

MEMORANDUM**MEMBERS:**

City of Lacey
City of Olympia
City of Rainier
City of Tenino
City of Tumwater
City of Yelm
Confederated Tribes of the
Chehalis Reservation
Nisqually Indian Tribe
Town of Bucoda
Thurston County
North Thurston Public Schools
Olympia School District
Tumwater School District
Intercity Transit
LOTT Clean Water Alliance
Port of Olympia
PUD No. 1 of Thurston County

ASSOCIATE MEMBERS:

Lacey Fire District #3
Puget Sound Regional Council
The Evergreen State College
Thurston Economic
Development Council
Timberland Regional Library

TO: City of Olympia Land Use & Environment Committee

FROM: Karen Parkhurst, Programs & Policy Director
Michael Burnham, Senior Planner

DATE: June 21, 2018

SUBJECT: Regional Climate Mitigation Plan overview and recommended emissions baseline and targets

PURPOSE: The purpose of this memorandum and its accompanying presentation and resolution is two-fold:

- 1) Provide an overview of Phase 1 of the Regional Climate Mitigation Plan that Olympia, Lacey, Tumwater, and Thurston County began this spring;
- 2) Recommend that Olympia and its partner jurisdictions adopt the following emissions-reduction targets to guide the plan's Phase 2: Reduce communitywide greenhouse gas emissions **45 percent below 2015 levels by 2030** and **85 percent below 2015 levels by 2050**.

Requested Action:

Olympia staff members request that the Olympia City Council adopt a resolution [*Attached*] that affirms the City will pursue the recommended emissions-reduction targets. Staff members intend to integrate the targets into a Phase 2 scope of work and present it, along with an interlocal agreement to continue work on the Regional Climate Mitigation Plan, to the Olympia City Council later this year.

Overview of Mitigation Plan:

In April 2018, Thurston County, Olympia, Lacey, Tumwater, and the Thurston Regional Planning Council (TRPC) signed an interlocal agreement to complete Phase 1 of a Regional Climate Mitigation Plan. Phase 1 — a 10 week effort — includes the following components:

- Assess each jurisdiction's existing climate policy with an emissions-reduction goal.
- Recommend a common, communitywide emissions baseline and targets for the 21st century.
- Identify mitigation actions each jurisdiction has adopted and/or implemented.
- Develop a draft interlocal agreement and scope of work for Phase 2, which would include a public-engagement strategy, assessment of actions sufficient to hit shared emissions targets, and implementation strategies.

The Regional Climate Mitigation Plan is a companion to the Thurston Climate Adaptation Plan that TRPC adopted in January 2018. The adaptation plan includes 91 actions to help the region prepare for and adjust to climate impacts. For information about the two planning efforts, visit www.trpc.org/climate.

Subsequent pages of this memo provide background about the recommended emissions-reduction targets.

Overview of Emissions Recommendation:

Per Task 2 of the Regional Climate Mitigation Plan's Phase 1 scope of work, TRPC: reviewed and summarized climate policies adopted by Thurston County, Olympia, Lacey and Tumwater; assessed the current state of emissions inventories within Thurston County; and, summarized — for the sake of comparison — emissions-reduction targets recommended by international climate scientists and adopted by state and local governments.

Based on this foundational work, a project team composed of staff members from each jurisdiction (Project Team) agreed to recommend that each policymaker body adopt common emissions-reduction targets of **45 percent below 2015 levels by 2030 and 85 percent below 2015 levels by 2050.**

This would put all four jurisdictions on the same pathway to hitting the emissions level associated with the regionally adopted Sustainable Thurston plan's science-based, mid-century target (about 400,000 metric tons of carbon dioxide equivalent), as well as ensure that the jurisdictions do their part to keep the global average temperature from rising more than 2° Celsius above pre-industrial levels by the century's end. This is what scientists conclude is needed to avoid the most severe climate impacts.

Comparison of Current State and Local Emissions Targets:

The Sustainable Thurston plan — adopted by TRPC's council in late 2013 and accepted by four jurisdictions in early 2014 — includes a priority goal to “move toward a carbon-neutral community.” This goal includes supporting emissions-reduction targets for the Thurston County region (i.e., all incorporated and unincorporated areas of Thurston County):

- **Achieve a 25% reduction of 1990 greenhouse gas levels by 2020;**
- **Achieve a 45% reduction of 1990 greenhouse gas levels by 2035; and**
- **Achieve an 80% reduction of 1990 greenhouse gas levels by 2050.**

The Sustainable Thurston targets are science-based. The Intergovernmental Panel on Climate Change's Fourth Assessment Report¹, published in 2007, concluded that the United States and other industrialized countries would need to reduce emissions in the range of 80-95 percent from 1990 levels by 2050 to stabilize atmospheric concentrations of carbon dioxide and other heat-trapping gases at 450 parts per million. IPCC scientists contend that hitting the stabilization target, expressed as 450 ppm CO₂eq, will “likely” keep the global average temperature from rising 2° Celsius (3.6° Fahrenheit) above pre-industrial levels (i.e., before 1870) by the end of this century.²

The United Nations Framework Convention on Climate Change's “Paris Agreement,” which the United States and other nations brokered in late 2015, includes the 2°C target but also stresses the importance of pursuing a more aggressive 1.5° C (2.7° F) target to mitigate the dangerous climate change risks.³

Since 1990, Thurston County, Olympia, Lacey, and Tumwater have adopted, by plan or resolution, greenhouse gas emissions-reduction goals and targets that vary widely.

¹ IPCC (2007). *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

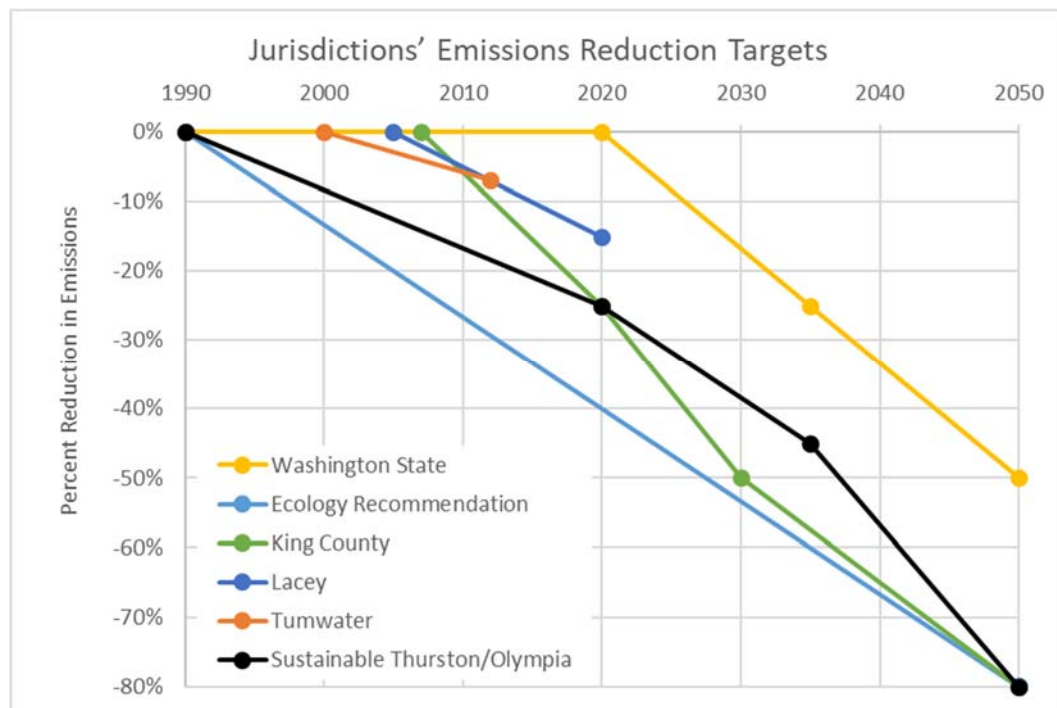
² IPCC (2014). *Summary for Policymakers. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY.

³ Figueres, C. (2015). Proceedings from the United Nations Framework Convention on Climate Change Conference: The Paris Agreement., *Article 2, Section 1.*

- **Thurston County:** Move toward zero emissions from Thurston County government operations by an unspecified date. [[Resolution No. 14395](#)]
- **Olympia:** Hit Sustainable Thurston's regional emissions targets (communitywide), as adopted in the Olympia Comprehensive Plan [[Olympia Comprehensive Plan, Goal PN8.1](#)]
- **Lacey:** Reduce municipal and communitywide emissions to 15 percent below 2005 levels by 2020. [[Lacey Comprehensive Plan, Environmental Element](#)]
- **Tumwater:** Reduce municipal emissions to 7 percent below 2000 levels by 2012, and maintain that level beyond 2020. [[Tumwater Climate Action Plan](#)]

Washington's 2050 emissions target, adopted in 2008, is 50 percent below 1990 levels, or 70 percent below the State's emissions that year; the law also set interim targets for 2020 and 2035.⁴ In 2016, the state Department of Ecology recommended revising the targets (e.g., to 80 percent below 1990 levels by 2050) so they're closer to what the IPCC suggested.⁵ Comparatively, King County has adopted the following targets to reduce emissions from a 2007 baseline: 25% by 2020; 50% by 2030; 80% by 2050.

Assessment of Local Emissions Inventory:



Thurston County's (all incorporated and unincorporated areas) emissions total in 1990 was about 2.197 million metric tons of carbon dioxide equivalent (MMT_{CO2e}), according to an estimate by the Thurston Climate Action Team (TCAT)⁶. The nonprofit calculated the figure by using U.S. Census Bureau population data and a 2007 Washington Department of Ecology estimate of per capita emissions.⁷ Using

⁴ RCW 70.235.020(1)(a) <http://apps.leg.wa.gov/rcw/default.aspx?cite=70.235.020>

⁵ Rees, S. (2016). *Washington Greenhouse Gas Emissions Reduction Limits*. Washington Department of Ecology. Olympia, WA. <https://fortress.wa.gov/ecy/publications/SummaryPages/1601010.html>

⁶ Thurston Climate Action Team (2014). *Estimating Greenhouse Gas Emissions and Targets in Thurston County*. White paper retrieved on May 1, 2018, from Thurston Thrives website: http://www.co.thurston.wa.us/health/thrives/pdfs/EstimatedGreenhouseEmissions_021816.pdf

⁷ The per capita Thurston County emissions figure does not include emissions associated with producing jet fuel and smelting aluminum, industrial activities that occur in other parts of the state but not in Thurston County.

the 1990 baseline figure, Thurston County would need to reduce its emissions to 0.439 million MTCO₂e to hit the 2050 Sustainable Thurston target [80% reduction of 1990 levels].

TCAT's emissions inventories for the years 2010-2016 incorporate energy, waste, agricultural, and transportation data from Puget Sound Energy (PSE), TRPC, and other sources, so these recent inventories provide more accurate figures for the Thurston County region's annual greenhouse gas emissions than the 1990 estimate. For this reason, the Project Team agreed that the jurisdictions should use a recent baseline — either 2010 or 2015 — instead of a 1990 baseline, yet still aim for the emissions level associated with Sustainable Thurston's 2050 target. This required revising the percentage reduction targets for the 2030s and 2050 from a new baseline year, as well as eliminating the near-term 2020 target because of its infeasibility.

Assessment of Alternatives:

TRPC prepared two options — “A” and “B” — for the the Project Team's consideration. Both options are shown below and on the graph and table on the following page.

Option A:

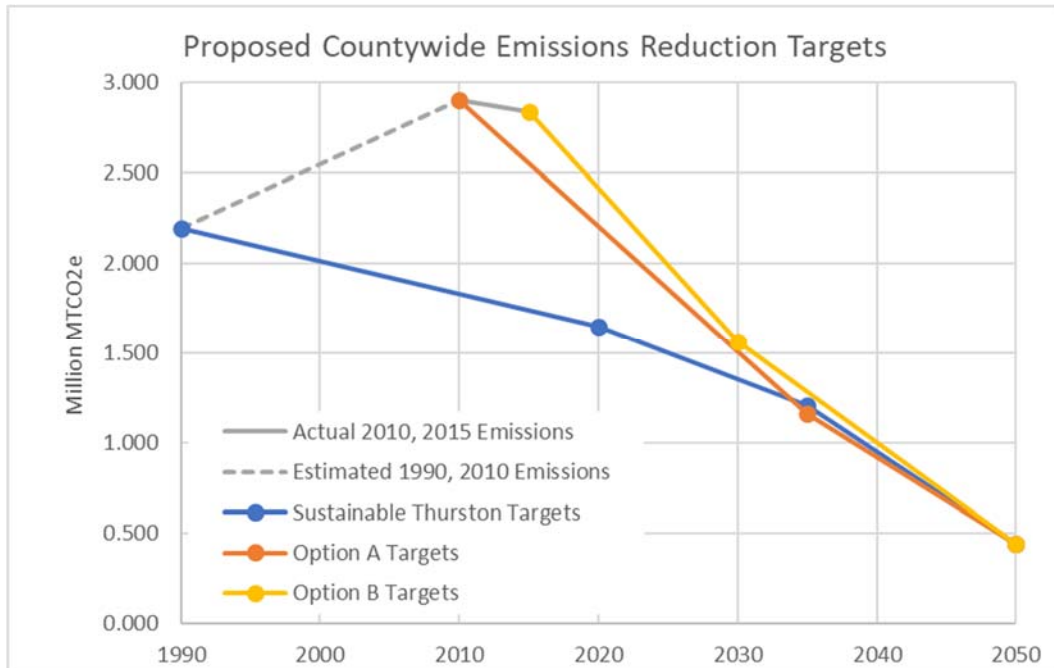
- **Achieve a 60% reduction of 2010 greenhouse gas levels by 2035**
- **Achieve an 85% reduction of 2010 greenhouse gas levels by 2050.**

Option B:

- **Achieve a 45% reduction of 2015 greenhouse gas levels by 2030**
- **Achieve an 85% reduction of 2015 greenhouse gas levels by 2050.**

Both options would have the jurisdictions aim for Sustainable Thurston's 2050 emissions target of roughly 400,000 MTCO₂e, as well as do their part to keep the global average temperature from rising more than 2°C by the century's end. The Project Team recommended Option B, however, because it incorporates the 2030 target year and 2015 baseline year that Olympia and TRPC included in “carbon wedge” analyses commissioned in 2017. Carbon wedge analyses could be used during Phase 2 to measure the cumulative impact of existing and proposed federal, state and local mitigation policies.

The following graph and table compare the two options with the Sustainable Thurston targets.



	Sustainable Thurston 1990 Baseline		Option "A" 2010 Baseline		Option "B" 2015 Baseline	
	Million MTCO ₂ e	% reduction from 1990	Million MTCO ₂ e	% reduction from 2010	Million MTCO ₂ e	% reduction from 2015
Baseline Target	2.197	0%	2.905	0%	2.840	0%
2020	1.647	-25%	-	-	-	-
2030	-	-	-	-	1.562	-45%
2035	1.208	-45%	1.162	-60%	-	-
2050	0.439	-80%	0.439	-85%	0.439	-85%

Notes: TRPC used TCAT's emissions data to calculate the table's figures and plot the graph. Percentages are rounded.