

**Thurston Climate Mitigation Plan  
Climate Actions Menu**

As of: 10/17/2019

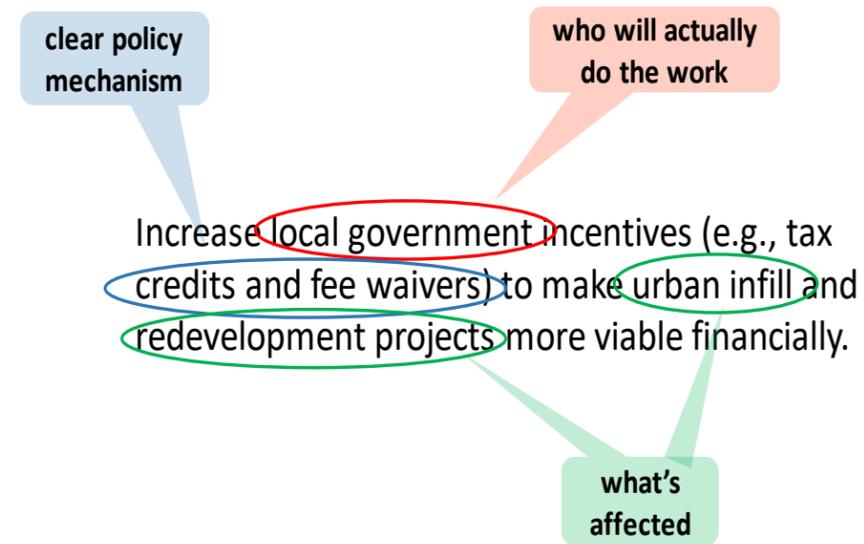
KEY	
B	Buildings & Energy actions
T	Transportation & Land Use actions
W	Water & Waste actions
A	Agriculture & Forests actions
G	Cross-cutting actions
#	Unique identifier for each strategy and action
short name	1-3 word description of action
description	1-2 sentences describing action - see box for example of a well-defined action description. Additional details beyond 1-2 sentences can be included in "other notes"
source	person who suggested or plan that provided the action
potential lead	agency or organization that could lead the action
potential partner	agency or organization that could participate in implementing the action
target population	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.
other notes	any other considerations or extended descriptions

This preliminary list of strategies and actions has been developed by Thurston Regional Planning Council and Cascadia Consulting Group to support 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)



#	short name	description	source	potential lead	potential partners	opportunities	barriers	Comments received from CAW October 2019
<b>B: BUILDINGS &amp; ENERGY</b>								
<b>B1: Reduce energy use in existing construction.</b>								
<i>Residential - Split into single family/ multifamily, owner/ renter</i>								
B1.1	residential energy performance ratings	Require energy performance ratings <u>and disclosures</u> 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			Emphasize benefits like higher resale value and lower maintenance costs for property owners/ landlords.		MR: Consolidate actions B1.1, B1.2, B1.3, B1.10, B1.11. Include an evaluation of solar exposure in residential energy performance ratings. CvD: Combine B1.1 and B1.2 and add "disclosure" < "YES"
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.	Adaptation Plan	Local government	remodeling professionals, PSE, energy auditors, real estate professionals	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.	MR: Consolidate actions B1.1, B1.2, B1.3, B1.10, B1.11 CvD: Combine B1.1 and B1.2 and add "disclosure"
B1.3	energy audit outreach	Partner with energy audit providers to promote residential energy efficiency retrofit programs, with a focus on post audit follow-through.	Cascadia Consulting	Local government	energy auditors	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		MR: Consolidate actions B1.1, B1.2, B1.3, B1.10, B1.11
B1.4	rental housing EE incentives	Create municipal regulations that provide a framework for conservation incentives in rental housing, such as through property tax breaks.	Cascadia Consulting/B Focus Group #1	Local government	Landlords, property managers, renters			CvD: Review and refine based on Thurston Thrives Housing Action Team strategy. Maintain investigation of property tax credit as a separate action. "Emphasis on rental" CAW: Also create incentives for owners.
B1.5	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	Local government	Landlords, property managers, renters			CvD: Review and refine based on Thurston Thrives Housing Action Team strategy.

B1.6	low-income weatherization	Provide home weatherization services for low-income residents.	Lacey CR2 plan	Community Action Council (already does this with federal funding)	Local governments (provide funding)	Existing program offered by Community Action Council. property tax reduction for reaching targets? Low cost loans or grants? Tax bill goes down, utilities bill goes down, direct capital infusion at rate of 85 cents/ square foot until 2026, then 1 dollar/ square foot penalty afterwards.		
B1.7	energy efficiency financing	Offer loans for residential energy efficiency improvements.	Lacey CR2 plan	Credit unions	Local governments, non profits, PSE, remodeling contractors. (Incentives provided by local government?). Thurston Energy or similar program	Status for credit union and loan office at point of sale to implement incremental energy efficiency. Realtors as partners? Marketing? rules for disclosing info? Require? Rebates and grants. Offer to do audit for free, maybe sell to apps like zillow and redfin as an promotional feature of their real estate services.		CAW: Work w/ local banks, Credit Unions for low or zero interest loans. Or loan loss reserves. Sliding scales?
B1.8	residential utility outreach	Expand utility outreach to residential electricity customers about the benefits of clean and efficient energy technologies and practices.	Adaptation Plan	PSE	Local government, equipment vendors, remodeling contractors, non profits	Community action campaign	How do we get people to participate in programs/ offers that already exist?	Combine with B1.9
B1.9	residential utility rebates	Offer additional utility rebates or bill credits to induce residents to buy and install energy-efficient appliances and other equipment.	Adaptation Plan	PSE	Local government, equipment vendors		How do we get people to participate in programs/ offers that already exist?	Combine with B1.8
B1.10	opportunity mapping	Identify concentrated neighborhoods with older buildings that would benefit from energy audits and upgrades.	B Focus Group #1	Local government	PSE, neighborhood associations, HOAs			MR: Consolidate actions B1.1, B1.2, B1.3, B1.10, B1.11 "Focus on low-income neighborhoods/ equity"
B1.11	efficiency of scale	Create group packages for efficiency upgrades within a target neighborhood or with a target audience.	B Focus Group #1					MR: Consolidate actions B1.1, B1.2, B1.3, B1.10, B1.11 "COMMUNITY AGGREGATED PURCHASE"

B1.12	landlord education	Educate landlords on options and benefits for improved energy efficiency.	B Focus Group #1					CvD: Review and refine based on Thurston Thrives Housing Action Team strategy.
<b>Commercial/Industrial</b>								
B1.13	commercial energy <del>performance ratings- benchmarking &amp; disclosure</del>	Require energy performance ratings for commercial structures <b>be disclosed</b> so that owners, tenants, and prospective buyers <b>are informed before making purchasing or rental decisions.</b>	Cascadia Consulting					MR: Consolidate actions B1.13, B1.14, B1.20 CvD: I would put a finer point on this one, what we are talking about here is energy performance benchmarking and disclosure, not just "ratings" how about replace the current item with: Energy Benchmarking - Require energy performance reporting for commercial buildings, to track and report building energy use annually to the city/county. HB 1257 did =,>250,000 S.F.: if possible action is outreach to qualifying buildings.
B1.14	commercial energy audits	Develop and adopt policies that require commercial properties to undertake an energy audit <b>at the time of sale</b> or during a substantial remodel.	Adaptation Plan			Review similar policy applied in Berkeley, CA		MR: Consolidate actions B1.13, B1.14, B1.20
B1.15	LED lighting	Expand the use of LED lighting in public- and private-sector buildings and infrastructure (e.g., street lights, traffic signals).	TRPC					CvD: Too prescriptive - refer to Section C406 of the Energy Code, which has a menu of energy efficiency measures that projects choose from to comply. Instead include a more generic education action like B5.13.
B1.16	commercial lights-out	<b>Promote</b> "lights-out" policy that encourages businesses to turn off their signs and other lights at night when they are closed.	Lacey CR2 plan					CvD: Too prescriptive - refer to Section C406 of the Energy Code, which has a menu of energy efficiency measures that projects choose from to comply. Instead include a more generic education action like B5.13.

B1.17	commercial utility outreach	Expand utility outreach to commercial power customers about the benefits of clean and efficient energy technologies and practices. <b>STET</b>	Adaptation Plan			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	
B1.18	cool roofs	Create <b>incentives</b> for the installation of reflective and/or vegetated roofs (ie, green roofs) to reduce building energy consumption and the urban heat island effect. <b>"incentives vs. require"</b>	Adaptation Plan			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.		<b>MR: Consider requiring commercial buildings over a certain size to use green roofs.</b>
B1.19	commercial utility rebates	Offer additional utility rebates or bill credits to encourage businesses to buy and install energy-efficient appliances and equipment.	Adaptation Plan			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.	
B1.20	performance standard	Set energy efficiency performance standards for commercial buildings with gross floor areas smaller than 50,000 square feet.	B Focus Group #1				Could this be done on a local level, or would it need to be done through State Building Code Council?	<b>MR: Consolidate actions B1.13, B1.14, B1.20 &lt;- "YES"</b>
B1.21	municipal building retrofits	Continue to identify and implement priority energy efficiency improvements in municipal buildings.	CAW	County, cities				<b>MR: New action. ESPC state program should be promoted to local government.</b>
B1.X		Unique financing mechanisms available to commercial buildings that are leased to the state.	CAW					
B1.X		Grants for energy efficient projects?	CAW					
B1.X		Mortgage product that rolls in audited EE recommendations	CAW					
<b>B2: Reduce energy use in new buildings.</b>								<b>MR: Subcategorize into Residential, Commercial, Single and Multifamily</b>

B2.1	IgCC	Adopt the International Green Construction Code (IgCC).	TRPC					MR: Rephrase to require the standard rather than adopt the standard as a voluntary framework.  CvD: Not a relevant action - push for amendments to state building codes instead.
B2.2	building energy goals	Establish energy goals/benchmarks (e.g., LEED) for new buildings, and adopt permitting practices and building code and/or design guidelines that support clean and efficient energy practices and technologies (e.g., passive design, rooftop solar panels and water heaters, electric vehicle charging stations). <b>Too vague</b>	Adaptation Plan			Mandate energy efficient performance standards at point of sale (carrot & stick) Develop ways to regulate and require implementation then reward and incentivize participation	Adapatation 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.	CvD: This is a catch-all goal that rolls several specific actions into one vague idea, in doing so makes it toothless. I would break it down and see if we don't have other recommendations in the list that cover all the elements of that item. It also suggest actions that are not under the authority of local jurisdictions to do, such as adopt building codes or design guidelines - depending on what it actually means - has to happen at the state level. If this is about cities setting targets, it needs to be stated differently. The word "benchmark" means a specific thing in energy efficiency - not synonomous with "milestone" or "measure". I guess we should discuss and try to improve this one as a group.
B2.3	green municipal buildings	Build local government facilities (e.g., the new Olympia City Hall and LOTT building) that demonstrate green building technologies and practices.	TRPC			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.		
B2.4	permitting incentives	Offer streamlined permitting or other incentives for projects that meet green building certification standards.	Rich Hoey			Review existing programs in Seattle and Shoreline	Need to differentiate between strategies for residential and strategies for commerical.	
B2.5	permit counter technical assistance	Recruit and hire green building specialists to provide technical assistance through the development process and assist with permitting	Rich Hoey			Review existing program in Tacoma		TC: Require green energy consultation for building permits.

B2.6 (T3.5)	EV-ready building code	Modify the residential building code to require builders of new single-family and multi-family housing units to install wiring, boxes and other infrastructure to charge plug-in electric vehicles.	B Focus Group #1	Thurston County, Lacey, Olympia, Tumwater				MR: Remove from B Section, keep in T section
B2.7	grid-connected appliances	Require <del>grid-connected</del> smart appliances in new construction, especially water heaters that control timing of demand.	B Focus Group #1					
B2.8	multifamily submetering	Require submetering for multifamily buildings so residents can track energy use.	B Focus Group #1					
B2.9	EE tax exemptions	Create a local property tax reduction or credit for buildings that meet an energy efficiency performance standard.	B Focus Group #1			Could operate similar to Open Space tax program		
B2.10	commercial EE recognition	Create program that recognizes energy efficiency leadership in new construction	B Focus Group #1			Brussels, Belgium exemplary building program/initiative		
B2.11	embodied carbon	Create incentives to increase the use of less carbon intensive building materials (mass timber, reduced concrete)	B Focus Group #1					MR: Rephrase: Restrict the amount of carbon intensive concrete (or other materials) that may be used in new construction.
B2.13	multifamily energy measures	Develop a business case financial model for multi-family developers to take energy efficiency and renewable energy measures.	CAW					
B2.14		Push state code improvements e.g. "zero energy building code by 2031"	CAW					
<b>B3: Increase the portion of energy used from renewable sources.</b>								
B3.1	community solar	Support the expansion of community solar.	TRPC			Olympia's McAllister well site could be a location to consider. Government buildings in area are old, find new ways for municipal buildings to be part of resiliency plans		MR: Requires UTC or legislative action - move to cross-cutting.
B3.2	clean energy bonds	Sell municipal bonds for local clean energy projects.				www.cleanenergyfinance.org		
B3.3	feed-in tariffs	Offer feed-in tariffs						MR: Requires UTC or legislative action - move to cross-cutting.
B3.4	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			Olympia's McAllister well site could be a location to consider		
B3.5	net metering production incentive	Increase incentive ratio for connecting residential solar from 1:1 to 2:1.	Thurston Thrives/B Focus Group #1			Program currently exists through PSE - is there a way to expand it or increase incentives?		MR: Requires UTC or legislative action - move to cross-cutting.

B3.6	solSmart	Pursue SolSmart designations and adopt solar friendly practices.	Rich Hoey					MR: Revise: Achieve SolSmart Gold designations. This program provides guidance for over 90 actions and technical assistance to improve solar implementation. "SolSmart" = DOE program
B3.7	utility-scale renewables	Promote Thurston County as a location to build more utility-scale renewable energy projects such as solar and wind farms.	Adaptation Plan			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.	
B3.8	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					
B3.9	solar-ready	Adopt local development code amendments to require solar-ready construction	B Focus Group #1	Olympia, Tumwater, Thurston County		See City of Lacey's adopted code.		
B3.10	on-bill financing	Provide additional utility incentives such as on-bill financing to support energy efficiency and renewable energy investments on buildings (e.g., rooftop solar). May require introduction of state legislation.	Adaptation Plan				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.	
B3.11	group purchasing	Develop a city-sponsored group solar purchasing program.	CAW	Cities		See "Solarize" program.		MR: new action.
B3.12	solar zoning	Review and amend zoning and development regulations to allow utility or community solar.	CAW	Cities, County				MR: new action.
<b>B4: Convert to cleaner fuel sources.</b>								
B4.1	natural gas to electric appliances	Educate business owners and residents on the options for electric appliances (e.g., furnaces, water heaters) and the importance of pairing electrification with the installation of renewable energy.	Cascadia Consulting/B Focus Group #1					MR: Rename strategy to Electrifica

B4.2	electric appliances in new construction	Update municipal code to require electric appliances in new construction.	Cascadia Consulting					
B4.3	heat pumps	Investigate options and costs for using geothermal heat pumps for heating and cooling.	Lacey CR2 plan					
B4.4	natural gas ban	Ban all new natural gas connections in new buildings.	CAW	Cities				MR: New action.
B4.5	natural gas fee	Create a utility fee for natural gas use.	CAW			Use to fund electrification or other programs.		MR: New action.
<b>B5: Cross-cutting actions</b>								
B5.1	local building code standards	Pursue legislative authority to allow more flexibility for local governments to set more ambitious residential energy codes.	TCAT					
B5.2	PACE	Assess whether PACE is still desirable and, if so, how local and state policymakers could pursue a legislative solution or state constitutional amendment.	TRPC-ST Plan					CvD: Actively support passage of commercial C-PACER legislation ( 2019-2020 bills SB 5730 / HB 1796), and assess whether residential PACE legislation, or authorizing other ways of financing residential energy efficiency improvements at scale are worth supporting.
B5.3	workforce development	Look for opportunities to link clean energy companies with vocational training facilities.	TRPC-ST Plan					Create training direct at low-income or marginalized.
B5.4	utility tax	Develop a local utility charge to fund clean energy projects.	B Focus Group #1					
B5.5	resiliency hubs	Identify municipal or other community buildings that should operate when grid fails, and retrofit or construct to this standard.	B Focus Group #1					
B5.6	property tax credit	Create a property tax credit for property owners who participate in energy efficiency.	B Focus Group #1					
B5.7	<del>solar ready buildings</del>	<del>Introduce solar ready requirements for new buildings.</del>	B Focus Group #1					MR: Duplicate of B3.9.
B5.8	demand pricing	Adjust fee scale to charge higher rates during high use times of the day (6 – 10pm)	B Focus Group #1	PSE				MR: Requires UTC or legislative action - move to cross-cutting.
B5.9	expedited permitting	Provide expedited permitting (pre-submissions, plan review, permit corrections, or inspections) for zero-net carbon buildings or other applications that dramatically increase energy efficiency.	CAW	Cities, county		See Shift Zero Policy Toolkit		CvD: New action. Redundant with B2.4
B5.10	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.	CAW	Cities, county		See Shift Zero Policy Toolkit		CvD: New action.

B5.11	reduced fees	Offer reduced permitting fees or rebates for zero-net carbon buildings or other applications that dramatically increase energy efficiency.	CAW	Cities, county		See Shift Zero Policy Toolkit		CvD: New action.
B5.12	code enforcement	Consistently enforce building energy codes during design, permitting, inspection, and issuance of certificate of occupancy.	CAW	Cities, county				CvD: New action.
B5.13	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					CvD: New action
B5.14	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					CvD: New action (See Seattle example)
B5.15	technical assistance	Provide technical assistance to permit applicants on high-performance green building methods, certification systems, and incentives; by either hiring/training dedicated municipal staff or contracting with outside	CAW	Cities, county				CvD: New action. Redundant with B2.5?
B5.16	exemplary buildings	Partner with public, private, non-profit and faith-based organizations, and leverage resources to create a Zero-Energy Building Challenge; then facilitate rapid deployment and public awareness of high-profile demonstration buildings	CAW					CvD: New action
B5.17	green building marketing	Promote green building incentives through public meetings, point-of-permit education, communications, media, etc.	CAW			Promote and celebrate both small and large successes by innovators and early adopters energy efficient and zero-net carbon building		CvD: New action
B5.18	innovative design	Allow administrative variances from code requirements for innovative designs, materials, and technology that support increased efficiency or renewable energy optimization, and water management.	CAW			Allow solar resource optimization through code departure for added shed/gable/roof height as well as awnings and roof space extending past setbacks and in some cases over public domain. Allow code departures for water catchment, water treatment and on-site water reuse		CvD: New action
B5.19	green stormwater infrastructure	Encourage the use of green stormwater infrastructure to treat all stormwater on site to the extent feasible	CAW					CvD: New action

#	short name	description	source	potential lead	potential partners	opportunities	barriers	Comments received from CAW October 2019
<b>T: TRANSPORTATION &amp; LAND USE</b>								
<b>T1: Set land use policies that support efficient transportation networks</b>								
T1.1	urban infill	<u>Increase</u> local government incentives (e.g., tax credits and fee waivers) to make urban infill and redevelopment projects more viable financially.	Adaptation Plan	Cities		Already state property tax		Where does money come from? More burden on tax. School impact. More infill strategies. No transportation money if not infill
T1.2	middle-density housing	Expand middle- and higher-density housing near the region's urban corridors and centers which feature public transit. Ensure such development includes options affordable to all sectors of	TRPC	Cities			First/ last mile	Goals vs. strategy mechanisms
T1.3	ecodistricts	Develop ecodistricts to manage energy, waste and other services at district scale	Thurston Thrives	Local government				
T1.4	climate-ready development and land use	Identify key accessibility components for 20-minute neighborhoods: e.g., schools, parks, grocery store, retail services, etc. Conduct a network gap analysis to determine needs. Identify steps to improve the number and distribution of 20-minute neighborhoods.	Cascadia Consulting	TRPC				what defines a center? 20-minute walk?
T1.5	clustered development	Encourage clustered developments to conserve farmland and forests	WSU	County/ all jurisdiction				applies to cross cutting, Agriculture & Forest/ ouside UGA
T1.6	climate-aware UGB	Amend the County Wide Planning Policies to require Climate analysis before expanding an Urban Growth Area boundary.	T Focus Group #1	TRPC/UGM Subsommittee	Cities, County			
T1.7	climate impact fee	Investigate <b>and implement</b> options for creating a regional impact fee structure that would incorporate climate impacts of new construction in urban and rural areas, which would be used to fund regional climate mitigation projects	T Focus Group #1	Cities, County				
T1.8	neighborhood centers T.14	Review and revise local development and zoning codes to allow and encourage the development of small neighborhood commercial and mixed use centers along key transportation corridors to reduce travel distances for basic errands.	T Focus Group #1	Cities, County		Wildwood commercial areas (Vics/Spuds) is an example		
T1.9	low-barrier housing	Facilitate ADUS and Low barrier housing	T Focus Group #1					define "low barrier housing"
T1.10	MFTE	Increase Multifamily Tax Exemption Programs. Look at impact fees, connection charges in areas to be more dense.	T Focus Group #1					Not schools! out-higher?
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.	T Focus Group #1					"R" red flag?
T1.12	corridor-centered development	Encourage housing and mixed-use development along designated corridors with tax incentives, fee structure, or other incentives.	T Focus Group #1	Cities, County		Create tax incentives		"R" red flag?

T1.13	downtown development	Encourage residential and commercial location downtown.	T Focus Group #1	Olympia				"R" red flag?
T1.14	development VMT caps	Require caps on VMT or vehicle trips for development on capitol campus and other government offices	T Focus Group #1	Olympia	State, Tumwater, Lacey	Leverage city location		cross cutting
<b>T2: Increase efficiency of the transportation system</b>								
T2.1	traffic analysis	Look for ways to incorporate greenhouse gas emissions calculations into traffic impact analyses to identify those land use proposals that will have a higher-than-average per capita impact on the region.	TRPC-ST Plan	Cities, County				Part of...?
T2.2	traffic signals	Coordinate traffic signals to minimize idling	Cascadia Consulting	Cities		Already done in some areas/jurisdictions - what areas have not?		
T2.3	anti-idling	Prohibit vehicle idling	Thurston Thrives				Hard to enforce	
T2.4	transportation efficiency outreach	Develop educational campaigns about benefits of properly inflated tires, including signage at gas stations and local businesses, and partnering with schools	Cascadia Consulting					"less driving?"
T2.5	bus anti-idling	Limit idling of local transit buses and school buses	Lacey CR2 plan					
T2.6	municipal anti-idling	Limit idling of municipal fleets	Rich Hoey					
T2.7	carpooling	Promote the use of car shares and carpools throughout the region. May include additional HOV lanes.	Lacey CR2 plan/T Focus Group #1					
T2.8	car shares	Work with third party electric or plug in hybrid car share programs to provide residents with an alternative to owning their own vehicles.	Cascadia Consulting					
T2.9	congestion pricing	Explore congestion pricing between Thurston and Pierce counties to encourage transit, vanpool, and carpool use on I-5 during peak commute periods. Target revenues to projects that enhance system efficiency.	TRPC-ST Plan					
T2.10	low-carbon vehicles	Continue to upgrade public fleets with cleaner, energy-efficient vehicles as technologies improve as a way to conserve dollars and reduce greenhouse gas emissions.	TRPC-ST Plan					
T2.11	roundabouts	Identify intersections where roundabouts could replace traffic signals to reduce idling.	Rich Hoey					
T2.12	ecodriving education	Include awareness of fuel economy in curriculum for new drivers.	T Focus Group #1					"C"
T2.13	carshare infrastructure	Consistent reserved parking spots for car share cars (ex. Corner spot)	T Focus Group #1					
T2.14	grid density	Increase street connectivity/ denser grids	T Focus Group #1			Focus on commercial areas, rather than residential	Neighborhood reaction to potential for increased traffic	
T2.15	TMA's	Develop transportation management associations (TMAs) within CTR framework.	T Focus Group #1			Lloyd district example in Portland.		
<b>T3: Increase the adoption of electric vehicles, and the infrastructure to support electric vehicles</b>								

T3.1	EV parking at buildings	Require developers of large commercial or residential buildings (XXXX square feet or larger) to dedicate a percentage of parking spots for plug-in electric vehicles and to install charging infrastructure.	TRPC (CALGreen)					Focus on Equity
T3.2	EV parking at municipal buildings	Allow free parking for electric vehicles at local government buildings.	Clean Technica and Greenway					Focus on Equity
T3.3	solar parking lots	Build photovoltaic panels atop porticos over surface parking spaces or structured parking garages	Thurston Thrives					
T3.4	EV charging at large buildings	Incentivize the installation of EV charging infrastructure at large government and commercial facilities that have lots of traffic (e.g., the Great Wolf Lodge, St. Martins Pavilion, IT transit stations, libraries)	TRPC					"T31"?
T3.5 (B2.6)	EV-ready building code	Modify the residential building code to require builders of new single-family and multi-family housing units to install wiring, boxes and other infrastructure to charge plug-in electric vehicles.	TRPC (CALGreen)			CALGreen drafted a model code, adapted from Lancaster, CA's municipal code.		
T3.6	utility EV partnerships	Support pilot programs and incentives for installing vehicle chargers at homes and businesses throughout the region.	TRPC-ST Plan	Cities, County	PSE			
T3.7	EV integration	Promote integration of electric vehicle infrastructure into residential building codes and public and private facilities, including allowances in zoning regulations for charging stations in locations where they are needed.	TRPC-ST Plan			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	EV infrastructure at public buildings	As new public facilities are built (buildings, park-and-rides, trailheads), consider requiring parking stalls and charging stations for electric vehicles. Ensure that the infrastructure is adequate to meet the growing number of electric vehicles.	TRPC-ST Plan					
T3.9	EV-aware building code	Jurisdictions <u>could consider requiring</u> EV charging infrastructure (e.g., wiring, parking) for new commercial and residential units.	TRPC-ST Plan			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>		
T3.10	EV fleets	Set policies and timetable for electrification of municipal and other governmental fleets.	Rich Hoey					
T3.11	EV education	Increase consumer awareness about the options and incentives for EV use.	T Focus Group #1					

T3.12	gas station colocation	Require EV stations at gas stations.	T Focus Group #1					
T3.13	utility battery ownership	Have utilities "own" the batteries and lease out to operators (all phone model)	T Focus Group #1					
T3.14	EV group purchase discounts	Create a group purchase program for residents to get deep discounts on Evs, other fuel efficient and alternative fuel vehicles.	CAW					TC: New action
T3.15	EV purchase incentives	Provide incentives for purchase of electric vehicles by Thurston County residents. Perhaps target those neighborhoods,	CAW					TC: New action
<b>T4: Increase the use of public transit</b>								
T4.1	increase transit	Increase local public transit routes/frequency. Expand transit service outside M-F 8-5 to serve services jobs, weekends.	Thurston Thrives/ T Focus Group #1					
T4.2	bus rapid transit	Expand bus rapid transit. Add transit only lanes in UGA on main routes/ BRT/ do more light priority areas. Add express bus connections between South Sound cities.	Rich Hoey/T Focus Group #1					
T4.3	rural transit	Increase public transit routes/frequency to rural areas. First/last mile transit solutions.	Public comment/ T Focus Group #1	TRPC/RT				Outside P T B A?
T4.4	fareless system	Explore options to charge no fares, either system wide or within certain zones	Rich Hoey					
T4.5	Sound Transit in Thurston County	Expand Sound Transit to Thurston County	TCAP					Explore HCT in Thurston County, connect to bus only lanes, WSDOT efficient, vanpool efficient
T4.6	student passes	Provide high school students free bus passes	Lacey CR2 plan					
T4.7	public transit benefits	Incentivize transit use by improving integration of payment between different transit systems and promote benefits such as pre-tax transit passes and rebates to employees who give up use of employer parking facilities.	Cascadia Consulting					
T4.8	alternative fuel buses	Work with transit agencies to improve fuel efficiency and alternative fuel buses by providing staff and financial resources to conduct feasibility studies.	Cascadia Consulting					DUP?
T4.9	fed-compliant alternatives analysis	Conduct an alternatives analysis, a specific type of analysis used to determine what types of high capacity transit the region may be able to support in the future, and which is required to apply for federal funding.	TRPC-ST Plan					
T4.10	rider education	Education	T Focus Group #1	coordinate		- Cost of trip -> trip changing		rolling classroom, bus buddies,
T4.11	transit insurance benefit	Negotiate with insurance companies to reduce insurance costs with transit pass usage	T Focus Group #1					
T4.12	neighborhood transit	Create program to contract with rural HOAs to offer neighborhood shuttle service	T Focus Group #1			"Ruby Ride"		

T4.13	park & ride	<del>Consider more</del> Expand park & rides/ <b>Park &amp; pools</b>	T Focus Group #1					encourages safety?
T4.14	transit & schools	School start/ stop times coordinate with transit. Transit passes for school outings (learn how to ride)	T Focus Group #1					"IT", Education
<b>T5: Increase use of alternative modes (bike, walking, carpool) and commute alternatives</b>								
T5.1	walk/bike infrastructure	Expand walking and biking infrastructure, including low-stress bicycle facilities (trails, protected bike lanes, bike corridors)	Thurston Thrives					
T5.2	barriers to transportation alternatives	Conduct a survey to understand barriers to carpooling, walking, and biking	Cascadia Consulting					
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					all organizations
T5.4	school drop-off alternative modes	Partner with school districts to develop a walking school bus and other school-related pedestrian + " ... ?" safety programs	Cascadia Consulting					"E + encourage" expand intercity transit to middle school?
T5.5	bike maps	Continue updating and promoting <del>map</del> data of bicycle routes showing connections to bike lanes	Cascadia Consulting			TRPC has a bike map, available as a paper map or mobile app: <a href="https://www.trpc.org/181/Online-Bike-Maps">https://www.trpc.org/181/Online-Bike-Maps</a>		
T5.6	park & pool	Covered/dry bike racks at <b>park &amp; ride</b> and/or carpool/vanpool pickups. <b>Safety</b>	T Focus Group #1					bike protection
T5.7	urban bikeshare	Introduce bike share or scooter share in urban areas of the	TRPC					
T5.8	teleworking	Incentivize or require teleworking options	Rich Hoey/T Focus Group #1			CTR programs		
T5.9	trail-centered planning	Zoning around trails – locate mixed use, worksites along trails	T Focus Group #1			Fones corridor – optimize industrial lands along existing trail		
T5.10	complete streets	Increase transportation grid density in residential and other areas by creating walking/ bike only connections that break up large	T Focus Group #1					
T5.11	car-free zones	Create car-free commercial zones	T Focus Group #1					
T5.12	bike transit	Increase capacity of buses to carry bikes	T Focus Group #1					
<b>T6: Other Transportation &amp; Land Use initiatives</b>								
T6.1	route-finding technology	Technology to help choose routes - Especially alt. modes	T Focus Group #1					
T6.2	Olympia ferry service	Support ferry service between Olympia and Seattle	T Focus Group #1					
T6.3	shore power	Port = shore power (needs standardization)	T Focus Group #1					
T6.4	ORCAA targets	Engage the Olympic Region Clean Air Agency in setting emissions reductions	T Focus Group #1					
T6.5	embodied carbon	Include embodied carbon in transportation decisionmaking.	T Focus Group #1					

T6.6	Olympia-Seattle rail	Support a Commuter rail connection between Olympia and Seattle	T Focus Group #1					
T6.7	transportation efficiency service	Create and fund a transportation efficiency service for local residents, which would help residents with assessment of their current transportation costs, cost saving potential by using cleaner forms of transportation, connection with vendors and financing as needed, and follow up with the resident's decision.	TCAT			This could be modeled on Thurston Energy's work with building energy efficiency improvements.		TC: New action

#	short name	description	source	potential lead	potential partners	opportunities	barriers	Comments received from CAW October 2019
<b>W: WATER &amp; WASTE</b>								
<b>W1: Increase the efficiency of water infrastructure + wastewater</b>								
W1.1	municipal energy efficiency	Increase the efficiency of municipal water infrastructure. This includes replacing pumps and other systems that consume large amounts of energy, conducting water and sewer pumping station efficiency audits, or repairing/reducing leaks. <b>Increase efficiency of sewage treatment systems.</b>	Adaptation Plan	Thurston County, Lacey, Olympia, Tumwater, <b>PSE, LOTT, Thurston PUD, Lead depends on system operator</b>	<b>PSE, LOTT</b>	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).	<b>energy audit</b>	<b>Pipe size and flow affects efficiency of distribution system. * [district heating]- use heat form wastewater treatment for building heating see 5.2</b>
W1.2	public water systems	Increase the efficiency of public water systems (Group A and Group B). This includes replacing pumps and other systems that consume large amounts of energy, or repairing/reducing leaks. <b>Separate waste water from drinking water.</b>	TRPC	Thurston PUD		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)	
W1.3	rural wells	Encourage/promote use of efficient technology when permitting wells to serve new rural development.	TRPC	Thurston County				<b>Policy that requires certain types of pumps- need more</b>
W1.4	gravity sewer	Maximize the use of gravity sewer rather than STEP systems or other systems that use more energy	WW Focus Group Meeting #1			<b>gravity effluent easier to treat</b>		<b>is there an enegy savings in one lift system versus multiple step. Trans element to removing waste.</b>
W1.5	operation timing	Invest in technology that adjusts the timing of operations to increase efficiency, such as variable-speed pumps.	WW Focus Group Meeting #1	<b>LOTT?</b>			<b>What is a variable speed pump?</b>	<b>old wells are on/ off. Plow paced UV treatment</b>
W1.6	lifecycle costs	Assess the energy use or energy savings of a project, and other lifecycle costs, as part of decisionmaking process.	WW Focus Group Meeting #1	Thurston County, Lacey, Olympia, Tumwater, Thurston PUD, LOTT		<b>LOTT does this already.</b>		<b>E.g. LOTT includes savings of equipment and life span when bidding. Add energy to "cycle cost" analyses.</b>
<b>W2: Reduce water consumption</b>								
W2.1	municipal water ordinance	Implement a water conservation ordinance at a municipal level	Lacey CR2 plan					<b>E.g. odd/ even watering days. Ratings for faucets and toilets. Happening at the state level. Different rates for time of day.</b>

W2.2	water audits	Conduct water audits of <b>city and county facilities.</b>	Ashland Climate & Energy Action Plan	Thurston County, Lacey, Olympia, Tumwater				are current standards efficient? - WS: great idea
W2.3	water conservation outreach	Expand water conservation outreach and incentive programs for residents and businesses.	Ashland Climate & Energy Action Plan					Low return on investment. low priority/ not necessary. Water utilities already do this. People not taking advantage of it.
W2.4	permitting	Review water use of proposed new development in local permitting process <b>to make sure most efficient.</b>	TRPC	Thurston County, Lacey, Olympia, Tumwater				Challenging for commercial b/c tenant changes. Infrastructure is proposed. Already done? Partially. How would this differ from what is already done?
W2.5	rural conservation -"2 actions"	Offer incentives for rural "exempt" wells to conserve water or convert to public water systems with available service connections.	Art Starry, Thurston County Environmental Health	Thurston County				Split into two actions. Public system more efficient.
W2.6	agricultural water use	Evaluate agricultural water use and develop program to buy back or reclaim excess capacity	Art Starry, Thurston County Environmental Health					
W2.7	low-water landscaping	Require or incentivize low water use landscaping for new development, and provide incentives for existing homes and businesses to convert existing landscaping to low water use.	Art Starry, Thurston County Environmental Health/WW Focus Group Meeting #1	Thurston County, Lacey, Olympia, Tumwater				
W2.8	integrated incentives	Integrate City incentives for water and wastewater reductions with PSE rebates for washing machines and dishwasher energy savings	Thad Curtz					
W2.9	tiered rates	Introduce and/or strengthen tiered rates for water and for sewer, increasing charges significantly as usage increases.	Thad Curtz			Most (all?) utilities		
W2.10	reclaimed water	Increate the use and availability of reclaimed water, especially where needed for irrigation	WW Focus Group Meeting #1	LOTT				
W2.11	watering schedule	Institute mandatory watering schedule that limits irrigation to certain days.	WW Focus Group Meeting #1	Thurston County, Olympia, Tumwater		Lacey has a current program		
W2.12	high users	Identify greatest water users and provide targeted technical outreach and support to reduce water consumption.	WW Focus Group Meeting #1	Thurston County, Lacey, Olympia, Tumwater				

W2.13	combined sewer	Separate combined sewer and stormwater system	WW Focus Group Meeting #1	Olympia, LOTT				Extra infrastructure
W2.14	plumbing codes	Improve plumbing codes to reflect new water conservation methods	WW Focus Group Meeting #1					State must adopt codes, regulation (plumbing)
W2.15	renter incentives	Develop and offer incentives for water conservation targeted to renters and multifamily residential units.	WW Focus Group Meeting #1					
W2.16	metering	Research ways to use metering to inform water consumers about use.	WW Focus Group Meeting #1					Something stronger.
W2.17	Gray water use	Require use of gray water in new buildings.	CAW		DOH			Would require DOH approval. CAW: New action
<b>W3: Reduce emissions from wastewater treatment operations</b>								
W3.1	nitrous oxide capture	Research options for nitrous oxide capture.	WW Focus Group Meeting #1	LOTT				
W3.2	methane capture	Capture methane from wastewater operations and use to generate power.	WW Focus Group Meeting #1	LOTT				
W3.3	hydrogen power	Investigate the use of hydrogen power as an alternative energy source for operations, including technical vehicles, or for distribution.	WW Focus Group Meeting #1	LOTT				Unlikely- too far in the future.

W4: Divert more solid waste from landfills								
W4.1	residential composting	Provide/expand programs for composting for residential units	Thurston Thrives			Master Recycler Composter Program (WSU)	how to offer in multifamily units	
W4.2	commercial composting	Provide/expand programs for composting at commercial sites	WW Focus Group Meeting #1			Thurston County Restaurant Rescue program		
W4.3	demolition waste	Promote alternatives to traditional building demolition such as relocation, deconstruction, and salvage through construction outreach programs.	Cascadia Consulting			Thurston County Solid Waste programs	Lack of markets for waste material	
W4.4	waste audits	Provide education and waste audits for business owners to increase compost and recycling rates and provide financial incentives.	Cascadia Consulting			Thurston County Solid Waste technical assistance, Food Rescue programs		
W4.5	gleaning	Support farm gleaning programs and recovery of edible yet unwanted foods from restaurants, grocery stores, and schools.	Thurston Thrives/AF Focus Group #1	Thurston County Food Bank				
W4.6	commercial recycling	Establish/expand business recycling programs, including capturing corrugated cardboard	Lacey CR2 plan			Focus on materials that have markets	Lack of markets for waste material	
W4.7	deconstruction ordinance	Create a building deconstruction ordinance, with requirements for deconstruction, reporting, inspections, and compliance tools.	Thad Curtz			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>		
W4.8	fruit teams	Create neighborhood fruit teams	Thad Curtz			<a href="https://www.portlandfruit.org/">Portland's Fruit Tree Project (https://www.portlandfruit.org/)</a> or <a href="https://www.cityfruit.org/join-us/about-us">Seattle's City Fruit (https://www.cityfruit.org/join-us/about-us)</a>		

W4.9	organics collection	Prohibit organics in residential landfill pickup to increase compost, reduce tipping fees, and reduce landfill methane.	Thad Curtz			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.		
W4.10	waste less food program	Expand existing Waste Less Food program					Increasing education/outreach and programming drives up consumer rates, which decentivizes participation	
W4.11	regional recycling	Develop a regional recycling facility and build local markets for materials	WW Focus Group #1			Longview Paper Mill - takes all mixed grade paper		
<b>W5: Generate energy from waste sources</b>								
W5.1	waste-to-energy	Generate additional energy from waste products (e.g., woody biomass and sewage) in Thurston County.	Adaptation Plan			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 emmisions in burning?	Look more at waste stream in European model. Also- reduce consumption first
W5.2	heat exchange	Look into heat exchange potential of embedded energy in wastewater and/or reclaimed water	Rich Hoey			Similar to district heating idea.		
W5.3	kinetic energy	Evaluate feasibility of utilizing kinetic energy from transport of water and wastewater through piping networks.	Art Starry, Thurston County Environmental Health					
W5.4	FOG waste	Evaluate fesibility of program to digest Food, Oils, and Grease (FOG) and/or commercial food waste at LOTT to recover energy and increase methane production.	Thad Curtz/WW Focus Group #1	LOTT	local restaurants, local schools			
W5.6	dry anaerobic digesters	Build a dry anaerobic digester with associated combined heat and power facility to process organics and agricultural waste	Thad Curtz/WW Focus Group #1					

W6: Reduce consumption of carbon-intensive goods and services								
W6.1	emissions monitoring	Determine and implement effective ways to track consumption based emissions	Ashland Climate & Energy Action Plan					Portland, OR doing something similar.
W6.2	meat reduction	Encourage plant-rich diet/less meat consumption	Thurston Thrives					
W6.3	collaborative consumption	Support "collaborative consumption" community projects like tool libraries and repair cafes, through mini-grant programs.	Cascadia Consulting					
W6.4	environmentally preferable purchasing policy	Develop and maintain information about environmentally preferable and recycled products recommended in the municipal environmentally preferable purchasing policy for use by departments, agencies, consultants and contractors whenever possible.	Cascadia Consulting					
W6.5	product stewardship	Actively support new state and national 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	Cascadia Consulting					
W6.6	supply chain	Support local businesses in reducing the carbon intensity of their supply chains	Multnomah County Climate Action Plan					
W6.7	water fill stations	Install more water bottle filling stations at public buildings, especially at parks and recreational facilities.	Cascadia Consulting					
W6.8	reuseable takeout	Amend health code to allow reuseable take out containers.	WW Focus Group #1					
W6.9	single-use ban	Ban single use plastics (e.g. straws, water bottles)	WW Focus Group #1	Thurston County, Lacey, Olympia, Tumwater			consumer behavior	
W7: Reduce emissions of solid waste operations								
W7.1	waste route efficiency	Utilize one side of the street pickup	Thad Curtz			Technology exists: Hybrid trucks and powered by CNG. Currently done by Olympia; is this done by other providers?		TC: Belongs in Transportation section.
W7.2	waste service areas	Eliminate areas served redundantly by municipalities and private waste collection, such as the Tumwater/Olympia border south of the high school, by trading service areas	Thad Curtz					

W7.3	electrification	Electrify garbage trucks	Thad Curtz			<p>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></p> <p>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></p> <p>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></p>		
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#	short name	description	source	potential lead	potential partners	opportunities	barriers	Comments received from CAW October 2019
<b>A: AGRICULTURE &amp; FORESTS</b>								
<b>A1: Reduce emissions from agricultural practices.</b>								
A1.1	manure management	Provide education and incentives (grants, loans, technical assistance) to support manure management to reduce methane and nitrous oxide emissions, such as covered manure storage facilities, manure application practices.	Cascadia Consulting	TCD, WSUx		Existing outreach program through the Thurston Conservation District	Funding for staff and BMP implementation	
A1.2	nutrient management	Provide education and incentives to manage fertilizer use to reduce nitrous oxide emissions.	TRPC	TCD			Funding for staff and BMP implementation	
A1.3	waste-to-energy	Investigate opportunities for small-scale energy production, such as capture and combustion of methane, anaerobic digestion, biofuel and biogas production.	TRPC	WSUx				
A1.4	water use	Create/provide incentives to install more efficient irrigation systems.	TRPC	TCD		Drought grant funding through Washington State Conservation Commission	Funding for staff and BMP implementation	
A1.5	BMP audits	Incorporate sustainability audits into conservation/farm plans to identify ways to reduce energy use and promote best management practices (BMPs).	Cascadia Consulting/ TRPC	TCD		Washington State Conservation Commission (WSCC) cost-share; build on existing checklists and processes	Funding for staff and BMP implementation	
A1.6	feed additives	Promote the use of methane-reducing livestock feed additives, such as seaweed derivatives.	AF Focus Group #1	TCD				
<b>A2: Support agricultural practices that sequester carbon.</b>								
A2.1	regenerative agriculture	Expand programs to educate farmers about regenerative agricultural practices, such as low-till, no-till.	TRPC	TCD, WSUx	TESC POP program, St Martins	Pilot programs with incentives for farmers; Expand regenerative Ag training programs at insitutions of higher learning to support a new generation of famers 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;	

A2.2	soil management	Increase organic matter content and water retention in soils within urban and agricultural settings. (Integrating perennials into cropping systems such as grass forages, cover cropping, compost application and conservation tillage help improve water infiltration and storage, as well as increase soil organic matter content and carbon sequestration)	Adaptation Plan	TCD, Agricultural community, residents		Soil Health program in early 2020 (TCD)	Funding for staff and BMP implementation	
A2.3	biochar	Encourage the practice of amending soils with biochar through support of local enterprises that produce biochar.	TRPC	Agricultural community, residents				
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	WSUx				
A2.5	silvopasture	Develop education programs and incentives to encourage farmers to incorporate tree planting on farms (e.g., silviculture, silvopasture, agroforestry, treecropping).	AF Focus Group Meeting #1	TCD				
<b>A3: Support production of less carbon-intensive agricultural products, and local food markets.</b>								
A3.1	farmland preservation	Support farmland preservation through policies, incentives, and other innovative strategies to maintain production capacity and increase self-sufficiency.	AF Focus Group meeting #1	TCD	SSFSN		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	TESC	TEDC, WSUx, Senior Svs South Sound/SSFSN		Lack of understanding of current capacity to meet local market needs	
A3.3	processing and distribution	Rebuild regional capacity to process and distribute regionally-grown agricultural products to local markets (including restaurants, supermarkets, jails, schools, colleges, and hospitals).	AF Focus Group meeting #1	TEDC	WSUx, SSFSN Infrastructure/Processing WIT, EDC	Regional food can be price competitive, existing EDC programs	Distribution is inefficient locally with many small famrs spread out	
A3.4	Local Food Hubs	Provide political and financial support (through grants, loans, etc.) to develop a local food hub that works with regional producers to aggregate agricultural products from multiple farms in the types and volumes sufficient to meet demand of institutional buyers. A food hub would aggregate, store,	AF Focus Group meeting #1	TEDC	TESC, SSFSN Infrastructure/Processing WIT			
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	SSFSN Infrastructure/Processing WIT	EDC	Existing EDC programs, WSDA grants to food banks to purchase and contract with local farms	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		WA-DOH, Olympia FM, WSUx SNAP program			

A3.7	hemp production	Support industrial hemp production.	Public comment			Soil testing program		"RED FLAG"
A3.8	woody crops	Grow woody perennial crops that help conserve water, store carbon, and provide other ecosystem services.	Adaptation Plan	Residents, agricultural community, TCD				
<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	TRPC, 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.	A big barrier right now is the lack of Conservation Futures funding. This has put a huge damper on the ability of TC land trust (CLT, NLT, SSCFLT) to get grant match to fund projects.

A4.2	conservation easements	Create dedicated local funding sources for agricultural and forestry conservation easements, to address local match requirements.	Cascadia Consulting		land trusts, TCD	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	Laurence Reeves, Capitol Land Trust: The lack of Conservation Futures funding has hit the conservation of working lands particularly hard, given the ONLY funding sources for working lands CEs (WWRP and NRCS) require local matching funds. Our working lands efforts have ground to a halt due to the lack of CF funding. I think the best answer is to have more and better funding opportunities for working lands (no local match requirement, lower match requirement, due diligence costs paid for, etc)
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	Cities, county				
A4.4	investment bundling	Create a system for bundling small monetary contributions to invest in collective conservation easement or land purchases.	AF Focus Group meeting #1					City Tree/ forest credits - organization
A4.5	clearing limits	Add clearing limits (usually expressed as percentage) for large lot development in county and city zoning codes.	AF Focus Group meeting #1	Cities, county				
A4.6	stream buffers	Use carbon sequestration as a justification for increasing the required stream buffer size.	AF Focus Group meeting #1	Cities, county		collaborate with salmon preservation efforts		
A4.7	code enforcement	Increase monitoring and enforcement of City and County zoning and other regulations that preserve sensitive areas.	AF Focus Group meeting #1	Cities, county				
<b>A5: Manage forests to sequester carbon.</b>								
A5.1	reforestation & afforestation research	Identify priority areas where reforestation and afforestation may have carbon reduction benefits.	Thurston Thrives	City forest, carbon organization, USFS	TCD (Forest RCPP)			
A5.2	community forests	Support and expand community forests that consider carbon sequestration in their management goals.	TRPC			Opportunity to learn from existing Nisqually Community	Require extensive up front work with community to develop vision and	
A5.3	long-rotation timber	Lengthen the rotation of timber harvesting in Thurston County.	TRPC	DNR	Weyerhaeuser		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	TESC			credits must be valuable enough for commercial forester to buy in	

A5.5	species mix	Develop species mixes for reforestation or aforestation that result in high-density carbon sequestration.	AF Focus Group meeting #1					
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	state lobby	Lobby Washington State legislature in support of bills that positively affect carbon balance on state-managed lands.	AF Focus Group meeting #1	TRPC citizen groups, TCAT				
A5.8	slash-to-biochar	Process slash to biochar and apply in forestry or agricultural settings.	AF Focus Group meeting #1					ORCAA wouldn't support
A5.9	slash-to-fuel	Utilize slash as fuel in forestry equipment.	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					Expand action item to include "wood products" in general.
A5.11	carbon in the CAO	Authorize carbon as a justification for critical areas ordinance protection.	AF Focus Group meeting #1					
<b>A6: Reduce emissions from the urban landscape.</b>								
A6.1	low-maintenance landscaping	Promote the planting of low-maintenance landscaping.	Adaptation Plan		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.	Cascadia Consulting	Cities, county	Thurston Conservation District			

A6.3	urban tree canopy	Create incentives for expanding the region's urban tree canopy.	Adaptation Plan	Cities, county	nonprofits, neighborhood s, residents, property owners, K-12, <b>Thurston Conservation District</b>	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	Strengthen tree protection in City ordinances.	AF Focus Group meeting #1					KS: Prohibit topping as a pruning option! Create guidance and rules related to replacement of failed street and commercial landscaping trees; when dead trees are removed they are rarely replaced with new trees, particularly in commercial landscapes. When commercial properties change hands, new owners often remove existing trees to improve signage visibility and don't replace them.
A6.5	municipally-controlled canopy	Maximize tree canopy on City-owned or City-controlled land.	AF Focus Group meeting #1					
A6.6	tree-aware zoning	Develop zoning setbacks and similar provisions designed to provide room for and encourage large trees.	AF Focus Group meeting #1					
A6.7	adaptation	Adapt infrastructure to conform to the needs of growing trees, rather than removing the trees.	AF Focus Group meeting #1					KS: A critical potential improvement but complex. Involves direct work with public works/engineering community , which is often resistant; would impact sidewalk design, line of sight rules for roadways, and stree tree pit size standards at a minimum. Could also influence location of below-ground utilities etc.

A6.8	street stocking standards	Set minimum stocking standards for street trees.	AF Focus Group meeting #1						KS: Include clear replacement requirements with a timeline for situations where trees fail.
A6.9	direct cooling	Combine direct cooling value (urban heat island mitigation) with carbon sequestration value when evaluating urban tree management.	AF Focus Group meeting #1						
A6.10	landscape regulation	Land use regulations for landscaping - Shade in summer/ sun in winter o energy comp - use of native landscaping in development (less water/ less energy)							KS: Be cautious of using "native plants" only in any requirements. Use of both native species and appropriate, non-invasive drought-tolerant plants that aren't native in landscapes is important (echoing A6-1). Many natives grow larger than desired for commercial sites and trigger extra maintenance, which can use more energy. Emphasizing use of both natives and drought tolerant plant choices makes the most sense.
<b>A7: Increase carbon sequestration in marine ecosystems.</b>									
A7.1	marine vegetation	Protect and enhance marine vegetation such as eelgrass to improve water quality, sequester, and improve fish habitat and survival.	Adaptation Plan	county, state, federal, port, tribes	nonprofits, neighborhoods, residents, agricultural community, property owners	Squaxin Island Tribe research/project in Oakland Bay; decisions around Capitol Lake; USGS			

#	short name	description	source	potential lead	potential partners	opportunities	barriers	Comments received from CAW October 2019
<b>G: CROSS-CUTTING (GENERAL)</b>								
<b>G1: Education &amp; Outreach</b>								
G1.1	educational website	Develop user-friendly website and outreach materials that educates residents on how to reduce GHG emissions in their lives and homes and locate resources to help them implement measures.	Cascadia Consulting					
G1.2	consumption	Develop and run community based social marketing/educational program to reduce consumption and help consumers become better informed about options for reducing their carbon footprint in collaboration with schools, local media, service organizations, etc.	Thad Curtz			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	Increase OSPI ClimeTime program funding	G Focus Group #1					
G1.4	Career Connects	Increase green jobs workforce share of budget in Career Connects WA program	G Focus Group #1					
G1.5	externalities illumination	Have external costs appear on communications about public projects.	G Focus Group #1					
G1.6	money & health	Make sure public communications on climate change make connections to issues of money and health.	G Focus Group #1					
G1.7	social research	More social studies to develop effective marketing, educate = behavior change	G Focus Group #1					
G1.8	outreach on clean energy	Hire subject matter experts or direct staff to conduct outreach and community education on climate change and the benefits of clean and efficient energy technologies and practices.	CAW					TC: New action.
G1.9	staff training	Provide Professional technical and skill training for staff related to climate mitigation. Educate staff on the local sources of GHG emissions, the importance of local climate action, the TCMP, and effective community measures related to their job duties.	CAW	Cities, county				TC: New action derived from Adaptation Plan G-01.
<b>G2: Green Economy</b>								
G2.1	cleantech park	Attract and retain clean energy economy companies (makers, installers, etc.) through recruitment efforts (EDC) and creation of a "cleantech" business park.	TRPC					
G2.2	sustainable businesses	Develop a green guide for area business leaders.	Cascadia Consulting					
G2.3	clean economy roundtables	Organize and facilitate roundtables with business leaders focused on clean economy strategies	Cascadia Consulting					
G2.4	technical clearinghouse	Have TRPC or another entity function as a clearinghouse for technical roadblocks to cleantech development.	G Focus Group #1					
<b>G3: Workforce Development</b>								
G3.1	training diversification	Diversify workforce training (to apply to a wider variety of green jobs)	G Focus Group #1					

G3.2	jobs leadership	Approaches for large entities to generate green jobs (e.g. through an energy plan)	G Focus Group #1					
G3.3	renewables training	Provide job training for employment in renewable energy industry.	CAW			Cities should pursue grants to support training through Economic Development programs.		MR: New action
<b>G4: Financing Tools</b>								
G4.1	tax benefits on externalities	Provide tax benefits for demonstrated reductions in normally externalized costs.	G Focus Group #1					
G4.2	cost-sharing	Partner and share costs of expertise. e.g. Green Building Officer.	G Focus Group #1					
G4.3	green energy bond	Research feasibility of green energy bond.	G Focus Group #1			San Diego's- green energy bond? - Could be a model for other public entities for energy retrofits		
G4.4	grants	Identify and pursue grant opportunities to fund renewable energy projects	CAW	Cities				MR: New action
G4.5	neighborhood grants	Create and support competitive grants for neighborhood clean energy and energy efficiency projects.	CAW					TC: New action.
<b>G5: Data and Monitoring</b>								
G5.1	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	TRPC	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.		
G5.2	performance measures	Develop and publicize performance measures to show how community action is achieving established goals.						
G5.2	land use emissions	Include emissions from land use change in future emissions inventories.	Cascadia Consulting	TRPC		Review King County's approach to including in their inventory.		
G5.3	other emission sources	Consider including additional sources and sectors in future emissions inventories, including: ozone-depleting substitutes, off-road vehicles, and out-of-county consumption-based emissions, including from air travel and supply chains.	Cascadia Consulting, TCAT	TRPC		Review Cascadia and TCAT memos for suggestions on examples.		
G5.4	vulnerable populations	Identify socio-economically vulnerable areas that are most exposed, and understand their vulnerabilities (e.g. access to transportation, access to A/C, proximity to cooling centers, etc.), and develop a plan to address these vulnerabilities.	Cascadia Consulting					
G5.5	green building tracking	Monitor the use and effects of green building incentives by target audiences by tracking projects and projected energy savings, and report the results with recommendations for improvements in policies or programs	CAW					CvD: New action.
G5.6	social cost of carbon	Adopt a policy that requires the development and use of a "social costs of carbon emissions" number to factor into local government zoning, development, construction and transportation decisions.	TCAT					TC: New action.
<b>G6: State/National/International Policy</b>								

G6.1	UTC presence	Show up at UTC meetings.	G Focus Group #1					
G6.2	solar-ready building code	Support amendment to state building code requiring solar-ready construction.	CAW					CvD: New action.
G6.3	net-zero building code	Request State Building Council and State Legislature set goal to require net-zero energy use in all new buildings by the 2031 residential code cycle, and support amendments to state building code each 3-year cycle to meet that goal.	CAW					CvD: New action.
G6.4	utility advocacy	Support PSE, the legislature and Utilities and Transportation Commission in implementing SB 5116, which requires a shift to clean electricity. Adopt and communicate policy statements and positions which call for rapid conversion to clean energy in the power supply which serves Thurston County.	CAW					TC: Modified from TCAT early actions list.
G6.5	legislative agenda	Prioritize 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.	CAW					TC: TCAT early action list
<b>G7: Miscellaneous</b>								
G7.1	crowdsourcing	Launch an idea-crowdsourcing tool like "The Gamechanger."	G Focus Group #1					
G7.2	telecommuting infrastructure	Include connections and other infrastructure to support telecommuting, in new housing.	G Focus Group #1					
G7.3	interlocal coordination	Don't wait for the state! Collaborate among the four participating jurisdictions, including possibly coordinated	G Focus Group #1					
G7.4	tribal innovation	Look to tribes for regulatory innovations in those areas having legal roadblocks elsewhere.	G Focus Group #1					