

CHANGING CLIMATE, CHANGING COMMITMENTS: MUNICIPAL
GREENHOUSE GAS REDUCTION STRATEGIES IN OREGON

by

GORDON THOMAS LEVITT

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Student: Gordon Thomas Levitt

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This thesis has been accepted and approved in partial fulfillment of the requirements for the Master of Science degree in the Conflict and Dispute Resolution Program by:

Professor Mary Christina Wood	Chairperson
Margi Hoffmann	Member

and

Scott L. Pratt	Dean of the Graduate School
----------------	-----------------------------

Original approval signatures are on file with the University of Oregon Graduate School.

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THESIS ABSTRACT

Gordon Thomas Levitt

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This thesis examines emerging commitments by local governments in Oregon to address climate change, and situates those efforts within climate policy development at the international, national, regional, and state governmental levels. It also reviews the literature for local climate initiatives and seeks to expand upon that knowledge by surveying “Climate Policymakers” in Oregon. The survey results provide insight into the challenges and opportunities associated with local government and state-level efforts to reduce greenhouse gas emissions in Oregon. Considering current climate policies, a broad selection of scholarly analysis, and the opinions of leading climate policy experts in Oregon, this thesis recommends eight categories of strategies to enhance greenhouse gas reduction efforts in Oregon.

CURRICULUM VITAE

NAME OF AUTHOR: Gordon Thomas Levitt

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene

DEGREES AWARDED:

Master of Science, Conflict and Dispute Resolution, 2016, University of Oregon
Juris Doctor, 2016, University of Oregon
Bachelor of Arts, Robert D. Clark Honors College, Political Science, 2012,
University of Oregon

AREAS OF SPECIAL INTEREST:

Environmental, Natural Resources, and Land Use Law and Policy
Environmental Conflict Resolution

PROFESSIONAL EXPERIENCE:

Policy Fellow, Oregon Governor's Natural Resources Office, January 2015 – June 2015

Research Assistant, University of Oregon School of Law, August 2013 – May 2015

Policy Researcher, PolicyInteractive, May 2014 – December 2014

Law Clerk, Our Children's Trust, May 2013 – September 2014

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CHAPTER I

RESEARCH QUESTIONS

This thesis discusses the challenges and opportunities for local governments, primarily municipalities, in Oregon to reduce greenhouse gas (GHG) emissions. The project was inspired by the author’s personal involvement in all aspects of the Youth Climate Action Now (YouCAN) Eugene Campaign between May 2013 and August 2014. The YouCAN Campaign resulted in the adoption of the Climate Recovery Ordinance, which legally obligates the City of Eugene to achieve outcomes that substantially reduce GHG emissions.¹ After this successful campaign, the author sought to develop GHG emission reduction recommendations for local governments across Oregon.

A changing climate merits an effort by Oregon’s local governments to change their climate commitments, but many governments do not have the resources to develop specific commitments or a general framework to guide those commitments. Thus, this thesis features recommendations for local governments based on the following research questions:

- In relation to GHG emission reduction policies: how do actions by Oregon’s local governments relate to actions being pursued by international, national, regional, and state-level actors? This question is discussed in the Introduction.
- Based on relevant literature, how do scholars perceive local government climate initiatives, and which policies have they proposed? This question is discussed in the Literature Review.
- Within the sectors identified by scholars of local climate action, which types of GHG emission reduction policies are local governments in Oregon already pursuing? This question is discussed in the Literature Review.
- According to Oregon’s “Climate Policymakers”², what are the challenges and opportunities of local efforts to reduce GHG emissions? This question is discussed in the Findings and Discussion.

¹ For more information on the Climate Recovery Ordinance, *see* pg. 36 *infra*.

² For a description of the “Climate Policymaker” population, *see* pg. 41 *infra*.

- Based on the literature review and the results of the survey of “Climate Policymakers” in Oregon, which GHG emission reduction policies should be considered by local governments? This question is discussed in the Recommendations.

Finally, the thesis concludes with a discussion of how efforts to better understand and implement local climate policy in Oregon are essential for addressing a changing climate in Oregon.

CHAPTER II

INTRODUCTION

The best available climate science states that global emissions of carbon dioxide (CO₂) and other GHGs must sharply decrease if humanity wishes to preserve a habitable climate system.³ While the causes and effects of climate change may be global in scale, responses to it should come from governmental and nongovernmental actors at all levels – international, national, regional, state, and local. Local government action matters because local communities are already on the frontlines of a changing climate and will be on the frontlines of a changing legal and policy framework. Regardless of whether the framework changes as a result of top-down, bottom-up, or some combination of these pressures, local governments will have a role to play, and Oregon’s local governments can lead the way.

Oregon cities have a history of climate leadership. For example, Portland was the first city in the U.S. to adopt a local climate action plan. As of 2009, five local governments in Oregon had completed inventories of GHG emissions⁴, and 16 cities, including most of the states’ largest cities such as Portland, Eugene, Bend, Corvallis, Beaverton, and Gresham are currently signatories to the Mayor’s Climate Protection Agreement - a commitment to reduce emissions by 7% from 1990 levels by 2012.⁵ Furthermore, this leadership has been more than symbolic; Portland has reduced carbon emissions 14% since 1990, despite the addition of 150,000 people to its metropolitan area.⁶

³ James Hansen, et. al.; Assessing “Dangerous Climate Change”: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature; PLOS One (2013); <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081648>.

⁴ Report to the Legislature 2009, Oregon Global Warming Commission, <http://www.keeporegoncool.org/sites/default/files/ogwc-standard-documents/09CommissionReport.pdf>, at 15.

⁵ List of Participating Mayors, Mayor’s Climate Protection Center, U.S. Conference of Mayors, <http://www.usmayors.org/climateprotection/list.asp>, last accessed 1-16-16.

⁶ Elizabeth Willmott, The Urban Clean Energy Revolution, Climate Solutions (November 2015), http://climatesolutions.org/sites/default/files/uploads/pdf/urban_clean_energy_revolution_web.pdf at 3.

While successes like Portland’s are laudable, the fact remains that Oregon is not on pace to meet state-level GHG emission reduction goals, and one of the reasons is that local governments are not cumulatively contributing sufficient emission reductions. Nearly 10 years ago, Oregon Governor Ted Kulongoski’s Climate Change Integration Group urged the state’s leadership to initiate a rapid transition to a low carbon economy and warned that “waiting to act is not a wise choice... [because] changes to the climate are significant, and will require all parts of civilization ... to invest considerable thought and capital to successfully prepare and adapt.”⁷ The need for considerable investment in Oregon also was recognized: the Climate Change Integration Group’s report acknowledged that completing all of Oregon’s planned climate actions (as of 2009) would only yield about half of the reductions necessary to meet Oregon’s 2020 emission reduction goal.⁸

Additional emission reduction efforts by Oregon’s municipalities can help bridge this gap. In order to understand the realm of possible GHG emission reduction actions by local governments (also referred to as cities, municipalities, and localities in this document)⁹, it is necessary to understand the types of climate initiatives currently being pursued by governmental and nongovernmental actors from the international to the local level.

a. Scaling Down: Contextualizing Authority for Local Climate Action in Oregon

i. International Emission Reduction Efforts

International efforts to address climate change were formalized with the creation of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. Within five years of its creation, the UNFCCC endeavored to set specific emission

⁷ Final Report to the Governor: A Framework for Addressing Rapid Climate Change; The Governor’s Climate Change Integration Group (January 2008); <http://www.oregon.gov/energy/gblwrm/docs/ccigreport08web.pdf> at 4.

⁸ *Id.* at 23. For more information on Oregon’s 2020 emission reduction goal, *see* pg. 15 *infra*.

⁹ The Merriam-Webster dictionary defines municipalities as “a primarily urban political unit having corporate status and usually powers of self-government”; local governments as “the government of a specific local area constituting a subdivision of a major political unit...”; and cities as “a usually large or important municipality in the United States governed under a charter granted by the state.” *See* Merriam-Webster, last accessed 2-22-16, <http://www.merriam-webster.com/>.

reduction targets, which led to the adoption of the Kyoto Protocol in 1997. The Kyoto Protocol was not broadly accepted, especially by political leadership in the United States, and only 38 countries remain committed to meeting their emission reduction goals by the end of the final commitment period in 2020.¹⁰ However, in December of 2015, 196 nations signed the Paris Agreement to usher in the post-Kyoto international system for addressing climate change.

For the purposes of this paper, the most important outcomes of the Paris Agreement are the commitment to hold “the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change....”¹¹ The parties agreed that achieving this goal would necessitate “global peaking of greenhouse gas emissions as soon as possible...” and that subsequent emission reductions be guided by the “best available science” to equitably achieve global carbon neutrality from 2050 onward.¹² According to the agreement, carbon neutrality means that anthropogenic emissions (not defined) are balanced by carbon sequestration uptakes. National mechanisms to achieve the goals of the agreement are referred to as Intended Nationally Determined Contributions (INDCs) and the agreement specifies that such INDCs contain “domestic mitigation measures” that reflect a nation’s “highest possible ambition” in light of national capabilities and circumstances.¹³ For developed country Parties, ambitions *should* demonstrate continued leadership on “economy-wide absolute emission reduction targets.”¹⁴ Finally, the

¹⁰ The Bonn Climate Change Conference: Another Milestone on the Road to Paris; Climate Law Blog, Sabin Center for Climate Change Law, Columbia Law School (July, 2015); <http://blogs.law.columbia.edu/climatechange/2015/07/14/the-bonn-climate-change-conference-another-milestone-on-the-road-to-paris/#sthash.P5xDXItz.dpuf>. For detailed information on the Kyoto Protocol, *see* Kyoto Protocol, United Nations Framework Convention on Climate Change (2014), http://unfccc.int/kyoto_protocol/items/2830.php.

¹¹ Adoption of the Paris Agreement, United Nations Framework Convention on Climate Change (December, 2015), <https://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf> at 22.

¹²*Id.*

¹³*Id.* For more information on INDCs, *see* Intended Nationally Determined Contributions (INDCs), United Nations Framework Convention on Climate Change (2014), http://unfccc.int/focus/indc_portal/items/8766.php.

¹⁴ Adoption of the Paris Agreement at 22.

agreement recognized that current climate change adaptation needs already are significant and that increased climate change mitigation efforts now will reduce future adaptation needs and costs.¹⁵

In addition to the Paris Agreement, a number of sub-national climate change agreements with international scope have emerged. Local governments are a crucial component of many of these agreements. For example, in July of 2015, a Climate Action Statement was signed by 22 state, provincial, and municipal governments at the Climate Summit of the Americas, including Oregon, Washington, and California.¹⁶ By signing this agreement, these governments have agreed to undertake one or more of the following actions:

1. Set GHG emission reduction targets that contribute to limiting global temperature increases to 2 degrees Celsius;
2. Join the Compact of States and Regions or Compact of Mayors;¹⁷
3. Join the Under 2 MOU, which demonstrates parties' commitment to pursue "emission reductions consistent with a trajectory of 80 to 95 percent below 1990 levels by 2050 and/or achieving a per capita annual emission goal of less than 2 metric tons by 2050"¹⁸; and
4. Support carbon pricing, including the World Bank Carbon Pricing Leadership Coalition, and endorse the World Bank's "Putting a Price on Carbon" statement.¹⁹

¹⁵ *Id.* at 25.

¹⁶ See Climate Action Statement – Climate Summit of the Americas, Ontario Ministry of the Environment and Climate Change, <http://news.ontario.ca/ene/en/2015/07/climate-action-statement---climate-summit-of-the-americas.html>, last accessed 8-4-15; for a list of Climate Action Statement Signatories, see also Let's Stick Together: Why the Climate Summit of the Americas Matters, The Climate Reality Project (July 13, 2015), <https://www.climateRealityproject.org/blog/climate-summit>.

¹⁷ See Compact of States and Regions, The Climate Group, <http://www.theclimategroup.org/what-we-do/programs/compact-of-states-and-regions>, last accessed 8-4-15; see also The Compact of Mayors, ICLEI: Local Governments for Sustainability, http://www.iclei.org/fileadmin/user_upload/ICLEI_WS/Documents/Climate/FINAL_MAYORS_COMPACT_TEXT_092214.pdf, last accessed 8-4-15.

¹⁸ Global Climate Leadership Memorandum of Understanding, Under 2 MOU, <http://under2mou.org/wp-content/uploads/2015/04/Under-2-MOU-English.pdf> at 1-2, last accessed 8-6-15.

¹⁹ See Carbon Pricing Leadership Coalition, The World Bank, <http://www.worldbank.org/en/programs/pricing-carbon#2>, last accessed 8-4-15; see also Statement: Putting

The Compact of Mayors merits additional attention because it was supported by reputable local government organizations, including ICLEI-Local Governments for Sustainability, United Cities and Local Governments (UCLG), and the C40 Climate Leadership Group. By joining this compact, participating local governments agreed “to undertake a transparent and supportive approach to reduce city-level emissions, to reduce vulnerability and to enhance resilience to climate change, in a consistent and complimentary manner to national level climate protection efforts.”²⁰ This approach also emphasizes improved efficiency and ease of reporting for local officials and a commitment that such information will inform international processes and bodies tasked with addressing climate change. Finally, the compact seeks to compile local GHG reduction goals and to “quantify [the] impact of city commitments made to date.”²¹ Such compilation will likely be useful for future international climate negotiations because it will inform how much emphasis should be placed on emission reduction authority at each governance level based on demonstrated results.

Another effort is Yale University’s Environmental Performance Index (EPI), which seeks to inform “data-driven environmental policymaking” in many sectors including climate and energy.²² According to the EPI, nearly 7,000 cities from 99 countries (“representing approximately 11 percent of the global population and 32 percent of the global GDP”) have joined an emission reduction platform or coalition.²³ A recent report from Yale and other partners found that sub-national actors will have a prominent role in the success of the UNFCCC processes because they will be closer to

a Price on Carbon, The World Bank, <http://www.worldbank.org/content/dam/Worldbank/document/Carbon-Pricing-Statement-060314.pdf>, last accessed 8-6-15.

²⁰ The Compact of Mayors: Goals, Objectives and Commitments; C40 Cities, United Cities and Local Governments, Bonn Center for Local Climate Action and Reporting – carbonn Center and ICLEI – Local Governments for Sustainability (Sep. 2014); at 1.

²¹ *Id.* at 2-4.

²² Why Measurement Matters, Yale University Environmental Performance Index, <http://epi.yale.edu/why-measurement-matters>, last accessed 1-14-16.

²³ New Report Demonstrates Local Actors’ Contribution to Global Climate Action, Yale University Environmental Performance Index, <http://epi.yale.edu/the-metric/new-report-demonstrates-local-actors-contribution-global-climate-action>, last accessed 1-14-16.

the frontline implementation of the aforementioned mitigation goals, achievement of which will require unprecedented multi-level, scaled-up governmental cooperation.²⁴

Finally, the Climate Initiatives Platform and the Galvanizing the Groundswell of Climate Actions are two interesting efforts that may provide useful information to decision-makers at all governmental levels. The Climate Initiatives Platform was developed as “an attempt to collect, share, and track the burgeoning number of climate-related commitments.”²⁵ Similarly, Galvanizing the Groundswell of Climate Actions “is a series of open dialogues that aims to bring the groundswell of climate actions from cities, regions, companies, and other groups to a higher level of scale and ambition.”²⁶ Given the herculean emission reduction challenges that lie ahead, such efforts to share and motivate additional climate action internationally are crucial.

ii. National Level Emission Reduction Efforts in the U.S.

The Obama Administration’s primary emission reduction efforts are anchored in rulemaking by the Environmental Protection Agency (EPA) that uses the authority of Clean Air Act, Section 111(d) to regulate emissions from power plants. Note that the following discussion of 111(d) is heavily informed by Oregon regulators and policymakers’ opinions of how Oregon might comply with these new federal requirements, and does not extensively discuss the pending legal challenges to the EPA’s authority to implement the Clean Power Plan.²⁷ Nonetheless, it is important to note that the U.S. Supreme Court’s stay of the Clean Power Plan means that the deadlines for states to submit compliance plans is indefinitely extended until legal challenges to the plan are resolved. Despite the stay, about one third of states, including Oregon, are

²⁴ Angel Hsu, et. al.; *Scaling Up: Local to Global Climate Action*; R20 Regions of Climate Action (2015), <http://regions20.org/images/ScalingUp.pdf> at 79.

²⁵ Welcome, Climate Initiatives Platform, <http://climateinitiativesplatform.org/index.php/Welcome>, last accessed 8-4-15.

²⁶ Galvanizing the Groundswell of Climate Actions, <http://www.climategroundswell.org/>, last accessed 1-16-16.

²⁷ For more information on the legal challenges to the Clean Power Plan, *see* *Inside the Most Important Supreme Court Case in Human History*, Think Progress (Feb. 12, 2016), <http://thinkprogress.org/justice/2016/02/12/3748062/inside-the-most-important-supreme-court-case-in-human-history/>.

committed to moving forward with their compliance plans even though they are no longer required to do so.²⁸

In August of 2015, the EPA announced the final rule, known as the Clean Power Plan, which includes the “first-ever national standards that address carbon pollution from power plants.”²⁹ This was a major step because “fossil fuel-fired power plants are by far the largest source of U.S. CO₂ emissions, making up 31 percent of U.S. total greenhouse gas emissions.”³⁰ By 2020, the Clean Power Plan aims to reduce “overall U.S. GHG emissions by 17% below 2005 levels....”³¹ By 2030, the U.S. EPA estimates that “carbon pollution from the power sector will be 32 percent below 2005 levels....”³² Based on these expectations, it is apparent that the Clean Power Plan’s emission reduction impact may taper off between 2020 and 2030, but perhaps other policies will be pursued during that time period if the initial stages of the Clean Power Plan are successful.

In order to meet the EPA’s emission reduction goals, states “develop and implement plans that ensure that the power plants in their state – either individually, together or in combination with other measures – achieve the interim CO₂ emissions performance rates over the period of 2022 to 2029 and the final CO₂ emission performance rates, rate-based goals or mass-based goals, by 2030.”³³ State plans will be developed based on EPA’s proposed emission reduction targets, which are informed by “the range and scale of supply (generation) and demand-side resources (the ‘Building

²⁸ For a variety of statements from state leaders about the stay, *see* State Statements Following the Supreme Court’s Decision to Stay the Clean Power Plan, Georgetown Climate Center (Feb. 10, 2016), <http://www.georgetownclimate.org/state-statements-following-the-supreme-courts-decision-to-stay-the-clean-power-plan>.

²⁹ Overview of the Clean Power Plan: Cutting Carbon Pollution from Power Plants; United States Environmental Protection Agency (Aug. 2015), <http://www.epa.gov/airquality/cpp/fs-cpp-overview.pdf> at 1.

³⁰ *Id.* at 2.

³¹ Angus Duncan, Clean Air Act Section 111(d) CO₂ Reduction Compliance Pathways for the Pacific Northwest and Intermountain West States, 30 J. Envtl. L. & Litig. 303, 305 (2015).

³² Overview of the Clean Power Plan: Cutting Carbon Pollution from Power Plants at 2.

³³ *Id.* at 4.

Blocks’) available to that state....”³⁴ States have discretion to devise a strategy that will achieve EPA’s proposed emission reductions.³⁵ For example, the EPA has said that efforts to promote lower carbon energy supply, as well as demand side investments such as energy efficiency, will count toward a state’s compliance requirements so long as the efforts “displace real emissions.”³⁶

The proposed emission reductions for each state are based on regional CO₂ emission performance rates for coal and natural gas plants, and represent the EPA’s determination of the Best System of Emission Reductions (BSER); BSER is then applied to all affected sources in the state to produce the rate-based and mass-based emission reduction options for each state.³⁷ Generally speaking, rate-based compliance is accomplished by achieving a reduction in emission rates that falls “somewhere between the national emission rate limits for coal plants and gas plants.”³⁸ Mass-based reductions require decreases in the overall tonnage of pollution emitted and are calculated by multiplying a state’s emission rate limit by the projected electricity production in that state.³⁹

Regardless of the compliance path chosen, each state was previously required to either submit a final plan or a preliminary plan with a request for an extension (no later than September 2018) by September 6, 2016.⁴⁰ The final Clean Power Plan only allowed an exception to these deadlines when at least two states work together to jointly submit a plan to meet their combined emission reduction responsibilities, resulting in a one-year

³⁴ Clean Air Act Section 111(d) CO₂ Reduction Compliance Pathways for the Pacific Northwest and Intermountain West States at 322.

³⁵ *Id.*

³⁶ *Id.* (citing Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 64,543, 64,546-47 (Section II.B.1. Stringency of Building Block 2) (proposed Oct. 30, 2014) (to be codified at 40 C.F.R. pt. 60) available at <http://www.gpo.gov/fdsys/pkg/FR-2014-10-30/pdf/2014-25845.pdf>).

³⁷ Overview of the Clean Power Plan: Cutting Carbon Pollution from Power Plants at 5.

³⁸ David Doniger; Understanding the EPA’s Clean Power Plan; Switchboard: Natural Resources Defense Council (August 2015); http://switchboard.nrdc.org/blogs/ddoniger/understanding_the_epas_clean_p.html.

³⁹ *Id.*

⁴⁰ Overview of the Clean Power Plan: Cutting Carbon Pollution from Power Plants at 8.

extension of the deadline.⁴¹ Again, given the Supreme Court’s stay of the Clean Power Plan, it is unclear when the new deadlines will be.

While there are many reasons that states might not cooperate with one another in devising their individual plans or producing a multi-state plan, multi-state or regional plans could be desirable if they allow for emissions reductions to be “achieved at least cost and with [the] fewest required operational adjustments in the regional electricity system.”⁴² According to Angus Duncan, Chair of the Oregon Global Warming Commission, states with more aggressive emission reduction goals than those set by the EPA could benefit from regional compliance mechanisms because it could allow those states a least cost trajectory to help achieve state goals.⁴³ Oregon is such a state – a fact that will become apparent when Oregon’s GHG reduction goals are discussed later.

Given that Oregon has few stationary sources that will be affected by the Clean Power Plan, Oregon’s strategy will be a “system-based” approach “that evaluates a broader portfolio of measures including those that could be taken beyond the affected sources but still reduce emissions at the source.”⁴⁴ Duncan believes that this approach, in conjunction with other states in the Western U.S., “might permit a multi-state emissions management structure like an Independent System Operator (ISO), or like a Regional Greenhouse Gas Initiative (RGGI), to aggregate and average emissions across multiple plants owned by multiple operators.”⁴⁵ An ISO, also known as a regional transmission organization (RTO), is an independent third party that dispatches different sources of power, minimizing the conflicts of interest that can occur when an entity owns the transmission and distribution system, but does not provide all of the power generation.⁴⁶ RGGI is described in the following section.

⁴¹ *Id.* at 6.

⁴² Clean Air Act Section 111(d) CO₂ Reduction Compliance Pathways for the Pacific Northwest and Intermountain West States at 305.

⁴³ *Id.* at 309.

⁴⁴ *Id.* at 315.

⁴⁵ *Id.* at 317.

⁴⁶ What are RTOs and Organized Markets? Electric Power Supply Association, <https://www.epsa.org/industry/primer/?fa=rto>, last accessed 1-26-16.

Duncan notes that a multi-state agreement would require “a state-to-state agreement covering emissions, power plants, and customer loads among the participating states... The participating states could then use an allocation agreement or allowance system to assign reduction responsibilities among themselves, as RGGI has done. For compliance, reduction would be totaled and reported as a single sum to EPA.”⁴⁷ However, Duncan notes that “A region-wide, multi-state pact like a RGGI is unlikely given the limited time for developing state compliance submissions to EPA, and the highly divergent views among the PNW [Pacific Northwest] and IMW [Inter-Mountain West] states on the threshold question whether GHG reductions are even necessary.”⁴⁸ Furthermore, despite the availability of a one-year extension for multi-state compliance plans, Duncan thinks it is unlikely these plans will emerge. Many states’ responsiveness during the initial commenting period for the draft Clean Power Plan was sluggish and it is unlikely that states will be willing “to enter into the complex state-to-state and utility-to-utility negotiations required while they are simultaneously developing a primary or fallback state-specific compliance strategy.”⁴⁹ Nonetheless, one of the silver linings of the Supreme Court’s stay of the Clean Power Plan may be that states now have a longer timeframe to negotiate multi-state compliance agreements. Such agreements may be easier to scale up or integrate into a truly national system of emission reductions, perhaps following the U.S.’s next submittal of nationally-determined contributions to the international community.

iii. Regional Emission Reduction Efforts in the U.S.

Apart from any multi-state compliance mechanisms that might emerge under the Clean Power Plan, there are a number of regional emission reduction frameworks currently in place, as well as several now defunct efforts. The emergence of regional efforts may be a result of the growing number of states with GHG emission targets; as of

⁴⁷ Clean Air Act Section 111(d) CO₂ Reduction Compliance Pathways for the Pacific Northwest and Intermountain West States at 323.

⁴⁸ *Id.* at 319.

⁴⁹ *Id.* at 327.

August 2015, 20 states and the District of Columbia had greenhouse gas emission targets.⁵⁰

The most functional regional mechanism is the Regional Greenhouse Gas Initiative (RGGI), which aims to cap and reduce CO₂ emissions from the power sector in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. RGGI has successfully reduced emissions from the power sector by at least 40% since 2005, while simultaneously encouraging economic growth.⁵¹

Other regional efforts, however, have been less successful. For example, the Midwest Greenhouse Gas Reduction Accord collapsed after federal cap and trade legislation failed in 2011. The accord likely collapsed because it was a platform primarily built in anticipation of comprehensive federal legislation. A similar, though less severe, step backwards occurred with the Western Climate Initiative (WCI), which was comprised of five states in the Western U.S. in 2007, grew to seven U.S. states and four Canadian provinces by 2010, and has now shrunk to California and the four original Canadian provinces.⁵² The WCI aims to “reduce regional GHG emissions to 15 percent below 2005 levels by 2020”, and to promote a green economy.⁵³ Most of the West Coast jurisdictions, including Oregon, are now a part of the Pacific Coast Collaborative (PCC) and the non-binding Pacific Coast Action Plan on Climate and Energy, which aims to coordinate each jurisdiction’s longer term climate planning and other policies.⁵⁴ Both the WCI and the PCC, however, appear to have been less successful than RGGI in reducing GHG emissions. Neither agreement requires emission reductions, so any reductions that

⁵⁰ Greenhouse Gas Emission Targets, Center for Climate and Energy Solutions, <http://www.c2es.org/us-states-regions/policy-maps/emissions-targets>, last accessed 8-3-15.

⁵¹ *See* How to Cut Carbon and Save Money: RGGI Delivers Yet Again; Union of Concerned Scientists (April 22, 2015); <http://blog.ucsusa.org/rachel-cleetus/cut-carbon-and-save-money-rggi-delivers-yet-again-713?>.

⁵² *See* History, Western Climate Initiative (2013), <http://www.westernclimateinitiative.org/history>; *see also* Program Design, Western Climate Initiative, Inc. (2014), <http://www.wci-inc.org/program-design.php>.

⁵³ Program Design, Western Climate Initiative (2013), <http://www.westernclimateinitiative.org/designing-the-program>.

⁵⁴ Pacific Coast Action Plan on Climate and Energy, Pacific Coast Collaborative (October, 2013), <http://www.pacificcoastcollaborative.org/Documents/Pacific%20Coast%20Climate%20Action%20Plan.pdf>.

have occurred in our region cannot be tied with any certainty to the WCI or the PCC frameworks. Instead, it appears that California's initially unilateral action to develop an economy wide cap and trade system, now having been joined by Quebec and with several other Canadian provinces, is driving emission reductions in the western U.S.

iv. State of Oregon Emission Reduction Efforts

While the previous discussion of Oregon's compliance with 111(d) covered the federal requirements that Oregon will need to meet, Oregon already has a number of other important legal requirements and goals related to emission reductions.

In 1992, Oregon adopted a state benchmark to hold the state's CO₂ emissions at 1990 levels.⁵⁵ While this goal was not met and 1990 emission levels were exceeded, the state continued to develop new policy. In 1997, Oregon became the first state in the U.S. to regulate GHG emissions from energy facilities emitting carbon dioxide, regulations that were updated in 2003 to require that such facilities "reduce their net carbon dioxide emissions 17 percent below the most efficient baseload gas plant in the United States."⁵⁶ The bill, HB 3283, set forth two alternate compliance mechanisms for affected utilities: 1) directly implement CO₂ offset projects or have a third party do so; and 2) provide funds to The Climate Trust, a nonprofit organization established by the bill, to develop projects that reduce or sequester CO₂ emissions.⁵⁷ HB 3283 was updated with the passage of SB 101 in 2009, which expanded the emission reduction requirements to cover coal power plants and discontinued utility compliance through carbon offset purchases.⁵⁸

⁵⁵ *Report to the Legislature 2009*, Oregon Global Warming Commission, <http://www.keeporegoncool.org/sites/default/files/ogwc-standard-documents/09CommissionReport.pdf>, at 9.

⁵⁶ State Power Plant Rules of Oregon, Washington, and Massachusetts; Stockholm Environment Institute and Greenhouse Gas Management Institute (2011); <http://www.co2offsetresearch.org/policy/PowerPlantRules.html>.

⁵⁷ Standards and Caps for Electricity GHG Emissions, Center for Climate and Energy Solutions, <http://www.c2es.org/us-states-regions/policy-maps/electricity-emissions-caps>, last accessed 8-3-15.

⁵⁸ *Id.*

SB 101 may have passed in 2009 as a result of the passage of HB 3543 two years earlier in 2007. HB 3543 is a state declaration of policy that adopts greenhouse gas emission reduction targets for Oregon for 2010, 2020, and 2050. These goals are:

- (a) By 2010, arrest the growth of Oregon's greenhouse gas emissions and begin to reduce greenhouse gas emissions.
- (b) By 2020, achieve greenhouse gas levels that are 10 percent below 1990 levels.
- (c) By 2050, achieve greenhouse gas levels that are at least 75 percent below 1990 levels.⁵⁹

In 2007, the Oregon Legislature also passed SB 838, which established a Renewable Portfolio Standard (RPS) requiring all utilities and electricity service suppliers for Oregon customers to obtain gradually increasing percentages of electricity “from qualifying renewable energy sources.”⁶⁰ These requirements vary for large utilities, small utilities, and electricity service suppliers (*see* Table 1, below). While a number of exemptions apply to these requirements (e.g. 4% of annual revenue spending cap for utility compliance), the RPS system does feature transparent compliance requirements because renewable energy credits (RECs) must be purchased through the Western Renewable Energy Generation Information System.⁶¹ However, some RPS requirements may shift as a result of a recently passed bill, SB 1547B, that expands the state’s RPS to 50% (for large, investor-owned utilities) by 2040.⁶² SB 1547B also requires that coal be removed from Oregon’s investor-owned utility electricity mix by 2030 and allows “Pacific Power and PGE to make prudent investments in charging stations and related electric vehicle infrastructure in their service territories.”⁶³

⁵⁹ ORS § 468A.205.

⁶⁰ Summary of Oregon’s Renewable Portfolio Standard, Oregon Department of Energy (January, 2014), http://www.oregon.gov/energy/P-I/docs/RPS_Long_Summary_January%202014.pdf at 1.

⁶¹ Renewable Portfolio Standard, Federal Department of Energy, <http://energy.gov/savings/renewable-portfolio-standard-8>.

⁶² Kristen Sheeran, Oregon's plan to trade coal for clean energy—the benefits in detail; Climate Solutions (March 15, 2016), <http://climatesolutions.org/article/1458070211-oregons-plan-trade-coal-clean-energy#sthash.vUUNTYhY.dpuf>.

⁶³ *Id.*

Table 1: Summary of RPS Targets and Timelines

RPS obligations on all utilities and electricity service suppliers						
	Percent of Oregon's Total Retail Electric Sales	Utilities ² and ESSs	Applicable Targets in Year:			
			2011	2015	2020	2025
Large Utilities	Three percent or more	Portland General Electric, PacifiCorp, Eugene Water & Electric Board	5%	15%	20%	25%
Small Utilities	At least one and a half percent but less than three percent	Central Lincoln PUD, Idaho Power, McMinnville W&L, Clatskanie PUD, Springfield Utility Board, Umatilla Electric Cooperative	No Interim Targets			10%
	Below one and a half percent	All other utilities (31 consumer-owned utilities)				5%
Electricity Service Suppliers (ESSs)	Any sales in Oregon	Any Electricity Service Supplier (ESS)	If an ESS sells electricity in the service area of more than one utility its targets may calculated as an aggregate of electricity sold in its territory.			

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As previously noted, Oregon could choose to join a multi-state emission reduction effort, a decision that could potentially be made easier if Oregon passed carbon pricing legislation.⁶⁵ Duncan's "system-based" approach would be very appropriate if Oregon passed cap and trade legislation. During the 2015 Legislative Session, the Oregon Legislature considered HB 3470, a bill that would have enabled a cap and trade system applied to large emitters of GHGs. While the bill did not pass, a new version of the bill was prepared for the 2016 Legislative Session. Nonetheless, the cap and trade concept once again failed to gain traction, with several climate insiders speculating that the deal between the investor owned utilities and larger environmental groups in the state to expand the RPS gave legislators a less contentious proposal to support. However, many doubt that the expanded RPS will have the same impact on emission reductions that a cap and trade system would have produced. Of course, the impact of a cap and trade system would have depended on where the cap was set and which emission sources would be subject to the cap over time.

Finally, and perhaps most importantly, there is a pending lawsuit against the State of Oregon by youth plaintiffs that could entirely recast the state's obligation to address

⁶⁴ Summary of Oregon's Renewable Portfolio Standard at 1.

⁶⁵ However, note that it is unlikely that Oregon will pursue a multi-state compliance strategy given the state's preliminary strategy, available here: <http://www.deq.state.or.us/aq/climate/docs/epaLcomment.pdf>.

climate change. This lawsuit, *Chernaik v. Brown*, asserts that the State of Oregon has violated its fiduciary duties under the Public Trust Doctrine by inadequately acting to preserve public resources, including the atmosphere, for the benefit of current and future generations. The plaintiffs seek a declaration that the atmosphere is a part of the public trust and an order that the State of Oregon must complete a climate recovery plan that comprehensively considers how the State of Oregon will reduce its GHG emissions in line with the best available climate science. Should plaintiffs succeed, the State of Oregon will be proportionately responsible for its share of global emission reductions necessary to preserve a habitable climate system for current and future generations. The case is currently on appeal in the Oregon Court of Appeals.⁶⁶

v. Local Emission Reduction Landscape in Oregon

Oregon follows the concept of municipal “home rule.” In 1906, Oregon voters amended the Oregon Constitution to broaden cities’ lawmaking authority through municipal charters, and this privilege was extended to counties and county charters by another constitutional amendment in 1958.⁶⁷ Some scholars opine that home rule provisions arose as a response to Dillon’s Rule, which “posits that cities have no inherent powers and possess only those powers specifically delegated to them by state law... [and] that courts, when interpreting a delegation from state to city, resolve against the city any doubt regarding whether it possesses a particular power.”⁶⁸ Thus, scholars see the home rule provisions of the Oregon Constitution as protection for the substantive lawmaking authority of Oregon cities, subject to the limits of preemption.⁶⁹

Local initiatives may be seen as violating the mandates of federal or state programs, leading to claims of preemption.⁷⁰ Local laws may be preempted by federal

⁶⁶ For more information on the current posture and history of this case, see Oregon, Our Children’s Trust, last accessed 2-24-16, <http://ourchildrenstrust.org/state/Oregon>.

⁶⁷ See OR CONST Art. XI, § 2; see also OR CONST Art. VI, § 10.

⁶⁸ Paul A. Diller, The Partly Fulfilled Promise of Home Rule in Oregon, 87 Or. L. Rev. 939, 942 (2008).

⁶⁹ *Id.* at 945.

⁷⁰ See, e.g., Paul S. Weiland, Preemption of Local Efforts to Protect the Environment: Implications for Local Government Officials, 18 Va. Env’tl. L.J. 467, 471 (1999) (“[F]ederal preemption has been applied to strike down state and/or local regulations addressing air pollution, hazardous waste management (including the transport and disposal of waste and the cleanup of sites contaminated by hazardous waste), nuclear

law, typically as a result of the Supremacy Clause in the U.S. Constitution, which makes federal law the supreme law of the land when there is a conflict of law.⁷¹ Federal law can expressly or impliedly preempt local actions. Express preemption occurs when Congress states in express terms that it is preempting state authority (and therefore by extension, local authority).⁷² If such a preemptive effect is identified, conflict between federal and state law results in displacement of the state statute.⁷³ Implied preemption may occur if federal preemption is “inferred from a congressional enactment upon the basis of: (1) the intent of Congress as revealed by the statutory language and the legislative history; (2) the pervasiveness of the federal administrative scheme; (3) the nature of the subject matter and the need for exclusive federal regulation to achieve uniformity vital to national interest; and (4) the extent to which state law stands as an obstacle to the accomplishment and execution of the congressional objectives.”⁷⁴ An example of implied preemption of local law occurred when the City of Albuquerque, New Mexico was sued for requiring appliance energy efficiency levels more stringent than required by federal law; the court found that these provisions of the city’s Energy Conservation Code were preempted by federal law.⁷⁵ If a party claims that a local law is preempted by Oregon state law, the court will hear the claim if express preemption has been alleged. The Oregon Supreme Court has held that Oregon state law addressing “substantive social, economic, or other regulatory objectives of the state” overrides contrary policies of local governments if the state law expressly intends to preempt any local regulation in that

power, pesticide use, solid waste management, surface mining, toxic substance control, and water pollution control.”).

⁷¹ U.S. Const. art. VI, cl. 2. (“This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.”).

⁷² *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Development Comm'n*, 461 US 190, 203 (1983) (citing *Jones v. Rath Packing Co.*, 430 U.S. 519, 525 (1977)).

⁷³ *See, e.g.*, 2 L. of Toxic Torts § 11:8 (2015).

⁷⁴ *See, e.g.*, 2 L. of Toxic Torts § 11:9 (2015) (citing *Fidelity Fed. Sav. & Loan Ass'n v. De La Cuesta*, 458 U.S. 141, 153 (1982) & *Wyeth v. Levine*, 129 S. Ct. 1187 (2009)).

⁷⁵ *Air Conditioning, Heating & Refrigeration Inst. v. City of Albuquerque*, 835 F Supp 2d 1,133, 1140 (DNM 2010).

area.⁷⁶ The exception to this is if the state law is “irreconcilable with the local community's freedom to choose its own political form.”⁷⁷ The court will be reluctant to hear claims that state law impliedly preempts local law.⁷⁸ Therefore, express preemption by state law is almost always necessary to show that local laws are invalid.⁷⁹

Given this precedent, local laws in Oregon can regulate substantive concerns so long as they are not so incompatible with existing state regulations that both regulations cannot operate concurrently.⁸⁰ Furthermore, substantive local regulation can be implemented in the same area as existent state regulation, regulate more extensively in that area, and address different aspects of the same regulatory area so long as such regulation is not expressly preempted or incompatible with state law.⁸¹ However, in any case, local law must be in accord with the state constitution, be minimally compatible with state law, and be reasonable.⁸²

It appears that within the climate mitigation and adaptation realm, the Oregon Legislature has only expressly preempted local governments from establishing greenhouse gas (GHG) emission regulations⁸³, or building, electrical, plumbing, and mechanical codes which are stricter than state codes.⁸⁴ Outside of those realms of regulation, municipal actions are arguably authorized so long as they are constitutional, reasonable, and not incompatible with state law. The following discussion of climate

⁷⁶ See *City of La Grande v. Pub. Employees Ret. Bd.*, 281 Or. 137, 156 (1978).

⁷⁷ *Id.*

⁷⁸ *Id.* at 148-49.

⁷⁹ See *City of La Grande v. Pub. Employees Ret. Bd.* at 153-156; see also *The Partly Fulfilled Promise of Home Rule in Oregon* at 940.

⁸⁰ See *Thunderbird Mobile Club, LLC v. City of Wilsonville*, 234 Or. App. 457, 470-71 (2010).

⁸¹ *Id.* at 474.

⁸² Municipal ordinances in Oregon are generally presumed to be reasonable, “unless the unreasonable features are so apparent as to be beyond question,” in which case a court may hold a municipal ordinance void for unreasonableness. *Spencer v. City of Medford*, 129 Or. 333, 341 (1929).

⁸³ “The Public Utility Commission and the State Department of Energy shall adopt rules as necessary to implement ORS 757.522 to 757.536.”

⁸⁴ See *Community Climate and Energy Action Plan: 2013 Progress Report*; City of Eugene, <http://www.eugene-or.gov/ArchiveCenter/ViewFile/Item/2385> at 42.

commitments by cities illustrates some of the ways that local governments are exercising their authority in Oregon, or could do so in the future.

CHAPTER III

LITERATURE REVIEW

a. Scholarly Discussion of Local Governments' Authority to Address Climate Change and Reduce Greenhouse Gas Emissions

Two key themes animate scholarly discussions of local governance and climate change. First, are local actions actually substantive or merely symbolic? Second, how does, and how should, local government climate regulation fit within the federalist system of government in the U.S.?

i. Local Government Climate Policy: Substantive or Symbolic?

Scholars debate whether the impacts of local actions to address climate change are substantive or symbolic. The first part of this section discusses why local actions are substantive and the second part discusses the symbolic nature of local actions.

Why Local Actions Are Substantive

Local governments are empowered by states, through enabling legislation, to protect the health, safety, and welfare of citizens through zoning, exert local control over many natural resources, and conduct other planning processes.⁸⁵ Many of the most important decisions affecting natural resources and the environment occur at the local level, wherein towns, cities and counties decide where, how, and what development may occur. Within the context of climate change, the EPA notes that local communities have the power to address climate change through energy efficiency, transportation, community planning and design, solid waste and materials management, and renewable energy.⁸⁶ In addition to the EPA's list, Professor Salkin and others opine that cities also can address climate change through carbon sequestration, public education and outreach, climate change adaptation, [and the] development of local climate action plans....⁸⁷ Below, each of these substantive categories of actions is described in more detail. Note

⁸⁵ R. M. Krause, Symbolic or substantive policy? Measuring the Extent of Local Commitment to Climate Protection. *Environment and Planning C: Government and Policy* (2011), at 48.

⁸⁶ State and Local Climate and Energy Program, U.S. Environmental Protection Agency (2012), <http://www.epa.gov/statelocalclimate/index.html>.

⁸⁷ Patricia E. Salkin, Cooperative Federalism and Climate Change: New Meaning to "Think Globally-Act Locally", 40 *Envtl. L. Rep. News & Analysis* 10562, 10563-64 (2010).

that there are not bright line divisions between the categories, and that actions in each category often interact with actions in other categories.

1. Energy efficiency

The International Energy Agency defines energy efficiency as the delivery of “more services for the same energy input, or the same services for less energy input.”⁸⁸ Energy efficiency in cities may be achieved in the building, transportation, and land use sectors. Buildings may be made more energy efficient through the use of “green building standards, appliance efficiency standards, loans/grants, incentives for energy retrofits, and modified electricity pricing.”⁸⁹ Increased transportation energy efficiency is achieved through investments in infrastructure that reduce congestion and by supporting transit forms that make more efficient use of energy than personal automobiles. Land use decisions can increase energy efficiency in a variety of ways, including limits on sprawl and encouragement of denser development that is better integrated with mass transit systems.⁹⁰

2. Transportation

In the transportation sector, cities can address climate change by supporting mass transit, electric and other alternative fuel (e.g. natural gas or hydrogen fuel cell) vehicle infrastructure, and infrastructure and programs that support walkable and bikable landscapes. By taking these actions rather than supporting the transportation status quo (personal vehicle travel), cities reduce their expenditures to maintain and expand infrastructure that is not only fossil fuel intensive, but also promotes fossil fuel use. Changing transportation patterns can revitalize cities by attracting employers and employees that value the health and lifestyle benefits of re-developed cityscapes. Local governments truly have the ability to re-direct “growth in a new direction” through

⁸⁸ Energy Efficiency, International Energy Agency (2016), <http://www.iea.org/topics/energyefficiency/>.

⁸⁹ Cooperative Federalism and Climate Change: New Meaning to “Think Globally-Act Locally” at 10563-64.

⁹⁰ For a more extensive explanation of the connections between land use and energy efficiency, *see* John Nolon; Land Use for Energy Conservation and Sustainable Development: A New Path Toward Climate Change Mitigation; Pace University (2012); <http://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1791&context=lawfaculty>.

transportation policies that integrate with sustainable land use and community planning.⁹¹ For example, transportation energy efficiency can be achieved through policy measures that contribute to a reduction in vehicle miles travelled (VMT).⁹² For example, VMT may be reduced by promoting “smart growth, infill, increased density, transit- and pedestrian-oriented design... encouraged telecommuting, [and] bicycling...” among other energy efficient land use policies.⁹³

3. Community Planning and Design

Professor Salkin opines that “major cultural shifts are possible if local governments, as a group, use their land use planning and control authority to plan for and implement various green development standards, transit-oriented development strategies, and adaptation measures.”⁹⁴ For example, local governments have significant power over the composition of the built environment, and assuming that new development will occur as population grows and the construction of the recent past ages, proactive green development standards for buildings and other infrastructure are low-cost GHG emission reduction strategies.⁹⁵ These local decisions that affect the built environment are important because they are relatively permanent, and “unlike beneficial but shorter-term strategies such as carbon taxes, parking fees, and demand management efforts” these changes are difficult to repeal.⁹⁶

Additionally, some of the most frequently projected impacts of climate change, such as drought and increased temperatures, create vulnerabilities for the existing built environment and the “sprawl growth development” mindset that produced that

⁹¹ Thomas M. Gremillion, *Setting the Foundation: Climate Change Adaptation at the Local Level*, 41 *Envtl. L.* 1221, 1242 (2011)

⁹² *Cooperative Federalism and Climate Change: New Meaning to "Think Globally-Act Locally"* at 10563-64.

⁹³ *Id.*

⁹⁴ *Id.* at 10565.

⁹⁵ Katherine A. Trisolini, *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*. *Stanford Law Review*, 669-746, 713 (2010) (citing Reid Ewing et al., *Growing Cooler: The Evidence on Urban Development and Climate Change* §1.7.3 (2007), available at http://postcarboncities.net/files/SGA_GrowingCooler9-18-07small.pdf, at Executive Summary.)

⁹⁶ *Id.*

environment.⁹⁷ Thus, some aspects of this infrastructure may become stranded investments, and an increasing number of local governments could find themselves re-thinking community planning norms. In this re-thinking, there will be opportunities to develop plans that result in lower GHG emissions.

4. Solid Waste and Materials Management

Many local governments are responsible for waste management processes.⁹⁸ In this sector, there are opportunities to reduce GHG emissions, particularly the potent short-term (relative to other GHGs) impact of methane gas from landfills.⁹⁹ For example, waste authorities may install methane gas collectors/digesters that capture the release of methane from landfills and use it for municipal energy needs, resulting in a lower impact emission stream from both the landfill and the city.¹⁰⁰ These efforts can have significant impact because, as of 2011, municipal solid waste facilities were the third largest source of annual methane emissions in the U.S.¹⁰¹

5. Renewable Energy

To the extent that a local government has authority to set siting standards for different kinds of development, efforts to install wind, solar, and biomass renewable energy may be expedited.¹⁰² Local governments also can directly support renewable

⁹⁷ Setting the Foundation: Climate Change Adaptation at the Local Level at 1237.

⁹⁸ For example, *see* OAR 340-093-0010 (“Local government will be expected to assume or provide for responsibility in the ownership and operation of any Department/Commission sited landfill under anything but an extraordinary circumstance.”)

⁹⁹ *See* Shanjun Li., et. al., Assessing the role of renewable energy policies in landfill gas to energy projects, *Energy Economics* (May 2015) Volume 49, 687–697, <http://www.sciencedirect.com/science/article/pii/S0140988315001140> at 687.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² Local governments in Oregon do not have much control over the energy siting process because large electric generating facilities are evaluated by the Oregon Department of Energy’s Energy Facility Siting Council. *See* Oregon Department of Energy – Energy Facility Siting Process, <http://www.oregon.gov/energy/Siting/docs/StandardProcess.pdf>; *see also* ODOE: Energy Facility Siting; Oregon Department of Energy, <http://www.oregon.gov/ENERGY/SITING/Pages/index.aspx>.

energy by promoting community solar programs, net metering, purchasing renewable energy credits, and other cooperative actions between consumers and utilities.¹⁰³

6. Carbon Sequestration

Local governments may support efforts that sequester carbon, such as planting new trees, protecting agricultural land that offers significant soil carbon sequestration, and protecting forested landscapes through park purchases and other preservation efforts.¹⁰⁴ Additionally, local governments can choose to purchase carbon offsets that reduce emissions elsewhere through carbon sequestration, and sometimes these projects may be relatively local if qualified offset projects have been established.¹⁰⁵

7. Public Education and Outreach

Given that local governments cannot require certain sustainable behaviors, educating the public through outreach efforts is important.¹⁰⁶ While this is challenging given limited resources, tools such as social media and interested party email lists allow local governments to more efficiently communicate about governmental goals and programs to achieve those goals. Professor Krause notes that when local citizens become more informed, they may engage as policy entrepreneurs and thus advance local climate protection efforts.¹⁰⁷ Additionally, demonstrating successful policy to the public through educational efforts may lead to greater support for stronger climate regulation within the

¹⁰³ For more information on community solar programs, *see e.g.* Community Solar, Oregon Department of Energy, http://www.oregon.gov/energy/P-I/Pages/solar/Community_Solar.aspx. For more information on net metering, *see e.g.* Net Metering, Energy Trust of Oregon, <https://energytrust.org/shared-resources/info/solar-net-metering.aspx>.

¹⁰⁴ For example, *see* Talking Trees: An Urban Forestry Toolkit for Local Governments; ICLEI: Local Governments for Sustainability (2006), http://www.milliontreesnyc.org/downloads/pdf/talking_trees_urban_forestry_toolkit.pdf.

¹⁰⁵ For example, the Climate Trust sells a variety of offsets in Oregon that Oregon's local governments could support; *see* Project Portfolio, The Climate Trust, <http://www.climatetrust.org/work/portfolio/>.

¹⁰⁶ However, note that some cities have required residents to adopt certain sustainable behavior or to pay a fine; *see* Ordinances Prohibiting Recyclables in Garbage, Seattle Public Utilities, <http://www.seattle.gov/Util/MyServices/Garbage/AboutGarbage/SolidWastePlans/AboutSolidWaste/BanOrdinance/index.htm>.

¹⁰⁷ Symbolic or Substantive Policy? Measuring the Extent of Local Commitment to Climate Protection at 46.

locality, in other jurisdictions, as well as decreased opposition from industry and other groups.¹⁰⁸

8. Climate Change Adaptation

Some scholars have opined that local populations may be more supportive of climate change adaptation than mitigation efforts because local residents see adaptation efforts and feel that these projects benefit them.¹⁰⁹ Many local adaptation plans choose to tackle land use and energy conservation concerns, producing both mitigation and adaptation benefits, and “focusing residents' attention to the problem of climate change and the consequences of inaction.”¹¹⁰ While there is the risk that local governments and residents will conflate and confuse adaptation and mitigation objectives, some scholars claim that “all adaptation policy should foster better understanding of climate change, better integration and coordination of local government services, and better long-term planning capacity.”¹¹¹ If adaptation policy does indeed produce these benefits, it may help establish procedures and institutions that are transferrable to local GHG reduction efforts.¹¹²

Adaptation is also a potentially fruitful area for local government efforts because adaptation policies “tend to fall within the gambit of traditional local government powers—zoning, water and waste management, emergency response....”¹¹³ Thus, adaptation policies can encourage sustainable practices from the entities that are affected by the exercise of these local government powers.¹¹⁴

¹⁰⁸ Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 *Ariz. L. Rev.* 681, 700 (2008).

¹⁰⁹ *Setting the Foundation: Climate Change Adaptation at the Local Level* at 1227.

¹¹⁰ *Id.* at 1227-28.

¹¹¹ *Id.* at 1228.

¹¹² *Id.* at 1233.

¹¹³ *Id.* at 1235.

¹¹⁴ *Id.* at 1235-36.

9. Local Climate Action Plans

Many of the aforementioned categories of actions are set out in local climate action plans.

Professor Trisolini points out that when local governments make additional efforts to address climate change, they create competent institutions and bureaucracies that will be better able to adapt to whichever state or federal programs are required at a later juncture. Another benefit of leading on emission reductions locally is that local citizens will become more familiar with programs as they are implemented, which may lead to buy-in and the development of capacity to tackle more difficult to implement goals.¹¹⁵ Finally, local programs can motivate state and national governments to be more ambitious, spur climate adaptation, mitigation, and financing, and encourage “an emphasis on solutions-directed efforts” in public dialogue about climate change.¹¹⁶

Why Local Actions Are Symbolic

Despite the aforementioned substantive steps that local governments may take to address climate change and seek to reduce GHG emissions, some scholars argue (and many at least recognize) that local government action can be more symbolism than substance. For example, although many local governments have pledged to make emissions reductions, these pledges are rarely legally obligating, and as Professor Krause notes, local governments are reluctant to voluntarily implement policy pledges that have local costs, but do not necessarily have local benefits.¹¹⁷ Furthermore, when local action requires public support, many local leaders find it difficult to communicate about climate change to the general public because climate science is complex and the science does not often discuss social or economic implications of status quo policy or policy change.¹¹⁸ Given that local government emission reduction commitments often rely on voluntary

¹¹⁵ All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation at 744.

¹¹⁶ Angel Hsu, et. al.; Scaling Up: Local to Global Climate Action; R20 Regions of Climate Action (2015); <http://regions20.org/images/ScalingUp.pdf> at 8.

¹¹⁷ Symbolic or Substantive Policy? Measuring the Extent of Local Commitment to Climate Protection at 46.

¹¹⁸ S.R.J. Sheppard, et. al.; Future visioning of local climate change: A framework for community engagement and planning with scenarios and visualization; *Futures*, 43, 400-412 (2011).

individual actions from members of the public, and these actions usually cannot be required by local governments (e.g. riding a bicycle vs. driving a motor vehicle), emission reduction pledges may represent symbolic steps rather than substantive progress.

Indeed, Professor Engel opines that many local initiatives to reduce GHGs are symbolic because they do little to reduce the risks of climate change, despite providing “localized economic and environmental benefits” other than emissions reductions, including local advantages for compliance with potential “future carbon regulation regimes.”¹¹⁹ Professor Stewart states that subnational climate regulatory “measures may be largely symbolic initiatives, pushed by local political entrepreneurs for short-term political gain, that will simply not be implemented once their significant costs become apparent.”¹²⁰ Stewart also opines that local efforts may have less to do with addressing climate change and more to do with saving money, and that “easy” emission reductions become commitments because the costs of these “low-hanging fruit” actions are outweighed by the benefits of action.¹²¹ Thus, Stewart believes that independent sub-national actions will not continue beyond the point “where net economic costs become significant and outweigh local environmental benefits.”¹²²

Engel also opines that many local climate change initiatives are abstract because of nonbinding and broad provisions that allow “government officials great flexibility in timing, scope, and aggressiveness of implementation...”, suggesting “that one of their primary functions is to serve as symbolic statements in favor of action addressing climate change.”¹²³ Because of this abstraction and perceived symbolism, Engel believes that local voters often endorse climate initiatives as a general expression of support for

¹¹⁹ Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 *Emory L.J.* 159, 168 (2006).

¹²⁰ Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 *Ariz. L. Rev.* 681, 690 (2008).

¹²¹ *Id.*

¹²² *Id.*

¹²³ Kirsten H. Engel & Barak Y. Orbach, *Micro Motives and State and Local Climate Change Initiatives*, *Harvard Law and Policy Review* 2: 119-137 (2008) at 128.

climate action, rather than as an act of approval of private or public expenditures in order to implement their preferences.¹²⁴ In the same vein, local climate change initiatives may be political ploys by politicians seeking greater exposure and popularity.¹²⁵ For these reasons, Engel suspects that local climate initiatives are perceived as low-risk because local governments can “back off before incurring any costs if other state and localities do not adopt similar climate protection measures.”¹²⁶ Finally, Engel warns that local “initiatives could have a placebo effect: the pervasiveness of local initiatives may create the impression that something effective is being done.”¹²⁷

Why Local Actions Matter Regardless of Substance and/or Symbolism

While the actual substance of local government climate actions is debatable, there is the possibility that any substantive success creates a beneficial multiplier effect. At the local level, Professor Stewart notes that cities may gain “enhanced energy security and lower energy prices by stimulating development of local energy sources...” and that other benefits may include “improved transportation infrastructure, green space, building efficiency, air quality, and traffic--all of which can at the same time reduce emissions and allow for faster economic and residential growth.”¹²⁸ Local actions can also influence larger jurisdictions as well. Stewart believes that sub-national climate regulatory initiatives may “demonstrate that it is feasible to reduce emissions at an acceptable or even negative cost... [and] that jurisdictions that initiate such measures may reap competitive advantages or other co-benefits.”¹²⁹

Regardless of whether local climate protection efforts are primarily substantive or symbolic, Professor Trisolini wisely notes that “ignoring local governments’ collective capacity to reduce emissions may cause the state and federal governments to overlook

¹²⁴ *Id.* at 129.

¹²⁵ *Id.* at 134.

¹²⁶ *Id.* at 129.

¹²⁷ *Id.* at 136.

¹²⁸ States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures at 691-92.

¹²⁹ *Id.* at 700.

ways to facilitate proven and sometimes quick reductions that can be accomplished with existing technology and established local bureaucracies.”¹³⁰ Yet, Trisolini is careful to temper her optimism with the observation that local government action faces constitutional limitations within the U.S. federalist system that limit the overall substantive impact of local climate regulatory action.¹³¹ Thus, the next section examines how local government climate regulatory actions fit within our federalist system.

ii. Local Government Engagement in Plural Climate Regulatory Structures Within the U.S. Federalist System

This section first lays out the scholarly case for plural climate regulatory structures (also referred to as multilevel or stacked approaches), and then discusses how such structures fit within the U.S. system of federalism.

Many scholars believe that more effective environmental governance is achieved when a “multilevel approach” or a “plural model” to regulation is utilized.¹³² While scholars note the theoretical advantages of a unitary, top-down climate regulatory system (e.g. binding international cap and trade program), many believe that a unitary system could take a very long time to emerge, and that a plural system is thus more likely to advance climate protection now.¹³³ One of the reasons that a global, or even a national, unitary regulatory system for climate protection is unlikely to emerge is that federal leadership, particularly congressional leadership, on climate change has been obstructed by “the many veto points in the congressional decision-making structure... [which give] significant power to organized economic interests to block climate change regulation.”¹³⁴ While many veto points also exist in state and local level decision-making, organized economic interests may be less able to impede decisions at these levels, perhaps due to

¹³⁰ All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation at 693.

¹³¹ *Id.* at 695.

¹³² *Id.* at 691 (citing Ann E. Carlson, Federalism, Preemption, and Greenhouse Gas Emissions, 37 U.C. Davis L. Rev. 281, 312-17 (2003), and Kirsten H. Engel, Harnessing the Benefits of Dynamic Federalism in Environmental Law, 56 Emory L.J. 159, 161 (2006).).

¹³³ States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures at 681.

¹³⁴ *Id.* at 694.

inadequate resources, disinterest in the effect of regulations, and/or the diminished impact of money spent to influence local decision-makers.

In the context of GHG emission reductions, one of the primary arguments for the plural approach is that if the initial international, federal, regional, or state response to climate change is not well-designed and is a regulatory failure, local efforts will compensate.¹³⁵ Such compensation and local experimentation will be an important portion of an effective mitigation regime.¹³⁶ Enabling local competition, cooperation, and interaction to tailor regulations to local conditions is a key benefit of a plural regulatory system, particularly when so much uncertainty exists about how to optimally design climate regulatory systems at any level of government.¹³⁷ Other benefits include “regulatory experimentation, innovation and mutual learning, filling regulatory gaps, and ... political impetus for progressively stronger regulatory measures.”¹³⁸ These benefits have the potential to kick off “political and market domino effects” that encourage increased climate regulation both horizontally among local governments and vertically to other levels of government.¹³⁹ One such benefit could be local governments helping to fill gaps that emerge in centralized regulation, perhaps through participation in carbon offset and credit systems.¹⁴⁰ Given that these systems have not thrived, perhaps due to under participation, local participation could trigger a market domino effect. Local government participation in local regulatory programs may produce helpful feedback for higher level regulatory design.¹⁴¹

Despite the benefits of plural regulatory designs, there are costs as well. For example, compliance by regulated entities may be complicated in a climate regulatory

¹³⁵ All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation at 690.

¹³⁶ Setting the Foundation: Climate Change Adaptation at the Local Level at 1230-31.

¹³⁷ See Setting the Foundation: Climate Change Adaptation at the Local Level at 1231; see also States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures at 697.

¹³⁸ States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures at 706-07.

¹³⁹ *Id.* at 692-93.

¹⁴⁰ *Id.* at 700.

¹⁴¹ *Id.* at 701.

system with multiple layers.¹⁴² Also, to the extent that local governments advance new policy with costs, such policy may also impose costs on other jurisdictions.¹⁴³ Another potential pitfall is "carbon leakage", whereby carbon intensive capital and industry may relocate to areas where there is decreased regulation, or decreased consumption will result in cheaper prices that increase consumption elsewhere, thus offsetting any emission reductions that may have occurred.¹⁴⁴ These downsides are arguably unavoidable without a comprehensive state, regional, federal, or international policy that deters other local actors from opting out of action. Additionally, some argue "that piecemeal efforts can create path dependency, making inefficient small-scale plans difficult to displace with a subsequent and more effective comprehensive regime."¹⁴⁵

Professor Trisolini explains that plans to address climate change and reduce emissions at the local level are desirable because they would "not require new administrative structures (such as likely will be required by a federal cap-and-trade scheme, for example) but rather can be implemented by existing bureaucracies such as planning, building and safety, and waste management departments."¹⁴⁶ Yet, as Professor Krause notes, there are many supply-side model variables (population, staff expertise, policy entrepreneur, per capita budget, etc.) and demand-side model variables (household income, political representation, educational attainment, the number of environmental non-profits, etc.) that will affect each community's efforts.¹⁴⁷

¹⁴² *Id.*

¹⁴³ *Id.* at 701-02.

¹⁴⁴ See All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation at 685 (citing Jonathan B. Wiener, Think Globally, Act Globally: The Limits of Local Climate Change Policies, 155 U. Pa. L. Rev. 1961, 1967-70 (2007)); *see also* States and Cities As Actors in Global Climate Regulation: Unitary vs. Plural Architectures at 689.

¹⁴⁵ All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation at 685 (citing Jonathan B. Wiener, Think Globally, Act Globally: The Limits of Local Climate Change Policies, 155 U. Pa. L. Rev. 1961, 1970-73 (2007)).

¹⁴⁶ All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation at 696.

¹⁴⁷ Symbolic or Substantive Policy? Measuring the Extent of Local Commitment to Climate Protection at 55.

Professor Salkin opines that comprehensively and thoughtfully addressing climate change requires a “system of cooperative federalism” where local governments serve as “the foundation for implementation and benchmarking” of broader state and federal public policy goals.¹⁴⁸ According to her, “Global climate change mitigation cannot be adequately accomplished without effective, immediate, and coordinated local action.”¹⁴⁹ Similar to Salkin's concept of “cooperative federalism”, Professor Kirsten Engel discusses the concept of “dynamic federalism” in the context of environmental regulation, and while this scholarship primarily focuses on the interaction of the states and federal government, some of her arguments also are applicable to the interaction of local governments with the state and federal government. Engel has argued that a system of “dynamic federalism” with overlapping authority on regulatory matters promotes regulatory innovation and responsiveness, deters governmental capture by interest groups, and allows for greater judicial efficiency because courts can abstain from the confusion of “jurisdictional line-drawing.”¹⁵⁰ She believes that a diffusion of authority between governmental bodies leads to greater interest group activity to find policymakers that will advance the interest group’s agenda.¹⁵¹

However, it is important to note that jurisdictional overlap also has downsides, primarily a lack of accountability and finality, and potentially inefficient redundancies.¹⁵² Another significant potential downside to overlapping authority is preemption.¹⁵³ Despite the dangers of preemption, in the case of environmental regulation, particularly climate regulation, the costs of inadequate regulation of the use of nonrenewable and irreplaceable resources are high.¹⁵⁴ Thus, it is worth risking preemption to contribute to the adequate protection of resources.

¹⁴⁸ Cooperative Federalism and Climate Change: New Meaning to "Think Globally-Act Locally" at 10571.

¹⁴⁹ *Id.*

¹⁵⁰ Harnessing the Benefits of Dynamic Federalism in Environmental Law at 161.

¹⁵¹ *Id.* at 173.

¹⁵² *Id.* at 162.

¹⁵³ See discussion of preemption *supra* at 10-11.

¹⁵⁴ Harnessing the Benefits of Dynamic Federalism in Environmental Law at 178-79.

iii. The Future of Local Government Climate Actions in Oregon

Given the preceding discussion of climate policy at multiple governmental levels and the scholarly assessments of local government climate action, what are local governments in Oregon doing? The following assessment incorporates examples of actions that local governments in Oregon already are planning to accomplish, as well as actions that have been contemplated, and refers back to the introduction's discussion of climate regulatory authority at each governmental level when necessary to contextualize these local actions.

To recap, local governments have the power to address climate change through energy efficiency, transportation, community planning and design, solid waste and materials management, renewable energy, carbon sequestration, public education and outreach, climate change adaptation, and the development of local climate action plans, among other actions.¹⁵⁵ Primarily referencing Portland and Eugene, Oregon as examples (but also incorporating smaller communities where relevant), the following discussion highlights key actions Oregon's cities are taking to address climate change and reduce GHG emissions.¹⁵⁶ Note that this discussion is not intended to be a comprehensive guide to local government actions and strategies in Oregon, but instead highlights actions that are either innovative or are representative of actions taken by several or numerous local governments.

1. Energy Efficiency

Many cities in Oregon encourage energy efficiency by disseminating information about state-level rebate and tax credit programs for energy efficient retrofits, as well as distributing federal grant monies for energy efficiency projects.¹⁵⁷ Cities also directly

¹⁵⁵ See Cooperative Federalism and Climate Change: New Meaning to "Think Globally-Act Locally" at 10563-64 (2010); see also State and Local Climate and Energy Program, U.S. Environmental Protection Agency (2012), <http://www.epa.gov/statelocalclimate/index.html>.

¹⁵⁶ The Oregon Global Warming Commission maintains a page on local climate initiatives; this information served as a springboard for the following examples, but the website appears to be several years out of date at this point. See Local Initiatives, Oregon Global Warming Commission, last accessed 2-23-16, <http://www.keeporegoncool.org/content/local-initiatives>.

¹⁵⁷ For example, see Energy Efficiency and Conservation, City of Lake Oswego, last accessed 2-23-16, <http://www.ci.oswego.or.us/sustainability/energy-efficiency-and-conservation>.

invest in projects that integrate energy efficient technology such as LED lights.¹⁵⁸ Additionally, the State of Oregon has been a heavy proponent of energy efficiency efforts to avoid energy supply issues and the need to build additional electrical generation capacity to serve a greater number of consumers. However, it is important to note that while “energy efficiency has been the region’s lowest cost resource... it is not expected to be sufficient to the task of replacing a substantial amount of coal combustion.”¹⁵⁹ Thus, energy efficiency efforts alone are unlikely to provide all of the needed additional capacity as the state transitions from a reliance on fossil fuel electricity generation to clean energy sources. This is one of the reasons why local governments should pursue the additional actions that fall under the following categories of local climate initiatives.

2. Transportation

Ideas for decreasing emissions from the transportation sector abound. For example, as early as 2009, the Oregon Governor’s Climate Change Integration Group suggested that local governments be required to consider Vehicle Miles Travelled (VMT) in comprehensive plans and in evaluating proposals for development, and also suggested that “development credits” could be rewarded for achieved VMT reductions.¹⁶⁰

In 2013, the Oregon Legislature passed ORS 184.895, which directed the Oregon Department of Transportation and Department of Land Conservation and Development to consult and cooperate with local governments, metropolitan planning organizations, and other stakeholders to “establish a toolkit to assist local governments in developing and executing actions and programs to reduce greenhouse gas emissions from motor vehicles with a gross vehicle weight rating of 10,000 pounds or less.”¹⁶¹ This toolkit was required to include, among other mandates, implementable programs for local governments, information about different actions’ effectiveness at reducing GHG emissions, cost-

¹⁵⁸ *Id.*

¹⁵⁹ Clean Air Act Section 111(d) CO₂ Reduction Compliance Pathways for the Pacific Northwest and Intermountain West States at 320.

¹⁶⁰ Final Report to the Governor: A Framework for Addressing Rapid Climate Change at 49.

¹⁶¹ ORS § 184.895.

effectiveness of different actions, and educational tools to encourage public buy-in to the different actions.¹⁶² This toolkit has not yet been completed.

3. Community Planning and Design

Recently, several local governments in Oregon have committed to ambitious and innovative climate policies. In 2014, the City of Eugene adopted a Climate Recovery Ordinance requiring that:

- (1) By the year 2020, all city-owned facilities and city operations shall be carbon neutral, either by reducing greenhouse gas emissions to zero, or, if necessary, by funding of verifiable local greenhouse gas reduction projects and programs or the purchase of verifiable carbon offsets for any remaining greenhouse gas emissions.
- (2) By the year 2030, the city organization shall reduce its use of fossil fuels by 50% compared to 2010 usage.
- (3) By the year 2030, all businesses, individuals and others living or working in the city collectively shall reduce the total (not per capita) use of fossil fuels by 50% compared to 2010 usage.¹⁶³

Furthermore, the ordinance required that the city assess current efforts to reach its climate action goals by evaluating (among other things):

- (1) Trends in current energy use for the community and for city operations and facilities; and
- (2) Progress in implementing the community climate and energy action plan and the internal climate action plan.

Once this assessment was complete within 12 months of the effective date of the ordinance, the city council was required to “establish numerical targets and benchmarks, and take other actions that the council determines are necessary, for achieving the required reductions....”¹⁶⁴ In order to establish these targets, city staff was required to provide the city council with: “Numerical greenhouse gas and fossil fuel reduction targets equivalent to achieving the related goals... Two-year and five-year benchmarks for

¹⁶² *Id.*

¹⁶³ Council Ordinance No. 20540 (Climate Recovery Ordinance), City of Eugene, <http://www.eugene-or.gov/511/Climate-Recovery>.

¹⁶⁴ *Id.*

reaching the numerical targets...” as well as a proposal for a “numerical community-wide goal or ‘carbon budget’ for greenhouse gas emission reductions consistent with achieving 350 parts per million of CO₂ in the atmosphere by the year 2100.”¹⁶⁵ All options prepared for council decision are required to “include a triple bottom line assessment of the options including a cost-benefit analysis.”¹⁶⁶

After council adoption of targets and benchmarks, the city has the following reporting and updating obligations:

- (1) Provide a progress report every two years.
- (2) Provide a comprehensive report every five years that includes an assessment of greenhouse gas emission reductions to date and the status in reaching the established targets and benchmarks....
- (3) Update the community climate and energy action plan and the internal climate action plan every five years, which shall be based on the updated greenhouse gas inventory.

Under part two of the above requirements, if the city is not reaching adopted targets and benchmarks, it must “Conduct an analysis of possible actions to get back on track to achieve the next adopted benchmark, together with a triple bottom line analysis of those options... [and] Develop for council consideration potential revisions to the plan that reflect the necessary actions to achieve the next adopted benchmark.”¹⁶⁷

More recently, the City of Portland passed two new resolutions. First, the City Council resolved to oppose the purchase of corporate securities from fossil fuel companies.¹⁶⁸ Second, the City Council directed city bureaus “to identify how to use the City's authority to restrict the development and expansion of fossil fuel infrastructure....”¹⁶⁹ While neither of these actions is legally binding, they may have a

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

¹⁶⁸ Fossil Fuel Export Policy Development Process, City of Portland, last accessed 2-23-16, <https://www.portlandoregon.gov/bps/article/546087>.

¹⁶⁹ *See Id.*; *See also* Resolution No. 37168, City of Portland, <https://www.portlandoregon.gov/bps/article/553551>.

significant impact on the city’s financial contribution to climate change inducing activities and the city’s support of fossil fuel infrastructure development that results in emissions within the city and in other jurisdictions.

While the Eugene and Portland community planning and design efforts are important, it is worth noting that cities assumed to be less interested in environmental initiatives are framing discussions around sustainability. For example, La Grande is striving to achieve “a natural resource use pattern which gives as much importance to providing for tomorrow's needs and the protection of the natural environment as to providing for the needs of today.”¹⁷⁰ Another example is Lincoln City’s commitment to becoming a carbon neutral community.¹⁷¹

4. Solid Waste and Materials Management

The City of Portland’s 2015 Climate Action Plan has four main goals related to solid waste and materials management between now and 2030: 1) encourage sustainable consumption by residents and to help businesses minimize their supply chains’ carbon intensity; 2) reduce the amount of food sent to landfills by 90%; 3) reduce solid waste (on a per capita basis) by 33%; and 4) recover 90% of waste generated in the city.¹⁷²

Renewable Energy

5. Renewable Energy

The City of Lake Oswego has committed to purchasing RECs “for all of its Schedule 83 accounts (largest consumers of electricity).”¹⁷³ Actions like this can have a large impact on emissions. According to the city’s analysis of current electricity usage, these RECs have an annual emission reduction impact “equivalent to planting 1,065 trees or not driving 9,982,036 miles.”¹⁷⁴

¹⁷⁰ City of La Grande Ordinance Number 3208 Series 2013 Comprehensive Plan Page 27 of 258; Last accessed 7-24-15; <http://www.cityoflagrande.org/muraProjects/muraLAG/lagcity/?LinkServID=97481322-C409-86DB-21D8C2DD524B14E7&showMeta=0>.

¹⁷¹ Abby Haight, Lincoln City crimps its carbon, *The Oregonian* (Dec. 12, 2008), http://www.oregonlive.com/environment/index.ssf/2008/12/lincoln_city.html.

¹⁷² Climate Action Plan: Local Strategies to Address Climate Change; City of Portland (June 2015); <https://www.portlandoregon.gov/bps/article/531984> at 26.

¹⁷³ Energy and Climate Change, City of Lake Oswego, last accessed 2-23-16, <http://www.ci.oswego.or.us/sustainability/energy-and-climate-change>.

As costs for renewable energy technologies decreases, some local governments in Oregon have begun to consider how to support the development of projects that are small enough (in terms of energy production) to not require siting approval by the Oregon Energy Facility Siting Council. In order to expedite this transition, the Oregon Department of Energy has produced a model ordinance for local governments seeking to clarify their processes for small-scale energy development.¹⁷⁵

6. Carbon Sequestration

Portland's 2015 Climate Action Plan sets two major carbon sequestration goals for 2030: a 600-acre aggregate reduction in impervious areas and an expansion of the urban forest canopy in order to cover one third of the city, which includes targets for minimum canopy coverage in different neighborhood types.¹⁷⁶

7. Public Education and Outreach

The City of Portland has a variety of short-term (2020) and longer-term (2030) goals for engaging the community in its 2015 Climate Action Plan. Most notable among these are: aligning the plan with existing community efforts and partnering with the community organizations that are leading these efforts, creating a “culturally relevant presence” (not defined) at community engagement events, and a conscious effort to engage “under-served” residents by providing materials and resources for carbon reduction activities.¹⁷⁷

8. Climate Change Adaptation

Since 2009, it has been Oregon State policy for “local governments, businesses, nonprofit organizations and individual residents to prepare for the effects of global warming and by doing so, prevent and reduce the social, economic and environmental effects of global warming.”¹⁷⁸ Local governments such as Portland have responded to this

¹⁷⁴ *Id.*

¹⁷⁵ A Model Ordinance for Energy Projects, Oregon Department of Energy (July 2005), <http://www.oregon.gov/ENERGY/SITING/docs/ModelEnergyOrdinance.pdf>.

¹⁷⁶ Climate Action Plan: Local Strategies to Address Climate Change at 27.

¹⁷⁷ *Id.* at 120-21.

¹⁷⁸ ORS § 468A.205.

charge by preparing to reduce and mitigate urban heat island effects, develop infrastructure that will be more resilient to expected changes in weather and climate, and protecting community water supply and quality through efficiency, groundwater development forecasting, and greener Stormwater management techniques.¹⁷⁹

9. Local Climate Action Plans

In 2007, The Oregon Climate Change Research Institute (OCCRI) was established and given a directive to “provide technical assistance to local governments to assist them in developing climate change policies, practices and programs.”¹⁸⁰ It is unclear how much OCCRI has helped with this charge. Nonetheless, several cities in Oregon, including Portland and Eugene, already have climate action plans and several other cities intend to finish plans soon; for example, the City of Ashland plans to complete their plan by February 2017,¹⁸¹ and the City of Corvallis has begun the climate action planning process. It also appears that the quality of these plans is increasing over time as city staff gain expertise and experiment with policy solutions. A great example of the state of climate action planning at the local level is Portland’s 2015 Climate Action Plan, which presents a well-organized and visually pleasing menu of city actions and goals.¹⁸²

¹⁷⁹ See Climate Action Plan: Local Strategies to Address Climate Change at 113; see also A Community Climate and Energy Action Plan for Eugene, City of Eugene (September 2010), <https://www.eugene-or.gov/ArchiveCenter/ViewFile/Item/80> at 17.

¹⁸⁰ History and Charter, Oregon Climate Change Research Institute, <http://occri.net/>, last accessed 2-6-16.

¹⁸¹ Climate & Energy Action Plan Ad hoc Committee, City of Ashland, <http://www.ashland.or.us/CCBIndex.asp?CCBID=251>.

¹⁸² Climate Action Plan: Local Strategies to Address Climate Change; City of Portland (June 2015); <https://www.portlandoregon.gov/bps/article/531984>.

CHAPTER IV

METHODOLOGY

The goal of the survey was to learn more about the views of “climate policymakers” in Oregon, particularly their opinions about municipal and other local government approaches to GHG emission reductions. The “climate policymaker” survey population was broadly defined as individuals involved with efforts to reduce greenhouse gas (GHG) emissions in Oregon. This group included: state, county, and local elected officials; state and city staff dealing with climate change planning and policy; staff at relevant NGOs; and an assortment of community and business leaders. Selection of the survey population aimed to equitably represent viewpoints from different regions of the state (e.g. Portland Metro, Willamette Valley, Eastern Oregon, Central Oregon, Oregon Coast, and Southern Oregon). Climate policymakers were surveyed in order to better understand GHG emission reduction goals in Oregon at the state and local level, specific policies enacted or proposed to achieve those goals, the degree to which various obstacles have stymied progress, and creative approaches that could help achieve and exceed the goals.

The survey was hosted on the Qualtrics survey platform and was distributed via email to at least 140 individuals from at least 41 distinct organizational entities. The survey may have been distributed to more individuals and organizations if any of the survey participants shared the survey without asking permission. However, the survey did not allow multiple responses from the same IP address, so any person receiving the link was only personally allowed to complete the survey once. Contact information for the subjects was obtained through publicly available information on the internet, as well as through personal and professional networks. In order to survey staff from local, state, and federal governments, written permission was obtained from relevant leadership prior to distributing the survey. Participants were alerted at the beginning of the survey that completion of the survey constituted their consent to the use of Qualtrics surveying software and the inclusion of their responses in the research findings.

Recognizing that climate change law and policy can be politically contentious, the survey built in the maximum amount of confidentiality possible. Due to concerns about

participant confidentiality, the list of organizations and individuals that received the survey is not disclosed in the research findings or the discussion. Disclosure could allow findings to be linked to specific organizations or individuals. The decision to not disclose surveyed individuals and organizations, in conjunction with respondent anonymity through response anonymization by Qualtrics, eliminated the ability to tie responses to any individual (unless the respondent entered personally identifiable information). Participants were informed that their responses would become part of the research findings and were encouraged to not include personally identifiable information in any question that allowed for an open response. Thus, the survey was completely anonymous, except for the instances where participants chose to share personally identifiable information.

The survey methodology and questions were inspired by several previous surveys administered in Oregon that partially or entirely focused on climate change concerns. These include two surveys conducted by Davis, Hibbitts & Midghall, Inc (DHM Research) and PolicyInteractive; one was a survey of citizens in Eugene, Oregon on climate change and consumption¹⁸³, and the other was the Oregon Values and Beliefs Survey.¹⁸⁴ Several questions were also based on a PolicyInteractive survey distributed during 2015 to gauge support for a carbon cap and trade bill in the Oregon Legislature. Finally, surveying conducted by the Oregon Global Warming Commission as a part of its “Roadmap to 2020” report also informed the design of the survey.¹⁸⁵

The survey featured several different types of questions, including forced choice, open-ended, and close-ended questions. Any questions that were placed in a grouping, category, or list were randomized so that “order influence” had the least chance to affect the results. This tactic is particularly important for avoiding “agreement answering” bias,

¹⁸³ Davis, Hibbitts & Midghall, Inc, Climate Change and Consumption Survey. Available online at <http://www.eugene-or.gov/DocumentCenter/Index/> (2011).

¹⁸⁴ See 2013 Oregon Values and Beliefs Survey, Oregon Values and Beliefs Project (Oct. 2013) http://oregonvaluesproject.org/ovp-content/uploads/2013/09/true_north_final_10_7_13.pdf.

¹⁸⁵ Roadmap to 2020 Full Report, Oregon Global Warming Commission (2010), http://www.keeporegoncool.org/sites/default/files/OGWC_Roadmap_2020_Roadshow_Survey_Phase_1_Report_Combined.pdf.

whereby participants are primed to answer questions in a predictable way based upon their answers to previous questions.

Participants were asked to complete a survey that featured ten substantive questions and nine demographic questions. For the substantive questions, three questions were open ended, three questions measured strength of agreement with a statement, two questions asked participants to select policy approaches from a list, and two questions asked participants to rank categories of policy obstacles and mechanisms. Mixed methodology analysis of the questions produced tables and/or graphs for all of the multiple choice and otherwise close ended questions. The qualitative analysis focused on trends in the responses to the open ended questions, tying quantitative results to the qualitative results where possible. Both sets of analyses are located in the discussion section.

The introduction, literature review, and discussion formed the basis for synthesized GHG emission reduction recommendations for Oregon's local governments. These recommendations dovetail with existing and contemplated strategies by multiple levels of governmental and non-governmental actors, and are featured in the recommendations section.

CHAPTER V






FINDINGS

Note that the following survey results do not appear in the order in which questions were presented in the survey. The order of results is not significant because some questions were ordered randomly in the survey to diminish the effect of order influence.








a. Demographic Findings

The survey was completed by 55 participants, but not every participant completed every question, as demonstrated by respondent numbers ranging from 51 – 54. To give context about the composition of the survey population, brief findings are included on the distribution of survey participants’: 1) GHG emission reduction experience; 2) age; 3) political party; 4) political outlook; 5) education; 6) household income; 7) city and state of residence; 8) ethnic background; and 9) gender.

1. How long have you worked on GHG emission reduction efforts?

0 - 2 years		5	9%
2 - 4 years		10	19%
4 - 10 years		18	33%
More than 10 years		20	37%
Don't know or need more information		1	2%
Total		54	100%

2. Please identify which age bracket you belong to:

18-24		2	4%
25-34		6	11%
35-44		15	28%
45-54		7	13%
55-64		13	24%
65+		9	17%
No response		2	4%
Total		54	100%

3. Which political party do you identify with?

Democrat		40	75%
Republican		0	0%
Other		7	13%
No response		6	11%
Total		53	100%

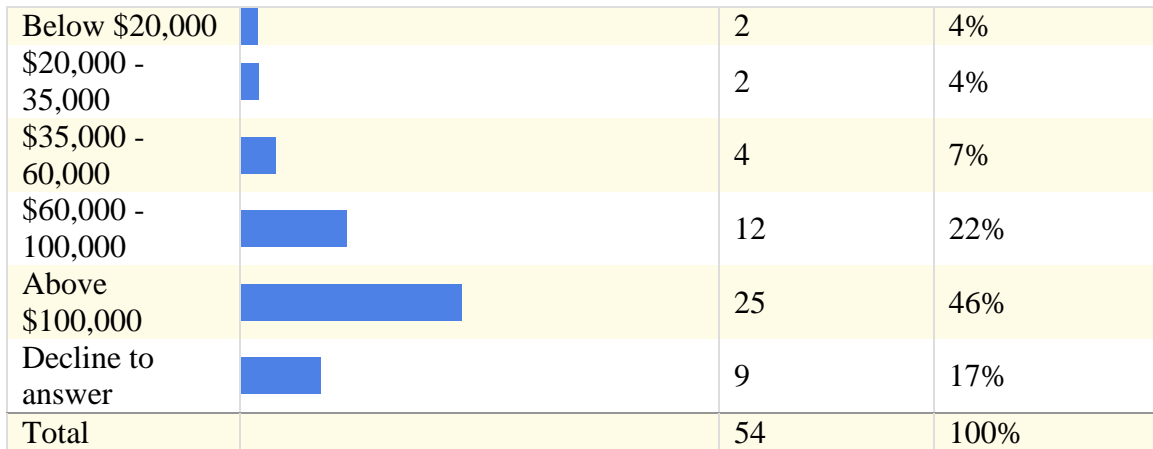
4. How would you describe your general political outlook?

Very conservative		0	0%
Lean conservative		0	0%
Moderate		2	4%
Lean liberal		16	30%
Very liberal		30	56%
Other response		3	6%
No response		3	6%
Total		54	100%

5. What is the highest level of education you have completed?

Less than high school		0	0%
High school diploma or GED		1	2%
Associate's degree or technical trade license		0	0%
Bachelor's degree		21	39%
Graduate or professional degree		29	54%
Other		1	2%
Decline to answer		2	4%
Total		54	100%



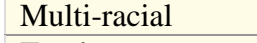
6. What is your household income (all members combined)?

Below \$20,000		2	4%
\$20,000 - 35,000		2	4%
\$35,000 - 60,000		4	7%
\$60,000 - 100,000		12	22%
Above \$100,000		25	46%
Decline to answer		9	17%
Total		54	100%


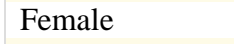

7. Where do you currently reside? Please include city, state and zip code.

Eugene, OR, 97405	Eugene, OR 97402	Bend, OR 97703
Lane Co. Oregon	Cove, OR 97824	Terrebonne, OR 97760
Eugene OR 97405	97214	Bend, Oregon 97703
Portland, OR 97217	Portland, Oregon 97213	Bend, OR 97703
Eugene, OR 97405	Corbett, OR 97019	Seattle, WA 98115
Eugene, OR 97405	Eugene, OR 97401	Redmond, OR 97756
Eugene, 97405	Corvallis, OR 97333	Salem, or 97301
Eugene, OR 97405	Corvallis, Oregon 97333	Salem, OR 97301
Portland, OR	Corvallis, OR 97330	Salem, OR 97302
Portland, OR, 97202	Eugene, OR 97405	Springfield, OR 97478
Bend, OR 97703	Portland, OR 97209	Salem, Oregon 97301
Portland, OR 97211	Corvallis, OR 97330	Bend OR 97702
Eugene OR 97403	Mercer Island WA 98040	Salem, OR 97301
Portland, Oregon 97217	Multnomah	Portland OR 97202
Portland, Oregon 97206	97217	Bandon, OR 97411
	Dallas, OR 97338	

8. Please note your ethnic background.

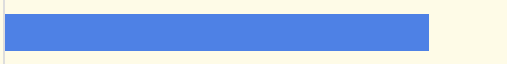



Hispanic/latino		0	0%
American Indian or Alaskan Native		0	0%
Asian		1	2%
Black or African American		0	0%
Native Hawaiian or other Pacific Islander		0	0%
White/Caucasian		48	91%
Multi-racial		4	8%
Total		53	100%

9. Which gender do you identify with?

Male		25	46%
Female		27	50%
Other		0	0%
No response		2	4%
Total		54	100%

b. Substantive Findings

1. How much do you agree or disagree with this statement: there should be stronger government policies to reduce greenhouse gas emissions.

Strongly agree		48	89%
Somewhat agree		4	7%
Somewhat disagree		1	2%
Strongly Disagree		1	2%
Undecided (neutral, don't know, need more information, etc.)		0	0%
Total		54	100%

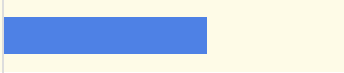



2. How much do you think that cities in Oregon should reduce their GHG emissions? Check all that apply.

As much as necessary to meet federal requirements under the Clean Air Act		6	11%
Enough to equitably contribute to meeting the State of Oregon's goals		20	37%
Enough to equitably limit global temperature increases to 2 degrees Celsius (~ 450 parts per million (ppm) of CO2 in the atmosphere)		9	17%
Enough to equitably limit global temperature increases to 1.5 degrees C (~ 350 ppm of CO2 in the atmosphere)		32	59%
As much as possible		17	31%
Only as much as their citizens or council decides they want to		5	9%
Undecided (neutral, don't know, need more information, etc.)		1	2%

3. If you had to choose between policy action to reduce GHGs and policy action to adapt to the effects of climate change, which of the two would you be most inclined to choose?

Strongly toward GHG reductions		25	46%
Lean toward GHG reductions		4	7%
Lean toward adaptation		1	2%
Strongly toward adaptation		0	0%
Mitigation and adaptation are not separate issues – they both must be addressed in tandem		24	44%
Undecided (neutral, don't know, need more information, etc.)		0	0%
Total		54	100%

4. How important is it that local GHG emission reduction policies do not harm low-income and vulnerable communities?

Very important		32	59%
Somewhat important		19	35%
Neither important nor unimportant		2	4%
Somewhat unimportant		0	0%
Very unimportant		0	0%
Undecided (neutral, don't know, need more information, etc.)		1	2%
Total		54	100%

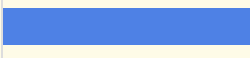

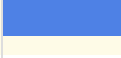





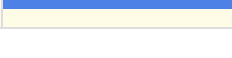
5. From the list of policy mechanisms to address GHG emissions, please indicate your opinion of how effective each mechanism is at reducing GHG emissions:

Question	Not effective	Somewhat effective	Effective component of set of policies	Very effective (with others or stand-alone)	No opinion/unsure	Total Responses
Carbon tax	3	2	20	28	4	57
Carbon tax and dividend	2	10	13	24	6	55
Cap and trade	2	7	20	24	2	55
Carbon budget (no emissions trading allowed)	6	11	12	14	12	55
Renewable Portfolio Standard (RPS)	0	8	24	16	7	55
Carbon offsets	7	21	16	2	7	53
Energy efficiency upgrades and requirements for buildings	0	7	27	19	1	54
Low-carbon fuel standard	4	13	22	12	3	54
Tax on vehicle miles travelled	6	11	23	8	6	54
Mass transit investments	0	4	33	15	2	54
Incentives and programs for decreased consumption economy-wide	0	18	21	12	5	56
Increased public outreach and education about existing policies	5	24	22	3	1	55
Further integration of climate change considerations into land use planning	0	9	26	17	2	54

6. In your experience, what degree of difficulty have the following obstacles presented for reducing GHG emissions in Oregon's cities?

Question	Very difficult	Difficult	Somewhat difficult	Not difficult	No opinion/unsure	Total Responses
Lack of business support	12	23	14	1	3	53
Lack of public support	7	12	20	13	1	53
Lack of political support	22	17	12	1	1	53
Lack of technical resources	0	13	13	23	4	53
Lack of funding	16	20	10	2	3	51
Other policy priorities	18	24	5	0	4	51
Population growth	5	10	17	12	8	52

7. Which sectors do you think Oregon should focus on to limit GHG emissions? Select all that apply. If you select "All of the above", please deselect any other options.

Energy/utilities		28	52%
Industry		24	44%
Waste management		14	26%
Agriculture		10	19%
Forestry		8	15%
Buildings' efficiency		26	48%
Transportation		29	54%
Land use planning		21	39%
All of the above		26	48%

8. What role should the State of Oregon play in supporting local government GHG emission reduction efforts?

1. At least something like what CA did — executive order & CEQA procedure that courts have ruled apply to municipalities. Require annual carbon budgets based on best available science. Promulgate regulations requiring internal city operation carbon reductions & divestment. Amending state constitution to explicitly empower cities to adopt ordinances that affirm community rights, including the right disallow dirty energy production or transportation within city limits.
2. Help local jurisdictions by passing broad and comprehensive GHG reduction mandates.
3. Eugene, Portland, and others seem to be more aggressive in addressing climate change and GHGs. The state should show some leadership in this area. Enacting a carbon fee is needed statewide.

4. They should support and coordinate local efforts. Especially if those efforts can help the state meet its reduction goals.
5. This is too broad a question to answer effectively here. Generally, I think believe the state should establish an across-the-board carbon tax and then transfer some of the revenues to cities to support transitions away from carbon intensive technologies and behaviors.
6. The State should provide the kind of support local governments need to effectively implement their initiatives to reduce GHG emissions, whether it be technical, expert, or financial support. The State should also strengthen its laws and polices enough to equitably limit long-term global temperature increases to 1-degree C (~ 350 ppm of CO2 in the atmosphere), particularly in the areas the state government has jurisdiction but local governments do not.
7. The state of Oregon should support actions that local governments are taking to reduce emissions with technological support, funding sources, and skills and expertise. Furthermore, the state should never stand in the way of local governments trying to reduce emissions through preemption.
8. Funding and allowing for local control if local policies differ from state standards but benefit emission reductions
9. The state should enable local governments to maximize emission reductions. There are existing state barriers--like not allowing cities to adopt more climate-friendly building codes--that stand in the way of local action.
10. Provide guidance and funding. Make sure its transportation decisions don't inadvertently make it harder for local governments to put in the right infrastructure.
11. Create incentives. Limit sprawl but support Inclusionary Zoning. Define "less cost options" to include consideration of externalities to direct the work of the OPUC
12. The state should continue to assist local governments with scenario planning at the MPO level. Funds for energy efficiency projects should be

more readily available. Financial and Technical assistance with waste management would also be good.

13. Setting standards and policy.
14. Leadership with tighter regulations in each sector with tough penalties; public education; support for mass transit; grants & incentives for residential solar, energy efficiency, composting to put carbon back into soil & tree planting; stronger pollution regs; technology sharing; training & education on toxin-free, sustainable ag.
15. Establish standards or equitable contributions for localities based on population toward State goals. This requires the State to establish statewide goals.
16. State should have its own GHG emission reduction goals that cities can tie into and meet or exceed. Also should provide technical support for monitoring and also funding for additional personnel.
17. The state should provide model legislation, technical assistance and financing for innovative programs.
18. Supporting communities through revenue for public transit, policies that encourage utility/grid innovation (e.g., storage, demand response, and investment in EV infrastructure), energy efficiency and renewable energy grants, and technical assistance programs such as the Massachusetts Green Communities program.
19. I would like to see the State of Oregon take on an even stronger leadership role in combatting global warming. That is one reason why I support a coordinated statewide plan, such as the Healthy Climate Bill, currently being considered in the short Legislative session.
20. Regulatory, technical assistance, legislative support, funding.
21. The State must support local efforts through all means necessary. It should require polluters to pay for their pollution, provide technical support to communities in their efforts to cut pollution, enforce its existing pollution laws, and stop doing the things it does to increase pollution instead of decrease it. It should devolve most of its transportation funding to local

levels, and tax pollution coming across the borders (from coal energy transmission, etc.)

22. Increased funding for the actions that we have been identified to help regions meet their reduction goals.
23. The State needs to maintain its leadership on this issue because many of the most effective strategies (e.g., fuel standards) cannot be implemented solely at the local level.
24. Set targets through statute and administrative rules and require reporting on a bi-annual basis with penalties if targets are not met. Also reflect that GHG reduction targets be reflected in acknowledged comprehensive plans.
25. mandate planning and policy through administrative rules and statute, provide technical assistance, develop financial incentives and disincentives.
26. The State of Oregon should set policies at the state level that direct local government to follow suit.
27. Provide funding & technical assistance.
28. As supportive as possible, providing guidance and best practices.
29. Pass a state-wide cap and trade bill that binds us to GHG reduction targets!
30. not sure
31. State should pass cap and trade and complementary actions to reduce GHGs. Revenues from cap and trade should in part help cities to reduce GHGs
32. Meet the targets of its own Global Warming Commission
33. The state should set goals and fund mandates
34. They should pass a state-wide carbon pricing law. Coal and oil trains should be stopped as well as LNG ports. We need state-wide action to support a low carbon future.
35. Establishing a framework of policies that balances reduction in ghg emissions, adaptation, and costs/economic development.

36. Oregon state government should be able to provide resources (staff and monetary) to local governments in developing their Climate Action Plans. Oregon should be able to direct local governments in what are accurate, science-based emission reduction goals or GHG budgets that will reduce warming to 1.5°C in the long term. These state programs can be funded by a carbon tax or cap and trade program.
37. Seize the opportunity to invest in clean energy technology and create policies to transition the entire state to clean energy sources
38. The state should be leading and coordinating the efforts.
39. The state of Oregon should lead by example and provide matching funds for GHG reduction actions.
40. Research, evaluation, policy support
41. Given funding concerns, I'd say that there is not much that the State can do for local governments... An easy thing, though - bring back the DLCD staffer that helped local governments with greenhouse gas reduction. That position was - shockingly - cut last year.
42. Give direction. Pass laws that guide local government efforts.
43. An active one - the State and its policies are critical
44. funding, providing technical assistance
45. State has a rocky but cooperative working relationship with local government. Use incentives rather than regulation as much as possible.
46. State should provide a consistent regulatory framework that allows local flexibility.
47. Providing technical assistance including calculating greenhouse inventories.

- 9. Should local governments in Oregon wait for larger jurisdictions like the State, national or international bodies to adopt stronger regulations to reduce GHG emissions before developing new policies?**
1. Absolutely not!
 2. No, but they should also push hard for state, national and international actions. Mainly, local actions are limited by lack of sovereignty.
 3. In absence of the state providing leadership, the answer is no. The state needs to take the lead on regulations. Otherwise there will be inconsistent requirements from city to city which will be confusing and probably ineffective. Given current national politics and congressional dysfunction, there will not be stronger GHG emission reduction standards beyond those implemented through the Clean Air Act.
 4. No. This problem is too big and too politically complicated to wait for others to act. Every level of government has a role to play.
 5. No. It's fine to proceed in the absence of state or federal policy. That's often the thing that gets state and feds to take action.
 6. No, absolutely not. Strong action taken by local governments to reduce GHG emissions NOW, in conjunction with pressure from local governments on state and federal governments to take similar action, has the potential to influence state and federal action before it's "too late" (in terms of tipping points, feedback loops, runaway heating, etc.).
 7. No, while larger jurisdictions continue to delay or implement ineffective or not comprehensive climate policies local governments must step up and implement strong regulations to reduce GHG emissions. Local governments will be significantly burdened by the impacts of climate change so have a significant stake in reduce emissions. They can also inspire action for larger jurisdictions.
 8. NO
 9. No. Local governments can pilot or pioneer new approaches.
 10. NO

11. Cities can adopt certain policies to reduce GHG locally, but most effective would be concerted support for action by larger jurisdictions, divestment and support of community education,
12. No
13. No.
14. No! Local governments must adopt stronger regulations ASAP to show legislators & politicians that strong grassroots political will exists. Every reduction of GHG emissions counts. All local governments need to act.
15. No. We can't wait.
16. No but should work in tandem to the extent possible.
17. No. Work has to continue at all levels of government in order to mitigate to the levels we need to. Local action can be rolled up to help the state meet carbon reduction goals.
18. No - action and innovation starts at the local level!
19. I believe that the issue of global climate change is too urgent of an issue to delay meaningful action at any level of society while waiting for substantive actions to be formulated and implemented at the national & international level. The cumulative efforts of individuals, communities, and local governments, supported by state governments, can be implemented much more quickly, and can &do make a real difference.
20. No
21. No. This challenge is the defining challenge of our generation, and must be acted on by all actors immediately -- without regard to who is not acting.
22. No
23. While state policies and programs create an important "backstop" for GHG reduction efforts, local jurisdictions can move forward with local actions if they choose (e.g., city of Eugene)
24. No, but no action at the federal or state level is no excuse for not doing anything.
25. No.

26. No - no reason not to move ahead in the absence of state-level action.
27. No need to wait.
28. They should take action as far and as best they can, as they can.
29. Sadly, no.
30. no
31. Yes
32. No.
33. No, they should act now
34. No. Politically movement is mostly likely from the bottom up.
35. No Necessarily, but it would be more impactful.
36. NO!
37. No, because larger jurisdiction are very slow and may miss opportunities available at the local level.
38. No, it is important that every level of government do it's best to assess the issue of climate change, involve its citizens, and understand the drastic nature of the changes needed.
39. No! Majors and city councils have jurisdiction to protect the health of their citizens. Creating opportunities for clean energy expansion and reducing pollution falls within their grasp.
40. Local government should be acting when politically feasible.
41. No, states should be leaders until national govt acts.
42. No
43. No
44. No
45. Of course not
46. No
47. NO - No-one can wait - everyone has to do as much as possible as quickly as possible.
48. Local governments should adopt all "no regrets" policies while urging adoption of mandatory measures applying to all to address more difficult policies.

49. Not necessarily

10. Would you like to make a general or specific comment about the questions in this survey? All comments are carefully read and included in the research findings.

1. Thanks for doing this!
2. Some answers should have been mutually exclusive but weren't set up that way. Over, nice survey, hope to see the results. Thanks for working on this.
3. No
4. Regarding the question about harm to low-income and vulnerable communities, GHG emission reduction policies that are strong enough to prevent catastrophic climate change are likely to have impacts on all U.S. citizens because of our disproportionately large per capita carbon footprint. Some people would characterize these impacts as harmful. It is very important that these impacts are not disproportionately felt by low-income and vulnerable communities.
5. 350 ppm over the long-term aligns with stabilizing at 1 degree C of warming with 1.5 C as the peak, but not long-term heating over preindustrial temps.
6. As with most things, the devil is in the details for how effective policies can be. A carbon tax of \$5 won't be very effective. Targeted policies are needed to solve problems in different sectors--there are relatively few low carbon alternatives in transportation; it's harder to get individual home owners to take action than for a few utilities to make big changes, etc. Many policies are meant to be built upon--you can expand an RPS or LCFS after it's already been put in place.
7. I think larger cities can have a large impact, but smaller jurisdictions can certainly contribute especially in education and advocacy roles
8. It would have been helpful to have a brief description of the policy mechanisms in order to make better comparisons. I was glad to see

agriculture included; chemical farming must be phased out to stop ocean dead zones, etc. and regenerative ag replace it to put carbon back in the soil.

9. Great questions. I am curious to see the answers.
10. Transportation is the hardest nut to crack -- too many interests push huge highway expansions and the alignment of corporate and labor supporting such efforts, along with the intuitive appeal of building roads over long-term community transformation is hard to fight. More climate champions support projects like the CRC than any other pollution expansion efforts.
11. You can find more information on two voluntary ghg scenario planning projects in Corvallis and Rogue Valley at http://www.oregon.gov/ODOT/TD/OSTI/Pages/scenario_planning.aspx#psao
12. I would love to receive a copy of the results please.
seanpenrith@gmail.com
13. Gender is not about being male or female (that's sex). Gender describes how we identify with gender norms (e.g. I identify as a man or with masculine gender norms). For cisgender people, our sex and gender align (male and man) but for trans* and gender queer folks, this is not the case. If you were interested in including people who identify as other than cisgender, you could change the gender options to man/boy/masculine and woman/girl/feminine. 2.Suggest making the racial question checkbox
14. Please include different options to denote someone's gender (cis-man, trans-woman, etc.) "Other" and "No response" can alienate trans and other members of the queer community.
15. On the question about adaption versus GHG reduction: adaption is already a given as we are already seeing the effects of climate change.
16. I feel like the likelihood of passage of a policy might be interesting to gauge. For example, carbon tax in Oregon - given our sales tax history - might be effective - but pretty unlikely to happen.

17. "Caucasian" is not an interchangeable term with "white." (And white is not even an ethnic background; it is one of the skin colors by which society has chosen to define groups of people..)"Caucasian" refers to people who are ethnically from the Caucasus Mountains region. I am white in color and Irish in ethnicity. This question needs to be re-written.
18. Local or grassroots action is especially important in the face of national inaction.

CHAPTER VI

DISCUSSION

The survey of climate policymakers in Oregon was designed to address several research questions. First, what challenges do Oregon’s local governments face in reducing GHG emissions? Second, what opportunities exist for Oregon’s local governments to further reduce GHG emissions? Third, how much should local governments reduce GHG emissions and how should they work with the State of Oregon and other governmental bodies? Fourth, should GHG emission reduction efforts focus on mitigation or adaptation, and how concerned should policymakers be about impacts to low-income and vulnerable populations? Finally, which policy mechanisms are deemed to be most effective at reducing GHG emissions?

In the discussion, responses from the survey’s open response questions are both quoted and paraphrased. Where appropriate, observations from previous reports and surveys are included to supplement the themes that emerged from survey results. The discussion first details demographic trends for survey respondents, then addresses each of the research questions, and then concludes with a brief analysis of survey limitations.

a. Survey Respondent Demographics

Several demographic questions had interesting results that may help us better understand the substantive opinions of participants. First, 70% of respondents had more than four years of experience working on GHG emission reduction efforts. Second, 93% of the survey population had completed a Bachelors or advanced degree. Third, 68% of respondents earned more than \$60,000 per year. Fourth, 75% of respondents identified as Democrats and 86% said that their general political outlook is “lean liberal” or “very liberal.” In contrast, no respondents identified as Republicans or as having a political outlook that was conservative. Fifth, despite efforts to recruit survey respondents from all around the state, most respondents reported living in Eugene, Portland, Bend, Salem, or Corvallis. Taken together, these results represent a survey population that is experienced, well-educated, relatively affluent, very liberal, and urban. This composition may not be surprising, but it should inform how the subsequent discussion is perceived.

Another interesting demographic result was that some 91% of respondents identified as “White/Caucasian”, which is substantially higher than the 2014 U.S. Census findings that Oregon is 77% White.¹⁸⁶ Additionally, no survey respondents identified as “Hispanic/Latino”, even though Hispanics were estimated to be 12.5% of Oregon’s population in 2014.¹⁸⁷ These observations come with the caveat that only 55 individuals completed the survey. Nonetheless, it is interesting to consider whether climate policymakers in Oregon are statistically representative of the communities that they serve. While Oregon is not the most diverse state, the composition of survey participants was even less diverse and it is possible that this lack of ethnic diversity among climate policymakers may have diminished the reach and effectiveness of policies that have been adopted.

b. GHG Emission Reduction Challenges

i. Obstacles to City-Level GHG Emission Reductions

Addressing challenges to GHG emission reductions in Oregon’s cities, one survey question asked participants to evaluate the degree of difficulty posed by seven potential categories of obstacles. These obstacles were: 1) lack of business support; 2) lack of public support; 3) lack of political support; 4) lack of technical resources; 5) lack of funding; 6) other policy priorities; and 7) population growth. Note that there was a slight difference (plus or minus 2 respondents) in the number of responses across obstacle categories. For each of the following categories for degree of difficulty, the obstacles are ranked and the number of selections is shown in the parentheses:

“Very difficult”:

- | | |
|------------------------------|------|
| 1. Lack of political support | (22) |
| 2. Other policy priorities | (18) |
| 3. Lack of funding | (16) |
| 4. Lack of business support | (12) |

¹⁸⁶ See United States Census Bureau, <http://www.census.gov/quickfacts/table/PST045215/00,41>.

¹⁸⁷ *Id.*

- 5. Lack of public support (7)
- 6. Population growth (5)
- 7. Lack of technical resources (0)

“Difficult”

- 1. Other policy priorities (24)
- 2. Lack of business support (23)
- 3. Lack of funding (20)
- 4. Lack of political support (17)
- 5. Lack of technical resources (13)
- 6. Lack of public support (12)
- 7. Population growth (10)

“Somewhat difficult”:

- 1. Lack of public support (20)
- 2. Population growth (17)
- 3. Lack of business support (14)
- 4. Lack of technical resources (13)
- 5. Lack of political support (12)
- 6. Lack of funding (10)
- 7. Other policy priorities (5)

Combined “very difficult”, “difficult”, and “somewhat difficult” degrees of difficulty:

- 1. Lack of political support (51)
- 2. Lack of business support (49)
- 3. Other policy priorities (47)
- 4. Lack of funding (46)
- 5. Lack of public support (39)
- 6. Population growth (32)

7. Lack of technical resources (26)

“Not difficult”:

1. Lack of technical resources (23)
2. Lack of public support (13)
3. Population growth (12)
4. Lack of funding (2)
5. Lack of business support; and
lack of political support (1)
7. Other policy priorities (0)

“No opinion/unsure”:

1. Population growth (8)
2. Lack of technical resources; and
Other policy priorities (4)
4. Lack of funding; and
Lack of business support (3)
6. Lack of public support; and
Lack of political support (1)

ii. Trends in City-Level Obstacles to Reducing GHG Emissions

These responses demonstrate a number of trends. First, the most-selected difficulties seem to be particularly interrelated. Examining the collated results for “very difficult”, “difficult” and “somewhat difficult”, the top four obstacles were lack of political support, lack of business support, other policy priorities, and lack of funding. One relationship between these obstacles is that political support may be lacking because support is focused instead on other policy priorities, leading to insufficient funds. Funds also may be lacking because of business’ disinterest in policies that could hurt their profitability and competitiveness. Indeed, many policies proposed to reduce GHG emissions could arguably impose short-term costs on businesses and consumers. At least for some portions of the public, the message that GHG emission reductions will

negatively affect businesses and consumers is enough to diminish support. While lack of public support did not ascend to the top tier of obstacles, survey respondents showed fairly strong support for the notion that a lack of public support makes GHG emission reductions “somewhat difficult.”

Outside of the trends that emerged from the collated obstacle difficulty, several important findings emerged for obstacle categories that respondents deemed to be “not difficult.” One of the main findings is that policymakers do not believe that technical resources are lacking for GHG reduction initiatives. Another interesting finding is that a sizable portion of respondents did not identify a lack of public support as a substantial obstacle to local GHG emission reduction efforts. Similarly, while it seems that policymakers are becoming concerned about population growth, many do not think that population growth is a limiting factor for GHG emission reductions. However, this observation is tempered by the high number of respondents that did not have an opinion or were unsure about the difficulties presented by population growth.

c. GHG Emission Reduction Opportunities

i. Emission Reduction Relationship Between the State of Oregon and Local Governments

In order to better understand the relationship between the State of Oregon and local governments for reducing GHG emissions, the survey asked climate policymakers “What role should the State of Oregon play in supporting local government GHG emission reduction efforts?” Responses to this question can be organized into six categories. First, many participants suggested that the state adopt some form of carbon pricing. Second, several respondents suggested that the state require local governments to take certain actions. Third, a few participants suggested that the state give local governments greater flexibility to adopt innovative policies. Fourth, many respondents wanted the state to take a greater leadership role in coordinating local emission reduction efforts. Fifth, many participants argued that the state should increase funding for local government programs. Finally, several respondents suggested that the state emphasize economic opportunities for local governments engaging in climate initiatives.

1. Adopt Carbon Pricing

Many respondents to this question emphasized that some form of carbon pricing is needed, whether that be a carbon fee, an “across-the-board carbon tax”, a price on pollution that polluters are required to pay, or a binding statewide cap and trade program.

2. Require Local Actions

A wide variety of state requirements for local action were proposed. For example, respondents suggested that the state: require local governments to institute “annual carbon budgets based on the best available science”; “explicitly empower cities to adopt ordinances that affirm community rights”, such as a right to ban fossil fuel projects; require biannual reporting on progress toward local emission reduction targets, incorporate those targets into acknowledged comprehensive plans, and enforce penalties if the targets are not met; and require that local governments contribute to state-level emission reduction policies.

3. Give Local Governments More Flexibility

The primary concern of respondents was that the state has already preempted some aggressive emission reduction actions by local governments or could do so in the future. One respondent stated that the state “should never stand in the way of local governments trying to reduce emissions....” Other respondents believed that local control should be allowed to differ from state standards if they have emission reduction benefits, with one respondent opining that “The state should enable local governments to maximize emission reductions. There are existing state barriers--like not allowing cities to adopt more climate-friendly building codes--that stand in the way of local action.” Leading into the next category, one respondent noted that the state “should provide a consistent regulatory framework that allows local flexibility.”

4. Increase State Leadership and Coordination of Local Governments

An interesting corollary of some climate policymakers’ desire for increased local government flexibility is the desire to have the state take a leadership role, particularly in the coordination of local government policies. This is the category where the chorus sang the loudest in support of a changed dynamic between the state and local governments on

GHG emission reduction initiatives. Respondents were in favor of state leadership to: develop comprehensive and balanced framework for GHG reduction mandates, embodied in regulations across sectors; coordinate and support (including technical and financial) local initiatives; assist with scenario planning; establish equitable GHG reductions for each locality based upon population and enforceable state goals; provide model legislation and best practices for local governments; and supervise local implementation of statewide policies.

5. Increase Funding for Local Governments

Another popular desire among respondents was for the state to provide additional financial support to local governments for emission reduction initiatives. Suggestions for funding took a number of forms, including: better availability for energy efficiency and renewable energy funds (perhaps through grant mechanisms); state funding of additional personnel to help cities develop climate action plans and meet GHG emission reduction goals; “financing for innovative programs” and programs with demonstrated emission reduction success; mass transit funding; and funding for any emission reduction mandates that are passed from the state to local governments (perhaps through matching funds). Respondents’ favored suggestion for a new funding stream was statewide adoption of a carbon pricing mechanism, with distribution of some portion of system revenue to local governments; however, one person thought that local governments should be given more control over transportation spending.

6. Incentivize and Emphasize Economic Opportunities

Respondents did not offer specific proposals for incentives that the state government could offer to local governments, but a respondent did point out that incentives should be used in lieu of regulation as much as possible. Another respondent also opined that the state should “seize the opportunity to invest in clean energy technology and create policies to transition the entire state to clean energy sources.”

d. GHG Emission Reduction Ambitions and Intergovernmental Relations

i. Stronger GHG Regulations?

When asked whether “there should be stronger government policies to reduce greenhouse gas emissions”, 89% of survey respondents (out of 54 responses) strongly

agreed and an additional 7% of respondents somewhat agreed with the statement. Only 4% of respondents somewhat or strongly disagreed. This shows a very high level of agreement among Oregon’s climate policymakers that current governmental policies are not strong enough.

ii. City GHG Emission Reduction Expectations

Following up on respondent’s desire to reduce GHG emissions, the survey asked how much “cities in Oregon should reduce their GHG emissions”, allowing multiple options to be selected; thus, percentages do not sum to 100% but rather indicate how many participants selected an option in comparison to the total number of participants for the question. The option receiving the most support (59%) was GHG emission reductions consistent with equitably limiting global temperature increases to 1.5° Celsius (C) and returning carbon dioxide concentration in the atmosphere to 350 ppm of CO₂.¹⁸⁸ It is important to note that “equitably” was not defined and that respondents likely differed in their perception of what would be equitable. The second most popular selection (37%) supported emission reductions that “equitably contribute to meeting the State of Oregon’s goals.” The view that cities should reduce emissions “as much as possible” received the third highest number of selections (31%). A substantial number of respondents (17%) supported local governments equitably limiting global temperature increases to 2° C and long-term atmospheric concentrations of CO₂ to 450 ppm.

What do these numbers show? First, it seems that Oregon’s climate policymakers broadly support “equitable” emission reductions, differing only on what the baseline and the final target for equitable reductions should be. However, this is not a trivial difference. Equitably contributing to limiting global temperature increases to 2° C or atmospheric concentrations to 450 ppm is likely to be much more difficult than equitably contributing to the State of Oregon’s emission reduction goals. Second, respondents offered weak support (9%) for local governments reducing emissions “as much as their citizens or council decides they want to”, perhaps recognizing that this could result in

¹⁸⁸ A respondent noted that policies to put us on track back toward 350 ppm of CO₂ in the atmosphere would result in a 1.5 C° peak over pre-industrial temperatures, but that the temperature would not remain at that point.

minimal emission reductions in reticent communities. The majority of respondents also desired to be more ambitious than the federal Clean Air Act requires, with only 11% saying that cities should reduce their emissions by this amount only. These results show that respondents are in favor of stronger policy action that equitably aligns with larger jurisdiction's emission reduction commitments.

iii. Should Local Governments Wait for Larger Jurisdictions Before Developing New Emission Reduction Policies?

Respondents resoundingly answered “no.” Only one respondent said that local governments should wait because the absence of state guidance will lead to inconsistent and ineffective regulations from locality to locality. The support for local government initiatives regardless of larger jurisdictions' regulatory agenda can be broken down into three broad categories. First, respondents suggested that local action will encourage larger jurisdictions to take action. Second, any feasible level of local action should be pursued because climate change requires the maximum possible amount of collective actions. Finally, local action can trigger innovative approaches.

1. Encouraging Larger Jurisdictions to Be More Ambitious

Respondents emphasized that “every level of government has a role to play” and that local actions are “often the thing that gets [the] state and feds to take action.” Participants also felt that this local pressure could inspire state and federal action “before ‘it’s too late’”, demonstrating to “legislators and politicians that strong grassroots political will exists.” However, these sentiments were tempered with the acknowledgement that the most effective approach to reducing emissions “would be concerted support for action by larger jurisdictions....”

2. Local Governments Should Do Everything Feasible to Reduce Emissions

One respondent nicely summed up the sentiments of many by saying that “Local governments should adopt all ‘no regrets’ policies while urging adoption of mandatory measures applying to all to address more difficult policies.” An area with few regrets may be preparing for the effects of climate change, which one participant noted will significantly burden local governments. Other respondents believe that local governments should pursue climate initiatives in order to fill the perceived void left by insufficient

federal and state policy. Doing so increases the chances of the state meeting its emission reduction goals and helps governments “understand the drastic nature of the changes needed.”

3. Local Government Initiatives Can Encourage Innovation

Given that local initiatives may be scaled up quicker than state or federal policies, some respondents contended that local action captures opportunities to reduce emissions that would otherwise be emitted under state or federal legal frameworks. Respondents also emphasized that local actions could serve as pilot projects that breed innovation in other localities and at larger levels of government and business.

e. Mitigation, Adaptation, and Impacts on Low-Income and Vulnerable Populations

When asked to choose between policy action to reduce GHGs (commonly referred to as “mitigation”) and policy action to adapt to the effects of climate change, 53% of respondents favored GHG reductions (46% strongly and 7% lean toward), and only 2% of respondents leaned toward adaptation. However, some 44% of respondents supported the view that “Mitigation and adaptation are not separate issues – they both must be addressed in tandem.”

In this question, “effects of climate change” were not defined. What participants included in the realm of an “effect” and the timescale on which each of those effects would occur undoubtedly varied, and thus likely affected participants’ forced choice between supporting mitigation and adaptation. However, the purpose of asking the question was to see how many policymakers supported either side of the mitigation-adaptation dichotomy, if adaptation was gaining ground as a choice, and if policymakers saw mitigation and adaptation as connected issues.

While it is interesting to see that nearly 50% of policymakers saw mitigation and adaptation as connected issues, in retrospect it seems that even more respondents may have chosen this response if the question had been worded in a way that did not suggest a forced choice between either mitigation or adaptation. Thus, this question may have been poorly designed to accurately capture feedback, especially from rushed survey respondents. One conclusion that is encouraging, however, is that very few respondents

were of the opinion that adaptation should take precedence over mitigation. While some believe that resources will be stretched thin merely trying to adapt to unavoidable climatic changes, leaving little room to mitigate emissions, it is possible that the difficulties of adapting will be compounded without mitigation efforts that reduce emissions and blunt the severity of additional climatic changes that may still be avoidable. Perhaps many of Oregon's climate policymakers agree with this opinion.

When asked about the importance of local GHG emission reduction policies not harming "low-income and vulnerable communities", 94% of respondents said this concern was either very or somewhat important. Despite the broad support from policymakers, one survey respondent noted that "GHG emission reduction policies that are strong enough to prevent catastrophic climate change are likely to have impacts on all U.S. citizens because of our disproportionately large per capita carbon footprint..." and that these impacts could be considered "harmful" by some. Nonetheless this respondent emphasized that policies should be designed to not disproportionately impact low-income and vulnerable communities.

f. Effectiveness of GHG Emission Reduction Policy Mechanisms

One survey question gauging effectiveness of policy mechanisms to address GHG emissions provided useful insight into policy opportunities for Oregon. This question asked participants to specify how effective 13 policy mechanisms were at reducing GHG emissions, with effectiveness ranging from "not effective" to "very effective (with others or stand-alone)." The policy mechanisms offered were: 1) carbon tax; 2) carbon tax and dividend; 3) cap and trade; 4) carbon budget (no emissions trading allowed); 5) renewable portfolio standard (RPS); 6) carbon offsets; 7) energy efficiency upgrades and requirements for buildings; 8) low carbon fuel standard; 9) tax on vehicle miles travelled; 10) mass transit investments; 11) incentives and programs for decreased consumption economy-wide; 12) increased public outreach and education about existing policies; and 13) further integration of climate change considerations into land use planning. Note that there was a slight difference (plus or minus 3 respondents) in the number of responses across policy mechanism categories. For each effectiveness category, the policy mechanisms are ranked and the number of selections are in parentheses.

“Not effective” at reducing GHG emissions:

1. Carbon offsets (7)
2. Carbon budget (no emissions trading allowed); and
Tax on vehicle miles travelled (6)
4. Increased public outreach and education about existing policies (5)
5. Low carbon fuel standard (4)
6. Carbon tax (3)
7. Carbon tax and dividend; and
cap and trade (2)
8. Mass transit investments; and
RPS; and
Energy efficiency upgrades and requirements for buildings; and
Incentives and programs for decreased consumption economy-wide; and
Further integration of climate change considerations into land use planning (0)

“Somewhat effective” at reducing GHG emissions:

1. Increased public outreach and education about existing policies (24)
2. Carbon offsets (21)
3. Incentives and programs for decreased consumption economy-wide (18)
4. Low carbon fuel standard (13)
5. Tax on vehicle miles travelled; and
Carbon budget (no emissions trading allowed) (11)
7. Carbon tax and dividend (10)
8. Further integration of climate change considerations into land use planning (9)
9. Renewable portfolio standard (RPS) (8)
10. Cap and trade; and
Energy efficiency upgrades and requirements for buildings (7)
12. Mass transit investments (4)
13. Carbon tax (2)

“Effective component of set of policies” at reducing GHG emissions:

1. Mass transit investments (33)
2. Energy efficiency upgrades and requirements for buildings (27)
3. Further integration of climate change considerations into land use planning (26)
4. Renewable portfolio standard (RPS) (24)
5. Tax on vehicle miles travelled (23)
6. Low carbon fuel standard; and
Increased public outreach and education about existing policies (22)
8. Incentives and programs for decreased consumption economy-wide (21)
9. Carbon tax; and
Cap and trade (20)
11. Carbon offsets (16)
12. Carbon tax and dividend (13)
13. Carbon budget (no emissions trading allowed) (12)

“Very effective (with others or stand-alone)” at reducing GHG emissions:

1. Carbon tax (28)
2. Carbon tax and dividend; and
Cap and trade (24)
4. Energy efficiency upgrades and requirements for buildings (19)
5. Further integration of climate change considerations into land use planning (17)
6. Renewable portfolio standard (RPS) (16)
7. Mass transit investments (15)
8. Carbon budget (no emissions trading allowed) (14)
9. Low carbon fuel standard; and
Incentives and programs for decreased consumption economy-wide (12)
11. Tax on vehicle miles travelled (8)
12. Increased public outreach and education about existing policies (3)
13. Carbon offsets (2)

“No opinion/unsure” about effectiveness for reducing GHG emissions:

1. Carbon budget (no emissions trading allowed) (12)
2. Renewable portfolio standard (RPS); and
Carbon offsets (7)
4. Carbon tax and dividend; and
Tax on vehicle miles travelled (6)
6. Incentives and programs for decreased consumption economy-wide (5)
7. Carbon tax (4)
8. Low carbon fuel standard (3)
9. Cap and trade; and
Mass transit investments; and
Further integration of climate change considerations into land use planning (2)
12. Energy efficiency upgrades and requirements for buildings
Increased public outreach and education about existing policies (1)

Several trends emerged from this question about the effectiveness of policy mechanisms. First, while a low percentage of respondents thought that any of the policy mechanisms were “not effective”, carbon offsets and carbon budgets without emissions trading attracted the most skepticism. That skepticism was also reflected in the “no opinion/unsure” category, where a carbon budget without emissions trading and carbon offsets were again the most selected mechanisms.

Second, carbon pricing policy mechanisms were the most popular selections in the “very effective” category. This shows that nearly half of the surveyed climate policymakers in the state believe that a carbon pricing mechanism is the best choice for a “very effective” GHG emission reduction policy mechanism. Interestingly, support for a carbon tax, carbon tax and dividend, and cap and trade were relatively equal among respondents.

Third, policy mechanisms with less projected impact on GHG emissions than the carbon pricing policies were the most popular selections for the “effective component of a set of policies” category. Specifically, mass transit investments, the renewable portfolio standard, further consideration of climate change in land use planning, and energy

efficiency stood out as effective component policies. In conjunction with each of these policy's moderate support in the "very effective" category, it is clear that retaining a commitment to each of these policy approaches is likely to be supported by the climate policymaker community.

Several open response comments about policy mechanisms and their perceived effectiveness are also important to consider. One respondent noted that "the devil is in the details for how effective policies can be..." and that "many policies are meant to be built upon...", specifically renewable portfolio standards (RPS) and low carbon fuel standards (LCFS). This comment on scalability of certain policies suggests that additional research into perceptions of appropriate policies may be desirable. A lack of understanding among participants about the finer details of the policies may have skewed selections.

Another respondent stated that transportation emissions are the "hardest nut to crack" because many interests "push huge highway expansions" and corporate and labor interests are often aligned to do so. This response implicates the power of business and labor interests and the effect of population pressure. One respondent also opined that "larger cities can have a large impact, but smaller jurisdictions can certainly contribute especially in education and advocacy roles." Thus, perhaps this question on policy mechanisms and other questions could have been designed to differentiate between smaller and larger jurisdictions.

g. Limitations of Survey Results

The major limitations of the survey were: 1) the breadth of the questions; 2) the small number of respondents and the potential that the survey population is not representative of the climate policymaker community; 3) invalidation of some data based on survey design; and 4) the phrasing of certain demographic questions may have alienated some respondents.

The survey questions were relatively broad, especially the questions that allowed for an open response. Broad questions were chosen to encourage completion of the survey and to allow for creative responses. However, this approach diminished the length and effectiveness of some participant's responses. For example, one respondent opined that the question about the State of Oregon's role in supporting local governments with

GHG emission reductions was “too broad a question to answer effectively here.” Given the limited responses to the broad questions, this critique applies equally to other broadly worded questions. Nonetheless, some open responses were very insightful, so it is possible that the broad framing of questions had more positive than negative impacts.

The impact of the survey results is unclear given that only 55 individuals responded to the survey. While 55 responses out of 140 survey invitations is not an unusually low response rate, the initial vision of the survey envisioned greater participation from the climate policymaker community. However, in retrospect, most of the identified population of climate policymakers were strong supporters of GHG emission reduction policies, so perhaps the results would not have been much different with more participation from people with potentially similar views. A larger limitation on the results may be that few respondents were opposed to the idea of more extensive climate policy. It is entirely possible that individuals that do not believe in climate change or have reason to oppose GHG emission reductions can be just as, or even more, influential on the success or failure of climate policy in Oregon and in Oregon’s cities. Although the survey was distributed to policymakers that have been skeptical of claims that state and local climate policy are inadequate, the demographic results do not suggest that many of these individuals chose to complete the survey. Ultimately, the survey results should not be construed as representing the aggregate viewpoint of the climate policy community in Oregon.

Regarding survey design, one survey respondent pointed out that some of the survey answers should have been set up in a mutually exclusive manner that did not allow participants to choose multiple answers. Unfortunately, the criticism is valid, and as a result of this criticism, one of the survey questions had to be thrown out and there are several others that are not as targeted as they could have been. The specific question with severe limitations asked: “Which sectors do you think Oregon should focus on to limit GHG emissions? Select all that apply. If you select “All of the above”, please deselect any other options.” When the survey was first launched, the instruction for the “All of the above” selection was not included, which possibly led to inaccurate selections of other options, and opened up the possibility of double counting. Thus, the results from that

question are not discussed. However, the results are still included in the findings (*see* part II of the findings section, #7).

Finally, some respondents also took issue with the demographic questions, which may have led to less engagement with other survey questions. For example, the lack of gender options beyond “male”, “female”, “other”, and “no response” was potentially alienating, and one respondent noted that gender is about gender norms, not biological sex. The question about ethnic background also was criticized for mixing racial, cultural, and ethnic categories.

CHAPTER VII

RECOMMENDATIONS

The following GHG emission reduction strategies were produced by considering the structural trends of climate policy at different governmental levels, the policy frameworks suggested by leading scholars of local government climate initiatives, the current status and proposed expansion of local climate initiatives in the state, and survey feedback from 55 of Oregon's climate policymakers.

This section sets forth eight categories of recommendations: 1) revisit past studies; 2) align the climate agenda with other local priorities; 3) advocate for funding; 4) enhance information sharing and transparency; 5) promote collaboration; 6) consider new governance bodies; 7) incorporate social and environmental justice; and 8) apply pressure to the state and federal government. These recommendations are not exhaustive, but instead illustrate the themes that local governments in Oregon should consider in developing their strategies to reduce GHG emissions. As in previous sections of this paper, the categorization of recommendations is not mutually exclusive and information overlaps.

By point of comparison, the Oregon Global Warming Commission's (OGWC) 2015 report to the legislature offered the following recommendations:

We conclude with several recommendations for the state, and its policy leaders, specifically: set a 2035 interim goal; develop a strategy with interim benchmarks to achieve that goal; carefully consider cost and equity when setting the long-term strategy; encourage technological innovation when implementing the strategy; prioritize action from the largest emitters; support and leverage action at the federal level, and consider adopting parallel reduction goals for the emissions associated with Oregonians' consumption of goods.¹⁸⁹

This thesis's recommendations differ because they are primarily focused on local government initiatives rather than statewide policy; however, there are two broad

¹⁸⁹ Biennial Report to the Legislature 2015, Oregon Global Warming Commission (2015), http://www.keeporegoncool.org/sites/default/files/ogwc-standard-documents/OGWC_Rpt_Leg_2015_final.pdf at 6.

similarities between the two sets of recommendations. First, both are concerned with policy that is equitable over the long-term. Second, both recognize the importance of the federal government in advancing policy outcomes.

1. Revisit Past Studies

There is no shortage of information and suggestions on how to improve climate change policy in Oregon. For over 10 years, multiple state and non-governmental entities have been producing lengthy, but useful reports, several of which speculate about the role of local governments. Reviewing relevant studies decreases the likelihood that unintended policy consequences will occur and increases the creativity of current policymakers by exposing them to the ideas of the not too distant past. The following excerpted observations were chosen because they deserve additional emphasis (despite already being implemented in local policy) or because the ideas were never publicly acted upon.

One source of information is the 2009 Governor's Climate Change Integration Group Report. The report said that all government agencies should be encouraged, and perhaps required, to prepare and initiate climate preparation plans.¹⁹⁰ It is unknown how many entities completed such plans, but it is a beneficial business practice to have governmental agencies explicitly preparing for climate change. In addition, the report also suggested that "localized climate change assessments that focus on impacts of a changing climate, adaptation and preparation needs, and mitigation opportunities..." should be developed.¹⁹¹ Although the Oregon Climate Change Research Institute has conducted regional and statewide climate assessments, it appears that localized climate change assessments have not yet been developed.¹⁹² There are examples of federal programs such as the U.S. Geological Survey's National Climate Change Viewer that could inspire state specific resources focused on impacts, preparation, and mitigation opportunities.¹⁹³

¹⁹⁰ Final Report to the Governor: A Framework for Addressing Rapid Climate Change at 7.

¹⁹¹ *Id.* at 9 & 20.

¹⁹² See Reports, Oregon Climate Change Research Institute, <http://occri.net/reports>

¹⁹³ National Climate Change Viewer; United States Geological Survey; last modified Dec. 10, 2015; http://www.usgs.gov/climate_landuse/clu_rd/nccv/viewer.asp.

Following these assessments, the Governor’s Climate Change Integration Group Report recommended that the Legislature “Establish and fund a program of technical assistance to assist local governments to devise climate change action plans including policy, practices, and programs specific to the concerns of Oregon communities.”¹⁹⁴ Again, it does not appear that this recommendation led to action. Local governments should remind state-level policy makers that this kind of support would be valuable, and that the entities which could provide the support, such as the Oregon Global Warming Commission and the Oregon Climate Change Research Institute, will likely need more funding to do so. This forgotten recommendation is important because so few Oregon communities have formal climate change action plans.

Revisiting past reports like the Governor’s Climate Change Integration Group Report may help illuminate the unintended consequences that certain policies could produce. For example, the Oregon Climate Change Adaptation Framework report from 2010 noted that “As the state continues to reduce emissions, there is some risk that mitigation policies will be considered without sufficient appreciation for how those policies might perform under changing climate conditions, or whether they will restrict future choices of how to adapt to those changes.”¹⁹⁵ As an example of a policy that could restrict future choices, the report offered a concern that an emphasis on using biofuels rather than petroleum in the transportation sector could reduce land available for carbon sequestration.¹⁹⁶ Careful consideration of these types of complex interactions is especially important in the local government context because of local governments’ potentially more direct interaction with, and accountability to, local citizens and businesses (in comparison with state and federal government).

2. Align the Climate Agenda with Other Local Priorities

As seen in the discussion section of this thesis, the top four obstacles for reducing GHG emissions at the local government level are a lack of political support, a lack of business support, other policy priorities, and a lack of funding. The following suggestions

¹⁹⁴ Final Report to the Governor: A Framework for Addressing Rapid Climate Change, Appendix 2 at 3.

¹⁹⁵ Oregon Climate Change Adaptation Framework, State of Oregon (Dec. 2010) http://www.oregon.gov/ENERGY/GBLWRM/docs/Framework_Final_DLCD.pdf, at 85.

¹⁹⁶ *Id.*

are ideas for diminishing these obstacles and making progress with local climate initiatives.

In an excellent report on developments in urban clean energy initiatives, Climate Solutions noted that many urban leaders are attempting to diminish political opposition by aligning climate initiatives with other community concerns “such as air quality, transportation, social equity, economic development, and climate change resilience.”¹⁹⁷ One of the most prevalent concerns in Oregon’s communities is how to respond to the immigration influx into the state, especially in the largest cities.¹⁹⁸ The Oregon Governor’s Climate Integration Report long ago stressed that Oregon should be prepared to beneficially integrate climate refugees into local economies.¹⁹⁹ The systems that the state and local governments use to accommodate population growth and facilitate economic opportunities will have a large impact on future GHG emissions. The next three suggestions illustrate interconnected systems that implicate a range of local concerns including GHG emission reductions.

First, the state of Oregon’s land use system has a huge impact on the emission of GHGs. Recently questions have again emerged about whether the state and local governments will remain committed to a restrictive land use system that discourages urban sprawl, makes low emission public transit systems increasingly viable, and protects valuable agricultural and forest landscapes. Even though this land use system has arguably encouraged socially-stratified economic development, it also has GHG emission reduction benefits. The OGWC’s 2011 report to the legislature found that in “Comparisons between urban areas that expand land areas and those that restrict urban growth to inside existing growth boundaries... vehicle miles of travel and GHG emissions can be reduced up to 20 percent over 20 years at growth rates between one to two percent per year [in urban areas with growth boundaries].”²⁰⁰ On balance, integrating

¹⁹⁷ Elizabeth Willmott, *The Urban Clean Energy Revolution*, Climate Solutions (November 2015), http://climatesolutions.org/sites/default/files/uploads/pdf/urban_clean_energy_revolution_web.pdf at 2.

¹⁹⁸ *See* Report pegs Oregon as top state for in-migration. Can Portland handle all the new arrivals? *Portland Business Journal* (January 2, 2015), <http://www.bizjournals.com/portland/blog/real-estate-daily/2015/01/report-pegs-oregon-as-top-state-for-in-migration.html>.

¹⁹⁹ *Final Report to the Governor: A Framework for Addressing Rapid Climate Change* at 5 & 19.

²⁰⁰ *Report to the Legislature 2011*, Oregon Global Warming Commission (OGWC), <http://www.keeporegoncool.org/sites/default/files/ogwc-standard-documents/2011Report.pdf> at 50.

our knowledge of climate change into local concerns such as this tips the balance in favor of retaining compact growth policies, but local governments should be prepared to produce and defend programs that offset the impact of these policies upon vulnerable populations. Fortunately, this effort has already begun and the Oregon State Legislature recently authorized local governments to include inclusionary zoning requirements for new development projects.²⁰¹

Second, local governments could consider carbon offsets because Oregon has a great deal of forest and agricultural land that sequesters carbon and prevents additional emissions from development.²⁰² Local governments could support the creation of high quality carbon offsets that help protect the values behind Oregon's land use system, promote business opportunities in rural communities, and ease the compliance pathway for regulated entities should a carbon pricing system allowing for the use of offsets be developed. While some challenge the effectiveness of carbon offsets as emission reduction mechanisms, the carbon offset market is growing and Oregon communities have an opportunity to directly benefit from participation in an increasingly global market that already has a strong foothold in the Western U.S.²⁰³ There are also a range of co-benefits that may accrue from the support of carbon offset projects, "including reduced reliance on fossil fuels, habitat conservation, biodiversity protection, job creation, water quality improvement, and improved local air quality."²⁰⁴ However, carbon markets are complex and difficulties are bound to arise with the interplay of emission reduction policies at different institutional levels. Thus, local governments desiring to promote or participate in the carbon offset market should simultaneously balance skepticism and trust in offsets as a component of their emission reduction portfolio.²⁰⁵

²⁰¹ Chris Lehman, Oregon Lawmakers Vote to Lift Ban On Inclusionary Zoning Laws, Oregon Public Broadcasting (March 3, 2016), <http://www.opb.org/news/article/oregon-housing-law-inclusionary-zoning/>.

²⁰² Final Report to the Governor: A Framework for Addressing Rapid Climate Change at 10.

²⁰³ For more information on the number of offsets issued for cap and trade compliance in California, *see* Compliance Offset Program, California Environmental Protection Agency, Air Resources Board, last visited 2-28-16, <http://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>.

²⁰⁴ Gordon Levitt and Tom Bowerman, Voluntary Carbon Offsets for Small Jurisdictions at pg. 7 (Long Version, Working Paper V7), PolicyInteractive (October 17, 2014), available upon request.

²⁰⁵ *Id.* at 11.

Third, further research and explanation of the economic opportunities associated with climate change mitigation and adaptation could spur investment and local support. The 2010 Oregon Climate Change Adaptation Framework report opined that “there is a lack of solid information on economic opportunities that may be generated by changing climate conditions...there is significant need to quantify anticipated opportunities.”²⁰⁶ While this statement understandably focused on economic opportunities stemming from adaptation, there is certainly room for a greater number of utilities and local governments in Oregon to also explain the economic benefits of climate mitigation.

3. Advocate for Funding

This recommendation may be the most crucial because it enables funding of additional local government climate initiatives. It may also be the most frustrating because it requires securing statewide or national political support.

Due to persistent funding issues, local governments are hard-pressed to make and support investments that reduce GHG emissions, even if these investments have a high likelihood of saving the government money over time.²⁰⁷ This thesis’s survey results verified that insufficient funding was a major concern among respondent Oregon climate policymakers. A solution that survey respondents envisioned was to adopt a statewide carbon pricing system that would simultaneously reduce emissions and generate revenue that could fund local initiatives. Suggestions included a carbon tax, a carbon tax and dividend, and a cap and trade program, each of which received nearly equal support as policy mechanisms that would be “very effective” at reducing GHG emissions. However, local governments should be aware of some of the pros and cons for each of these carbon pricing mechanisms so that they can align their support behind the most appropriate mechanism.

²⁰⁶ Oregon Climate Change Adaptation Framework, State of Oregon (Dec. 2010) http://www.oregon.gov/ENERGY/GBLWRM/docs/Framework_Final_DLCD.pdf, at 83.

²⁰⁷ For a general overview of local fiscal challenges in Oregon, *see* Fiscal Challenges for Oregon’s Cities, ECONorthwest (Sep. 2011), http://www.orcities.org/Portals/17/Publications/SpecialPubs/Fiscal_Challenges_for_Oregon_Cities_FINAL.pdf.

Carbon Tax

One of the reasons that a carbon tax makes sense is that globally-speaking, “Businesses see that carbon pricing is the most efficient and cost effective means of reducing emissions....”²⁰⁸ Many of Oregon’s businesses appear to be heading toward agreement with this sentiment, with 400+ companies having already signed the Oregon Business Climate Declaration, which asserts that “tackling climate change is one of Oregon’s greatest economic opportunities of the 21st Century.”²⁰⁹ Additionally, our neighbor to the north, the province of British Columbia (B.C.), Canada has successfully administered a revenue neutral carbon tax since 2008. Admittedly, a revenue neutral carbon tax would probably not provide additional revenue to Oregon’s local governments, so the calculations for the political viability of a revenue boosting carbon tax in Oregon may not be bolstered by this example. However, B.C.’s experience does demonstrate that a carbon tax is politically viable for a subnational jurisdiction, and could be viable in Oregon because Oregon and B.C. have similar population, geographical, and economic makeups.

Despite the advantages of business support for the carbon tax and the existing successful example from B.C., there are several sections of the Oregon Constitution that may stymie the viability of a carbon tax. Article IX, § 3 and Article VIII, § 2 of the Constitution are important because they potentially limit how a carbon tax addresses more than 90% of Oregon’s CO₂ emissions.²¹⁰ Each section is discussed in detail below.

²⁰⁸ Statement: Putting a Price on Carbon, The World Bank, <http://www.worldbank.org/content/dam/Worldbank/document/Carbon-Pricing-Statement-060314.pdf>, last accessed 8-6-15.

²⁰⁹ Sign the Oregon Business Climate Declaration, Ceres, last visited 4-17-16, <http://www.ceres.org/declaration/sign/oregon-business-climate-declaration>.

²¹⁰ For information on Oregon’s CO₂ emissions *see* State CO₂ Emissions: By Energy Sectors, Energy Information Administration (Feb. 25, 2014), http://www.eia.gov/environment/emissions/state/state_emissions.cfm; *see also* State CO₂ Emissions, Oregon, Energy Information Administration (Feb. 25, 2014), http://www.eia.gov/environment/emissions/state/state_emissions.cfm.

Article IX, § 3a directs all revenues (with limited exceptions) from taxes on motor vehicle fuel or use²¹¹ to the State Highway Fund.²¹² This revenue (with limited exceptions) must be used “exclusively for the construction, reconstruction, improvement, repair, maintenance, operation and use of public highways, roads, streets and roadside rest areas in this state.”²¹³ Furthermore, the statute for the State Highway Fund states that “the highway fund shall be deemed and held as a trust fund, separate and distinct from the General Fund, and may be used only for the purposes authorized by law. . . .”²¹⁴ A carbon tax affecting motor vehicle fuel or use accrues to the State Highway Fund, which likely cannot be used to fund alternative transportation spending because many of those expenditures have not been found to contribute to the “operation and use” of public thoroughfares, as required by the Oregon Supreme Court’s interpretation of Article IX, § 3a.²¹⁵

Article IX, § 3b states that tax rates on oil and natural gas shall not exceed six percent of the market value of each resource, excluding sources covered by Article IX, § 3a.²¹⁶ Relevant language includes:

Any tax or excise levied on, with respect to or measured by the extraction, production, storage, use, sale, distribution or receipt of oil or natural gas, or the ownership thereof, shall not be levied at a rate that is greater than six percent of

²¹¹ Or Const, Art IX, § 3a (1) (Taxes on motor vehicle fuel and use include: “any tax levied on, with respect to, or measured by the storage, withdrawal, use, sale, distribution, importation or receipt of motor vehicle fuel or any other product used for the propulsion of motor vehicles; and any tax or excise levied on the ownership, operation, or use of motor vehicles.”).

²¹² ORS 366.505 (detailing the composition of the State Highway Fund); *see also* Highway Revenues Apportionment, Oregon Department of Transportation, http://www.oregon.gov/ODOT/CS/FS/pages/hwy_rev.aspx#Highway_Revenues_Apportionment.

²¹³ Or Const, Art IX, § 3a (1).

²¹⁴ ORS 366.505.

²¹⁵ *Auto. Club of Oregon v. State*, 314 Or 479, 494 (1992) (stating that funding public transportation from taxes on motor vehicle fuel and registration was impermissible – in part because Oregon voters had three times rejected proposed amendments to Article IX, § 3a that would permit these taxes to fund public transportation.).

²¹⁶ Or Const, Art IX, § 3b.

the market value of all oil and natural gas produced or salvaged from the earth or waters of this state as and when owned or produced.²¹⁷

There is confusion about the scope of “produced or salvaged from the earth or waters of this state as and when owned or produced.” In order to determine market value and the scope of §3b, it is still not known whether this statement applies *only* to natural gas and oil produced in the state of Oregon, or whether it *also* applies to *all* natural gas and oil consumed in the state, regardless of where it was produced.²¹⁸

Oregon produces very little natural gas or petroleum,²¹⁹ so it is critical to know whether Article IX, § 3b applies to all oil or natural gas consumed in Oregon.²²⁰ The answer to this question is important because natural gas use accounted for nearly 30% of Oregon’s CO₂ emissions in 2011, with more than 97% of those emissions coming from outside of the transportation sector.²²¹ Also, around 10% of CO₂ emissions from petroleum products were emitted outside of the transportation sector and around 15% of Oregon’s petroleum product consumption was not related to transportation.²²² In total, around 35% of Oregon’s total CO₂ emissions (based on 2011 data) appear to fall outside of the scope of Article IX, § 3a, and may thus be subject to the tax rate limitations of

²¹⁷ *Id.*

²¹⁸ *Nw. Natural Gas Co.* at 382 (“We decline to suggest whether. . . [Article IX, §3b] does apply only to taxes on oil and natural gas extracted within this state because this question is not necessary to our resolution of this case.”).

²¹⁹ In 2013, Oregon produced 770 million cubic feet of natural gas and had no documented production of petroleum. *See* Natural Gas Gross Withdrawals and Production, U.S. Energy Information Administration (October 31, 2014), http://www.eia.gov/dnav/ng/ng_prod_sum_dcu_sor_a.htm; *see also* Oregon State Profile and Energy Estimates, U.S. Energy Information Administration (June 19, 2014), <http://www.eia.gov/state/analysis.cfm?sid=OR>.

²²⁰ Excluding the transportation sector, Oregon’s natural gas consumption in August of 2014 was 16,797 million cubic feet and petroleum consumption in 2012 was at least 9,906,000 barrels or around 15% of Oregon’s total petroleum consumption, *see* Natural Gas Consumption by End Use, U.S. Energy Information Administration, (Oct. 31, 2014), http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SOR_m.htm; *see also* Table CT3. Total End-Use Energy Consumption Estimates, 1960-2012, Oregon, U.S. Energy Information Administration (June 27, 2014), http://www.eia.gov/state/seds/data.cfm?incfile=/state/seds/sep_use/tx/use_tx_OR.html&sid=Oregon.

²²¹ *See* State CO₂ Emissions, Oregon, http://www.eia.gov/environment/emissions/state/state_emissions.cfm.

²²² *See* Total End-Use Energy Consumption Estimates, 1960-2012, Oregon, http://www.eia.gov/state/seds/data.cfm?incfile=/state/seds/sep_use/tx/use_tx_OR.html&sid=Oregon.

Article IX, § 3b.²²³ Although the method for calculating the limitation is unknown, it is difficult to imagine how a carbon tax designed for long term emission reductions would effectively function with a six percent limitation on the tax rate. Article VIII, § 2 (1)(g)²²⁴ directs tax revenue from oil or natural gas outside of the scope of Article IX, §3 to the Common School Fund. Similar to Article IX, §3b there is uncertainty about whether this constitutional command only applies to in-state production of oil and natural gas, or if all oil and natural gas tax revenue is affected.

Ultimately, the impact of these constitutional provisions could be that revenue from a tax affecting oil or natural gas would go to the State Highway Fund and the Common School Fund, and some portions of such a tax would have tax rate limits. This means that revenue would not be directly distributed for the purpose of reducing GHG emissions. In order to rectify these issues, Oregon legislators have unsuccessfully attempted to pass constitutional amendments on several occasions.²²⁵ The OGWC also recommended legislative action in 2009 to “create a fund statutorily dedicated to investments in Oregon’s non-highway transportation needs”²²⁶, presumably to escape the strictures of the State Highway Fund. This sentiment was again echoed in the 2011 OGWC report: “To make critical investments in transportation infrastructure, operations and programs that will enable us to meet our GHG reduction goals, we need new sources of funding that are diverse, stable, predictable and flexible....”²²⁷ Oregon’s current constitutional framework likely makes a carbon tax a risky approach if revenues are desired for non-highway or educational purposes.

²²³ State CO₂ Emissions, Oregon, http://www.eia.gov/environment/emissions/state/state_emissions.cfm.

²²⁴ Or Const art VIII, § 2 (“After providing for the cost of administration and any refunds or credits authorized by law, the proceeds from any tax or excise levied on, with respect to or measured by the extraction, production, storage, use, sale, distribution or receipt of oil or natural gas and the proceeds from any tax or excise levied on the ownership of oil or natural gas. However, the rate of such taxes shall not be greater than six percent of the market value of all oil and natural gas produced or salvaged from the earth or waters of this state as and when owned or produced. This paragraph does not include proceeds from any tax or excise as described in section 3, Article IX of this Constitution.”).

²²⁵ See HJR 33, 76th Leg., Reg. Sess. (Or 2011); See also HJR 48, 75th Leg., Reg. Sess. (Or 2009).

²²⁶ Report to the Legislature 2009, Oregon Global Warming Commission, <http://www.keeporegoncool.org/sites/default/files/ogwc-standard-documents/09CommissionReport.pdf> at 28.

²²⁷ Report to the Legislature 2011 at 46.

Carbon Tax and Dividend

Another potentially more effective carbon tax proposal – short of amending the constitution – lies in Article IX § 3a (2)(a) and in the first sentence of Article VIII, § 2 (1)(g), noting that revenue from applicable taxes may be used “for the cost of administration and any refunds or credits authorized by law.”²²⁸ Thus, a carbon tax and dividend approach whereby tax revenues are returned to citizens via a dividend mechanism could be legal, so long as the dividend was a legal refund or credit. A refund is defined as “a repayment; the return of money paid;”²²⁹ and a credit may be defined as “to offset (a sum of money) *against* an amount of money owed or due; (now) *esp.* to offset (a sum of money paid) against a tax liability.”²³⁰ Unfortunately, neither the Oregon Department of Revenue nor the Oregon statutes on Revenue and Taxation appear to have an explicit definition of refund or credit, and the term “authorized by law” is nowhere explained. Despite the ambiguity of this section, it is arguable that if a new tax credit or refund were created by the legislature, revenue could be directed away from the State Highway Fund and given to Oregon residents. Whether residents would use this dividend in a way that would reduce GHG emissions is debatable and this proposal does not secure any revenue for state or local governments to fund climate initiatives.

Cap and Trade

Finally, cap and trade systems have been proposed to the Oregon legislature on several occasions, most recently in the 2016 short legislative session and the 2015 regular legislative session.²³¹ While these proposals have thus far failed, there are advantages to

²²⁸ Or Const, Art IX, § 3 and Or Const, Art VIII, § 2.

²²⁹ See Refund, n., Oxford English Dictionary, <http://www.oed.com/view/Entry/161129?rskey=metyct&result=1&isAdvanced=false#footerWrapper>.

²³⁰ See Credit, v., Oxford English Dictionary, <http://www.oed.com/view/Entry/44114?rskey=bBKMni&result=2&isAdvanced=false#eid>. For a list of currently available tax credits in Oregon, see Personal Income Tax Overview, Oregon Department of Revenue, <http://www.oregon.gov/dor/PERTAX/personal-income-tax-overview/pages/credits.aspx>.

²³¹ See House Bill 4068, 78th Oregon Legislative Assembly, 2016 Regular Session, <https://olis.leg.state.or.us/liz/2016R1/Downloads/MeasureDocument/HB4068/Introduced>; see also HB 3470, 78th Oregon Legislative Assembly, 2015 Regular Session, <https://olis.leg.state.or.us/liz/2015R1/Downloads/MeasureDocument/HB3470/B-Engrossed>.

advocating for a cap and trade system. First, California has been implementing a successful cap and trade system since 2007 and it could be easy to learn from their example and to collaborate with their efforts.²³² Second, a majority of jurisdictions that have adopted carbon pricing systems globally have adopted a cap and trade system. Thus, if Oregon adopted a cap and trade system, it could be easier to collaborate with other jurisdictions and to comply with a national cap and trade system should one be instituted. In addition, Oregon could join a larger cap and trade carbon market, achieving economies of scale and buying down the cost of compliance for Oregonians. Complying with a carbon price law in this way could prove significantly less expensive than a go-it-alone strategy. Last, there is the possibility that a cap and trade system would avoid the constitutional limitations noted in this paper. It appears that such a system could initially avoid the strictures of Article IX, §3a because motor vehicle fuel sources would not be included in the first compliance period.²³³ However, it is unknown whether an Oregon court would consider a cap on GHG emissions to be a tax on the sources that produced those emissions, thus triggering constitutional limitations.

However, there are also several potential issues with a cap and trade system. Some of the main reasons why the proposals may not have passed is a concern that Oregon's businesses will be less competitive, causing carbon leakage that will stymie real aggregate emission reductions as businesses relocate to other jurisdictions with fewer emission restrictions. As the 2009 OGWC report to the legislature explained:

Many of Oregon's primary manufacturing employers produce global commodities (e.g., steel, cement, pulp and paper). These companies are price takers in global markets, not price setters, and may be disadvantaged competitively by such leakage effects. How can Oregon and other WCI [Western Climate Initiative] participants anticipate and address economic hardship to these companies that may be materially and adversely affected by competition from areas not subject to WCI cap and trade regulation? How can Oregon and other WCI participants deal

²³² For more information on California's cap and trade program, *see* Summary of Final Rules for California's Cap and Trade Program, International Emissions Trading Association (February 14, 2012), http://www.ieta.org/assets/US-WG/ieta_summary_of_california_ct_regulations.pdf.

²³³ *Id.* at 1.

with carbon content from goods imported from areas not subject to WCI cap and trade regulation?²³⁴

Green Municipal Bonds

Outside of the carbon pricing context, some cities in the U.S. have generated new funding by levying taxes and issuing bonds.²³⁵ Portland, Oregon has expressed interest in issuing green municipal bonds, and may issue a bond sometime during 2016.²³⁶ Other cities in Oregon should watch how Portland's bonding effort plays out, and if resources are available, perhaps monitor other city-level financial trends for green financing.²³⁷ Local governments may also want to investigate sources such as the Climate Bond Initiative's *The Green City Playbook*²³⁸ and the U.S. EPA's *Getting to Green: Paying for Green Infrastructure* report.²³⁹

4. Enhance Information Sharing and Transparency

Previous climate governance regimes, such as those inspired by the Kyoto Protocol framework, tiered their emission reductions to a 1990 emission baseline. Now, with the emergence of more flexible and diverse schemes for describing emission reduction targets (e.g. INDCs and local government participation in global reporting systems), it is more important than ever that data be shared to enhance transparency and accountability.

²³⁴ Report to the Legislature 2009 at 36.

²³⁵ See Neha Bhatt and Michael Ryan; Carbon Energy Tax: Boulder, CO; Smart Growth America; last accessed 2-28-16, <http://www.smartgrowthamerica.org/documents/Boulder-Carbon-Tax.pdf>; see also Building a green muni bond market that will finance the development of low carbon and climate resilient US cities, Climate Bonds Initiative, last accessed 2-28-16, <https://www.climatebonds.net/get-involved/green-city-bond-campaign/US>.

²³⁶ Greenlight for Green Bonds in City of Portland, C40 Cities (August 4, 2015), http://www.c40.org/blog_posts/greenlight-for-green-bonds-in-city-of-portland.

²³⁷ For example, the United Nations Framework Convention on Climate Change aims to increase city-level climate finance globally. See The Cities Climate Finance Leadership Alliance (CCFLA): Closing the Low-carbon, Resilient Urban Investment Gap, United Nations Framework Convention on Climate Change, <http://newsroom.unfccc.int/lpaa/cities-subnationals/the-cities-climate-finance-leadership-alliance-ccfla/>, last accessed 2-7-16.

²³⁸ The Green City Playbook, The Climate Bond Initiative (July 2015), <http://www.climatebonds.net/files/files/Green%20City%20Playbook.pdf>.

²³⁹ Getting to Green: Paying for Green Infrastructure; U.S. EPA (December 2014), https://www.epa.gov/sites/production/files/2015-02/documents/gi_financing_options_12-2014_4.pdf.

While the survey showed that few climate policymakers in Oregon believe that technical resources are lacking for GHG emission reduction initiatives, that does not mean that local governments are aware of and using the technical resources that do exist. Tools and frameworks that promote information sharing between local governments should be encouraged. Doing so will be necessary to develop and achieve the equitable emission reduction plans that climate policymakers broadly supported in their survey responses.

Value has already been created by entities such as ICLEI sharing policy between different levels of government and private institutions around the globe.²⁴⁰ Some of the key policies for sharing include methodologies for inventorying and tracking GHG emissions within a local government’s jurisdiction. Improved mechanisms for tracking and managing emissions continue to emerge; for example, ClearPath Global, a free and collaborative online mechanism for inventorying emissions, was recently released.²⁴¹ Data tools have also been developed to aid certain categories of emission reduction efforts, such as The U.S. Department of Energy’s Cities Leading through Energy Analysis and Planning Project, which “delivers standardized, localized energy data and analysis that enables cities to lead clean energy innovation and integrate strategic energy analysis into decision making.”²⁴²

As early as 2009, the Oregon Global Warming Commission (OGWC) noted several data challenges for local government climate initiatives, including lack of clarity on what local governments were expected to contribute to state GHG emission reduction goals, and insufficient understanding of local carbon footprint data, particularly for commercial operations and residents.²⁴³ In response to this, the OGWC hoped “to disaggregate the State’s reduction goals down to local governments and work with them to design responses that will leverage their unique capabilities and access to citizens.”²⁴⁴

²⁴⁰ See *Setting the Foundation: Climate Change Adaptation at the Local Level* at 1232; see also ICLEI USA, <http://icleiusa.org/>.

²⁴¹ ClearPath Global, last accessed 2-28-16, <http://www.clearpath.global/>.

²⁴² *Cities Leading Through Energy Analysis and Planning*, U.S. Department of Energy, last accessed 2-28-16, <http://energy.gov/eere/cities-leading-through-energy-analysis-and-planning>.

²⁴³ Report to the Legislature 2009 at 4 & 8.

Again in 2011, the OGWC recognized that data should be disaggregated geographically and in a consistent manner, such that local governments could effectively design responses that comprise a least cost pathway for contributing to the achievement of statewide emission reduction goals.²⁴⁵

Data from this type of a disaggregation effort does not publicly exist, even though such data would be incredibly useful. Informing communities of their unique and tailored responsibility to contribute to state goals (and maybe enforceable laws at some point in the future) would promote equity and allow citizens to pressure cities, and for cities to hold other cities accountable for their responsibilities. In Eugene, Oregon, city sustainability staff were required to disaggregate Dr. James Hansen’s global CO² reduction plan down to the local level in order to form a carbon budget for the city.²⁴⁶ While the initial results were shocking, finding that Eugene will likely exhaust its carbon budget within five years (if 2013 emission levels hold steady), they have provided Eugene’s leaders and broader citizenry a framework for what may be required to preserve a habitable climate given the predictions of today’s best available climate science. Given the number of GHG sources in Oregon and the lack of emission data for much of the state, an accurate and equitable disaggregation of local responsibility across the state could prove difficult, but it is worth attempting this effort. As the Oregon Global Warming Commission noted in 2009, “Since carbon emissions are a product of most of our business and personal activities, an equitable distribution of costs is critical to the success of and public support for any strategy.”²⁴⁷

Many local governments are intimidated by the task of developing goals or committing to pledges to reduce GHG emissions, but tools are available. It is increasingly

²⁴⁴ Report to the Legislature 2009 at 4.

²⁴⁵ Report to the Legislature 2011 at 40.

²⁴⁶ See Council Ordinance No. 20540 (Climate Recovery Ordinance), City of Eugene, <http://www.eugene-or.gov/511/Climate-Recovery>; see also James Hansen, et. al.; Assessing “Dangerous Climate Change”: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature; PLOS ONE (December 2013), <http://www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0081648&representation=PDF>.

²⁴⁷ Report to the Legislature 2009 at 35.

apparent that difficult to achieve GHG emission reductions will be accelerated by robust transparency systems that allow all governments to confidently claim emission reductions in a way that avoids double counting and promotes confidence in regulatory systems. Several such systems are already up and running, including the Carbon Disclosure Project (CDP) and the Carbonn Cities Climate Registry (cCR). The cCR was developed in 2010 to help local government climate action to be transparent, accountable and comparable, and so that local data is “consistent with the standards of the global climate regime.”²⁴⁸ The cCR also is a forum for local governments to present their commitments to reduce GHGs, performance in doing so, and the actions that made the results possible. As of February 2016, only three cities in Oregon were participating in the cCR: Portland, Beaverton, and Hillsboro.²⁴⁹

While both of these global initiatives are taking place on the meta scale of emission reduction policies, there are other more localized policies that cities might consider, such as passing “ordinances that require large commercial building owners and managers to report their energy consumption annually, either to the city or publicly.”²⁵⁰ Regardless of the method that local governments use to report their climate commitments, transparency will be important to measure and verify implementation and to catalyze additional climate commitments. Local governments in Oregon are beginning to opt into global reporting mechanisms and this trend should continue.

5. Promote Collaboration

Local governments in Oregon should take advantage of opportunities to collaborate with one another and with local governments in other states and even countries. University of Oregon Professor Rich Margerum defines collaboration as “an approach to solving complex problems in which a diverse group of autonomous stakeholders deliberate to build consensus and develop networks for translating consensus into results.” Collaboration in public policy and planning is becoming more

²⁴⁸ About the carbonn Climate Registry, carbonn Climate Registry, last accessed 2-28-16, <http://carbonn.org/about/>.

²⁴⁹ Data, carbonn Climate Registry, last accessed 2-28-16, <http://carbonn.org/data/>.

²⁵⁰ The Urban Clean Energy Revolution at 13.

prevalent because society has “addressed many of the more straightforward problems, and we are now left with the more difficult, contentious, and diffuse problems.”²⁵¹

Other scholars note that municipalities which coordinate with other levels of government and other municipalities are more likely to “adopt meaningful [emission reduction] policies.”²⁵² Coordinated climate policy collaborations have already begun. For example, in Washington state, the King County-Cities Climate Collaboration is a nationally-recognized partnership platform that leverages limited city resources to achieve climate targets.²⁵³ While it is difficult to say whether it would be more effective for local governments in Oregon to join an existing collaborative body (such as Portland, Eugene, and several other Oregon cities have), or form an Oregon specific body, any form of collaboration could lead to better emission reduction outcomes.

Outside of the government to government context, local governments could also consider working with signatory (and other) businesses to the Oregon Climate Business Declaration in a number of ways. First, they could work together to host events that boost public awareness of climate change and potential policy solutions. Second, they could amplify pressure on the state and federal government to develop and implement significant climate policies. Third, they could apply pressure to non-signatory businesses to sign the declaration and commit to more sustainable business practices.

Engaging in collaborative efforts like these may help local governments answer and refine a set of questions posed by a National League of Cities’ article on initial GHG reduction planning steps. Note that these questions are primarily applicable to local governments in Oregon that have not begun formal GHG emission reduction efforts. The article suggests the following questions:

- What is the city’s capacity (e.g. to calculate emissions)? What will the scope of planning be (e.g. municipal operations only or community-wide activities)?
- Who are the stakeholders in the community?

²⁵¹ Rich Margerum, *Beyond Consensus: Improving Collaborative Planning and Management*, Cambridge, MA: MIT Press (2011) at 3-15.

²⁵² Damian R. Pitt, *Harnessing Community Energy: The Keys to Climate Mitigation Policy Adoption in US Municipalities*. *Local Environment*, Vol. 15, No. 8, 717-729 (2010).

²⁵³ See 2016 Climate Leadership Award Winners; United States Environmental Protection Agency; last updated March 23, 2016; <https://www.epa.gov/climateleadership/2016-climate-leadership-award-winners>.

- How will data be collected?
- What mitigation and/or adaptation measures will be taken?²⁵⁴

The next two categories of recommendations may also provide the opportunity to collaboratively engage local emission reduction efforts.

6. Consider New Governance Bodies

Recall that one of climate policymakers' principal desires was that the State of Oregon amplify its leadership and coordination of local government emission reduction efforts. This could be accomplished by promoting new governance bodies or reforming existing bodies. Reformation may be a better route because it avoids expending resources to develop potentially redundant new governance bodies. For example, the current mission of the Oregon Global Warming Commission is: "to recommend ways to coordinate state and local efforts *to reduce Oregon's GHG emissions* consistent with Oregon's goals and to recommend efforts to help the state, local governments, businesses and residents *prepare for the effects of global warming.*"²⁵⁵ Short of regulatory authority, this mission statement is already very strong and targeted. However, the climate policymaker community in Oregon appears to be frustrated with outcomes, so it seems like a reformation effort should consider why the OGWC is not functioning as well as possible. The OGWC appears to be operating on a shoe-string budget – perhaps it is time that the state prioritizes the commission's work if it is serious about meeting GHG emission reduction goals.

While the Oregon Global Warming Commission and the Oregon Climate Change Research Institute have been established and are operating on the statewide level already, there is certainly room for local bodies to contribute. A 2009 report to Oregon Governor Kulongoski stated that new forms of governance could be implemented just as watershed councils were developed in the 1990s to tackle issues with planning and management of watersheds.²⁵⁶ The main climate-related takeaway from this report was that "we need to

²⁵⁴ Corinne Kisner, Municipal Action Guide – Measuring Emissions and Creating a Greenhouse Gas Inventory, National League of Cities, http://www.sustainablecitiesinstitute.org/Documents/SCI/Report_Guide/Guide_NLC_Measuring_Emissions_2010.pdf.

²⁵⁵ Report to the Legislature 2009 at 13.

²⁵⁶ Final Report to the Governor: A Framework for Addressing Rapid Climate Change at 22.

modify our planning and decision-making processes so that we conduct them on a holistic basis that considers multiple interconnected systems – as well as mitigation and adaptation – simultaneously.”²⁵⁷

New institutions could build off of the advisory bodies that have already formed at the local level; for example, the City of Gresham has a Natural Resources and Sustainability Committee, the City of Eugene has a Sustainability Committee, and the City of Portland has a Planning and Sustainability Commission, as well as an Alternative Technology Advisory Committee.²⁵⁸ However, it remains to be seen how effective these advisory bodies will be at providing useful information on policies that might reduce GHG emissions, and whether bodies with regulatory powers should be developed.

7. Incorporate Social and Environmental Justice into Local Climate Initiatives

In order to make new environmental initiatives resilient and successful – especially at the local level – social and environmental justice (EJ) concerns should receive greater attention. The first generation of environmental laws were often effective on a meta-level but also resulted in substantial costs for some communities. For example, in the context of Clean Air Act initiatives to reduce air pollution, some communities found themselves victim to “hot spots” of concentrated air pollution because they were not informed of changes or given the opportunity to participate in decision making processes that affected them.

While it may be difficult to achieve socially and environmentally just results, Oregon’s local governments should undertake efforts to promote social and environment justice. Respondent climate policymakers overwhelmingly supported the view that low-income and vulnerable communities should not be harmed by GHG emission reduction policies. This sentiment may have contributed to, or been a cause of, recent steps to prioritize EJ. Such efforts include Portland, Oregon’s establishment of an equity working

²⁵⁷ *Id.* at 5.

²⁵⁸ *See* Natural Resources and Sustainability Committee, City of Gresham, last accessed 2-23-16, <http://greshamoregon.gov/city/city-departments/mayor-and-city-council/council-advisory-committees/Natural-Resource-and-Sustainability-Committee.aspx/>; *see also* Sustainability Commission, City of Eugene, last accessed 2-23-16, <https://www.eugene-or.gov/38/Sustainability-Commission>; *see also* List of Active Boards, Committees and Commissions, City of Portland, last accessed 2-23-16, <https://www.portlandoregon.gov/oni/56150>.

group for its climate planning processes²⁵⁹ and the establishment of the State of Oregon’s Environmental Justice Task Force (EJTF) in 2007.²⁶⁰ This task force defines EJ as:

[E]qual protection from environmental and health hazards, and meaningful public participation in decisions that affect the environment in which people live, work, learn, practice spirituality, and play. EJ communities include minority and low-income communities, tribal communities, and other communities traditionally underrepresented in public process. Underrepresented communities may include those with significant populations of youth, the elderly, or those with physical or mental disabilities.²⁶¹

Although low-income and vulnerable communities have begun to receive more attention, they “continue to bear disproportionate risk of adverse health impacts as a result of government decision-making.”²⁶² The EJTF opines that equitable outcomes are often not achieved because “best practices in outreach and engagement to overcome barriers to participation for disenfranchised communities [are not utilized].”²⁶³ It is important that local governments strive to utilize best practices because “Using a culturally competent approach to capacity-building, acknowledging privilege, and fostering open communication will help build trust with traditionally underrepresented communities, who can then help avoid potential disparate impacts....”²⁶⁴

One best practice is the use of collaborative governance, whereby government strives “to ensure all stakeholders – especially those from communities of color and low-income communities who are most potentially impacted by a decision – are at the table with capacity to meaningfully participate.”²⁶⁵ The EJTF opined that “Collaborative

²⁵⁹ Portland Climate Action Plan: Local Strategies to Address Climate Change at 49.

²⁶⁰ ORS §182.538 (2013).

²⁶¹ Environmental Justice: Best Practices for Oregon’s Natural Resource Agencies; State of Oregon Environmental Justice Task Force (Jan. 2016), https://www.oregon.gov/gov/policy/environment/environmental_justice/Documents/Oregon%20EJTF%20Handbook.v4.pdf at 1.

²⁶² *Id.*

²⁶³ *Id.*

²⁶⁴ *Id.* at 8.

governance models can transform traditional public/private roles and partnerships by focusing on building trust, identifying and addressing shared problems, being flexible, and working toward consensus rather than compromise.”²⁶⁶

While some statewide and local bodies have already begun considering these issues of justice, we can and must do better, particularly in relation to policies that strive to reduce GHG emissions. The 2015 OGWC report cautioned that while many emission reduction strategies are beneficial over the long-term, policymakers should recognize that:

[S]ome may either involve significant upfront costs or could result in an inequitable distribution of costs and benefits over the course of implementation. We are particularly concerned about these equity considerations with respect to low income Oregon households and many rural Oregon communities, which are likely to be more vulnerable to both the costs of measures to contain emissions, and to costs of our failure to contain the effects of climate change.²⁶⁷

Knowing these concerns, local governments should proactively involve low-income, disadvantaged, and historically underrepresented communities in the emission reduction decision-making process.

8. Apply Pressure to State and Federal Government

Many of the previous recommendations will either require state and federal action to become realities, or such action will enhance the effectiveness of policies that local governments can pursue without state and federal support.²⁶⁸ A potential unintended consequence of local climate initiatives is that pressure on the state and federal government may diminish if advocates refocus their efforts on the local level and forget the importance of advocacy at the state and federal level. While successful local initiatives are incredibly important because they enable the achievement of state and

²⁶⁵ *Id.* at 9.

²⁶⁶ *Id.* (citing Freeman, Jody, Collaborative Governance in the Administrative State, 45 University of California Los Angeles Law Review 1 (1997)).

²⁶⁷ Biennial Report to the Legislature 2015, Oregon Global Warming Commission, http://www.keeporegoncool.org/sites/default/files/ogwc-standard-documents/OGWC_Rpt_Leg_2015_final.pdf at 55.

²⁶⁸ *Id.* at 31.

federal emission reduction targets, climate action enthusiasts should remember that concurrent efforts at the state, federal, and international level are also necessary.

Pressure on state and federal government is important because statewide and federal support motivates a broad swath of local governments to take action. For example, when national governments assume leadership roles, cities fall into line: “Over 1,000 local elected officials ultimately committed to meet or beat the Kyoto Protocol’s greenhouse gas emissions reduction target of 7% reduction below 1990 levels by 2012.”²⁶⁹ States have a role to play as well. California has some of the nation’s most aggressive plans to reduce GHG emissions, and unsurprisingly also has the greatest number of cities pursuing aggressive GHG emissions reduction targets. Therefore, local governments in Oregon should pressure the State of Oregon and the federal government to maintain and expand their climate change initiatives, because doing so will make it easier to achieve local emission reductions.

There are many ways that Oregon’s local governments might engage on the state and national stage. In a recent example, both Eugene and Portland (along with 52 other counties, cities, and mayors, and the National League of Cities) signed onto an *amicus* brief in support of the Environmental Protection Agency’s position in the Clean Power Plan litigation.²⁷⁰ The brief notes that local government’s “innovative, uncoordinated forays have wanted for the support and certainty that only a more comprehensive federal framework for reducing the power sector’s greenhouse gas emissions can provide.”²⁷¹ Statements like this have the potential to inform the federal government that local government actions are constrained by the uncertainty and lack of support from a federal framework. While it is impossible to know how helpful such statements truly are, the act of cities coming together in solidarity may by itself be useful. Relationships across the country are forming. These relationships will promote the sharing of best practices for

²⁶⁹ The Urban Clean Energy Revolution at 6.

²⁷⁰ See Brief of Amici Curiae the National League of Cities; The U.S. Conference of Mayors; and 54 Cities, Counties, and Mayors in Support of the U.S. Environmental Protection Agency. http://web.law.columbia.edu/sites/default/files/microsites/climate-change/files/local_govt_coalition_amicus_brief.pdf.

²⁷¹ *Id.* at 30.

GHG emission reductions and will facilitate the formation of future coalitions for climate change policy progress.

CHAPTER VIII

CONCLUSION

Despite meeting its 2010 goal of arresting and beginning to reduce emissions, the State of Oregon is not on track to meet the 2020 goal of reducing GHG emission levels 10% below 1990 levels or the 2050 goal of reducing GHG emission levels at least 75% below 1990 levels. The 2015 OGWC report projected “Oregon’s 2020 emissions to be 11 million [metric tons] MTCO_{2e} above the target level set by the Legislature for that year, with the gap between emissions and our goals widening each year to 2050 and beyond unless additional action is taken to contain and drive down emissions.”²⁷² In response to this projection, the OGWC noted that in order to “put Oregon on a sustainable path to meeting our 2050 goal, we must immediately begin taking more ambitious action than what we have seriously contemplated as a state historically.”²⁷³

While it is possible (albeit unlikely) that the State of Oregon can achieve its emission reduction goals without additional efforts by local governments, local governments and citizens would be wise to heed the advice of the 2004 *Oregon Strategy for Greenhouse Gas Reductions*. In that report, the Governor’s Advisory Group on Global Warming concluded that “a 2050 goal of reducing greenhouse gas emissions 75 percent below 1990 levels would likely be the least demanding target we might merit. We will likely be called upon to deliver more significant reductions than this, rather than less.”²⁷⁴

Indeed, the 2015 OGWC report notes that the State of Oregon’s 2007 statutory goals were based on the recommendations submitted to Governor Kulongoski in 2004 by his Advisory Group on Global Warming. The 2050 goal (75% reduction of GHGs from 1990 levels by 2050) was based on what scientists at the time thought sustainable

²⁷² Biennial Report to the Legislature 2015, Oregon Global Warming Commission, http://www.keeporegoncool.org/sites/default/files/ogwc-standard-documents/OGWC_Rpt_Leg_2015_final.pdf at 6.

²⁷³ *Id.* at 32.

²⁷⁴ Oregon Strategy for Greenhouse Gas Reductions, State of Oregon (December 2004), <http://www.oregon.gov/energy/GBLWRM/docs/GWReport-FInal.pdf> at 7.

emission levels could be.²⁷⁵ While this projection of sustainable emissions likely no longer holds true, this observation shows that our State has had the political will to set targets that align with climate science. Now we need to show the political will to adopt even more ambitious targets and to implement the policies that will achieve those targets.

Efforts to better understand and implement local climate policy in Oregon will not only help the State of Oregon meet its GHG emission reduction goals, it will diminish the severity of the conflicts precipitated by a changing climate in Oregon. This thesis's information gathering process was similar to a conflict assessment process because many perspectives on reducing GHG emissions in Oregon were considered through the lens of local governments. First, the introduction detailed core climate change and GHG emission reduction policy frameworks from the international to the local level. Second, the literature review shared legal and policy scholarship on the role of local governments in climate governance systems, as well as the initiatives that Oregon's local governments are currently pursuing. Third, the climate policymaker survey attracted 55 responses from some of Oregon's leading experts, the results of which were shared in the discussion section. Finally, considering the findings from each of the previous sections' inquiries, eight categories of recommendations were developed to help guide future GHG emission reduction efforts across Oregon.

This thesis recommended that local governments 1) revisit past studies; 2) align the climate agenda with other local priorities; 3) advocate for funding; 4) enhance information sharing and transparency; 5) promote collaboration; 6) consider new governance bodies; 7) incorporate social and environmental justice; and 8) apply pressure to the state and federal government. Based on these recommendations, many opportunities for further research exist. For example, the effectiveness of different information sharing platforms could be evaluated, the success of climate-oriented campaigns that also engage other pressing issues (e.g. wealth inequality) could be examined, or the potential legal structures of new governance bodies and EJ initiatives could be developed. Such efforts could even be guided and enhanced by a more robust survey of climate policymakers in the state.

²⁷⁵ Biennial Report to the Legislature 2015, Oregon Global Warming Commission at 32-33.

Ultimately, further inquiry into local government climate initiatives should remain a priority because sub-national climate actions have the potential to create “‘radiator effects’ that may help build a foundation for successive rounds of regulatory initiatives....”²⁷⁶ This iterative cycle of local actions that encourage other governments to take action has already begun to play out in Oregon and will hopefully continue to do so. Local governments in Oregon clearly have a role to play in GHG emission reduction efforts because “The broad range of economic, political, and social activities that must be altered to sufficiently reduce greenhouse gas production will require the complementary and overlapping skills, competencies, and unique regulatory approaches that each level of government can provide.”²⁷⁷

Oregon and its communities have a history of supporting innovative and beneficial environmental initiatives. By better focusing on local government climate initiatives in Oregon, we have the potential to trigger “localized ruptures” in the dominant climate governance frameworks. According to Professor William Sewell, “Localized ruptures always have the potential of bringing about a cascading series of further ruptures that will result in structural transformations - that is, changes in cultural schemas, shifts of resources, and the emergence of new modes of power.”²⁷⁸ Due to the threat of climate change and overconsumption of resources, we are entering a transformational period for environmental governance where the powers and expected roles of different levels of the state will be challenged and re-made. Local governments in Oregon are poised to be on the leading edge of those efforts.

²⁷⁶ States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures at 700.

²⁷⁷ All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation at 746.

²⁷⁸ William H. Sewell, Historical Events as Transformations of Structures: Inventing Revolution at the Bastille (1996), http://www.jstor.org/stable/pdf/657830.pdf?_=1461182548070 at 844.

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