. The majority of greenhouse gas emissions from transportation result from the use of fossil fuel-based products, like gasoline, in internal combustion engines.

- Transportation is the second largest source of emissions in our region (32%). Passenger vehicles are the largest source of on-road emissions, followed by heavy duty trucks, and commercial vehicles.
- Regional transit options like buses and vanpools make up less than one percent of transportation-related emissions.

As the Thurston region continues to grow, low-emission transportation will become even more important. This will require that we drive less, use more fuel-efficient vehicles, and promote alternative forms of travel, like biking and walking.

SUCCESS STORY: CLIMATE CHANGE MITIGATION BY ENCOURAGING PUBLIC TRANSIT

Increasing access to public transit is a strategy that has benefits beyond its climate impact. In 2020, both Intercity Transit and ruralTransit stopped charging for rides on their buses. Revenue from bus passes contributed a small percentage of Intercity Transit’s funding—less than 2 percent. In 2018, voters approved a local sales tax increase to improve transit funding, making bus fare effectively prepaid by local economic activity. Intercity Transit’s zero-fare program is a five-year demonstration project intended to both increase the efficiency of transit operation and reduce barriers to taking the bus. The strategy can also support climate mitigation, by making it easier for people to opt for a less-carbon intensive way to get around town, decreasing the number of polluting vehicles on the road. More than 75 percent of residents in our region support or strongly support zero-fare services, and in just the first month of the pilot project, Intercity Transit saw a 20 percent increase in ridership. Over the longer term, a zero-fare system can increase return on taxpayer investment, reduce congestion, and provide more equitable service to all, all while helping to reduce greenhouse gas emissions.

Water & Waste

As a rapidly growing region, the amount of waste we produce and water we use are also on the rise. Trash produced by Thurston County residents and businesses is sent to a landfill to decompose. During the decomposition process, solid waste produces methane—a gas that can be 84 times more potent than carbon dioxide during the first two decades after its release. If uncaptured, this leakage can be a primary source of greenhouse gas emissions from solid waste disposal. Waste collection, transportation, and processing also require energy, which is often derived from the combustion of fossil fuels. There are similar emissions related to wastewater: wastewater must be collected, transported, treated, and released back into the environment—all of which requires energy and, in some cases, releases potent methane.

- In 2018, waste-related emissions contributed to a little over four percent of Thurston County’s total emissions. Methane leaks are often a major source of solid waste emissions – however, the Roosevelt Regional Landfill where most of Thurston County’s waste ends up is a leader in methane capture (see sidebar). Other solid waste emissions originated from processing and transportation of solid waste.
- The Thurston region has one of the most innovative wastewater treatment facilities in the country in the LOTT Clean Water Alliance. Wastewater treatment only makes up a small fraction of Thurston County’s total emissions (<1 percent). The largest sources of wastewater emissions were related to digester and methanol emissions—both of which are necessary in treating wastewater solids.

Diverting waste keeps materials out of landfills, where it would traditionally break down and produce greenhouse gases. Reducing the sources of waste is the most impactful way to cut the emissions associated with solid waste. Not only does source reduction decrease direct landfill emissions, it can also drive reductions in emissions associated with the manufacturing and transport of products and services.

While these consumption-side emissions are not currently included in our inventory, incentivizing reduction, recycling, and reuse strategies can ultimately have a big influence on emissions.

SUCCESS STORY: CLIMATE CHANGE MITIGATION BY IMPROVING WASTE PROCESSES

Reusing our excess waste can be a win-win mitigation strategy. The Roosevelt Regional Landfill in southern Washington is the destination for much of Thurston County’s trash. Since the late 1990s it has generated power through a waste-to-energy project, and now has transitioned from generating electricity to Renewable Natural Gas. The initial power plant at the landfill generated 26 megawatts of electrical power, or enough electricity to power more than 20,000 homes. In 2018, the Klickitat Public Utility District began investigating using methane from the landfill to generate renewable natural gas in partnership with Republic Services. In 2020, the PUD shifted entirely from electricity generation to the generation of RNG. Since methane is a powerful greenhouse gas, redirecting any methane emissions from the atmosphere can help reduce local contributions to climate change. By the end of the system’s 80-year lifespan, it will offset a total of 35.4 million tons of carbon dioxide emissions, and the land will be returned to agricultural use. The project generates more than 1.6 million dekatherms of renewable natural gas per year – a portion of which may circulate back to heat Thurston County homes through an agreement with Puget Sound Energy.

Agriculture & Forests

Farms and forests are important to the identity of the Thurston region, and they can play an essential role in achieving our emission reduction targets by sequestering carbon and helping limit urban sprawl. While these sectors make up only a small proportion of Thurston County’s emissions (two percent), agricultural activities and forest practices can contribute greenhouse gas emissions in a variety of ways:

- **Deforestation** causes the carbon stored in trees to be released into the atmosphere. Deforestation also prevents trees from capturing more carbon from the atmosphere—a process known as carbon sequestration.
- **Land management practices** on agricultural soils can lead to increased concentrations of nitrogen in the soil and result in emissions of nitrous oxide (N₂O), a potent greenhouse gas. Specific activities that emit N₂O emissions include the application of synthetic and organic fertilizers and inefficient irrigation practices.
- **Livestock**, especially cattle, produce methane (CH₄) as part of their normal digestive processes—another potent greenhouse gas. This process, called enteric fermentation, represents nearly half of the emissions from Thurston County’s agriculture sector.
- **Manure management** from livestock also emits potent methane and nitrous oxide gases. The amount of gases produced varies depending on the manure treatment and storage method.

Carbon sequestration refers to the ability of plants, soils, and other organic material to capture and store carbon from the atmosphere. By planting trees, amending soils, and creating natural drainage systems with certain plant species, the Thurston region can remove carbon from the atmosphere and store it in plant matter and soils. Carbon sequestration strategies can bring other benefits as well. For example, adding organic matter to soil supports soil structure and microbiology, retains water, reduces erosion and stormwater run-off, and filters out pollutants.

SUCCESS STORY: CLIMATE CHANGE MITIGATION THROUGH FARMING PRACTICES AND PRESERVATION

Thurston County loses more than 1,000 acres of farmland a year to other uses, yet this land is critical for our regional goals of maintaining a local food network, preserving open space, and offsetting local greenhouse gas emissions. This loss of local farmland requires us to source more of our food from outside the region which can contribute to transportation emissions. Programs that fund farmland preservation include the Washington Wildlife and Recreation Program, and Thurston County’s Conservation Futures and Transfer of Development Rights programs, which purchase property or development rights, allowing these areas to remain as open space available for farming. In 2017, Conservation Futures’ funding helped purchase an agricultural conservation easement for Oyster Bay Farm, permanently preserving 39 acres for future generations of food production.

Farmers also can make a difference with the way they manage their land – regenerative agriculture is an approach to farming that aims to capture carbon in both soil and plants. It employs a suite of practices including no-till, managed grazing, and selective planting of crops and trees that also benefit local biodiversity and ecosystem health. These techniques can be applied for farms of all sizes and styles. Sapsucker Farm in Olympia makes the most of its six acres to raise a mix of sheep, cattle, turkeys, geese, and chickens by using rotational grazing, keyline water management, and a silvopasture system that will intersperse nut- and fruit-bearing trees with grazing areas – all with the goal of providing carbon-negative meat. Helsing Junctions Farms, near Rochester, and Colvin Ranch, outside Tenino, are two examples of larger farm operations in Thurston County employing regenerative agricultural practices. In 2020, the Washington State Legislature established the Sustainable Farms and Fields grant program, which will aid farmers and ranchers in adopting practices that increase carbon storage. These resources allow families to continue farming land they have worked on for generations and provide Washingtonians with healthy local food and a diverse economy.

Cross-Cutting

Climate change poses a fundamental threat to the future health and well-being of our community and addressing it will require a strong response from across society. In addition to addressing specific local sources of greenhouse gas emissions, such as those described in the previous sections, success will depend on building the resources, expertise, and constituency within our community to carry out the change we need and amplify its impact. Through effective and strategic education, advocacy, monitoring, and policy development, the Thurston region can increase awareness of, participation in, and impact of climate mitigation efforts.

SUCCESS STORY: CLIMATE CHANGE MITIGATION THROUGH EDUCATION

ClimeTime is a state initiative to develop literacy around climate science by providing resources and professional development to science teachers and other educators across Washington. The program is managed by the Washington Office of Superintendent of Public Instruction and carried out through education districts and community organizations across the state. To date, the Capital Educational Service District (#113), which includes Thurston County, has engaged more than 800 primary, middle, and high school teachers through workshops, provided lessons on climate to youth in area detention centers, and developed an online course that can be used statewide. The curricula coming out of the initiative is targeted to support Next Generation Science Standards, such as that developed by the Pacific

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Education Institute, which centers its program on indigenous knowledge and empowering students to participate locally in solutions for reducing greenhouse gases.

4. Plan Development

The Thurston Climate Mitigation Plan is the result of more than a year of technical analysis and engagement with Thurston area stakeholders, including local governments, businesses, community organizations, and residents. An overview of this planning process is provided below.

4.1 Plan Development Framework

Several groups met regularly to inform and provide oversight of all aspects of the planning process:

- **Interjurisdictional Project Team.** This group consisted of lead staff from TRPC and each of the four partner jurisdictions: Thurston County, Lacey, Olympia, and Tumwater. The Project Team provided staff-level direction and coordination throughout the project, reviewed draft products, and facilitated development of the jurisdiction-specific implementation plans.
- **Consultant Team.** Seattle-based Cascadia Consulting Group and sub-consultant Hammerschlag LLC contributed technical support throughout the project, including developing the public engagement strategy and outreach materials, developing and analyzing actions, and quantifying emission reductions from those actions.
- **Climate Advisory Workgroup.** This committee included public- and private-sector members of the community with subject matter expertise in one of five sectors: Buildings and Energy, Transportation and Land Use, Water and Waste Management, Agriculture and Forestry, and Cross-cutting. The Climate Advisory Workgroup was tasked with identifying, evaluating, and recommending a list of impactful actions to achieve the emissions reduction goal. Workgroup members also reviewed and provided input on project goals and guiding principles, public engagement strategy, scenario results, and implementation strategies. On two occasions, members of the Advisory Workgroup split into their five **Sector Focus Groups**, which included additional subject matter experts and interested members of the public. One round of the focus groups included a meeting dedicated to youth and educator perspectives. All meetings of the Climate Advisory Workgroup were open to the public, and time for public comment was provided at each meeting.
- **Steering Committee.** The Steering Committee was composed of elected officials and staff from each of the four partner jurisdictions, and was the decision-making body for the plan. This committee used a consensus-based decision-making process to approve each stage of the planning process. All meetings of the Steering Committee were open to the public, and time for public comment was provided at each meeting.

Each jurisdiction’s policymaking body (City Council or Board of Commissioners) will ultimately consider a resolution that adopts the Thurston Climate Mitigation Plan and affirms the jurisdiction will execute its Implementation Strategy.



FIGURE 7. PLAN DEVELOPMENT FRAMEWORK OF THE THURSTON CLIMATE MITIGATION PLAN

4.2 Community Engagement

The benefits and costs of climate mitigation actions will affect everyone in Thurston County. Therefore, it was crucial to gather as many perspectives as possible to inform the plan. The following goals and objectives guided public engagement during the planning process:

- A. Lay the groundwork for continued community engagement on climate action.
 - Deliver honest and consistent messaging to the public.
 - Build relationships with trusted community liaisons to help engage hard-to-reach populations such as communities of color, low-income, rural, youth, and elderly communities, and military families.
 - Provide a range of engagement options to suit different lifestyles, availability, and ways of processing information.
- B. Promote alignment between community and government climate priorities, while recognizing the separate roles, responsibilities, and interests of individuals and organizations.
 - Solicit meaningful input from a diverse and representative set of partners and stakeholders.
 - Capture areas of convergence and divergence regarding climate action priorities throughout Thurston County, including gaps and unmet needs, where applicable.
- C. Build public support for climate action across Thurston County.

- Develop broad awareness of anticipated climate impacts throughout Thurston County and the cities of Lacey, Olympia, and Tumwater and efforts to address them, including the co-benefits of action and the costs of inaction.
- Meet participants where they are, with respect for their involvement in climate change action and their different needs, wants, and priorities regarding climate mitigation.
- Clearly describe the focus and boundaries of the TCMP, how the TCMP is to be used, and the role that public input and informed decision making will play in TCMP implementation.

Input from the community was used to inform the development, refinement, and prioritization of actions in the draft plan. To ensure a robust engagement process across the region, the planning process included both broad and targeted engagement. A few of the methods used are summarized below – for a complete description of community engagement activities, see Appendix 10.8.

Community Survey

In 2019, an online community questionnaire gathered a baseline understanding of the community's priorities, perspectives, and concerns. The survey was shared through the TRPC website, social media, e-newsletters, listservs, and partner networks. The survey was open from August 12 to September 30, 2019 and received 1,397 responses. Results from the survey are shown throughout this plan.

Pop-Up Events

The project team engaged with the community at local events, including Tenino Oregon Trail Days; Thurston County Fair; the Yelm, Olympia, and Tumwater Farmers Markets; and the Olympia Fall Arts Walk, among others. These pop-up events provided an opportunity for visitors to learn more about the project, ask questions to project staff, and provide input through interactive activities.

Presentations

The project team gave presentations to a number of committees and organizations. These presentations gave an overview of the project and an opportunity to provide high-level recommendations for the plan's development. Presentations were given to the South Thurston Economic Development Initiative (STEDI), Olympia Master Builders, Deschutes Estuary Restoration Team, Tumwater Tree Board, and Lacey Youth Council, among others

Interviews

To better understand the impacts of the strategies and actions being considered, the consultant team conducted interviews with representatives from key sectors and organizations. Interview subjects included representatives from the Thurston County Food Bank, Confederated Tribes of the Chehalis Reservation, Olympia Master Builders, Hispanic Roundtable, and Homes First. Interviewees provided feedback on their organization's climate impact mitigation work; climate impacts to the communities in which they work; as well as concerns, challenges, and potential barriers to implementation of the actions.

There will be additional opportunities for community engagement during the review of this draft plan, and as individual jurisdictions work to implement actions in the years to come.

4.3 Communitywide Action List

The Thurston Climate Mitigation Plan includes a list of communitywide actions to reduce greenhouse gas emissions in order to meet the adopted emissions reduction target. The planning process began by compiling a comprehensive initial list of potential strategies and actions. Between May and September 2019, the Project Team and consultants gathered ideas from the Climate Advisory Workgroup, Steering Committee, sector focus groups, survey respondents, general public, and other climate planning efforts to develop a list of over 300 potential actions to reduce greenhouse gas emissions. Contributors also provided details on likely partners, resources, funding opportunities, and barriers to implementation.

This initial list of actions was refined and consolidated, resulting in a list of 242 actions addressing a wide variety of sectors and strategies. While the shorter list of actions assessed for this draft plan focuses on where local government can play a leading role, addressing the causes of climate change will require action from partners throughout our community—including the private sector, nonprofits and nongovernmental organizations, and individuals. The complete list of actions is full of great ideas that can and should be taken up by others seeking to create change; it is available in Appendix 10.3.

Prioritizing Actions

To focus time and resources on actions that could best achieve the goals set for this process, the project partners narrowed the long list of actions using a multicriteria analysis. The consultant team, advisory workgroup, and technical experts assessed each action against four criteria: impact on greenhouse gas emissions, speed of deployment, local control, and community co-benefits. Stakeholders reviewed and discussed the outcomes from this multicriteria analysis to arrive at the priority actions assessed for this draft plan (see Chapter 5). For a thorough description of the multicriteria analysis, see Appendix 10.4.

CRITERIA	DESCRIPTION
GHG reduction potential	The annual quantity of greenhouse gas emissions (GHG) an action will avoid or sequester as of 2030.
Speed of deployment	Minimum time possible between decision to recommend an action, and achievement of the annual GHG reduction potential.
Control	One or more of the four project partners can likely influence the implementing party(ies) or can create the necessary regulatory structure.
Co-benefits <ul style="list-style-type: none"> <input type="checkbox"/> ecosystem health <input type="checkbox"/> social equity <input type="checkbox"/> economic benefit <input type="checkbox"/> other 	Supports one or more of the regional goals (aside from #9 – carbon neutrality).

FIGURE 8. CRITERIA USED TO PRIORITIZE ACTIONS FOR THE THURSTON CLIMATE MITIGATION PLAN

4.4 Emissions Target Analysis

The next step was to understand what it would take to reach the adopted greenhouse gas emission reduction targets, and whether the actions we prioritized would do enough. The consultant team developed a tool to display the impacts of climate policies on future emissions. Their analysis, summarized below, shows that the emissions reduction targets adopted by the four partner jurisdictions are ambitious but achievable. For a thorough discussion of the Scenario Analysis, see Appendix 10.5.

“Business as Usual” Scenario

This analysis began by assessing the amount of emissions we can expect if energy and climate policies remain fixed as they were in 2018. This “business-as-usual” scenario looked at how greenhouse gas emissions for the Thurston region would grow between now and 2050, with our anticipated population growth and no new climate action at a federal, state, or local level.

The “business-as-usual” scenario projects that without any action, our local emissions will grow by more than 760,000 metric tons of greenhouse gases over the next 10 years – a 26 percent increase from 2015 (see Figure 3). By 2050, that footprint could grow again by half – more than a million additional tons of greenhouse gases each year, compared to where we are today. This upward trajectory is tied to anticipated population growth, and it would put current and future residents of Thurston County on the path to experiencing the most severe impacts from climate change.

Thurston County Projected Greenhouse Gas Emissions: Business As Usual, 2010-2050

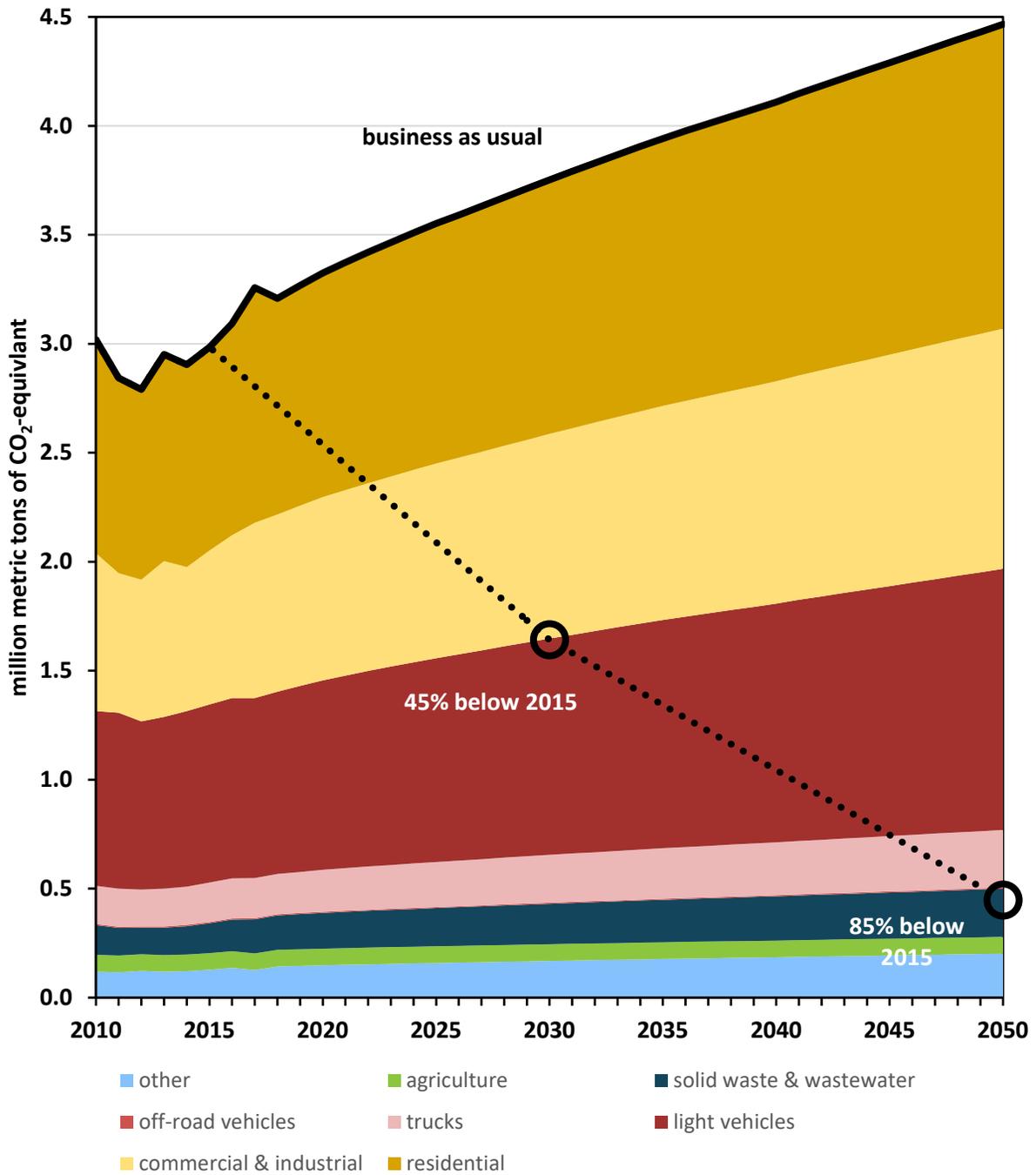


FIGURE 9. THURSTON COUNTY PROJECTED GREENHOUSE GAS EMISSIONS: BUSINESS AS USUAL SCENARIO, 2015-2050. THE DOTTED LINE SHOWS THE ADOPTED EMISSION REDUCTION TARGETS. RATHER THAN DECREASE, WITHOUT ACTION LOCALLY GENERATED GREENHOUSE GAS EMISSIONS ARE PREDICTED TO INCREASE BY 50 PERCENT BY 2050.

State Policy-Adjusted Scenario

The consultant team then assessed how recent federal and state actions will contribute to local greenhouse gas emission reductions over the next 30 years. This “policy-adjusted forecast” estimated the impact of the following recently adopted state laws:

- **Updates to Washington State Building and Energy Code.** Code changes that were set to go into effect in 2020 will significantly increase energy performance requirements for new residential and commercial buildings. In June 2020, the Washington State Building Code Council voted to extend the effective date of the new standards to February 1, 2021. This extension was not reflected in the consultant’s analysis.
- **Clean Energy Transformation Act (CETA).** State legislation adopted in 2019 requires that electric utilities operating in the state eliminate coal as a fuel source by 2025, and source 100 percent of the electricity they supply to Washington customers from renewable and non-greenhouse-gas-emitting resources by 2045.
- **Low-Emission Vehicle Standard.** State legislation adopted in 2018 requires that vehicles sold or licensed in Washington State must meet the same emissions standards as those set by the California Air Resources Board (CARB). CARB standards require efficiency increases of 3.7 percent each year from 2020-2026, resulting in a similar standard as the Obama-era Corporate Average Fuel Economy (CAFE) rule. Additional state legislation passed in 2020 extends these requirements to medium-duty trucks. The state Low-Emission Vehicle Standard currently is unaffected by the Trump administration’s replacement of the CAFE standards with lower federal efficiency requirements.
- **Zero-Emission Vehicle Standard.** State legislation adopted in 2020 requires car manufacturers selling vehicles in Washington State to follow California’s zero emission vehicle (ZEV) standards here as well. An increasing portion of vehicles provided for sale in Washington state must be ZEV, or car manufacturers may obtain credits equal to that portion.

There are additional actions happening at a state level that will affect local emissions, directly and indirectly. This analysis was not intended to provide a comprehensive account of the potential impact of all state actions. The consultant team highlighted those that seemed most likely to directly affect Thurston County’s largest emission sectors.

As shown in Figure 10, state action can have a large impact on emissions from Thurston County. Taken together these four policies could reduce emissions by nearly half (46%) by 2030, when compared with the “business-as-usual” scenario—and by nearly two-thirds (64%) by 2050. In particular, the Clean Energy Transformation Act (CETA) can play a critical role in reducing emissions in the near-term, by removing coal as a source of Thurston County’s electricity by 2025, and fully transitioning our electrical grid to clean energy sources by 2045. These changes will dramatically reduce emissions from the building sector, currently our region’s largest source of emissions. If implemented as intended, electricity will go from contributing almost half of our local emissions (43%) to contributing zero.

By comparison, building code changes and increased fuel efficiency will take longer to impact emissions—this is because it will take time for people to trade up for newer, more fuel-efficient cars, and even longer to replace our current building stock with new, more energy-efficient structures. These improvements play an increasingly important role as we look out toward achieving our 2050 goal.

Reduction in Thurston County Greenhouse Gas Emissions:
 Impact of State Policies

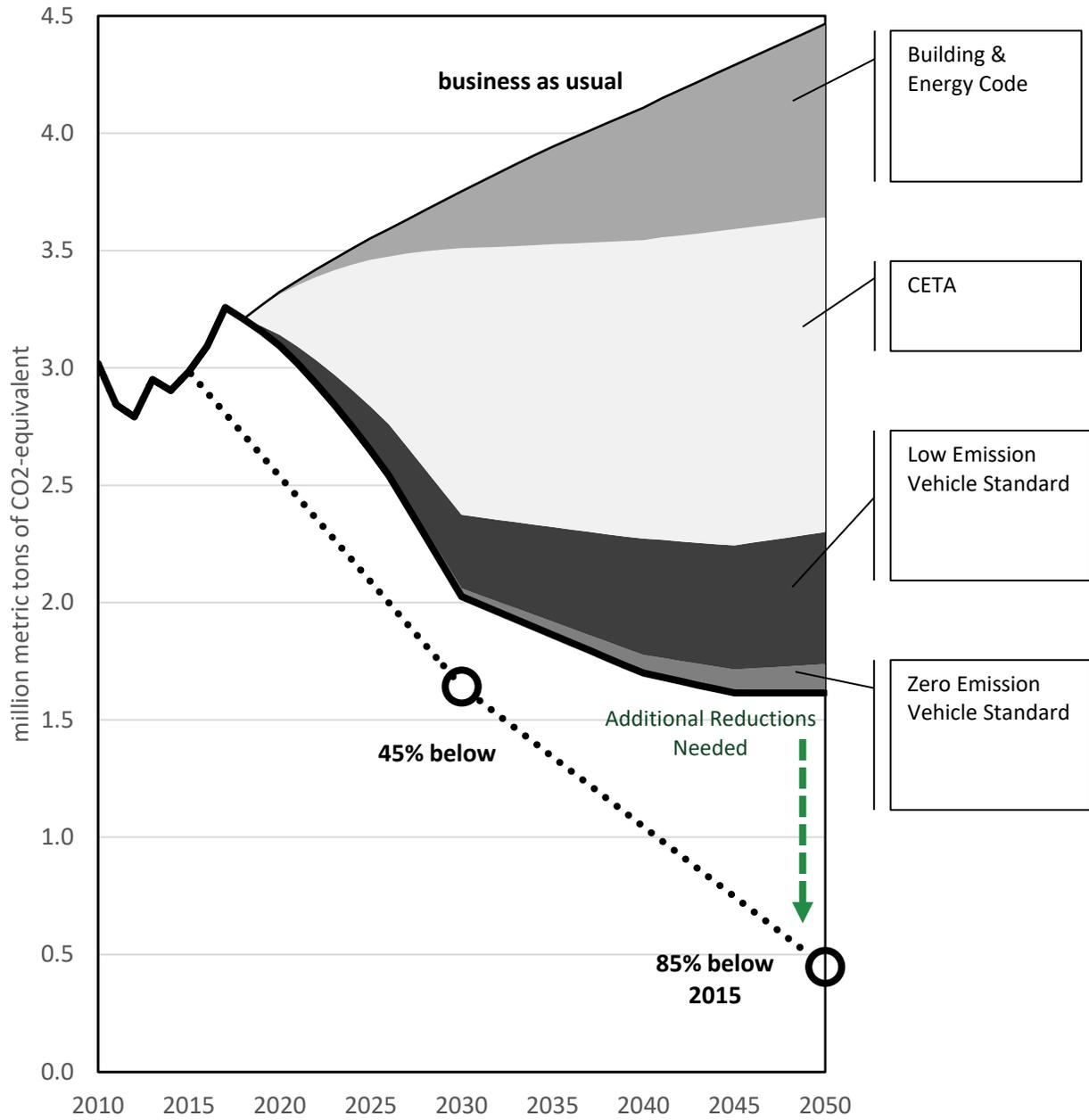


FIGURE 10. POTENTIAL REDUCTION IN THURSTON COUNTY EMISSIONS FROM STATE POLICIES. THE DOTTED LINE SHOWS THE ADOPTED EMISSION REDUCTION TARGETS. SOURCE: HAMMERSCHLAG 2020

Local Action Scenario

After evaluating the impact of state policies, the consultant team estimated how local actions can close the remaining gap and put the region on track to a 45 percent reduction in emissions by 2030 and an 85 percent reduction by 2050. Using the list of actions prioritized in the multicriteria analysis, they assessed how those actions could work together to affect different greenhouse gas contributors (see Table 1).

These pathways assume that each assessed action is feasible and will be completed with the full support of local and state officials and other relevant partners. In many cases, the emission reductions predicted by the consultants will require a significant level of focus and sustained commitment from local partners.

Figure 11 shows how this suite of local actions, when paired with state policies, could reduce emissions enough to meet our target. While all the actions identified play a part, a few strategies stand out as bringing about the most substantial reductions. These include strategies that:

- reduce natural gas use,
- reduce the amount that people drive and increase fuel efficiency for when they do, and
- store additional carbon in soil and plants.

<i>Greenhouse Gas Emissions Source</i>	<i>Estimated Reduction from 2015 Baseline</i>	
	<i>2030</i>	<i>2050</i>
Energy Use		
<i>Residential</i>		
<i>Electricity use</i>	20%	30%
<i>Natural gas use</i>	20%	50%
<i>Other fuels (LPG, wood)</i>	10%	20%
<i>Commercial</i>		
<i>Electricity use</i>	20%	30%
<i>Natural gas use</i>	20%	50%
<i>Industrial</i>		
<i>Electricity use</i>	2%	5%
<i>Natural gas use</i>	10%	30%
Transportation		
<i>Passenger vehicles</i>		
<i>Vehicle miles traveled</i>	5%	20%
<i>Fuel efficiency</i>	20%	60%
<i>Light-duty trucks</i>		
<i>Vehicle miles traveled</i>	10%	15%
<i>Fuel efficiency</i>	10%	40%
<i>Heavy-duty trucks</i>		
<i>Vehicle miles traveled</i>	0%	20%
<i>Fuel efficiency</i>	0%	10%
Water & Waste		
<i>Solid waste</i>	10%	30%
<i>Wastewater treatment</i>	20%	20%
Agriculture		
<i>Fertilizer use</i>	20%	50%
Offsets		
<i>Carbon Sequestration</i>	4%	12%

TABLE 1. ESTIMATED IMPACTS OF ASSESSED ACTIONS ON VARIOUS GREENHOUSE GAS EMISSION SOURCES. SOURCE: HAMMERSCHLAG 2020

Reduction in Thurston County Greenhouse Gas Emissions: Impact of State and Local Policies

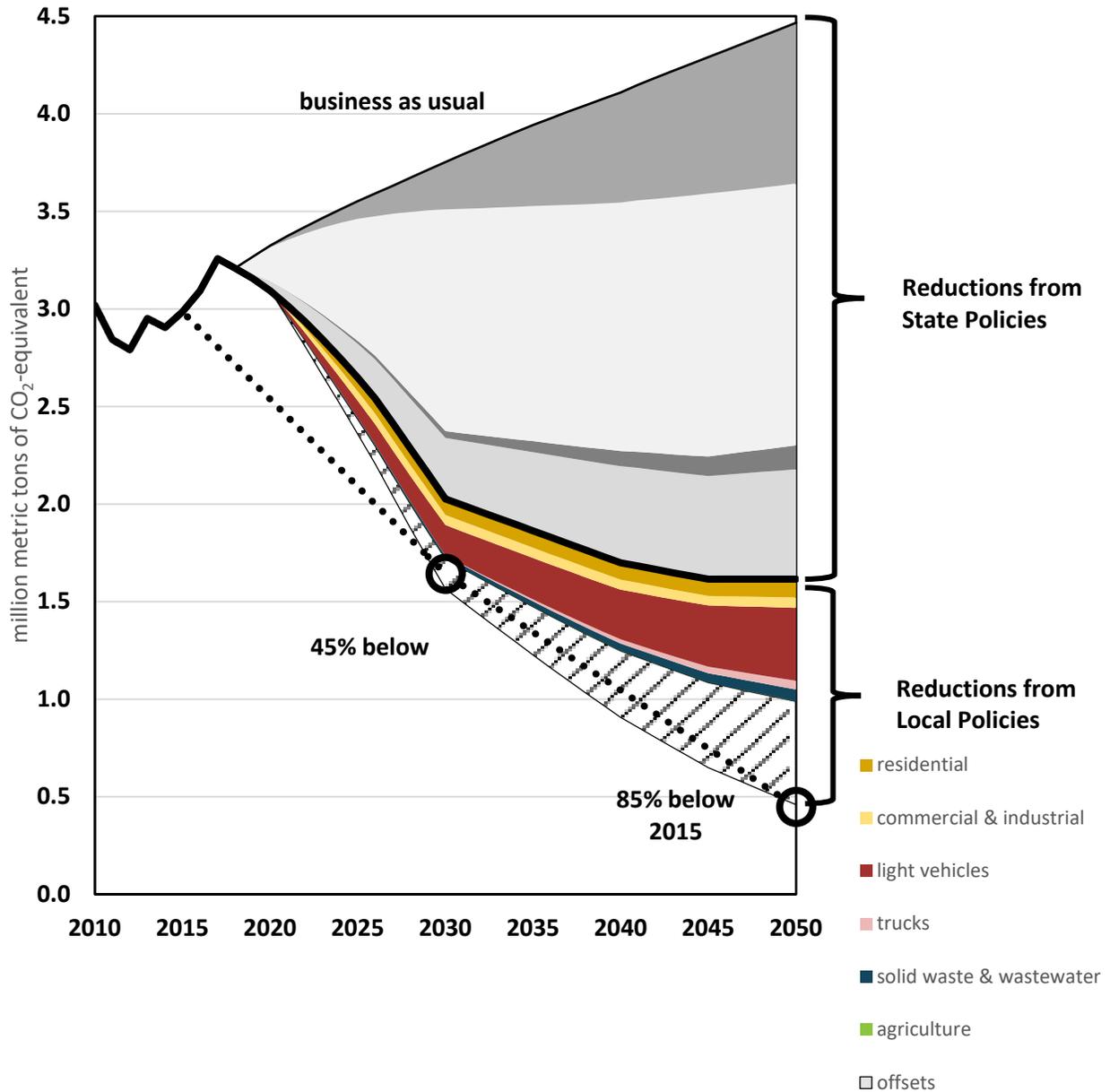


FIGURE 11. POTENTIAL REDUCTION IN THURSTON COUNTY EMISSIONS FROM STATE POLICIES AND LOCAL ACTIONS. THE DOTTED LINE SHOWS THE ADOPTED EMISSION REDUCTION TARGETS. COLORED WEDGES SHOW REDUCTION TO INDIVIDUAL EMISSIONS SECTORS. REDUCTIONS IN THE AGRICULTURE SECTOR ARE TOO SMALL TO BE VISIBLE. THE HASHED AREA SHOWS OFFSETS FROM ACTIONS THAT INCREASE CARBON SEQUESTRATION. SOURCE: HAMMERSCHLAG 2020

It is important to note that this analysis only considers the potential for certain policies and actions to reduce greenhouse gas emissions—it does not weigh the impact those actions may have on other important factors, such as any additional cost to consumers of energy or housing. It does not look at how the costs and benefits of the actions are distributed to different people within our community, and whether those costs or benefits would accrue disproportionately to some people over others. These factors are considered elsewhere in this plan, and can and should be considered as the project partners move ahead and determine how to take action.

In addition, this analysis presents just one of many possible pathways for reducing greenhouse gas emissions. New discoveries, technologies, or legislation at the state and federal level could dramatically change the picture, and that uncertainty increases as we look ahead ten and twenty years. For example, a clean fuel standard that significantly reduces the carbon intensity of vehicle fuels could have an impact on local transportation emissions similar to that of CETA on local building emissions, reducing the amount of local investment needed in sequestration or other actions.

Despite these caveats, looking at these potential futures led to some conclusions that guide the priorities laid out in this plan:

- **Our adopted emission reduction targets are achievable, but only with significant attention on many fronts.** There is no single action that will reduce local emissions enough to reach our targets; local governments will need to show leadership across many different programs to meaningfully address climate change.
- **State action will play a large role in our ability to achieve our targets.** Recent legislation, especially the Clean Energy Transformation Act, is helping to bring our emission reduction targets within reach. Our ability to achieve that goal is dependent on those rules being rolled out as envisioned.
- **Electricity is an ally.** Today, electricity use is our largest source of local emissions. With a cleaner electrical grid, that picture changes completely. Additional reductions are possible by shifting more uses to that greener power source. This means transitioning away from heating and cooking with natural gas and accelerating the adoption of electric vehicles.
- **Transportation is where local government action can effect the largest reductions.** While the building sector is our largest source of emissions today, those sources will be substantially reduced by state legislation. That leaves transportation as the area where the attention of local governments can make the biggest difference, by influencing what, where, and how much people drive.
- **Land use and building code changes will be more important over the long term.** The benefits of these changes will take longer to observe, but they need to be put in place in the near term to enable the urban density, bicycle and pedestrian networks, and greener buildings that are critical to achieving the 2050 target.
- **Carbon sequestration will need to be a part of the package.** Without new technology or state or federal action even aggressive local action to reduce emissions may not be sufficient to achieve our longer-term 2050 target. To succeed, we'll need to tap the potential carbon-storing potential of local farms and forests.
- **Good data can help us better understand how individual actions translate to emission reductions.** The scenarios described in this section estimate future emissions based on general

assumptions about how certain actions could affect human behavior in the future. This was the best information available at the time this plan was being developed, and it simplifies the complex interactions of the world. We will need to identify and gather more specific data to track and reflect the real outcomes of our actions, in order to truly understand where we lag and where we are making progress.

5. Strategies & Actions

The Thurston Climate Mitigation Plan identifies 22 strategies and 71 potential actions to put Thurston County, Lacey, Olympia, and Tumwater on track to reach the 2050 goal of an 85 percent reduction in carbon emissions. The strategies and actions are grouped into the following categories:

- Buildings and energy
- Transportation and land use
- Water and waste
- Agriculture and forests
- Cross-cutting

These actions emerged as priorities from the full list of potential climate mitigation actions proposed by stakeholders and community members (see Appendix 10.3). They include those that rose to the top of the multicriteria analysis overall, as well as actions that address key sectors or strategies identified as important by members of the Advisory Workgroup and Steering Committee. To find out how these actions combine to help meet the goals of the climate plan, review the results of the scenario analysis in Chapter 4 and Appendix 10.5.

Greenhouse Gas Reduction Potential

This criteria estimates the annual quantity of greenhouse gas emissions an action will avoid or sequester as of 2030. This measure was the most important factor used to identify priority actions.

- **High** = Addresses a large emissions source (e.g., energy use or transportation), has broad reach, and high enforceability.
- **Medium/High** = Addresses a large emissions source, but relies on voluntary action.
- **Medium** = Addresses a large emissions source, but has limited reach.
- **Medium/Low** = Addresses a small or unmeasured emissions source (e.g., agriculture, solid waste), and has broad reach or high enforceability.
- **Low** = Addresses a low emissions source, and has limited scope or enforceability; or lays the foundation for other actions, although it may not reduce emissions directly.

Co-Benefits

Nearly all the assessed actions support one or more of the Regional Goals adopted for this planning process (see Chapter 2). The icons below indicate an action's potential benefits to the community, in addition to its ability to address emission sources.

- **Ecosystem Health** = Supports the protection and preservation of environmentally sensitive species and lands, open space, water quality and water supply, or air quality. (Regional Goals 2, 4, 8, 10)
- **Social Equity** = Supports the equal distribution of resources among historically disadvantaged or marginalized communities. (Regional Goal 6)
- **Economic Benefit** = Supports local prosperity, including through investments, markets, and jobs. (Regional Goals 3, 7, 12)
- **Adaptation Value** = Supports an action in the Thurston Climate Adaptation Plan.

- **Other Regional Goal** = Supports another regional goal, including vibrant city centers and corridors, zero waste, or education. (Regional Goals 1, 5, 11)

Youth Priority

As the generation who will be tasked with adapting most to climate impacts, youth voices have had a strong influence on this planning process. These actions were identified as important by a team of students and educators as part of the multicriteria analysis.

5.1 Buildings & Energy

B1. Reduce energy use in existing residential buildings.

Residential energy use currently is the largest source of greenhouse gas emissions in our region. While newer buildings may be constructed to meet greener standards, the majority of homes in Thurston County were built before 1988, with one in five dating back 50 or more years. Looking at our emission reduction targets, more than two-thirds of the housing units that will exist in 2050 already exist today, so retrofitting existing buildings is a key strategy. While energy efficiency improvements can pay for themselves over time through reduced heating and cooling expenses, the upfront cost may be a barrier for many. More than a third of homes in Thurston County are rented, which means their occupants may have less control over choosing appliances or making building improvements that increase efficiency. The actions described below will support a transition toward higher efficiency homes by providing more information to consumers about home energy use and incentives for efficiency upgrades.

NOTE: In the formatted draft of the plan, each action will have an icon showing how it ranked for Impact (GHG emission reduction, co-benefits), and whether it was a Youth priority. This information is available in the Multicriteria Analysis Appendix 10.4.

Assessed Actions

- **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.
- **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.
- **rental housing energy efficiency incentives.** Provide property tax breaks for landlords who install energy conservation measures in rental housing.
- **property tax credit.** Create a property tax credit for property owners who participate in energy efficiency.
- **rental housing energy efficiency baseline.** Require rental units to meet baseline levels of energy efficiency and make more stringent over time.

B2. Reduce energy use in commercial and industrial buildings.

Energy used to power businesses contributes to more than a quarter of our local carbon footprint (26 percent). Operations range from small retail and professional offices to sprawling warehouses. Improving efficiency across this sector will require approaches that target these different scales. The Thurston region currently has more than 42 million square feet of commercial and industrial area, but it is distributed unevenly. The greatest proportion of commercial building area is in the city of Olympia, while industrial space is concentrated in Lacey and Tumwater. As home to the headquarters of many

state agencies, Thurston County’s stock of office space includes a large share of public sector buildings—these organizations can show leadership to increase efficiency, while reducing long-term energy costs to taxpayers. While it is hard to predict our future needs for work space, commercial and industrial buildings must be adapted over the coming decades to help reduce greenhouse gas emissions and accommodate the more than 50,000 new jobs anticipated to be added in our region between now and 2045.

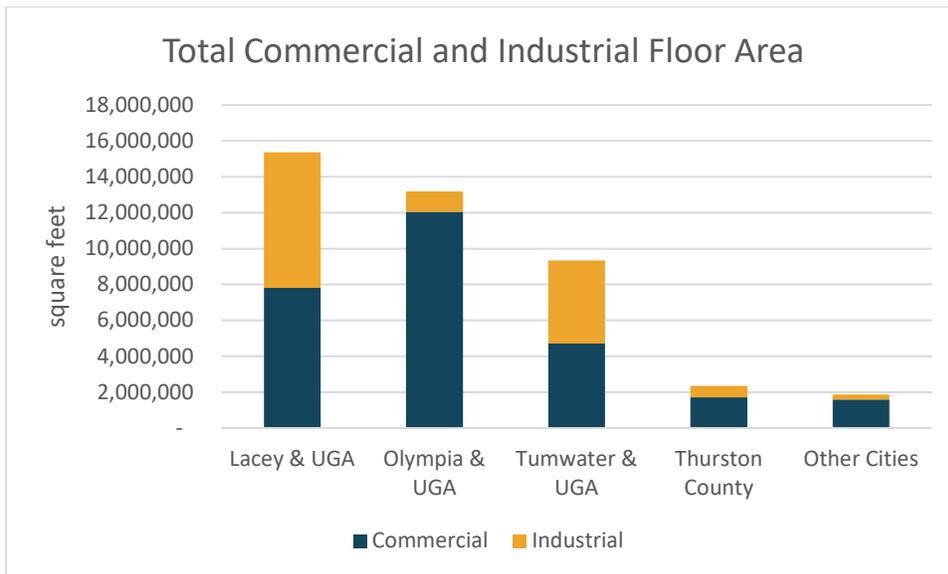


FIGURE 12. TOTAL FLOOR AREA OF COMMERCIAL AND INDUSTRIAL BUILDINGS IN THURSTON COUNTY. SOURCE: TRPC DATA PROGRAM, 2020

Assessed Actions

- **commercial energy benchmarking & disclosure.** Require energy performance ratings for commercial structures be disclosed so that owners, tenants, and prospective buyers are informed before making purchasing or rental decisions.
- **LED lighting.** Install LED lighting in public-sector buildings and infrastructure (e.g., street lights, traffic signals).
- **cool roofs.** Create an incentive program for the installation of reflective roofs on commercial buildings to reduce building energy consumption and the urban heat island effect.
- **performance standard.** Set energy efficiency performance standards for commercial buildings with gross floor areas smaller than 50,000 square feet.

B3. Reduce energy use across building types.

Increasing efficiency in our built environment will require builders and contractors to learn and adapt to new materials and practices. The following actions will help support that transition by providing technical assistance to share what works and celebrating development that takes on this challenge.

Assessed Actions

- **energy education.** Provide educational resources and technical assistance to industry professionals, building owners and managers on all aspects of energy efficient building design, retrofits, and operations for new and existing buildings.
- **exemplary buildings.** Create a Zero-Energy Building Challenge by partnering with public, private, non-profit and faith-based organizations. Facilitate rapid deployment and public awareness of high-profile demonstration buildings that use innovative energy efficiency and/or technology.
- **green building tracking.** Develop data methodology to monitor use and impacts of green building incentives, to inform future incentives and develop recommendations for policy or programs.

B4. Reduce energy use in new construction or redevelopment.

To meet the needs of a growing population, our region will add approximately 30,000 new housing units by 2030 and nearly 55,000 new units by 2050, as well as around 23,000 square feet of additional commercial and industrial space. Standards for energy efficiency in new development are generally set by the State Building Code Council, and requirements scheduled to go into place in 2020² set stricter emissions thresholds for most new buildings. Developers can incorporate greener practices more easily in new construction than existing structures, but such requirements can increase upfront costs – incentives and tools like the actions listed below can help to encourage the adoption of green building practices while balancing the need to keep housing affordable.

Assessed Actions

- **green public buildings.** Require that new local government facilities and other public buildings demonstrate green building technologies and practices.
- **permitting incentives.** Offer streamlined permitting, lower fees, or other incentives for projects that meet green building certification standards.
- **energy efficiency tax exemptions.** Create a local property tax reduction or credit for new buildings that meet an energy efficiency performance standard.
- **land use incentives.** Provide land use incentives (floor area ratio, density bonus, height bonus, parking reductions) for zero-net carbon buildings or other applications that dramatically increase energy efficiency.
- **permit counter technical assistance.** Hire or contract with dedicated green building specialists to provide technical assistance through the permitting and development process.
- **grid-connected appliances.** Require smart appliances in new construction, especially water heaters that control timing of demand.
- **multifamily submetering.** Require submetering for new multifamily buildings so residents can track energy use.

² In response to the COVID-19 pandemic, Governor Inslee delayed scheduled implementation of changes to the State Building Code from July 1 to November 1, 2020. (Proclamation 20-40)

B5. Increase the production of local renewable energy.

Shifting our reliance for electricity away from polluting fossil fuels toward renewable sources like wind and solar power is one of the most important strategies we have to reduce emissions. Action at the state level, with the adoption of the Clean Energy Transformation Act, will move us long way toward this end, but smaller-scale installation of renewable energy infrastructure can help support the transition as well, while saving ratepayers money over time and increasing local resilience. As of 2020, more than a thousand residential customers and over 60 businesses in Thurston County have installed solar panels that feed into the power grid, generating nearly 10 million kilowatt hours each year.³ The actions identified below are intended to set the stage for broader access to this technology.

Assessed Actions

- **public building solar.** Install solar photovoltaics on all available and feasible municipal sites, including building rooftops, city hall, schools, police and fire stations, community centers, municipal water pump sites, and transit depots.
- **solSmart.** Pursue SolSmart designations and adopt solar friendly practices.
- **solar-ready.** Amend local development code to require solar-ready construction for all building types.
- **group purchasing.** Develop/support a city-sponsored group solar purchasing program.

B6. Convert to cleaner fuel sources.

Greening our electrical grid is essential to achieving the climate targets, but electricity is not our only fuel source. Although it has a reputation for being “cleaner than coal,” natural gas also contributes to climate change, particularly by leaking methane, a powerful greenhouse gas far more potent than carbon dioxide, although less prevalent. Natural gas also can impact both indoor and outdoor air quality, causing impacts to public health.⁴ Approximately 32 percent of Thurston County households rely on natural gas as their primary source of heat at home.⁵ Across the partner jurisdictions, that proportion is highest in Lacey (45%), although the greatest number of households that use natural gas are in Unincorporated Thurston County (12,487 homes). Actions assessed for this plan would restrict new natural gas connections, and encourage those with existing connections to shift to cleaner options.

Assessed Actions

- **natural gas to electric conversions.** Educate business owners and residents on the options for electric appliances and the benefit of pairing electrification with the installation of renewable energy. Create incentives to support fuel switching.
- **electric appliances in new construction.** Update municipal code to require electric appliances in new construction.
- **natural gas ban.** Ban all new natural gas connections in new buildings.

³ Puget Sound Energy, data provided 4/16/2020.

⁴ Zhu, Y, et al., April 2020. Link: <https://ucla.app.box.com/s/xyzt8jc1ixnetiv0269qe704wu0ihif7>

⁵ U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

5.2 Transportation & Land Use

T1. Set land use policies that support increased density and efficient transportation networks. When people opt to live close to the places they work, shop, and meet up with others, they make fewer, and shorter, driving trips – this is how increased density leads to reduced greenhouse gases. Planning toward more compact growth in urban centers supports many of our regional goals, by making our cities and neighborhoods more vibrant, creating a robust economy, and reducing development pressure on environmentally sensitive areas. This strategy reinforces other approaches for reducing transportation emissions, by improving the viability of transit and making it safer and easier to get around by foot or bicycle. The land use vision set out in Sustainable Thurston includes the following targets:

- By 2035, 72 percent of all (new and existing) households in our cities, towns, and unincorporated urban growth areas will be within a half-mile (comparable to a 20-minute walk) of an urban center, corridor, or neighborhood center
- By 2035, at least 17 percent of homes in Lacey, Olympia, and Tumwater’s urban areas will be located in an urban corridor or center.
- Between 2010 and 2035, 5 percent of new housing will locate in the rural area.

As of now, our region is not on track to achieve these targets. The concentration of housing within walking distance of urban centers and corridors has stalled around 46 percent, although recent development in downtown urban areas is pointing the way toward increases in density.

Assessed Actions

- **coordinated long term planning- future infill.** Coordinate long-term plans with transit agencies to project where increased density would support more transit corridors. Then change zoning/density that would support new transit corridors and variety of household incomes. Promote long-term equity and healthy communities by developing incentives such as density bonuses for development where a percentage of the units will be permanently affordable for household incomes.
- **middle-density housing.** Reevaluate and change zoning as needed to allow for a range of housing types to promote social economic integration of housing near the region's urban centers or moderate-density zones. Promote long-term equity and healthy communities by developing incentives such as density bonuses for development where a percentage of the units will be permanently affordable for household incomes that can no longer afford to live in these areas.
- **Eco districts.** Identify potential Eco districts to advance innovative district-scale urban development, sustainability, and neighborhood equity. Then make necessary code/zoning changes to support their development and set ambitious performance outcomes to ensure their long-term success.
- **20-minute neighborhoods.** Increase the number of 20-minute neighborhoods (walkable environment, destinations that support a range of basic living needs and a residential density). Identify key infrastructure components needed to grow the number of 20-minute neighborhoods, then change zoning and codes if needed and coordinate with other jurisdictions to make public investments where necessary.
- **ADUs.** Amend development codes to allow for attached and detached accessory dwelling units (ADUs) in urban residential areas.

- **land use efficiency.** Set integrated goals to consider network efficiency in land use decisions, including how density in certain areas supports transit, increases efficiency of utility service, and other support facilities. Consider VMT in identifying locations for large employment facilities.

T2. Increase efficiency of the transportation system.

The minutes spent waiting in traffic can add up to a substantial climate impact. Actions that improve congestion on our roads, either through investments in transportation infrastructure or by reducing the number of people driving at peak periods, will reduce emissions while also improving the ability of people and goods to get where they need to go.

Assessed Actions

- **congestion mitigation.** Develop congestion mitigation programs to increase transportation efficiency, reduce delay, and reduce emissions such as signalization coordination improvements along with application of speed harmonization techniques (ex. reevaluate speed limits, roundabouts vs signalized intersection, street connectivity). Added benefits are decrease idling time (pollution) and improve fuel efficiency (cost savings to driver).
- **vehicle efficiency outreach.** Develop educational campaigns about benefits (reduced GHG emission, increase fuel efficiency, safety) of properly inflated tires, including signage at gas stations and local businesses and partnering with schools.
- **teleworking/flex work.** Government agencies increase opportunities for employee teleworking options and staggering work days to reduce employees driving during peak traffic times.
- **telecommuting infrastructure.** Develop grants and provide financial resources for installation of infrastructure necessary to support telecommuting.

T3. Increase adoption of electric vehicles.

As our energy sources become cleaner, with electricity coming mostly from renewables, vehicles powered by gas and diesel will become our greatest local source of emissions. One of the easiest shifts we can make is to also power our transportation using electricity. As of April 2020, Thurston County has 2,162 registered electric vehicles or EVs.⁶ This number will need to increase substantially over the coming years to make a dent in transportation emissions. At the state level, the Zero Emission Vehicle standard adopted in 2020⁷ will likely push auto companies toward offering a greater range of electric vehicles to consumers. Even as new EVs become more prevalent at dealerships, we know that generally one-third of the miles traveled in an average year in our region are driven in vehicles that are more than ten years old⁸. The actions assessed for this plan will help set the stage locally for greater adoption of EVs by reducing technical and economic barriers.

Assessed Actions

- **EV parking new construction.** Require large commercial and residential buildings to dedicate a percentage of parking spots for electric vehicle charging.

⁶ Washington Department of Licensing

⁷ SB 5811

⁸ RSG 2013

- **free EV parking.** Allow free parking for all electric vehicles at local government buildings and in city centers to encourage the adoption of all electric vehicles. Increase cost of parking for Non-EV vehicles.
- **EV-ready building code.** Require all new residential construction be built EV ready. Create a simple and consistent residential charging station permitting process to reduce costs and time to development.
- **EV integration.** Reevaluate regulations and make necessary changes to ensure charging stations are able to be permitted in locations where they are needed.
- **convert to EV fleets.** Set policies and timetable for electrification of municipal and other governmental fleets. Require replacement of public fleets with cleaner, energy-efficient vehicles to reduce long term fuel costs, improve air quality and reduce greenhouse gas emissions.
- **EV education.** Partner with environmental and other agencies to increase consumer awareness about EV options and incentives for use and purchase.
- **EV mass purchase discounts.** Create a group purchase program for residents to get deep discounts on EVs, other fuel efficient and alternative fuel vehicles.
- **EV purchase incentives.** Partner with car sale and lease dealerships to provide incentives for purchase of electric vehicles by Thurston County residents. Pilot with those neighborhoods, individuals with greatest VMT potential.

T4. Increase the use of public transit.

Public transportation connects people with jobs, school, healthcare, and community services in ways that are more carbon efficient than driving alone. Applying many of the actions assessed for this strategy, Intercity Transit's 2019-2024 Strategic Plan predicts a minimum 40 percent increase in ridership in the next five years. Continued investment in transit will most aid those who don't have access to other forms of transportation due to disabilities, age, or income, but also brings broader community benefits, such as better access to employment, workforce recruitment, and improvements in air pollution.

Assessed Actions

- **increase transit.** Increase local public transit routes/frequency with a focus on expanding transit service before and after traditional business hours and on weekends.
- **rural transit.** Identify and implement first/last mile solutions for rural ridership (engage rural home owners associations for representation and feedback).
- **fareless system.** Maintain a fareless system for public transit.
- **rider education/benefits.** Maintain and expand a regional online page that lists all the mode shift education efforts and employer benefits opportunities (Thurston Here-To-There). Include a comments section for suggestions to further transit education and ridership.
- **promote transit benefits.** Work with employers and transit agencies to develop ways to incentivize employee ridership (ex. rebates for employees who give up use of employer parking facilities).

T5. Increase use of active forms of travel (such as, bicycling, walking).

Currently, most Thurston County residents drive alone to work and use a car for most other trips. While many residents enjoy walking and bicycling for recreation, just 3 percent of commute trips are made using these active modes⁹. Making it easier for people to walk and bike for typical errands, rather than driving a car, will help reduce emissions while also supporting our regional goals and improved public health. The actions identified below will help address gaps and barriers in our current network.

Assessed Actions

- **walk/bike infrastructure.** Coordinate cities and Thurston County bicycle and pedestrian plans into a large regional plan to expand walking and bicycling infrastructure, including separated and protected opportunities. Coordinate efforts to maximize funding mechanisms and opportunities.
- **barriers to active transportation.** Develop a regional inventory to identify gaps in connectivity for safe cycling and walking. Then develop a strategy to prioritize projects and a plan for funding.
- **school drop-off alternative modes.** Maintain and expand a walking/bicycling incentive program with safety education for families.
- **mode-shift targets and car-free areas.** Reevaluate long term plans and update to prioritize people walking and riding bikes. Set goals for mode shift and plans on how to achieve those goals like developing car-free corridors in commercial and mixed-use areas to encourage mode shift.

5.3 Water & Waste

W1. Increase the efficiency of water and wastewater infrastructure.

W2. Reduce water consumption.

W3. Reduce emissions from wastewater treatment operations.

While water and wastewater management contribute only a small piece of our regional greenhouse gas inventory, the energy used to power these utilities are large contributors to the carbon footprint of individual jurisdictions. The actions identified below center on ways for city and county governments to reduce waste and save money, while reducing their own emissions.

Assessed Actions

- **municipal energy efficiency.** Conduct efficiency improvements to municipal water and sewage treatment systems. Prioritize components that consume the most energy and have high GHG emissions.
- **water audits.** Conduct water audits of city and county facilities to determine prioritization of capital improvements.
- **nitrous oxide capture.** Research and implement nitrous oxide mitigation strategies and strategies to avoid or reduce nitrous oxide emissions. Present findings and cost vs benefits analysis to policy makers to determine what changes should be made.

⁹ U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

W4. Divert more solid waste from landfills.

W6. Reduce consumption of carbon-intensive goods and services.

Although emissions generated outside Thurston County by manufacturing and transporting goods consumed here are not measured as part of our current inventory, many people involved in developing this plan were interested in addressing the impacts of consumption and waste. In Sustainable Thurston, our region set a goal to move toward zero waste, but currently, we are not on track to meet this goal. Waste collected on a per capita basis has increased from a low of 1,140 pounds per person in 2012 to 1,318 pounds per person in 2016.¹⁰

Assessed Actions

- **waste audits.** Provide waste audits for business owners and education on practices that decrease waste (ex. Compost, recycling, reuse).
- **waste less food program.** Expand Thurston County's "Waste Less Food" program.
- **supply chain.** Provide free technical assistance to local businesses in reducing the carbon intensity of their supply chains.

5.4 Agriculture & Forests

A1. Reduce emissions from agricultural practices.

A2. Support agricultural practices that sequester carbon.

Agriculture in Thurston County is remarkably diverse – it includes everything from large commercial dairy and egg operations to orchards to specialty vegetables grown on small urban lots. Our average farm size is small at 14 acres. Around 500 farms have livestock - mostly cattle and chickens – and a large portion of agricultural land is managed minimally for grazing and growing hay.¹¹ While farms can reduce their impact with better management of animal waste and fertilizer, they can also play a role in offsetting the community's emissions as a whole. Land management practices like cover cropping, no-till and minimum tillage conservation practices, crop rotations, manure application, biochar application, compost application, and changes in grazing management have been shown to increase the rate of carbon stored in plants and soil. In 2020, the Washington State Legislature established the Sustainable Farms and Fields grant program, which will aid farmers and ranchers in adopting practices that increase carbon storage.

Assessed Actions

- **nutrient management.** Provide education and incentives (e.g., grants, loans, technical assistance) reduce emissions from manure and fertilizer.
- **regenerative agriculture.** Expand regenerative agricultural practices among farmers that aim for a "whole farm" approach. Provide education on how to increase organic matter content and water retention in soils within urban and agricultural settings.

¹⁰ Thurston County Solid Waste

¹¹ USDA 2017 Agricultural Census

A5/A6. Preserve trees and manage forests to sequester carbon.

Trees have been called the lungs of our planet, and they also can be very effective at removing carbon from the air and storing it in the soil. Historically, tall stands of Douglas Fir, cedar and other tree species covered far more of Western Washington than they do today. Conserving our remaining tree canopy and restoring areas that have been cleared can help to offset emissions from other activities, while providing a host of benefits for our local environment from storing and cleaning water to providing habitat for many sensitive species.

Assessed Actions

- **reforestation & afforestation program.** Develop a coordinated reforestation/afforestation program. Begin by identifying priority areas where reforestation and afforestation may have carbon reduction benefits.
- **municipal canopy.** Maximize tree canopy on City-owned or City-controlled land, where appropriate in balance with other City goals.
- **tree canopy preservation.** Develop a tree canopy ordinance that establishes a baseline for current urban canopy and sets goals for future canopy to increase cities' resilience. Combine direct cooling value (urban heat island mitigation) with carbon sequestration value when evaluating urban tree management.

5.5 Cross-Cutting Actions

G1. Conduct education and outreach across climate mitigation areas.

This plan focuses on the ways local government can reduce local contributions to climate change, but achieving those reductions will require action from people at all levels. Many local businesses, community partners, and residents have already expressed their desire for climate action and demonstrate their commitment to improving our community. This strategy acknowledges the need for the partner jurisdictions to understand and work out how climate policies and programs can be tailored to best meet the needs of the people they serve, how to communicate in ways that inspire the change we need to meet our goals.

Assessed Actions

- **social research and behavior change campaigns.** Work with higher education institutions to research effective behavior change through marketing and education. Use this information in developing campaigns to reduce high emissions GHGs.

G4. Enhance monitoring and evaluation of climate mitigation measures and outcomes.

The actions included under this strategy will not reduce emissions directly, but they will help our community understand whether we are making progress toward achieving our goals. They also aim to fill information gaps identified over the course of this planning process and highlight ways to correct our course as we learn more.

Assessed Actions

- **emissions inventory.** Prepare and publish an annual emissions inventory that tracks greenhouse gas emissions by jurisdiction and source category. Review and update emissions inventory methodology as necessary to address improvements to data or methodologies, improve consistency, incorporate changes to state or federal policies, or report on issues of local interest.
- **performance measures.** Develop community GHG reduction goals and performance measures. Regularly update and publicize for community to track their progress.
- **other emission sources and sinks.** Expand sources and sectors in future emissions inventories to inform future regulatory policy to reduce GHG emissions. Connected to actions T1.5 and W6.1, and sequestration actions.
- **vulnerable populations.** Develop a data and monitoring mechanism that is specific to marginalized groups and their needs related to climate change and climate reality (e.g., access to transportation, access to A/C, proximity to cooling centers) and develop a plan to address these vulnerabilities with solutions that help reduce GHG emissions.
- **social cost of carbon.** Develop and adopt policies that require the use of a “social cost of carbon measure” in zoning, development, construction, and transportation decisions.

G5. Advocate for climate-mitigating state and federal policy.

While this planning process has helped answer the question of what local governments can do to address sources of climate change, it also has shed light on the limits of local authority when it comes to triggering large-scale transitions in our energy and transportation systems. The partnership among four jurisdictions that has powered this process is one of our greatest tools. By working together to advocate for strong state and federal climate action, we can amplify our influence on policy debates to come.

Assessed Actions

- **legislative agenda.** Prioritize climate mitigation policy in the municipalities’ legislative agenda each year. Instruct municipal lobbyist(s) to track and report on climate bills, and to advocate for those bills that will help reduce local emissions. Work with other jurisdictions to add this to the priorities for the Association of Washington Cities and Washington State Association of Counties.

6. Implementation Strategy

Achieving the vision and goals laid out for this plan will require bold leadership and, just as important, a sustained commitment to realizing the change necessary. It will require the attention, buy-in, and creativity of people in many different areas of our community and economy.

The Thurston Climate Mitigation Plan sets a framework for addressing the causes of climate change through actions that will reduce local sources of greenhouse gas emissions (see Table 1). It also lays out the steps each of the four partner jurisdictions (Thurston County, Lacey, Olympia, and Tumwater) will need to take in the near term to get on track to achieving the 2030 and 2050 emission reduction targets.

This implementation strategy draws from the list of communitywide actions described in Chapter 5, the results of the scenario analysis described in Chapter 4, as well as from perspectives provided by community members throughout the planning process.

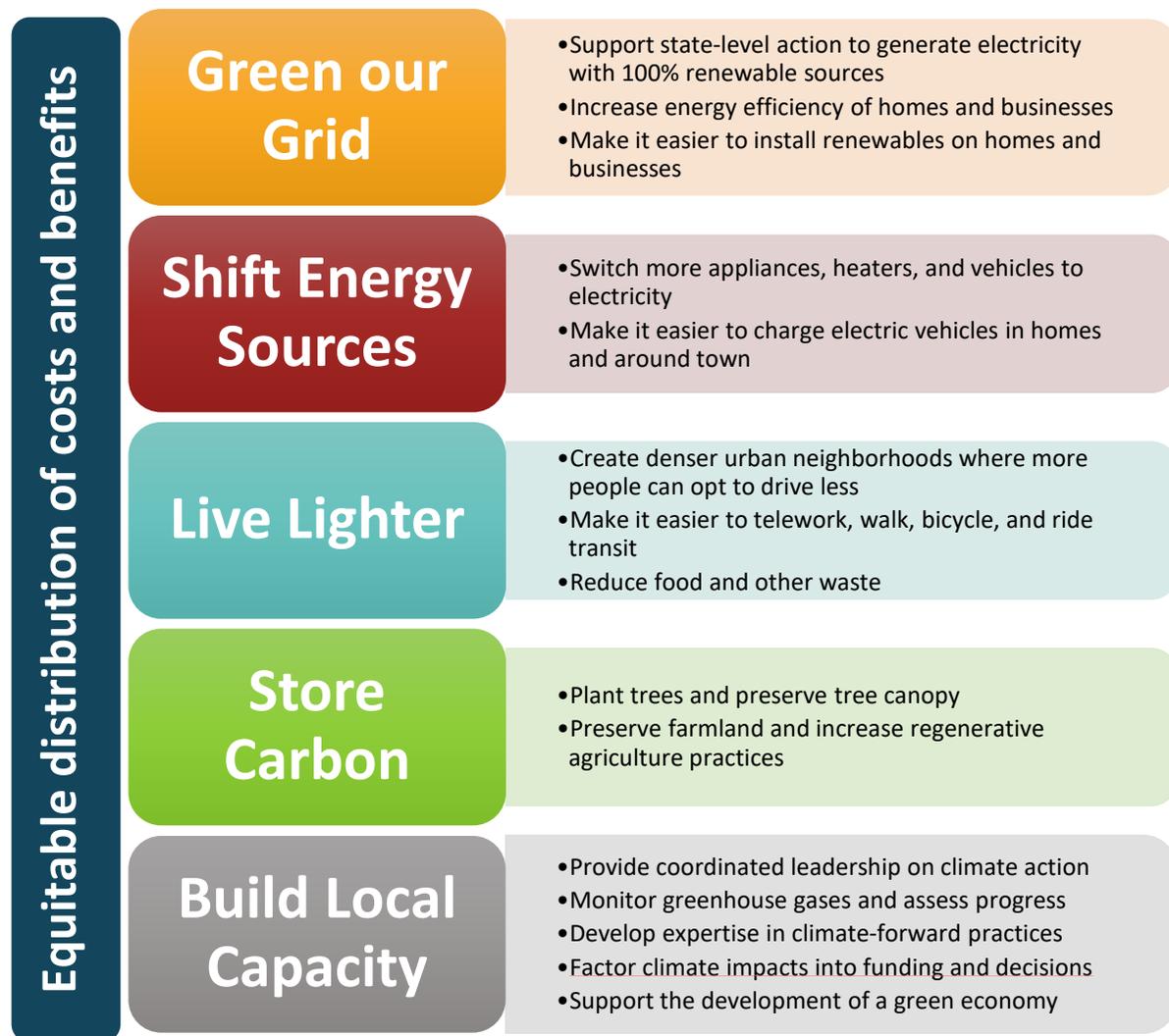


TABLE 2. FRAMEWORK FOR CLIMATE MITIGATION ACTION

6.1 Implementation Approaches

The suite of actions identified through the planning process cover a wide range of solutions. By including them in this plan, the intent is not to lock local jurisdictions into specific assignments, but to outline tangible, practical next steps worthy of further attention because they have the potential to address multiple goals in meaningful ways. Each action will require additional work to understand their feasibility, costs, and impacts.

To start that process, staff from the four partner jurisdictions grouped actions into four general approaches: legislative agenda, regionally coordinated, individual jurisdictions, and supporting partner.

Legislative Agenda

Over the course of the planning effort, it became clear that one of the most powerful actions available to local governments will be to use their shared influence to advocate for changes at the state level.

A number of assessed actions require action by the state legislature to create additional authority or make other changes to state law before action can occur at the local level. Under the legislative agenda, partner jurisdictions commit to working together to advocate for changes to state law that advance our climate mitigation priorities, such as:

- Establish additional financial incentives for property owners to invest in energy efficiency upgrades, such authority to provide local tax credits or exemptions. Such incentives should address all types of buildings, but in particular target improvements to rental housing units. Local jurisdictions can track properties receiving such incentives, once they are authorized.
- Set requirements that ensure standard building energy efficiency information is provided to prospective tenants and consumers during real estate transactions, at times of sale, lease, or rent.
- Build on changes in the state Building and Energy code to support an even faster shift toward efficient and electric appliances in new construction, and greater efficiency in smaller commercial buildings (less than 50,000 square feet).

Regional Coordination

One of the great strengths our region brings to this challenge is our history of collaborative partnership. A number of actions identified in the plan would build on existing regional programs. Others would require new partnerships to develop a shared approach. Partner jurisdictions commit to work together in the following areas:

- Buildings and permitting
 - Develop standard approaches to incentivize and track green building practices across the region.
 - Develop standard approaches to consider climate impacts in permitting decisions.
 - Develop model regional standards or codes for priority climate actions, including for green public buildings, land use incentives, solar and electric vehicle-ready buildings.
- Transportation planning.
 - Support, and in some cases expand, existing programs, including the Commute Trip Reduction Program, Thurston Here-To-There, and Safe and Active Walks to School.

- Consider, and where appropriate, address climate mitigation goals, targets, and actions in upcoming regional projects, such as the Regional Trails Plan and Capitol Campus Telework project.
- Prioritize funding for transportation projects that advance climate mitigation priorities, including through congestion mitigation and supporting walk/bike infrastructure.
- Food waste. Support and expand Thurston County’s waste less food program.
- Carbon sequestration. Develop a regional program to track and certify carbon sequestration, including through afforestation and regenerative agriculture.
- Monitoring and assessment.
 - Monitor the region’s progress on climate action, by continuing to track regional greenhouse gas emissions and progress toward climate mitigation targets. Incorporate additional information
 - Regularly report on performance so our strategy can adapt as our understanding evolves.
- Ongoing climate coordination and public engagement
 - Support ongoing regional coordination of climate action, through the continuation of the current steering committee or other governance body
 - Keep the community informed about climate mitigation activities and provide additional opportunities for public involvement in climate mitigation actions
 - Seek and support funding for climate mitigation priorities

Individual Jurisdictions

Many of the actions identified in the plan can be taken on by individual jurisdictions. Partner jurisdictions commit to addressing the following areas through their various departments and work programs:

- Municipal Operations.
 - Look for ways to reduce emissions from government operations, including by increasing energy efficiency of lighting and water systems, installing solar or other renewables on public buildings, and transitioning to electric fleets. Consider and prioritize climate impacts in capital improvement decisions.
 - Increase use of remote meetings, teleworking, and flexible work schedules to minimize emissions from employee travel.
- Code and Regulatory Changes. Review and update zoning and development codes and other regulatory programs to address priority climate actions, including solar-ready development, dense neighborhoods, electric vehicle infrastructure, and tree canopy preservation.
- Staff development. Dedicate resources to develop staff expertise to provide technical assistance to support climate mitigation actions like green building permitting.

Supporting Partner

Some actions identified in the plan would be best led by a different entity in the community, rather than a local government. Partner jurisdictions commit to support climate mitigation actions led by other organizations.

- Intercity Transit

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- Thurston Conservation District
- LOTT Clean Water Alliance
- Thurston Economic Development Council
- Puget Sound Energy

In addition, some actions assessed in the plan may be best achieved through public-private partnerships or other types of sponsorship or collaboration.

Additional details on the communitywide implementation strategy, including leads, partners, timeframe and potential funding sources, is available in Appendix 10.6.

What can You do to Take Climate Action?

Dramatic and lasting change comes from countless small shifts throughout society. Governments, business, families, and individuals all have a role to play. While this plan focuses on actions Thurston County, and the cities of Lacey, Olympia, and Tumwater can take to reduce local contributions to climate change, there are many things you can do on your own to support that goal. Here are some ways to get started:

- ✓ **Start a conversation.** National surveys have shown that while most Americans believe global warming is happening and are worried about its impacts, the majority say they rarely or never hear it discussed among their friends and family. Researchers call this the “climate change spiral of silence” – people concerned about climate change avoid talking about their concerns because they don’t hear other people talking about it.¹² That silence can leave us feeling isolated and overwhelmed. You don’t need to be an expert on the science to let others know your hopes, fears, experiences, and actions when it comes to climate change – you might find out you share more common ground than you thought.
- ✓ **Rethink your ride.** Try increasing the number of trips you make by transit, carpooling, walking, or biking. Check out your options on [Thurston Here to There](#). Support your city in development that creates high density and mixed-use areas to reduce the need for driving. Buying a new car? Test drive an electric vehicle to see if it makes sense for you.
- ✓ **Reduce energy use.** Request a free [home energy assessment from Puget Sound Energy](#), and consider upgrading to higher efficiency appliances and fixtures. If you rely on natural gas for heat, consider switching to a ductless heat pump or other electric heat source. Investigate options for using more renewable energy at your home, place of worship, or business.
- ✓ **Buy smart, buy local.** Buying smart and buying less can lower your greenhouse gas footprint. Measure the food that you throw away and take the [Waste Less Food Challenge](#). Try a meat-free meal once a week. Choose items with less packaging, and buy local to reduce emissions from shipping and packaging.
- ✓ **Advocate for change.** Tell your elected officials that addressing climate change is important to you, so they know to prioritize it when making work plans and budget decisions. If you have found it difficult to take a climate action, let them know what would make it easier or less expensive. Get together with your friends, neighbors, co-workers, or a local community organization to talk about what to do next.

¹² Maibach, E. et al, 2016

7. Next Steps

Plans are only as good the work they spark—the Thurston Climate Mitigation Plan is no exception. With the close of this planning process, focus can shift to carrying out the actions identified in the plan. Knowing the threat climate change poses to current and future generations of Thurston County’s residents, there is no time to lose. While the breadth of work and extent of change needed can feel daunting, this challenge presents many opportunities to build a future for our community that is innovative, resilient, and more equitable. The good news is that as a region we have incredible resources and spirit to make that change happen.

Following a public review period, this plan will be finalized and put forward for adoption by the four partner jurisdictions. Supporting pieces of this plan include:

- A monitoring framework to gauge accountability and track progress toward achieving the regional greenhouse gas emission targets. A description of the monitoring framework is included in Appendix 10.7.
- A resolution for adopting of the Thurston Climate Mitigation Plan to be considered by the four partner jurisdictions of Thurston County, Lacey, Olympia, and Tumwater.
- An interlocal agreement that outlines commitments among the four partner jurisdictions for implementation of the Thurston Climate Mitigation Plan and continued collaboration on regional climate action.
- A supplementary assessment of the costs and benefits of priority actions, and ways to address social equity in implementation of the Thurston Climate Mitigation Plan. This assessment has been awarded funding through a grant from the Washington State Department of Commerce, and is scheduled to be completed by mid-2021.

NOTE: Additional information will be added to this section based on feedback gathered during the public review period and discussions by the Steering Committee.

While the focus of this planning process has been on what Thurston County, and the cities of Lacey, Olympia, and Tumwater can do to reduce greenhouse gas emissions and mitigate impacts from climate change, TRPC encourages all community members—individuals, neighborhoods, businesses, service organizations, and agencies—to use the information gathered here to inform your own plans and commitments to address climate change. Many adaptation and mitigation actions—large and small—are needed to help our region and planet remain resilient in the face of climate change. To succeed, each of us will need to do our part, so let’s get to work.

8. Glossary and Acronyms

GHG – Greenhouse Gas

MTCO²e – metric tons of carbon dioxide equivalent

9. References

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10. Appendices

- 10.1. [Resolutions Adopting Common Targets to Reduce Communitywide Greenhouse Gas Emissions](#)
- 10.2. [2018 Greenhouse Gas Emissions Inventory](#)
- 10.3. [Communitywide Actions List](#)
- 10.4. [Multicriteria Analysis](#)
- 10.5. [Scenarios Analysis Report](#)
- 10.6. [Communitywide Implementation Strategy](#)
- 10.7. [Monitoring Protocol](#)
- 10.8. [Community Engagement Summary](#)