

# Appendix 10.3. Communitywide Actions List

## Thurston Climate Mitigation Plan Climate Actions Menu

As of: **7/2/2020**

KEY	
B	Buildings & Energy actions
T	Transportation & Land Use actions
W	Water & Waste actions
A	Agriculture & Forests actions
G	Cross-cutting actions
Action ID#	Unique identifier for each strategy and action
short name	1-3 word description of action
description	1-2 sentences describing action - see box for example of a well-defined action description. Additional details beyond 1-2 sentences can be included in "other notes"
source	person/entity that suggested or plan that provided the action
date added	The date that the action was added to the menu
implementor	agency or organization that could lead the action
potential partner	agency or organization that could participate in implementing the action
target stakeholders	groups affected by the action
opportunities	existing programs, partnerships, funding sources, legislation, regulations, or other resources that exist to support the action
barriers	potential obstacles to implementing the action, such as regulation, lack of expertise, lack of will, knowledge gaps, etc. Cost will be considered at a later step in the process, and should not be listed as a barrier at this stage.

This list of strategies and actions was developed by Thurston Regional Planning Council and Cascadia Consulting Group, with input from the Sector Focus Groups and Climate Advisory Workgroup of the Thurston Climate Mitigation Plan.

*Example of a well-defined climate action*

## T1.1 urban infill

(source: Adaptation Plan action G-12)

clear policy mechanism

who will actually do the work

Increase local government incentives (e.g., tax credits and fee waivers) to make urban infill and redevelopment projects more viable financially.

what's affected

**B Focus Area: BUILDINGS & ENERGY**  
 Strategies:  
 B.1: Reduce energy use in residential buildings.  
 B.2: Reduce energy use in existing commercial/industrial buildings.  
 B.3: Reduce energy use across building types.  
 B.4: Reduce energy use in new or redevelopment.  
 B.5: Increase the production of local renewable energy.  
 B.6: Convert to cleaner fuel sources.  
 B.7: Address building and energy goals across sectors.

Action ID#	short name	description	source	date added	implementor	potential partners	target stakeholders	opportunities	barriers
<b>B.1: Reduce energy use in residential buildings.</b>									
B1.1	residential energy performance ratings	Require energy performance ratings and disclosures for homes at time of sale, lease, or rent so that owners, tenants, and prospective buyers are informed before making purchasing or rental decisions.	Cascadia Consulting	Aug. '19	State and Local government	Realtors	realtors; home owners; low-income; rural communities	Emphasize benefits like higher resale value and lower maintenance costs for property owners/ landlords.	
B1.2	residential energy audits	Develop and adopt policies that require residential properties to undertake an energy audit at the time of sale or during a substantial remodel. Work with financial institutions to develop mortgage products that incorporate audited energy efficiency recommendations.	Adaptation Plan	Jan '19	State and Local government	remodeling professionals, PSE, energy auditors, real estate professionals	realtors; home owners; low-income; rural communities	Review similar policy applied in Berkeley, CA and Portland, OR A potential model for Thurston County: The nonprofit Enhabit (enhabit.org), which grew out of a City effort, works with homeowners and partners to score home energy efficiency and advise on upgrades.	What is the percentage turnover of residential homes in the region annually? People who are already interested in this program are participating. What education and outreach? Short-term home owners are harder to convince to make investments in property.
B1.3	residential energy retrofit program	Partner with energy audit providers and loan providers to establish and market residential energy efficiency and weatherization retrofit programs, with a focus on low-income residents, low-interest loans, and post audit follow-through.	Cascadia Consulting	Aug. '19	Non-profit	energy auditors	Realtors; home owners; renewable energy companies; small business; lenders	Review/bring back Thurston Energy - a program that was once run by the Economic Development Council (EDC) providing free or subsidized energy efficiency audits and offering free or subsidized retrofits	
B1.4	rental housing EE incentives	Provide property tax breaks for landlords who install energy conservation measures in rental housing.	Cascadia Consulting/B Focus Group #1	Aug. '19	Local/state government	Landlords, property managers, renters	Realtors; landlords, property managers, renters		
B1.5	property tax credit	Create a property tax credit for property owners who participate in energy efficiency.	B Focus Group #1	Sep-19	Local/state government				
B1.6	rental housing EE baseline	Pass an ordinance to require rental units to meet baseline levels of energy efficiency and make more stringent over time.	Cascadia Consulting	Aug. '19	Local government	Landlords, property managers, renters	low-income communities; landlords, property managers, renters		PSE: Washington recently implemented a new building code and we now have one of the most progressive in the country. I'm concerned that, anything that increases the cost of housing amidst a housing crisis is going to be both counter-productive and nearly impossible to implement.
B1.7	residential utility outreach	Expand utility outreach to residential electricity customers about the benefits of clean and efficient energy technologies/practices and available rebates and bill credits for efficient appliances and equipment. Focus on neighborhoods with older buildings and create group packages for efficiency upgrades, if possible.	Adaptation Plan	Jan '19	PSE	Local government, equipment vendors, remodeling contractors, non profits	residents	Community action campaign	How do we get people to participate in programs/ offers that already exist?
B1.8	landlord education	Educate landlords on options and benefits for improved energy efficiency.	B Focus Group #1	Sep-19	Local government	nonprofit, property management companies			
<b>B.2: Reduce energy use in existing commercial/industrial buildings.</b>									
B2.1	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.	Cascadia Consulting	Aug. '19	state and Local government		realtors (commercial)		
B2.2	commercial energy audits	Develop and adopt policies that require commercial properties to undertake an energy audit at the time of sale or during a substantial remodel.	Adaptation Plan	Jan '19	State and Local government		construction companies/ contractors; realtors (commercial)	Review similar policy applied in Berkeley, CA	
B2.3	LED lighting	Install LED lighting in public-sector buildings and infrastructure (e.g., street lights, traffic signals).	TRPC	Note 1	Local government				
B2.4	commercial lights-out	Introduce a "lights-out" policy that encourages businesses to turn off their signs and other lights at night when they are closed.	Lacey CR2 plan	Jan '19	Local government				
B2.5	commercial utility outreach	Expand utility outreach to commercial power customers about the benefits of clean and efficient energy technologies and practices.	Adaptation Plan	Jan '19	PSE			Incentives and penalties associated with House Bill 12587 (2019 Session) - \$1/square foot penalty after 2026 when requirement kicks in	If EE and conservation are successful, utilities operators business model affected. Need to plan for potential obsolescence of utility companies and implications
B2.6	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.	Adaptation Plan	Jan '19	Local government			See Denver, CO program: <a href="https://www.denvergov.org/content/denvergov/en/denver-development-services/commercial-projects/green-roof-initiative.html">https://www.denvergov.org/content/denvergov/en/denver-development-services/commercial-projects/green-roof-initiative.html</a> Incentives and penalties associated with House Bill 12587 (2019 Session) - \$1/square foot penalty after 2026 when requirement kicks in.	
B2.7	commercial utility rebates	Offer additional utility rebates or bill credits to encourage businesses to buy and install energy-efficient appliances and equipment.	Adaptation Plan	Jan '19	PSE			Incentives and penalties associated with House Bill 12587 (2019 Session) - \$1/square foot penalty after 2026 when requirement kicks in	Upfront investment needed, no cash to follow through with offers.
B2.8	performance standard	Set energy efficiency performance standards for commercial buildings with gross floor areas smaller than 50,000 square feet.	B Focus Group #1	Sep-19	Local government		construction companies/ contractors; realtors (commercial)		Could this be done on a local level, or would it need to be done through State Building Code Council? PSE: Washington recently implemented a new building code and we now have one of the most progressive in the country. I'm concerned that, anything that increases the cost of housing amidst a housing crisis is going to be both counter-productive and nearly impossible to implement.
B2.9	municipal building retrofits	Continue to identify and implement priority energy efficiency improvements in municipal buildings.	CAW	Oct-19	Local government				
B2.10	energy project grants	Secure grant funding for high-profile, innovative energy efficiency and/or technology projects on commercial buildings in the county.	CAW	Oct-19	Commercial property owners				
<b>B.3: Reduce energy use across building types.</b>									
B3.1	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.	CAW	Oct-19	Local government	Nonprofits, colleges			

B3.2	efficiency rebate	Adopt "energy efficiency as a service" utility rebate model to direct energy savings to building owners who bear the costs of energy efficiency retrofits.	CAW	Oct-19	UTC, PSE				
B3.3	PACE	Assess whether PACE is still desirable and, if so, how local and state policymakers could pursue a legislative solution or state constitutional amendment to develop a PACE program.	TRPC-ST Plan	Jan '19	State government				
B3.4	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.	CAW	Oct-19	Local government	Public and private organizations			
B3.5	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.	CAW	Oct-19	TRPC				
<b>B.4: Reduce energy use in new or redevelopment.</b>									
B4.1	green construction code	Adopt the International Green Construction Code (IgCC).	TRPC	Note 1	State government	local government, building code inspectors, OMB			
B4.2	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.	Adaptation Plan	Jan '19	TRPC			Mandate energy efficient performance standards at point of sale (carrot & stick) Develop ways to regulate and require implementation then reward and incentivize participation	Adaptation of the existing building code, motivations for participants? Landlords- split incentives between owner and renter? New buildings are not reflecting these goals/ outcomes. E.g. no solar, no energy efficiency shift.
B4.3	commercial EE recognition	Create program that recognizes energy efficiency leadership in new construction.	B Focus Group #1	Sep-19	Local government		construction companies/ contractors	Brussels, Belgium exemplary building program/initiative	
B4.4	green municipal buildings	Require that new local government facilities (e.g., the new Olympia City Hall and LOTT building) demonstrate green building technologies and practices.	TRPC	Jan '19	Local government		construction companies/ contractors	provide education though city and state implementation, and lead by example. The proposed new Thurston County courthouse is a good opportunity. Making the proposed facility a living laboratory would be consistent with TC Resolution 14395, passed in 2010.	
B4.5	grid-connected appliances	Require smart appliances in new construction, especially water heaters that control timing of demand.	TRPC	Jan '19	Local government		construction companies/ contractors; realtors	Review existing programs in Seattle and Shoreline	Need to differentiate between strategies for residential and strategies for commercial.
B4.6	multifamily submetering	Require submetering for new multifamily buildings so residents can track energy use.	B Focus Group #1	Sep-19	Local government		construction companies/ contractors	Could operate similar to Open Space tax program	
B4.7	multifamily energy measures	Develop and advertise a business case financial model for multi-family developers to take energy efficiency and renewable energy measures.	CAW	Oct-19	Local government		construction companies/ contractors	See Shift Zero Policy Toolkit	
B4.9	permit counter technical assistance	Hire or contract with dedicated green building specialists to provide technical assistance through the permitting and development process.	Rich Hoey	Aug '19	Local government		construction companies/ contractors; realtors	Review existing program in Tacoma	
B4.11	grid-connected appliances	Require smart appliances in new construction, especially water heaters that control timing of demand.	B Focus Group #1	Sep-19	Local government		construction companies/ contractors; realtors		
B4.12	multifamily submetering	Require submetering for new multifamily buildings so residents can track energy use.	B Focus Group #1	Sep-19	Local government		construction companies/ contractors		
B4.13	multifamily energy measures	Develop and advertise a business case financial model for multi-family developers to take energy efficiency and renewable energy measures.	CAW	Oct-19	Local government		construction companies/ contractors		
B4.14	state building code	Advocate for stricter energy efficiency requirements in state building code.	CAW	Oct-19	Local government		construction companies/ contractors		
<b>B.5: Increase the production of local renewable energy.</b>									
B5.1	clean energy bonds/levy	Sell municipal bonds or create a local tax levy for local clean energy projects.		Note 1	Local government			www.cleanenergyfinance.org; See Portland Clean Energy Fund	
B5.2	feed-in tariffs	Offer feed-in tariffs to incentivize solar projects.		Jan '19	State				
B5.3	municipal 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.	Cascadia Consulting	Aug '19	Local government			Olympia's McAllister well site could be a location to consider	
B5.4	net metering production incentive	Increase incentive ratio for connecting residential solar from 1:1 to 2:1.	Thurston Thrives/B Focus Group #1	Jan '19	State, UTC	PSE	renewable energy companies	Program currently exists through PSE - is there a way to expand it or increase incentives?	
B5.5	solSmart	Pursue SolSmart designations and adopt solar friendly practices.	Rich Hoey	Aug '19	Local government	Olympia Community Solar			
B5.6	utility-scale renewables	Promote Thurston County as a location to build more utility-scale renewable energy projects such as solar and wind farms. Support locally owned/operated renewable energy companies.	Adaptation Plan	Jan '19	Local government	Chamber of Commerce, EDC	renewable energy companies	Community energy authority/ community aggregate modeling? This provides momentum and reduces costs through bulk procurement. Community action plan. PSE - There IS a requirement to move towards EE standards	Need-opportunity conundrum > Highest need for energy comes when there is no solar available, and wind is typically low at night = highest period of need. Must make incentives related to the value of the property and cost of upgrades.
B5.7	electric infrastructure for renewables	Expand and retrofit the region's energy distribution, monitoring, and storage infrastructure to support more on-site renewable energy generation.	Adaptation Plan	Jan '19	PSE, UTC?		renewable energy companies		
B5.8	solar-ready	Amend local development code to require solar-ready construction for all building types.	B Focus Group #1	Sep-19	Local government		renewable energy companies; construction companies/ contractors	See City of Lacey's adopted code.	
B5.9	on-bill financing	Provide additional utility incentives such as on-bill financing to support energy efficiency and renewable energy investments on buildings.	Adaptation Plan	Jan '19	PSE				Cart before the horse- people are excited about incentives but infrastructure is not workable. Need to fix existing problems before incentives of energy use reduction can be implemented.
B5.10	group purchasing	Develop/support a city-sponsored group solar purchasing program.	CAW	Oct-19	Local government, community solar company	SPARK NW, Olympia Community Solar	renewable energy companies		
B5.11	solar zoning	Review and amend zoning and development regulations where necessary to allow utility or community solar generation facilities less than 20 megawatts.	CAW	Oct-19	Local government		renewable energy companies	Brussels, Belgium exemplary building program/initiative	
B5.12	neighborhood grants	Fund the creation of low barrier grant opportunities for neighborhood clean energy and energy efficiency projects.	CAW	Oct-19	Local government	PSE	renewable energy companies; low income communities; rural communities	provide education though city and state implementation, and lead by example. The proposed new Thurston County courthouse is a good opportunity. Making the proposed facility a living laboratory would be consistent with TC Resolution 14395, passed in 2010.	
B5.13	shore power	Develop shore power to improve air quality, reduce GHG emissions, improve local economy by serving the growing needs of local boat and ship customers.	T Focus Group #1	Sep-19	Port of Olympia			Review existing programs in Seattle and Shoreline	Need to differentiate between strategies for residential and strategies for commercial.
<b>B.6: Convert to cleaner fuel sources.</b>									
B6.1	natural gas to electric appliances	Educate business owners and residents on the options for electric appliances and the benefit of pairing electrification with the installation of renewable energy.	Cascadia Consulting/B Focus Group #1	Aug '19	Local government				

B6.2	electric appliances in new construction	Update municipal code to require electric appliances in new construction.	Cascadia Consulting	Aug '19	Local government		construction companies/ contractors;	
B6.3	heat pumps	Investigate options and costs for using geothermal heat pumps for heating and cooling.	Lacey CR2 plan	Note 1	Local government			
B6.4	natural gas ban	Ban all new natural gas connections in new buildings.	CAW	Oct-19	Local government		construction companies/ contractors	
B6.5	natural gas fee	Create a utility fee for natural gas use.	CAW	Oct-19	PSE, UTC?		low-income communities	Use to fund electrification or other programs.
B6.6	demand pricing	Adjust fee scale to charge higher rates during high use times of day.	B Focus Group #1	Sep-19	State, UTC	PSE	low-income communities	
B6.7	utility advocacy	Add as a high priority to municipality's legislative agenda - State and Utilities and Transportation Commission in implementing SB 5116, which requires a shift to clean electricity.	CAW	Oct-19	Local government			
B6.8	Clean energy	Local government adopt and communicate policy statements and positions with the State Electeds that call for rapid conversion to clean energy in the power supply that serves Thurston County.			Local government	Solar Installers of Washington (WASEIA)		

**B.7: Address building and energy goals across sectors.**

B7.1	workforce development	Create and support opportunities to link clean energy companies with vocational training facilities.	TRPC-ST Plan	Jan '19	Worksource; local governments	PacMountain (Chamber of Commerce)	renewable energy companies; workforce development	
B7.2	public power	Transition to a publicly owned power utility district.	Public Survey		PUD		Greater local control over power infrastructure and decisions	Large start-up and transition costs to purchase and develop power infrastructure. Undercuts PSE's ability to meet statewide energy goals.
B7.3	climate impact fee	Evaluate and, if feasible, implement a regional climate impact fee on new development to fund regional climate mitigation projects and programs.			Local government		construction companies/ contractors	
B7.4	embodied carbon	Create incentives to increase the use of less carbon intensive building materials (mass timber, reduced concrete).	B Focus Group #1	Sep-19	Local government		construction companies/ contractors	

**T Focus Area: TRANSPORTATION & LAND USE**  
**Strategies:**  
 T1: Set land use policies that increase urban density to support efficient transportation networks.  
 T2: Increase efficiency of the transportation system.  
 T3: Increase the adoption of electric vehicles, and the infrastructure to support electric vehicles.  
 T4: Increase the use of public transit.  
 T5: Increase use of active forms of travel and more efficient commuting modes.  
 T6: Support regional mass transportation connections.

Action ID#	short name	description	source	date added	implementor	potential partners	target stakeholders	opportunities	barriers
<b>T1: Set land use policies that increase urban density to support efficient transportation networks.</b>									
T1.1	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.			Local government/ transit agencies	TRPC	low income		
T1.2	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.	TRPC	Note 1	Local government		Construction companies/ contractors; low-income communities		First/ last mile
T1.3	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.	Thurston Thrives	Jan '19	Local government		Construction companies/ contractors	Current pilot project in downtown Olympia: <a href="http://ecodistrict.fertileground.org/">http://ecodistrict.fertileground.org/</a>	
T1.4	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.	Cascadia Consulting	Aug '19	Local government		Construction companies/ contractors; rural communities; low-income communities; communities of color		
T1.6	climate-aware UGB	Amend county wide planning policies to require analysis of climate impacts, the costs to mitigate those impacts, and the costs to ensure efficient transit (e.g., public transit services) to inform future Urban Growth Area expansions and Annexations of current UGA. Then weigh those costs and impacts with opportunities and investment needed to accommodate people and business within annexed areas and approved UGAs.	T Focus Group #1	Sep-19	TRPC/UGM Subcommittee	Cities, County	rural communities		
T1.9	ADUs	Amend development codes to allow for attached and detached ADU's in urban residential areas.	T Focus Group #1	Sep-19	Local government				
T1.10	Multifamily Tax Exemption (MFTE)	Expand Multifamily Tax Exemption Programs to increase residential development where services exist, and consider extending exemption timeframes.	T Focus Group #1	Sep-19	Local government		construction companies/ contractors; realtors; low-income communities; communities of color		
T1.11	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.	T Focus Group #1	Sep-19	TRPC		rural communities	see comment	

T1.12	corridor-centered development	Increase residential and mixed use development along designated transit corridors with monetary incentives such as tax incentives and improved fee structures. Determine impact fees and connection charges that, if reduced or waived, would generate denser development where transit and other services already exist.	T Focus Group #1	Sep-19	Local government		construction companies/contractors; realtors; low-income communities; rural communities	Create tax incentives	
T1.13	downtown development	Work with developers and investors to identify barriers to new investment and reinvestment projects of residential and commercial in urban centers. Then develop and implement policy changes and incentive programs in response.	T Focus Group #1	Sep-19	Local government		construction companies/contractors; realtors		
T1.14	development VMT caps	Require caps on VMT or vehicle trips for development on Olympia's Capitol Campus and other public development near clustered government offices.	T Focus Group #1	Sep-19	State	Olympia, Tumwater, Lacey	rural communities; low-income communities; communities of color	Leverage city location	
T1.15	land use emissions	Reevaluate emissions tracking data for land use to ensure accuracy and tracking changes and to inform future regulatory policy in land use.	Cascadia Consulting	Aug '19	TRPC			Review King County's approach to including in their inventory.	
<b>T2: Increase efficiency of the transportation system.</b>									
T2.1	traffic analysis	Incorporate greenhouse gas emissions calculations into traffic impact analyses to identify land use proposals that have the potential to generate a substantial positive impact on the region.	TRPC-ST Plan	Jan '19	Local government				
T2.2	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).	Cascadia Consulting	Aug '19	Local government			see comment	
T2.3	reduce idling	Work with the State and/or region to enacted legislation to minimize vehicle idling for GHG reductions, improved air quality and increased fuel efficiency. Coordinate with public agencies and private companies that transport people and materials to develop and enact internal policies that reduce idle time.	Thurston Thrives	Jan '19	Association of Washington Cities			see comment Work with local businesses such as gas stations, grocery pick up, and drive thru's to educate, sign and promote voluntary idle reduction programs for customers. Motivate private entities by showing a potential reduction in fuel expense. Improve air quality for vulnerable populations such as children (school bus) and disabled/elderly (paratransit).	Hard to enforce. See comment
T2.3	transportation efficiency service	Create and fund a transportation efficiency service for local residents that gives an assessment of a households current transportation costs, shows cost saving potential by using cleaner forms of transportation, connection with vendors and financing as needed, and follows to see if changes were adopted by household.	TCAT	1-Oct	Local governments		low-income communities; rural communities/those who work outside; realtors;		
T2.4	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.	Cascadia Consulting	Aug '19	Local government				
T2.7	carpooling	Work regionally to increase the HOV and HOT lanes available during peak times for car shares and carpools to reduce single occupancy trips.	Lacey CR2 plan/T Focus Group #1	Jan '19	TRPC, DOT	local governments,	rural communities; those who work outside		Coordinating multipul partners. Addition of lanes increase more hard scape.
T2.8	reduced parking requirements	Reduce the cost of development by reducing parking requirements for new residential and mixed use development along transit corridors and in urban centers. Could allow substitution of care share programs.	Cascadia Consulting	Aug '19	Local government				
T2.9	congestion pricing	Explore congestion pricing between Thurston and Pierce counties along I-5 during peak hours to improve mobility by reducing traffic congestion, reduce greenhouse gas emissions, and create a more equitable transportation system. Target revenues to projects that enhance system efficiency.	TRPC-ST Plan	Jan '19	TRPC, DOT			Learn from Seattle who has published a phase one report on their congestion pricing study.	
T2.12	Eco driving education	Include awareness of fuel economy through driving techniques in curriculum for new drivers to reduce GHG emissions and develop long term habits.	T Focus Group #1	Sep-19	State Department of Licensing				
T2.15	TMAS	Mitigate traffic congestion and reduce GHGs by providing government grant dollars to Transportation Management Associations (TMAs) to provide membership-controlled transportation services in a range of areas including regional or city-wide service, along a specific corridor, or central business districts.	T Focus Group #1	Sep-19	Local government (public/private partnership)			Examples in other communities (Lloyd district example in Portland). Provides service that are not currently being met by existing transportation agencies. Commute Trip Reduction (CTR) may provide the framework.	
T2.16	Internal policy - decrease idle time	Coordinate with public agencies and private companies that transport people and materials to develop and enact internal policies that reduce idle time.			Local government				
T2.17	teleworking/flex work	Government agencies increase opportunities for employee teleworking options and staggering work days to reduce employees driving during peak traffic times.			Local and state government		workforce development	CTR programs	
<b>T3: Increase the adoption of electric vehicles, and the infrastructure to support electric vehicles.</b>									
T3.1	EV parking new construction	Require large commercial and residential buildings to dedicate a percentage of parking spots for electric vehicle charging.	TRPC (CALGreen)	Jan '19	Local government		construction companies/contractors		
T3.2	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.	Clean Technica and Greenway	Jan '19	Local government				
T3.3	solar parking lots	Work with utilities to develop installation of solar panels over surface parking spaces and structured parking garages to produce green energy for electric vehicles.	Thurston Thrives	Jan '19	Local government	PSE	renewable energy companies		

T3.4	EV charging retrofit	Partner with business and utilities to develop incentives and streamlined process to install EV charging infrastructure at large government and commercial facilities with low public transit and high personal vehicle utilization to access (e.g., the Great Wolf Lodge, St. Martins Pavilion, IT transit stations, rural gov buildings/services).	TRPC	Jan '19	Local government	Private installer			
T3.5	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.	TRPC (CALGreen)	Jan '19	Local government		construction companies/contractors; renewable energy companies; realtors	CALGreen drafted a model code, adapted from Lancaster, CA's municipal code. Model code: <a href="http://www.opr.ca.gov/docs/Example_Building_Codes.docx">http://www.opr.ca.gov/docs/Example_Building_Codes.docx</a>	
T3.7	EV integration	Reevaluate regulations and make necessary changes to ensure charging stations are able to be permitted in locations where they are needed.	TRPC-ST Plan	Jan '19	Local government			Several jurisdictions -- including Lacey (LMC Ch. 16.73) and Rainier (RMC Ch. 18.40) -- stipulate which zoning designations (including residential) allow electric vehicle charging stations. EV charging stations are permitted but not required.	
T3.8	public building EV infrastructure	Require new public facilities (buildings, park-and-rides, trailheads) have EV infrastructure. Ensure that the infrastructure is adequate to meet the growing number of electric vehicles.	TRPC-ST Plan	Jan '19	Local government		construction companies/contractors; renewable energy companies		
T3.10	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.	Rich Hoey	Aug '19	Local government			see comment	
T3.11	EV education	Partner with environmental and other agencies to increase consumer awareness about EV options and incentives for use and purchase.	T Focus Group #1	Sep-19	Local government				
T3.12	gas station colocation	Require all new gas stations install EV stations and that current gas stations have low barriers (permitting, expense) to installing EV stations.	T Focus Group #1	Sep-19	Local government				
T3.14	EV mass purchase discounts	Create a group purchase program for residents to get deep discounts on EVs, other fuel efficient and alternative fuel vehicles.	CAW	Oct-19	Local government (public/private partnership)			low-income communities; rural communities/those who work outside	
T3.15	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.	CAW	Oct-19	Local government (public/private partnership)				
<b>T4: Increase the use of public transit.</b>									
T4.1	increase transit	increase local public transit routes/frequency with a focus on expanding transit service before and after traditional business hours and on weekends.	Thurston Thrives/ T Focus Group #1	Jan '19	Intercity Transit			low-income communities; rural communities/those who work outside; communities of color;	see comment
T4.2	bus rapid transit	Expand rapid transit (ex. add transit only lanes in UGA or add express bus connections between South Sound cities), then develop funding mechanisms.	Rich Hoey/T Focus Group #1	Aug '19	Intercity Transit			low-income communities; rural communities/those who work outside; communities of color;	
T4.3	rural transit	Identify and implement first/last mile solutions for rural ridership (engage rural home owners associations for representation and feedback). Present this plan to TRPC with direction to explore pilot programs and secure funding sources.	Public comment/ T Focus Group #1	Aug '19	TRPC/RT			low-income communities; rural communities/those who work outside; communities of color;	Ruby Ride
T4.4	fareless system/youth ride free	Develop a fareless system for public transit.	Rich Hoey	Aug '19	Intercity Transit			low-income communities	
T4.5	Sound Transit in Thurston County	Work with State Legislators and Governor's Office to identify opportunities and funding to expand Sound Transit to Thurston County.	TCAP	Jan '19	State				
T4.7	public transit ease	Create a partnership of transit providers and agree to a common goal of having an integrated navigation and payment system. Then work together to make an action plan.	Cascadia Consulting	Aug '19	TRPC				
T4.8	alternative fuel buses	Transition area transit services to 100% renewable energy.	Cascadia Consulting	Aug '19	Intercity Transit/IT			renewable energy companies	
T4.9	fed-compliant alternatives analysis	Work with the State partners and elected officials to understand future plans for mass transit. Secure funding in the State budget to conduct an alternatives analysis to determine what types of high capacity transit the region may be able to support in the future what funding mechanisms are available.	TRPC-ST Plan	Jan '19	TRPC				
T4.10	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.	T Focus Group #1	Sep-19	TRPC				- Cost of trip -> trip changing
T4.13	park & ride	Work with transit providers to explore expansion of park & rides and park & pools.	T Focus Group #1	Sep-19	Intercity Transit				
T4.14	transit & schools	Work with school and transit providers to understand if there is a likely partnership to coordinate routes with transit start and top times.	T Focus Group #1	Sep-19	Intercity Transit				
T4.15	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).			TRPC			workforce development	
<b>T5: Increase use of active forms of travel and more efficient commuting modes.</b>									
T5.1	walk/bike infrastructure	Coordinate cities of Thurston Counties Master Bicycle and Pedestrian plans into a large regional plan to expand walking and biking infrastructure, including separated and protected opportunities. Coordinate efforts to maximize funding mechanisms and opportunities.	Thurston Thrives	Jan '19	TRPC			rural communities/those who work outside	
T5.2	barriers to transportation alternatives	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.	Cascadia Consulting	Aug '19	TRPC				
T5.3	biking to work	Require municipal and large employers to provide a shower and/or changing area for employees to facilitate biking to work, and secure/dry bike parking. Provide financial incentives for employer-sponsored bicycle programs.	Cascadia Consulting	Aug '19	Local government				

<b>T5.4</b>	school drop-off alternative modes	Maintain and expand a walking/biking incentive program with safety education for families.	Cascadia Consulting	Aug '19	School Districts	Intercity Transit	low-income communities; rural communities/those who work outside		
<b>T5.6</b>	park & pool	Require covered and safe bike storage at carpooling and pick up locations.	T Focus Group #1	Sep-19	Local governments				
<b>T5.7</b>	urban bikeshare	Pilot and, if successful, implement a bike/scooter share program.	TRPC	Jan '19	Capitol City Bikes? / private third-party				
<b>T5.11</b>	car-free zones	Reevaluate long term plans and update to prioritize pedestrians and people 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.	T Focus Group #1	Sep-19	Local government		low-income communities; rural communities/those who work outside; communities of color		
<b>T5.12</b>	bike/transit	Coordinate a meeting with bicycle advocacy groups and transit agencies to explore barriers (ex. limited bike storage on bus). Prioritize solutions and develop plan to reduce barriers.	T Focus Group #1	Sep-19	TRPC	Local governments, advocacy groups	communities of color; low-income communities		
<b>T5.13</b>	telecommuting infrastructure	Develop grants and provide financial resources for installation of infrastructure necessary to support telecommuting.	G Focus Group #1	Sep-19	Local government/TRPC				
<b>T6: Support regional mass transportation connections.</b>									
<b>T6.1</b>	Olympia-Seattle rail	Update plans to prioritize commuter rail connection between Olympia and Seattle. Work with State partners to develop a plan and find other partners that have similar vision to coordinate with.	T Focus Group #1	Sep-19	State?				
<b>T6.2</b>	Olympia ferry service	Provide ferry service between Olympia and Seattle. Work with State partners to develop a plan and work with other partners that have similar vision.	T Focus Group #1	Sep-19	Washington State?				

**W Focus Area: WATER & WASTE**

**Strategies:**

- W1: Increase the efficiency of water infrastructure + wastewater
- W2: Reduce water consumption
- W3: Reduce emissions from wastewater treatment operations
- W4: Divert more solid waste from landfills
- W5: Generate energy from waste sources
- W6: Reduce consumption of carbon-intensive goods and services
- W7: Reduce emissions of solid waste operations

Action ID#	short name	description	source	date added	implementor	potential partners	target stakeholders	opportunities	barriers
<b>W1: Increase the efficiency of water infrastructure + wastewater</b>									
<b>W1.1</b>	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.	Adaptation Plan	Jan '19	Local government, PSE, LOTT, Thurston PUD, (Lead depends on system operator)			Olympia has completed an energy audit of its water infrastructure - tracks water loss and has looked at motor efficiency. Currently buys Green Power through PSE.  LOTT has also conducted an energy audit, and is making investments in efficiency upgrades (see note).	energy audit
<b>W1.2</b>	public water systems	Prioritize efficiency improvements to public water systems (Group A and Group B). Prioritize components that consume the most energy and have high GHG emissions.	TRPC	Aug-19	Thurston PUD, Lacey, Olympia, Tumwater			Streamflow Restoration funding	New pumps aren't always more efficient Need to ensure redundancy, so will need a traditional backup, even if switch to solar or other renewable power (could use rechargeable batteries as a power source)
<b>W1.3</b>	rural wells	Provide a low interest loan program to encourage the use of efficient technology when permitting wells to serve new rural development.	TRPC		Thurston County		lenders; construction companies/contractors		
<b>W1.4</b>	gravity sewer	Study the energy efficiency and cost impacts of gravity sewers versus STEP systems. As needed, introduce programs, regulations, and/or incentive programs.	WW Focus Group Meeting #1	Aug '19	Lacey, Olympia, Tumwater			gravity effluent easier to treat	
<b>W1.5</b>	lifecycle costs	Assess the energy use or energy savings of wastewater-related projects, and other lifecycle costs. Make analysis available to decision-makers.	WW Focus Group Meeting #1	Aug '19	Local government, Thurston PUD, LOTT			LOTT does this already.	
<b>W2: Reduce water consumption</b>									
<b>W2.1</b>	municipal water ordinance	Develop a mandatory municipal water conservation ordinance.	Lacey CR2 plan	Jan '19	Local government		construction companies/contractors		
<b>W2.2</b>	water audits	Conduct water audits of city and county facilities to determine prioritization of capital improvements.	Ashland Climate & Energy Action Plan	Aug '19	Local government				Look at plumbing fixtures in municipal buildings
<b>W2.3</b>	water conservation outreach	Expand water conservation outreach and incentive programs for residents and businesses through new funding sources (ex. grants) and partnerships.	Ashland Climate & Energy Action Plan	Aug '19	Local government			Low return on investment.	
<b>W2.4</b>	permitting	Review and update building code to ensure most efficient water practices and technologies are applied to new development.	TRPC	Aug '19	Local government		construction companies/contractors	Challenging for commercial b/c tenant changes.	
<b>W2.5</b>	rural conservation	Provide technical assistance for rural "exempt" wells to conserve water.	Art Starry, Thurston County Environmental Health	Aug '19	Thurston County, TCD		rural communities		
<b>W2.6</b>	agricultural water use	Evaluate agricultural water use and develop a program to buy back or reclaim excess capacity.	Art Starry, Thurston County Environmental Health	Aug '19	Local government		farmers/ ranchers		
<b>W2.7</b>	low-water landscaping	Require water landscaping conservation practices for new development.	Art Starry, Thurston County Environmental Health/WW Focus Group Meeting #1	Aug '19	Local government		construction companies/contractors		
<b>W2.8</b>	integrated incentives	Integrate City incentives for water and wastewater reductions with other aligned incentive programs (ex. PSE rebates for washing machines and dishwasher energy savings) to encourage broader usage and conservation.	Thad Curtz	Sept '19	Local government				
<b>W2.9</b>	tiered rates	Study effectiveness and strategies for conservation with tiered rating structures for water and sewer, and if proven, apply new rate structures.	Thad Curtz	Sept '19	Local government		Most (all?) utilities		

<b>W2.10</b>	water reuse	Develop a water reuse program for water conservation on site. Provide technical assistance and incentives, such as free rain barrels, to gather water and use on site (e.g., rain barrels for irrigation).	WW Focus Group Meeting #1	Aug '19	LOTT, local government				
<b>W2.10b</b>	reclaimed water	Expand the use of reclaimed water, especially where needed for irrigation.			LOTT				
<b>W2.11</b>	watering schedule	Institute mandatory watering schedule that limits irrigation to certain days.	WW Focus Group Meeting #1	Aug '19	Local government		farmers/ ranchers; rural communities; realtors	Lacey has a current program	
<b>W2.12</b>	high users	Identify greatest water users and provide targeted technical outreach and support to reduce water consumption.	WW Focus Group Meeting #1	Aug '19	Local government, LOTT				
<b>W2.13</b>	combined sewer	Separate combined sewer and stormwater system. Start with feasibility study and follow through on findings.	WW Focus Group Meeting #1	Aug '19	Olympia, LOTT				Extra infrastructure
<b>W2.15</b>	renter incentives	Develop and offer incentives for water conservation targeted to renters and multifamily residential units.	WW Focus Group Meeting #1	Aug '19	Local government		construction companies/ contractors; realtors		
<b>W2.16</b>	metering	Use metering to inform water consumers about their use compared to others on their utility bill. Provide technical assistance and education to higher users on ways to conserve water and improve household/business efficiencies.	WW Focus Group Meeting #1	Aug '19	Local government				
<b>W2.17</b>	gray water use	Require use of gray water in new residential and commercial buildings. Start with feasibility study and change building codes based on results.	CAW	Oct '19	Local government	DOH			Would require DOH approval.
<b>W2.18</b>	HOA watering outreach	Provide education and technical assistance to HOAs related to revising covenants that may be causing increase water consumption and/or prohibiting energy savings (ex. lawns must be irrigated and green, no water barrels).	Public Survey		Local government		realtors		
<b>W2.19</b>	well conversion to public systems	Provide technical assistance to rural "exempt" well owners to convert to public water systems when service connections are available.			Thurston County, PUD		farmers/ ranchers; rural communities		
<b>W3: Reduce emissions from wastewater treatment operations</b>									
<b>W3.1</b>	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.	WW Focus Group Meeting #1	Aug '19	LOTT				
<b>W3.2</b>	methane capture	Capture methane from wastewater operations and use to generate power to run systems. Begin by researching cost-effective methods and identifying funding sources to implement.	WW Focus Group Meeting #1	Aug '19	LOTT				
<b>W3.3</b>	hydrogen power	Investigate and determine if hydrogen power is a cost effective alternative energy source for operations, including technical vehicles, or for distribution and if so, identify funding source to implement.	WW Focus Group Meeting #1	Aug '19	LOTT				
<b>W4: Divert more solid waste from landfills</b>									
<b>W4.1</b>	residential composting	Expand residential programs for composting and recycling food waste.	Thurston Thrives	Jan '19	Local government			TC waste is being converted into renewable natural gas (RNG)	Expensive to construct, and hard to find available space. Air quality implications to burning waste, what are emissions in burning?
<b>W4.2</b>	commercial composting	Expand commercial programs for composting food waste. Start by identifying funding and partners.	WW Focus Group Meeting #1	Aug '19	Local government			Thurston County Restaurant Rescue program	
<b>W4.4</b>	waste audits	Provide waste audits for business owners and education on practices that decrease waste (ex. compost, recycling, reuse).	Cascadia Consulting	Aug '19	Local government				
<b>W4.5</b>	gleaning	Expand gleaning programs and recovery and use of edible yet unwanted foods from restaurants, grocery stores, and schools.	Thurston Thrives/AF Focus Group #1	Jan '19	Thurston County Food Bank				
<b>W4.7</b>	deconstruction ordinance	Develop a building deconstruction ordinance, with requirements for deconstruction, reporting, inspections, and compliance tools.	Thad Curtz	Sept '19	Local government		construction companies/ contractors	Examples at: <a href="https://sustainableconsumption.usdn.org/initiatives-list/encouraging-and-mandating-building-deconstruction">https://sustainableconsumption.usdn.org/initiatives-list/encouraging-and-mandating-building-deconstruction</a> Also Portland's ordinance at: <a href="https://www.portlandoregon.gov/bps/68520">https://www.portlandoregon.gov/bps/68520</a>	
<b>W4.8</b>	fruit teams	Partner with food banks and neighborhoods to harvest fruit from urban fruit trees.	Thad Curtz	Sept '19	Food Bank		food banks	Portland's Fruit Tree Project ( <a href="https://www.portlandfruit.org/">https://www.portlandfruit.org/</a> ) or Seattle's City Fruit ( <a href="https://www.cityfruit.org/join-us/about-us">https://www.cityfruit.org/join-us/about-us</a> )	
<b>W4.9</b>	organics collection	Require food waste pickup at residential and commercial buildings to reduce landfill methane. Compliment with an ordinance that restricts compostables from going into the garbage and has a fining structure to enforce.	Thad Curtz	Sept '19	Local government		food bank; realtors	Seattle has an existing program.  "Seattle Municipal Code (SMC) sections 21.36.082 and 21.36.083 require that residents and businesses do not put food scraps, compostable paper, yard waste, and recyclables in their garbage. ... Seattle Public Utilities (SPU) gives warning notices for garbage containers that contain recyclables or compostables. For each warning, the property will receive a tag on the container and a notice will be mailed to the account. After 2 warnings, properties may receive a \$50 fee on their waste bill for recyclables in the garbage."	
<b>W4.10</b>	waste less food program	Expand the TC Public Works "Waste Less Food" program.			Thurston County				Increasing education/outreach and programming drives up consumer rates, which decentivizes participation
<b>W4.11</b>	regional recycling	Conduct an analysis of how a regional recycling facility could build local markets for recyclable materials. Develop a cost vs benefits analysis and present to policy makers.	WW Focus Group #1	Aug '19	Thurston County, EDC,			Longview Paper Mill - takes all mixed grade paper	
<b>W5: Generate energy from waste sources</b>									
<b>W5.1</b>	waste-to-energy	Research the opportunities to generate additional energy from waste products (e.g., woody biomass and sewage) in Thurston County to reduce fossil fuel consumption and present to policy makers for consideration.	Adaptation Plan	Jan '19	Colleges, WSUx		renewable energy companies (?)	TC waste is being converted into renewable natural gas (RNG)	Expensive to construct, and hard to find available space. Air quality implications to burning waste, what are emissions in burning?
<b>W5.2</b>	heat exchange	Research the feasibility of heat exchange potential of embedded energy in wastewater and/or reclaimed water and present to policy makers for consideration.	Rich Hoey	Aug '19	LOTT			Similar to district heating idea.	
<b>W5.3</b>	kinetic energy	Research the feasibility of utilizing kinetic energy from transport of water and wastewater through piping networks and present to policy makers for consideration.	Art Starry, Thurston County Environmental Health	Aug '19	Thurston County				
<b>W5.4</b>	FOG waste	Research feasibility of program to digest Food, Oils, and Grease (FOG) and/or commercial food waste at LOTT to recover energy and increase methane production and present to policy makers for consideration.	Thad Curtz/WW Focus Group #1	Sept '19	LOTT	local restaurants, local schools			

W5.5	dry anaerobic digesters	Evaluate feasibility of a dry anaerobic digester with associated combined heat and power facility to process organics and agricultural waste locally. Present findings to appropriate policy makers for their consideration.	Thad Curtz/WW Focus Group #1	Sept '19	Thurston County		renewable energy companies; farmers/ ranchers		
<b>W6: Reduce consumption of carbon-intensive goods and services</b>									
W6.1	consumption emissions education	Develop an education program about consumption-based emissions and simple ways to track and reduce consumption-based emissions for residents of Thurston County.	Ashland Climate & Energy Action Plan	Jan '19	Local government				
W6.2	meat reduction	Develop awards/recognition programs for restaurants that encourage plant-rich diet that reduce meat consumption.	Thurston Thrives	Jan '19	Local government				
W6.3	collaborative consumption	Develop a awards/recognition programs for "collaborative consumption" community projects like tool libraries and repair cafes, through mini-grant programs to encourage their use and new projects.	Cascadia Consulting	Aug '19	Local government		low-income communities; communities of color; rural communities		
W6.4	environmentally preferable purchasing policy	Local governments require departments, agencies, consultants and contractors to use recycled products whenever possible and not cost prohibitive.	Cascadia Consulting	Aug '19	Local government		construction companies/ contractors		
W6.5	product stewardship	Support state-level product stewardship legislation that requires producers to be involved in end-of- product-life management, either through product design changes (e.g. compostable snack bags), investing in take back programs , or placing a fee on the sale of products to support diversion.	Cascadia Consulting	Aug '19	State government				
W6.6	supply chain	Provide free technical assistance to local businesses in reducing the carbon intensity of their supply chains.	Multnomah County Climate Action Plan		Local government				
W6.7	water fill stations	Require all government-owned water fountains be replaced with water bottle filling stations at end of life and all new construction requires water bottle filling stations.	Cascadia Consulting	Aug '19	Local government				
W6.8	reusable takeout	Amend health code to allow reusable take out containers.	WW Focus Group #1	Aug '19	Department of Health, Local government				
W6.9	single-use ban	Ban single use plastics (e.g. straws, water bottles)	WW Focus Group #1	Aug '19	Local government			consumer behavior	
<b>W7: Reduce emissions of solid waste operations</b>									
W7.1	waste route efficiency	Partner with sanitation companies to evaluate the GHG reduction potential of utilizing one side for street pickup and present to policy makers for consideration.	Thad Curtz	Sept '19	Local government		Technology exists: Hybrid trucks and powered by CNG. Currently done by Olympia; is this done by other providers?		
W7.2	waste service areas	Mandate that areas served redundantly by municipalities and private waste collection are eliminated, such as the Tumwater/Olympia border south of the high school, by trading service areas	Thad Curtz	Sept '19	Local government				
W7.3	garbage fleet electrification	Electrify garbage truck fleet. Start by developing plan for municipal and private waste collectors that includes financing options.	Thad Curtz	Sept '19	Local government		Seattle's new BYD EV rear-loader <a href="https://arstechnica.com/cars/2019/05/seattle-makes-history-with-electric-garbage-truck/">https://arstechnica.com/cars/2019/05/seattle-makes-history-with-electric-garbage-truck/</a>  Volvo EV garbage truck <a href="https://www.motorauthority.com/news/1116920_volvo-introduces-electric-delivery-garbage-truck-with-186-mile-range">https://www.motorauthority.com/news/1116920_volvo-introduces-electric-delivery-garbage-truck-with-186-mile-range</a>  Mack EV garbage truck <a href="https://www.greencarreports.com/news/1123352_mack-plans-to-send-electric-trucks-to-the-garbage-dump">https://www.greencarreports.com/news/1123352_mack-plans-to-send-electric-trucks-to-the-garbage-dump</a>		

**A Focus Area: AGRICULTURE & FORESTS**  
 Strategies:  
 A1: Reduce emissions from agricultural practices.  
 A2: Support agricultural practices that sequester carbon.  
 A3: Support production of less carbon-intensive agricultural products, and local food markets.  
 A4: Preserve existing trees, forest lands, and open space.  
 A5: Manage forests to sequester carbon.  
 A6: Reduce emissions from the urban landscape.  
 A7: Increase carbon sequestration in marine ecosystems.

Action ID#	short name	description	source	date added	implementor	potential partners	target stakeholders	opportunities	barriers
<b>A1: Reduce emissions from agricultural practices.</b>									
A1.1	manure management	Provide education and incentives (grants, loans, technical assistance) to support manure management that reduces methane and nitrous oxide emissions (ex. covered manure storage facilities, manure application practices).	Cascadia Consulting	Aug '19	TCD, WSUx		Farmers/ranchers; rural communities	Existing outreach program through the Thurston Conservation District	Funding for staff and BMP implementation
A1.2	nutrient management	Provide education and incentives (e.g., grants, loans, technical assistance) reduce nitrous oxide emissions when managing fertilizer.	TRPC	Aug '19	TCD		Farmers/ranchers; rural communities		Funding for staff and BMP implementation
A1.3	waste-to-energy	Conduct a feasibility study on small-scale energy production (ex. capture and combustion of methane, anaerobic digestion, biofuel and biogas production), then identify partners, programs and incentives to develop across TC.	TRPC	Aug '19	WSUx		Farmers/ranchers		
A1.4	water use	Develop an incentive program (e.g., technical assistance) to improve the efficiency of agriculture irrigation systems. Identify grant funding.	TRPC	Aug '19	TCD		Farmers/ranchers; rural communities	Drought grant funding through Washington State Conservation Commission	Funding for staff and BMP implementation
A1.5	BMP audits	Develop and incorporate mandatory sustainability audits into conservation/farm plans. Develop program and identify funding reduce energy use and promote best management practices (BMPs).	Cascadia Consulting/ TRPC	Aug '19	TCD		Farmers/ranchers	Washington State Conservation Commission (WSSC) cost-share; build on existing checklists and processes	Funding for staff and BMP implementation

A1.6	feed additives	Provide education to promote methane-reducing livestock feed additives (ex. seaweed derivatives). Make cost effective by partnering with local vendors and consumers to develop a bulk purchase program.	AF Focus Group #1	Aug '19	TCD		Farmers/ranchers		
<b>A2: Support agricultural practices that sequester carbon.</b>									
A2.1	regenerative agriculture	Expand regenerative agricultural practices (ex. low-till, no-till education programs) 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.	TRPC	Aug '19	TCD, WSUx	TESC POP program, St Martins	Farmers/ranchers; rural communities	Pilot programs with incentives for farmers; Expand regenerative Ag training programs at institutions of higher learning to support a new generation of farmers that use regenerative agricultural production practices. Existing Equipment rental programs through TCD	Funding for staff and BMP implementation; financial risk for trying new practices or expanding;
A2.3	biochar	Thurston EDC, Port Authority and TCD partner to explore feasibility of biochar enterprise in Thurston County to promote amending soils with biochar.	TRPC	Aug '19	TCD/EDC/Port Authority		Farmers/ranchers		
A2.4	soil carbon research	Fund/support regional soil carbon sequestration research to encourage adoption of region-specific conservation farming practices that store carbon.	WSU	Jan '19	WSUx		Farmers/ranchers		
A2.5	silvopasture	Develop education programs and incentives to encourage farmers to incorporate tree planting on farms (e.g., silviculture, silvopasture, agroforestry, tree cropping).	AF Focus Group Meeting #1	Aug '19	TCD		Farmers/ranchers		
<b>A3: Support production of less carbon-intensive agricultural products, and local food markets.</b>									
A3.1	farmland preservation	Support farmland preservation through land use policies and financial incentives (e.g., conservation easements) to maintain production capacity and increase self-sufficiency.	AF Focus Group meeting #1	Aug '19	Thurston County	SSFSN	Farmers/ranchers		Economics that lead to conversion of farmland to development
A3.2	food system assessments	Encourage growth of local markets through market research and assessment of our ability to feed ourselves from regionally-produced foods.	AF Focus Group meeting #1	Aug '19	TESC, WSUx	TEDC, WSUx, Senior Svs South Sound/ SSFSN	Farmers/ranchers		Lack of understanding of current capacity to meet local market needs
A3.3	processing and distribution hub	Develop a hub to process and distribute regionally-grown agricultural products to local markets (including restaurants, supermarkets, jails, schools, colleges, and hospitals).	AF Focus Group meeting #1	Aug '19	TEDC	WSUx, SSFSN Infrastructure/Processing WIT, EDC	Farmers/ranchers	Regional food can be price competitive, existing EDC programs	Distribution is inefficient locally with many small farms spread out
A3.5	institutional markets	Explore local policy and financial incentives to increase the percentage of regionally produced foods purchased by cafeterias in government and municipal institutions.	AF Focus Group meeting #1	Aug '19	State and Local governments, school districts	EDC	Farmers/ranchers; rural communities	Existing EDC programs, WSDA grants to food banks to purchase and contract with	more research needed
A3.6	SNAP access	Publicize federal nutrition incentive programs that aim to support small and mid-sized farms, such as SNAP, FMPP, LFPP, and FINI grant.	AF Focus Group meeting #1	Aug '19	Local governments	WA-DOH, Olympia FM, WSUx SNAP program	Farmers/ranchers		
A3.7	hemp production	Develop an economic development plan for attracting industrial hemp production as a way to create local jobs and sequester carbon.	Public comment	Aug '19	EDC, local governments		Farmers/ranchers	Soil testing program	
A3.8	woody crops	Provide technical assistance to help residents, businesses, and the agricultural community grow woody perennial crops that help conserve water, store carbon, and provide other ecosystem services.	Adaptation Plan	Jan '19	Residents, agricultural community, TCD		Farmers/ranchers		
<b>A4: Preserve existing trees, forest lands, and open space.</b>									
A4.1	natural area preservation	Identify and establish a range of diverse, stable, long-term funding sources for the acquisition, restoration, and preservation of prime natural areas.	Cascadia Consulting	Aug '19	Thurston County	land trusts, TCD		Many such programs exist: Conservation Futures, FarmLink, CREP, salmon recovery funding, federal grants, etc. TCD forest planting programs	Lack of consistent Conservation Futures funding leaves a gap of local match funding that dampens ability of Thurston County land trusts (CLT, NLT, SSCFLT) to get funding for projects.  Any program should be additional or build on existing programs, new program could take away from what limited funding is there.
A4.2	working land preservation	Identify or develop local funding sources for agricultural and forestry conservation easements. This could include creating a system for bundling small monetary contributions to invest in collective conservation easement or land purchases.	Cascadia Consulting	Aug '19	Thurston County	land trusts, TCD	Farmers/ranchers	Voluntary Stewardship Program, Sentinel Landscape Partnership, Regional Conservation Partnership Program	Lack of consistent Conservation Futures funding leaves a gap of local match funding that dampens ability of Thurston County land trusts (CLT, NLT, SSCFLT) to get funding for projects.  Difficult to enforce restrictions through successive landowners
A4.3	tree codes	Review and revise local development regulations to require the carbon sequestration value of existing trees be considered in regulatory requirements like site plan review.	TRPC	Aug '19	Local government				
A4.4	clearing limits	Add clearing limits (usually expressed as percentage) for large lot development in county and city zoning codes.	AF Focus Group meeting #1	Aug '19	Local government		Farmers/ranchers; construction companies/ contractors		
A4.5	stream buffers	Update permitting requirements to increase the required stream buffer size to increase carbon sequestration.	AF Focus Group meeting #1	Aug '19	Local government		Farmers/ranchers	collaborate with salmon preservation efforts	
A4.6	code enforcement	Increase monitoring and enforcement of City and County zoning and other regulations that preserve sensitive areas.	AF Focus Group meeting #1	Aug '19	Local government				
A4.7	clustered development	Incentivize cluster development, such as giving a 10-25% density bonus, to preserve more open space.	WSU	Jan '19	Local government		Construction companies/contractors		
<b>A5: Manage forests to sequester carbon.</b>									
A5.1	reforestation & afforestation program	Develop a coordinated reforestation/afforestation program. Begin by identifying priority areas where reforestation and afforestation may have carbon reduction benefits.	Thurston Thrives	Jan '19	Local government, USFS	TCD (Forest RCPP)			
A5.2	community forests	Expand extent of community forests that consider carbon sequestration in their management goals.	TRPC	Aug '19	3rd Party nonprofit, Thurston County			Opportunity to learn from existing Nisqually Community Forest	Require extensive up front work with community to develop vision and plan - funding would be needed for up front costs.
A5.3	long-rotation timber	Mandate that timber companies lengthen the rotation of timber harvesting in Thurston County as part of their permits.	TRPC	Jan '19	Thurston County, DNR	Weyerhaeuser	Farmers/ranchers		Need to change the way carbon credits are awarded
A5.4	ecosystem services monetization	Expand market-based approaches for ecosystem services such as carbon credit trading.	WSU	Jan '19	TESC				credits must be valuable enough for commercial forester to buy in
A5.5	species mix	As part of an educational/technical assistance program, promote species mixes for reforestation or afforestation that result in high-density carbon sequestration.	AF Focus Group meeting #1		DNR, NW Natural Resource Group				
A5.6	small forester education	Deploy an educational program for smaller foresters to increase understanding of carbon sequestration, emphasizing the better performance of mature rather than young trees.	AF Focus Group meeting #1		NW Natural Resource Group				
A5.7	legislative efforts	Lobby Washington State legislature in support of bills that positively affect carbon balance on state-managed lands.	AF Focus Group meeting #1		Local government, TCAT				

A5.8	slash-to-biochar	Seek grant funding to process slash to biochar and apply in forestry or agricultural settings.	AF Focus Group meeting #1		WSU extension commercial				
A5.9	slash-to-fuel	Seek grant funding to explore the feasibility of utilizing slash as fuel in forestry equipment at scale commercially.	AF Focus Group meeting #1		WSU extension commercial				
A5.10	laminated timber	Increase allowances for laminated timber in building code.	AF Focus Group meeting #1		Local governments				
A5.11	carbon in the CAO	Authorize carbon as a justification for critical areas ordinance protection.	AF Focus Group meeting #1		Thurston County, Department of Commerce				
<b>A6: Reduce emissions from the urban landscape.</b>									
A6.1	low-maintenance landscaping	Provide marketing and education campaign promoting the planting of low-maintenance landscaping to encourage more vegetation and tree canopy.	Adaptation Plan	Jan '19	Local governments	Thurston Conservation District		TCD and other Native Plant Sales	
A6.2	street tree plan	Create a comprehensive street tree plan and/or planting guide that prioritizes goals for carbon sequestration, climate change resiliency, and other equitably distributed co-benefits. Plan should include minimum stocking standards for street trees.	Cascadia Consulting	Aug '19	Local governments	Thurston Conservation District			
A6.3	urban tree canopy incentive program	Develop partnership with organizations that offer financial incentives for expanding tree canopy in exchange for carbon credits purchased by businesses and other institutions.	Adaptation Plan	Jan '19	Local governments	nonprofits, neighborhoods, residents, property owners, K-12, Thurston Conservation District	Construction companies/contractors (?)	City Forest Credits in Seattle ( <a href="https://www.cityforestcredits.org/">https://www.cityforestcredits.org/</a> ) leading an effort to not just get more urban tree cover but create incentives for it. Could be an avenue that municipalities can use to at least make the effort break even? Seattle Free Tree Program Nature Conservancy Tree Planting Grants	
A6.4	tree protection	Reevaluate municipal tree protection ordinances based on a review of national best practices.	AF Focus Group meeting #1		Local governments		Construction companies/contractors (?)		
A6.5	municipally-controlled canopy	Maximize tree canopy on City-owned or City-controlled land.	AF Focus Group meeting #1		Local governments				
A6.6	tree-aware zoning	Modify zoning setbacks and similar provisions designed to provide room for and encourage large trees.	AF Focus Group meeting #1		Local governments		Construction companies/contractors		
A6.7	adaptation	Educate City and County staff about low cost ways to adapt infrastructure to conform to the needs of growing trees, rather than removing the trees.	AF Focus Group meeting #1		Local governments				
A6.8	landscape regulation	Modify landscape development code requirements to direct the use of landscaping appropriate to the site that provides shade in summer/ sun in winter.			Local governments		Construction companies/contractors		
A6.9	Tree canopy ordinance	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.			Local governments		Construction companies/contractors		Low emission sector and regulatory action so medium to high impact.
<b>A7: Increase carbon sequestration in marine ecosystems.</b>									
A7.1	marine vegetation	Understand current efforts and develop a plan to enhance the protection of marine vegetation such as eelgrass to improve water quality, sequester, and improve fish habitat and survival.	Adaptation Plan	Jan '19	Thurston County, Puget Sound Partnership, DNR	nonprofits, neighborhoods, residents, agricultural community, property owners		Squaxin Island Tribe research/project in Oakland Bay; decisions around Capitol Lake; USGS	
A7.2	blue carbon	Research actions to implement blue carbon programs in Thurston County aimed at sequestering carbon through the conservation and restoration of coastal and marine ecosystems.	Public Survey		Thurston County, Puget Sound Partnership				

**G Focus Area: CROSS-CUTTING (GENERAL)**

**Strategies:**

- G1: Conduct education and outreach across climate mitigation areas.
- G2: Support a green local economy.
- G3: Fund climate mitigation actions.
- G4: Enhance monitoring and evaluation of climate mitigation measures and outcomes.
- G5: Advocate for climate-mitigating state and federal policy.

Action ID#	short name	description	source	date added	implementor	potential partners	target stakeholders	opportunities	barriers
<b>G1: Conduct education and outreach across climate mitigation areas.</b>									
G1.1	educational website	Develop user-friendly website and outreach materials to educate residents of the health and cost benefits of reducing GHG emissions in their lives and homes and resources on how to do it.	Cascadia Consulting	Aug '19	Other community partner				
G1.2	consumption (COMBINE WITH G1.5)	Develop and run community based social marketing program to reduce consumption and inform consumers about options for reducing their carbon footprint.	Thad Curtz	Sept '19	Local governments/other community partner			Lower thermostats, buy more fuel efficient vehicles, buy less plastic containers, allow grass to grow longer or even die, stop washing sidewalks and driveways.	
G1.3	ClimeTime	Coordinate OSPI ClimeTime program with local government to bring youth into the feedback and planning process of developing climate mitigation programs and policy.	G Focus Group #1	Sep-19	OSPI/Local government				
G1.4	Career Connects	Set a target to increase the percentage of green jobs in the Career Connects WA program each year.	G Focus Group #1	Sep-19	State		workforce development		
G1.7	social research (COMBINE WITH G1.2)	Work with higher education institutions to research effective behavior change through marketing and educate. Use this information in developing campaigns to reduce high emissions GHGs.	G Focus Group #1	Sep-19	Higher education/Local government				
G1.9	staff training	Develop climate mitigation practices for government employees at work and require they be implemented. Set outcomes to measure effectiveness.	CAW	Oct-19	Local government				
<b>G2: Support a green local economy.</b>									
G2.1	clean energy economy	Set policy that requires recruitment and retention practices for clean energy economy companies.	TRPC	Jan '19	Local government, EDC		workforce development		
G2.2	sustainable businesses	Develop a green guide for area businesses and build award programs to reward implementation.	Cascadia Consulting	Aug '19	Local government, EDC, Cambers of Commerce				
G2.3	clean economy roundtables	Organize and facilitate roundtables with business leaders focused on clean economy strategies.	Cascadia Consulting	Aug '19	Local government				

G2.4	technical clearinghouse	Have TRPC or another entity function as a clearinghouse for government regulations roadblocks to clean technology development.	G Focus Group #1	Sep-19	TRPC				
G2.5	cleantech park	Develop a "cleantech" business park and provide incentives (tax, utility) for green business that co-locate.			Local government, Port		rural communities		
G2.6	training diversification	Work with the Workforce Training and Education Coordinating Board (WTB) to ensure a wide variety of green jobs is part of the workforce training.	G Focus Group #1	Sep-19	WTB/Local government		workforce development		
G2.7	jobs leadership	Provide technical assistance to local businesses to generate green jobs and practices.	G Focus Group #1	Sep-19	EDC				
<b>G3: Fund climate mitigation actions.</b>									
G3.1	tax benefits	Develop tax incentives for businesses that demonstrate GHG reductions in their production.	G Focus Group #1	Sep-19	Local government				
G3.2	cost-sharing	Develop an Office of Green Building to work with the business sector to partner in sharing costs and expertise.	G Focus Group #1	Sep-19	Local government, EDC				
G3.3	green energy bond	Develop a green energy bond providing a monetary incentive to tackle prominent social issues such as climate change and a movement to renewable sources of energy. Start by researching the feasibility and impact.	G Focus Group #1	Sep-19	Local government			San Diego's- green energy bond? - Could be a model for other public entities for energy retrofits	
G3.4	crowdsourcing	Develop and launch a crowdsourcing platform (like "The Gamechanger") that allows entrepreneurs to submit green proposals for policies and projects for local government and businesses and ideas to influence the future of energy and help to overcome a specific challenge.	G Focus Group #1	Sep-19	private entity				
<b>G4: Enhance monitoring and evaluation of climate mitigation measures and outcomes.</b>									
G4.1	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.	TCAT	Aug '19	TRPC, TCAT	Thurston County, Lacey, Olympia, Tumwater, TCAT, others		TCAT has been producing regular emissions inventories using a comparable EPA methodology, and has past data entered into ClearPath.	
G4.2	performance measures	Develop community GHG reduction goals and performance measures. Regularly update and publicize for community to track their progress.			Local government, TCPC		low-income communities; communities of color; rural communities		
G4.3	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.	Cascadia Consulting, TCAT	Aug '19	TRPC, TCAT			Review Cascadia and TCAT memos for suggestions on examples.	
G4.4	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.	Cascadia Consulting	Aug '19	TRPC		communities of color; low-income communities; rural communities		
G4.6	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.	TCAT	Oct-19	Local government				
<b>G5: Advocate for climate-mitigating state and federal policy.</b>									
G5.1	UTC presence	Track, monitor and share information about Washington Utilities and Transportation Commission (UTC) meeting and actively recruit residents to give feedback and attend meetings to support bold GHG emission policy.	G Focus Group #1	Sep-19	NGOS				
G5.2	solar-ready building code	Add as a high priority to municipality's legislative agenda - State-level amendments to State building code requiring solar-ready construction. Work with other cities to add this to the Association of Washington Cities (AWC) priorities.	CAW	Oct-19	Local government/AWC		construction companies/contractors; realtors		
G5.3	net-zero building code	Add as a high priority to municipality's legislative agenda - State Building Council and State Legislature to require net-zero energy use in all new buildings by the 2031 residential code cycle and amendments to State building code each 3-year cycle to meet that goal. Work with other cities to add this to the AWC priorities.	CAW	Oct-19	Local government/AWC		construction companies/contractors; realtors		
G5.4	utility advocacy	Add as a high priority to municipality's legislative agenda - State and Utilities and Transportation Commission in implementing SB 5116, which requires a shift to clean electricity.	CAW	Oct-19	Local government		construction companies/contractors; realtors; renewable energy companies		
G5.5	legislative agenda	Prioritize combating climate change in the municipality's legislative agenda each year. Instruct municipal lobbyist to track and report on climate bills, and to advocate for those bills that will help reduce local emissions. Work with other cities to add this to the AWC priorities.	CAW	Oct-19	Local government				
G5.6	Clean energy	Local government adopt and communicate policy statements and positions with the State Electeds that call for rapid conversion to clean energy in the power supply that serves Thurston County.			Local government				