SMALL AND MEDIUM-SIZED CITY CLIMATE ACTION PLAN CREATION AND IMPLEMENTATION IN WESTERN WASHINGTON AND OREGON

by

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ABSTRACT

Small and Medium-Size City
Climate Action Planning and Implementation
In Western Washington and Oregon

As cities acknowledge their contributive roll in anthropogenic climate change and experience the destructive impacts of pollution, many are quickly motioning toward the development of localized climate action plans (CAPs). Environmental impacts paired with concerns of rapidly increasing population make small and medium-sized cities in Western Washington and Oregon ideal places to observe CAP creation and implementation. Using two frameworks for policy innovation, the internal determinants and regional diffusion models, eight localized stand-alone climate documents and nineteen comprehensive plans from twenty cities were analyzed and condensed into a Climate Actions Inventory (CAI). Additionally, thirteen city staff and two consultant interviews were conducted. Together this data identifies both motivations and barriers to CAP formation and implementation.

This research determines that limitations to CAP implementation within cities (i.e. money, staff resourcing, utility management, etc.), vulnerabilities and susceptibility to climate impacts, regional and local population growth, and community participation and demand all have significant value as cities create localized CAPs. Though CAP formation is primarily determined by internal viabilities and city staff, state and county policies as well as other cities also have impact in the municipal climate planning process. Further research assessing community emissions, perception, and behaviors is needed to strengthen the impact and relatability of city CAPs.

Key Words: climate action plans, municipal comprehensive plans, Washington, Oregon, policies, strategic development, community, municipalities, cities, internal determinants, regional diffusion

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Sincerely,

Arielle Simmons

Introduction

Small and Medium Size City Climate Action Planning in Western Washington and Oregon

Cities play a fundamental role in the production of greenhouse gas (GHG) emissions. Therefore, they are essential places for proactive innovation around adaption and mitigation strategies and actions (Basset & Shandas, 2010). Recent development in climate science indicates that, "Since the mid-20th century, most of the large cities of the United States have been warming at more than twice the rate of the planet as a whole" (Stone, Vargo, & Habeeb, 2012 pg. 263). As populations continue to grow and physical and mental displacement from severe weather events trend as a "new normal," small cities must reduce emissions impacts, strengthen urban infrastructure, conceptualize land-use design and purpose, and protect citizens from the physiological and psychological impacts imposed from climate disruption.

For many small cities, there exist considerable challenges in climate action planning. Specifically focusing on the Pacific Northwest region with emphasis on Western Washington and Oregon, this research explores the question, "*What factors shape the decision-making process of small and medium-sized city Climate Action Plan creation, and how do these plans differ across municipalities?"* Addressing the barriers encountered by decision makers and stakeholders, determining levels of leadership and expertise in the CAP development process, and highlighting economic and social benefits and constraints, this research broadens the scope for plan evaluation and success through an analysis of climate action plans as well as interviews with internal city staff and consultants involved in climate action planning. Identifying commonalities and differences between small and medium-sized CAP targets and actions can aid in

determining methods to diffuse planning strategies throughout the region. Finally, suggestions for incorporating dynamic urban and social reformation constructs into the CAP process may generate the movement needed to accommodate critical levels of urgency.

While there are many cities mobilizing throughout the United States, the small cities in Western Oregon and Washington can provide key insights into how cities can overcome obstacles and rapidly accommodate for transformative change. According to the Washington Office of Financial Management, Washington State's population grew an estimated 126,000 people, a two percent increase between June 2016 and June 2017. This is the largest percent increase of people in this state since the year 2006 (Zhao, 2017). As of June 2017, there are now over 7,300,000 people residing in Washington (Zhao, 2017). Migration to Washington was the primary reason for the increase accounting for seventy-two percent of the state's growth between 2016-2017 (Zhao, 2017). Natural birth accounted for twenty-eight percent of the increase (Zhao, 2017). To accommodate this growth, Washington added 39,500 housing units in 2017, an increase of fifteen percent from 2016. More than half of these units were multi-family structures (OFM, 2017). These homes were primarily incorporated in the five largest metropolitan counties: King, Snohomish, Pierce, Spokane, and Thurston (Zhao, 2017). Oregon's growth follows that of Washington's.

Oregon is experiencing similar population spikes. Oregon was the 9th fastest growing state in the US between 2016-2017, adding 64,750 people- a 1.6 increase (Dubois, 2017). Migration accounted for eighty-eight percent of this increase, with the remaining twelve percent attributed to natural birth (Dubois, 2017). Portland absorbed the

most population, with an estimated 640,000 people living within city limits (Dubois, 2017). Multnomah and Washington counties added more than 12,000 residents each and Clackamas County absorbed just over 8,000 people (Dubois, 2017). Central Oregon also had an increase of four percent with Bend adding 3,265 residents contributing a total population of 86,765 (Dubois, 2017).

Population is just one of the many reasons why it is of crucial importance to observe and interact with municipal CAPs. Washington and Oregon are home to many species of keystone flora and fauna such as salmon habitats and old growth trees. The naturalness of both places-- majestic forests, marine and aquatic life, as well as the diverse landscapes and terrain make cities of Washington and Oregon are not only incredibly beautiful, but also sensitive to dramatic changes in the climate. Keeping natural systems operating at high capacity is pivotal to maintaining the health and functionality of social systems (Millar, Stephenson, & Stephens 2007; Kabisch et Al, 2016).

Washington and Oregon are particularly vulnerable to climatic shifts. The University of Washington College of the Environment's Climate Impacts Group asserts that the Pacific Northwest region will be subject to a number of dramatic climate events now and in the years to come. Among these changes are 1) Increases in average annual temperatures, 2) Warming in all seasons, 3) More extreme heat events, 4) Ongoing natural variability and associated uncertainties (i.e. El Niño and La Niña) (Oscillation, 2013). Results of these projected scenarios of warming will result in dramatic changes in annual precipitation, sea-level rise, and wildfire intensity (Oscillation, 2013). Coastal ocean temperatures and ocean acidification have detrimental impacts on shellfish

production, local livelihood, and the regional economy. Increased wildfires result in localized public health crisis and impair timber harvest and production services. Rain events exacerbate flooding, stimulate landslides, and cause travel impediments for people throughout the region—and these are just the foreseeable problems.

Municipalities within the Pacific Northwest region possess an incredible obligation to design climate action plans to be policies and guidelines for all people within their respective communities. Observing key indicators such as land use changes and population increases, addressing knowledge gaps, acknowledging and working to elevate beyond financial and social barriers generate opportunities for action and create communicative space between municipal and regional leaders and respective communities (Kabish et. al, 2016). This study contributes a subsect of urban governance and policy innovation planning to identify how CAPs are formed in small and medium-sized cities in Western Washington and Oregon, who informs the development process, and how CAP influence is dispersed throughout the region. Additionally, this research specifies core conceptual components missing from the CAP process and recommends ways to make CAPs more impactful.

Chapter One

Components of Climate Action Planning Background and Purpose

Chapter One summarizes Climate Action Plan (CAP) creation and background. It addresses international movements, coalitions, and organizations that have placed cities at the forefront of climate planning and policy-setting. It then details CAP structure, content, and the leadership involved in the creation process. Finally, Chapter One addresses factors in plan quality and impact.

1a. Creating an Arena for Climate Action

There is consensus that state and municipal mobilization for climate action is increasing in the United States (Krause, 2011; Boswell, Greve, & Seale, 2012; Krause, Yi, & Fieock, 2017). This is largely a result of failure at the federal level to comply with international policy negotiations set within consortiums such as the 1992 Rio Earth Summit, 2005 Kyoto Protocol, 2015 Copenhagen United Nations COP 21 Conference, and the 2016 Paris Agreement (Krause, 2011; Gough 2013.). As a result of federal negligence to aggressively combat climate through emissions reduction standards and land-use reform, the inception of the US Mayors Climate Protection Agreement in 2005 has stirred cities toward policy innovation (Krause, 2011; Boswell, Greve, & Seale, 2012).

Commitment from cities to enhance resilience, reduce emissions, and track progress was met with resounding international appeal, prompting UN Secretary Ban Ki-moon and Special Envoy for Cities and Climate Change Michael R. Bloomberg to create the 2014 Compact of Mayors (Global Covenant of Mayors, 2017). Aligning objectives with European Union's Covenant of Mayors formed in 2008, the two entities joined together to form the Global Covenant of Mayors in 2016 (Global Covenant of Mayors,

2017). According to the Global Covenant of Mayors website, there are "7,496 cities representing 681,365,803 people worldwide and 9.27% of the total global population" (Global Covenant of Mayors, 2017). The Covenant remains the world's largest coalition of cities dedicated to mitigating pollution and adapting to change (Global Covenant of Mayors, 2017).

With the guiding principles of the U.S. Mayors Climate Protection Agreement and Global Covenant of Mayors, municipalities of varying sizes, demographics, and political orientations are prompted to make commitments toward emissions reductions. Some of these principles include adopting land use polices to preserve open space and promote compact urban development for walking and bicycle accessibility (Boswell, Greve, & Seale, 2012). Other principles include improving building code standards for new developments within communities, incentivizing investment in renewable energy, and increasing public outreach, education, and public health services (Boswell, Greve, & Seale, 2012). However, transforming guiding principles into tangible progress is a challenge for cities both internationally and in the United States (Anguelovski & Carmin, 2011). Resources such as city-staff and expertise, time, funding, and community engagement for municipalities vary considerably from city to city (Boswell, Greve, & Seale, 2012; Lyles, Berke, & Overstreet, 2017) as there are no set standards for climate planning and visioning (Anguelovski & Carmin, 2011; Boswell, Greve, & Seale, 2012).

Despite these limitations, the impact of technology and the influence of urbanization have created networks to aid cities in reducing emissions and has allowed for more incorporative information sharing (Sterman, 2011). The most notable organization providing technical support is the International Council for Local

Environmental Initiative (ICLEI- Local Governments for Sustainability). Founded in 1990, ICLEI is the "leading global network for towns, cities, and regions who have committed to building a sustainable future" (ICLEI, 2017). A crucial partner to the Global Covenant of Mayors, ICLEI provides guidelines, tools, programs, methodologies, and consultation to 1,500-member cities in 100 countries (ICLEI, 2017; Global Covenant of Mayors, 2017).

Cities dedicated to climate action plan (CAP) development are encouraged to partner with the ICLEI. The Global Covenant of Mayors standards follow the ICLEI *Five Milestone Process,* also called the Cities for Climate Protection (CCP). These five milestones are: 1) Create a baseline emission inventory and forecast of emissions, 2) Form an emissions reduction standard, 3) Design a local climate action document, 4) Supplement this plan with policy, 5) Develop a regulatory monitoring system to measure standards and verify results (ICLEI, 2017). ICLEI works to develop a number of software tools such as ClearPath and C-LEAP to ease transitioning between steps, make GHG emissions reduction monitoring simpler, and provide a systematic flow for amending CAPs. (ICLEI, 2017). Other essential partnership organizations with the Covenant are the C40 Climate Leadership Group and the United Cities for Local Governments (Global Covenant of Mayors, 2017).

1b. Climate Action Planning Purpose and Structure

The international arena plays a tremendous role in determining core emissions targets and projecting climate impact (McCright, Aaron, & Dunlap, 2003). In contrast, climate action plans (CAPs) work to scale down larger frameworks to integrate state and regional directives with community vision and local context (Boswell, Greve, & Seale,

2012). Therefore, every plan contains city-specific content CAPs are created for two distinct purposes. The first is mitigation, or the purposeful reduction and elimination of carbon emissions and GHG pollution (Stone, Vargo, Habeeb, 2012). The second is adaption, or the ability of a municipality and community to withstand or recover from climate impacts. (Adger et al. 2003). Some documents simply provide a visionary mission for cities, with most plans primarily focused on strategies concerning energy, land-use, transportation, waste, and public health (Boswell, Greve, & Seale, 2012).

According to Boswell, Greve & Seale (2012, pg. 9) are four varieties of local planning documentation cities can choose to adopt. These are 1) *CAPs:* municipal stand-alone documents that focus on providing guidelines for mitigating and adapting to climate change, 2) *Sustainability Plans:* define and envision sustainability initiatives, but include a climate action section, 3) *Energy Plans:* focus on conservation and efficiency, 4) *Comprehensive and General Plans:* community visioning and land use planning documents that may contain elements or sections of CAP (Boswell, Greve, & Seale, 2012). Budget constraints, time, and resources available to cities often determine which, if any, CAP variations are infused into city policy and community value systems (Lyles, Berke, & Overstreet, 2017). Regardless of these constraints, many municipalities recognize the importance of local-level climate planning and strive to incorporate cost-effective strategies into many facets of city planning and life (van Staden & Musco, 2010).

Jurisdictional CAPs possess a standard structure that includes a background, contributors, local greenhouse gas (GHG) inventory, forecast of city growth and future emissions, targets and goals, emissions reduction strategies, and adaptation

recommendations. Boswell, Greve, and Seale (2012, pg. 10) also suggest for CAPs to intergrade implementation, monitoring, and evaluation measure. While the entire CAP process relies largely on scientific and quantitative reasoning, two of the most technical aspects of the plan are inventorying GHG emissions and developing GHG reduction strategies (Boswell, Greve, & Seale, 2012; Roseland, 2006). Once a GHG inventory is complete, reduction strategies tied to emissions are formed.

GHG inventories are defined as "the introduction and accounting of emissions emitted to the atmosphere within a community over a period of time. They are not measured directly but are estimated from quantifying community activity and behavior (i.e. vehicle miles traveled (VMTs and electricity consumption)" (Boswell, Greve, & Seale, 2012, pg. 11). Despite the prevalence of GHG inventories in CAP formation and the inclusion of them in CAP documents, research indicates that emissions inventories must be refined to adequately inform reduction targets and implementation strategies (Boswell, Greve, & Seale, 2012; Basset & Shandas, 2010).

Identification of emissions sources by assigning designated carbon boundaries is a key element to reduction within municipalities (Boswell, Greve, & Seale, 2012 Bassett & Shandas, 2010; Rice, 2010). According to Rice (2010), territorializing emissions is a key component to maintaining accurate emissions records, determining levels of effective planning and implementation, and stimulating community participation in the reduction process. To accomplish this, Boswell, Greve, & Seale, (2012) advise that the data assumptions from GHG inventories be made more transparent by public officials and between stakeholders. Clearer justifications for emissions reduction targets can result in more impactful strategies and actions (Rice, 2010; Bassett & Shandas, 2010). The ability

to make informed assumptions about the technical, legislative, and regulatory processes of current systems are imperative, as is projecting associated risks and uncertainty (Boswell, Greve, & Seale, 2012). Finally, population growth and reduction patterns should be comprehensively accounted for in GHG emissions forecasts (Boswell, Greve, & Seale, 2012).

Emissions reduction strategies are core components of CAPs. They are designed to assist in municipalities in reaching designated targets and goals (Bassett & Shandas, 2010). To ensure that novel technical specifications are performed correctly, third-party consulting firms can provide municipalities with GHG emissions inventories and planning services (Boswell, Greve, & Seale, 2011). Municipalities are also motioning to "create high-level staff positions to oversee preparation and implementation of climate action and sustainability plans" (Boswell, Greve, & Seale, 2011, pg. 13). Additionally, training and technical planning support can be provided through colleges, universities, certificate programs, and other professional organizations (Boswell, Greve, & Seale, 2011, pg. 13).

Complementing emissions reduction strategies, adaption is a critical component of advancing CAPs (Hamin & Gurran, 2009; Laukkonen et. al, 2009; Boswell, Greve, & Seale, 2012). While some cities select to separate them in policy planning, they are inevitably intertwined and must be equally considered (Laukkonen et. al, 2009). Laukkoenen et. al (2009, pg. 287) state, "It is not sufficient to concentrate on either mitigation or adaption, but a rather a combination of these results with the most sustainable outcomes." However, that does not mean both should be equally prioritized, or that mitigation and adaption are always complimentary processes (Laukkonen et. al,

2009; Hamin & Gurran, 2009). Mitigation measures are often technical and broad, with minimal certainty as to how changes in energy systems and infrastructure will impact communities in both long and short-term trajectories. Adaptation policies tend to be directly allocated toward addressing specific hazards and system pressures within a community (i.e. sea-level rise migration, wildfire prevention, etc.) (Laukkonen et. al, 2009, pg. 289). However, adaptation is often costlier and while adaptation responses can work, adaptation requires effective coordination of individual response to an emergency (Paton & Johnson, 2001; Laukkonen et. al, 2009, pg. 289).

Adaption planning relies directly on scientific analysis of community and municipal vulnerability (Boswell, Greve, & Seale, 2012). As a result, adaptive strategic development requires addressing uncertainties as well as larger upfront capital investment (Ingham, Ma, & Ulph, 2007). Therefore, it is critical that municipalities evaluate potential climate impacts according to level of risks to community and municipal assets. In doing so, communities can better integrate mitigation planning with adaptive management (Hamin & Gurran, 2009). A way for municipalities to assess mitigation and adaption together, according to Hamin & Gurran (2009, pg. 239), are to place adaptation and mitigation into a common frame of resilience. Acting as a metaphor to ecosystems theory, resilient communities demonstrate the ability to accommodate and successfully adapt to stress and disturbances (Hamin & Gurran, 2009, pg. 239). Paton & Johnson (2001, pg. 273) establish that a crucial element of resilience is the fostering of sense community, especially in times of crisis. This aids in building critical skills such as "problem-focused coping" and "emotionally-focused" reactions (Paton & Johnson, 2001, pg. 273).

There are many components to fostering resilience within communities (Burby et. al, 2000; Moench, et al. 2009, Stone, Vargo, & Habeeb, 2012; Boswell, Greve, & Seale, 2012). Diversifying assets and financial resources, transparent and clear communication with community residents, ecosystem maintenance and recovery, partnerships with local organizations and businesses, adaptive infrastructure, and hazard-specific reduction policies are just some of the many components needed to make progress. Central to all of these is land-use development and planning (Burby et. al, 2000; Moench et al., 2009, Stone, Vargo, & Habeeb, 2012). According to Burby et al, (2000, pg. 99), "Land-use planning is the means for gathering and analyzing information about the suitability for development of land exposed to natural hazards, so that the limitations of hazard-prone areas are understood by citizens, potential investors, and government officials." In consideration of municipal CAPs and incorporated CAP strategies, land-use planning integrates natural hazards mitigation to help communities become more intelligent about long-term threats, facilitate collective problem solving, and create the ability for communities to experiment with transformational management and leadership strategies (Burby et. al, 2000; Sarros, Cooper, & Santora, 2008).

1c. CAP Core Components: Cost, Leadership, and Community Participation

Specialization such as consultant expertise or full-time city environmental personal significantly help municipalities generate climate action plans (Lyles, Berke, & Overstreet, 2017). However, the costs of specialization poses a major limitation. According to Boswell, Greve, and Seale (2012, pg. 53) the cost of CAPs varies according to planning processes-- with a typical cost range estimating from $50,000-$300,000. Budget and financial allocation can be determined by a number of factors including level

of public outreach, strategic content, status of GHG inventory, use of consultants and advisory committees, integration of other policy and planning documents, time needed for preparation and review, time management, as well as many other details (Boswell, Greve, & Seale, 2012, pg. 55-56).

Leadership is also a crucial component of CAP preparation and creation processes (Bassett & Shandas, 2010; Few, Brown, Tompkins, 2007). Since reductions strategies incorporate both long-term planning trajectories as well as short-term actions that integrate in existing policies, it is of the upmost importance to have multiple stakeholder input. There a number of ways that researchers propose to accomplish this task. Boswell, Greve, & Seale (2012, pg. 42-46, 66-85) assert that assembling a climate action team (CAT) consisting of a number of government staff, utility staff, local experts, business owners, academic officials, and community members are essential to bolstering plan quality (Berke & Godschalk, 2009; Anguelovski & Carmin, 2011).

Once a CAT is formed localities and consultants working to develop CAPs must identify strategic actions that best address community needs (Anguelovski & Carmin, 2011; Boswell, Greve, & Seale, 2012). To achieve this, Anguelovski & Carmin (2011) and Campos et. al (2016) assert that a primary task is for local leaders to organize community partners and establish forums for public participation. Anguelovski & Carmin (2011, pg. 172) also propose that in addition to mitigation, community-based adaptation (CBA) must also come to the forefront of attention when addressing minority, poor, and other vulnerable communities.

Public engagement around climate change mitigation and adaptation is not easily achieved, as perceptions of climate change importance differ between communities.

(Whitemarsh, Seyfang, & O'Neill, 2011; Boswell, Greve, & Seale, 2012). Perception of urgency, comprehension of climate science, and prioritization of other pressing social and economic factors prove to be among some of the greatest limitations of CAP (Sterman, 2011). According to Sterman's *Communicating climate change risks in a skeptical world,* (2011, pg. 811), there are significant misunderstandings in climate complexity. He states,

> *"Our mental models lead to persistent errors and biases in complex dynamic systems like the climate and economy. We have difficulty recognizing and understanding feedback processes, underestimate time delays, and so not understand basic principles of accumulation or how nonlinearities can create regime shifts" (2011, pg. 811).*

Sterman's research indicates that a community's "carbon capability" is limited by the restrictive components of structural decision-making (i.e. knowledge-barriers, top-down approaches, etc.), individual behavior and engrained practices (i.e. driving, electricity use, etc.), and broader community engagement (pg. 825). To increase carbon capacity, Sterman suggests that message-framing around community-based action should be paired with experimental learning techniques and practices. One way to accomplish this in climate planning is for cities to hire outside consultants to act as mediators between the community and the municipality. Through workshops and public engagement sessions, consultants work to integrate community input into objective-forming with municipalities (Wilson. 2006; Sterman, 2011).

Additionally, researchers are working vigorously to address climate comprehension and collaboration (Few, Brown Tomkins, 2007; Nisbet, 2009; Anguelovski & Carmin, 2011). According to Nisbet (2009, pg. 15), "To break through the communication barrier of human nature, partisan identity, and media fragmentation, messages need to be tailored to a specific medium and audience, using carefully researched metaphors, allusions, and

examples that trigger a new way of thinking about the personal relevance of climate change." Nisbet (2009) identifies framing as a core component of effective climate leadership, asserting that policy innovation can only be achieved through unifying objectives, incorporating morally relevant information, and evolving communication through the formation of new meaning and purpose.

Public participation in policy making, and key frameworks such participatory action research (PAR) are supplementing these practices and producing tangible results (Chevalier, 2013; Campos et. al, 2016). Campos (2016)'s study titled *Climate adaptation, transitions, and socially innovative action-research approaches* provide core examples of "how research and practice co-evolve through interactive cycles" (pg. 1). Presenting the case for PAR as a continuously evolving and transitional process the two cases that illustrate the establishment of PAR in the policy-making process. Case 1 in the study (pg. 2-3) was purposed for forming a CAP for the Atlantic Coast municipalities Ilhavo and Vagos, which are particularly susceptible to sea-level rise and erosion. The method involved forming an action-group, holding a series of meetings and seminars to provide information to group member, and working with municipal leaders and elected officials to develop planning stages.

The second case study (pg. 4-5) focused on creating a CAP for the Portuguese city of Cascais. Case 2 followed a similar progression to Case 1 but used the municipality's Agenda 21 Cabinet alongside the research team to ensure political and scientific professionalism. The combination of stakeholders resulted in new developmental pathways and methods to adaptation and mitigation formation, such as the "tipping-points method" and a "dynamic adaption plan for the following 75 years."

(Campos et. al pg. 4). There are many key positive insights drawn from these two cases. The first is that the forming action groups and participation in scenario workshops are central in ensuring continuous effort in transition to resilient communities. Additionally, engagement between stakeholders also bring into context issues of power and control and promotes new collaboration and dialogue between actor-groups (Campos et. al, 2016, pg. 7). Finally, it contributes to a growing body of literature on transitional management and governing practices in a world with dominant political and scientific obstacles (Campos et. al, 2016, pg. 8).

Despite the promises of PAR to solicit political engagement from otherwise disengaged social actors, PAR's success also comes with limitation. Distrust between community members and elected officials and communication barriers between decision-makers, scientists, and citizens produce major roadblocks to progress (Campos et. al, 2016). Uncertainty must be weighted in bold decisive action, and issues surrounding accountably of feasibility and outcomes also produces hesitation within stakeholder groups—particularly in the consideration of "anticipatory learning (Tscharkert & Dietrich, 2010)." However, the general practice of PAR and incorporation of community stakeholders holds as beneficial in policy innovation and development (Tscharkert & Dietrich, 2010; Chevalier, 2013; Campos et. al, 2016).

1d. Evaluating Plan Quality and Impact

Very little has been done to directly evaluate local CAPs for quality and impact (Tang et al. 2009). Tang et al. (2009) analyzed 40 local CAPS in the US for mitigation and adaption methods and capabilities. Their research indicates that while high levels of awareness are present in the plans, there are moderate levels of analysis capability and

significantly limited action approaches for mitigation and adaption measures. Defining the capacity of a municipality as political will, state mandates, and community wealth Tang and colleagues: (2009 pg. 45-46) propose ten hypothesis: 1) stronger political will results in higher plan quality, 2) state mandates result in higher plan quality, 3) wealthier municipalities will have higher plan quality, 4) coastal area communities will have higher plan quality, 5) localities with larger populations will have higher plan quality, 5) historical disaster damage will result in higher plan quality, 7) jurisdictions with higher energy use will adopt lower quality CAPS, 8) higher percentages of people using public transportation will result in higher plan quality, 9) higher vehicle emissions will result in higher plan quality, and 10) higher average commuting time will result in lower plan quality.

To test the above hypotheses, Tang and colleagues ascribed each CAP a set of indicators categorized in the categories of awareness, analysis and action (Tang et. al, pg. 47). The results of the study found significant variation in CAP quality. The study validated the presence of state mandates as among one of the most foundational components of plan quality (pg. 56). Transportation-related factors (i.e. vehicle emissions and commuting time) result in higher quality and evaluation planning, with over 80% of the plans detailing strategies and actions for transport-related issues. Additionally, (Tang et. al, 2009 pg. 57) discovered that historical damage of a municipality from severe weather events does not directly contribute to planning quality, as localities may be more focused on shorter-range adaptation not long-term climate impacts. All these findings are tied together by the revelation that there is minimal understanding of how to substantiate CAP implementation. To address this Tang et. al (2009) suggest local jurisdictions

expand their resource management authority and design policy instruments to address uncertainty and financial limitations.

One additional critical critique of current local CAP focus is predominately on the social and built environment, and less on the natural environment (Tang et. al 2009, Stone, Vargo, & Habeeb 2012). Stone, Vargo, and Habeeb (2012, pg. 263) echo this concern in a study measuring the temperature change and the urban heat island effect in fifty of the most populous US cities. Measuring the temperature of the fifty cities against global warming projections, the researchers paralleled their findings with the cities' CAPs and strategic climate initiatives and found that land use changes within cities increase the urban heat island effect, resulting in cities warming faster than global temperatures.

The researchers make a prominent point that "national and international climate policy generally do not recognize climate forcing agents related to changes in albedo and the surface energy balance" (Stone, Vargo, & Habeeb, 2012, pg. 267), stating the case that it is an imperative to account for land-based planning in CAP development. Burby et. al, (2000, pg. 99) define land-use planning as "the means for gathering and analyzing information about the suitability for development of land exposed to natural hazards, so that the limitations of hazard-prone areas are understood by citizens, potential investors, and government officials." To support a nature-based ecosystem perspective in political and urban planning, new considerations for nature-based solutions must supersede the planning process (Kabisch et. al, 2016). While GHG emissions reduction planning is important it does not result in enough protective benefit for cities as temperatures fluctuate and increase (Stone, Vargo, & Habeeb pg. 269). Therefore, it is crucial that

cities consider planting and vegetation enhancement in all considerations of land use and urban development (Stone, Vargo, & Habeeb 2012).

Kabisch et al (2016, pg. 1), assert that the

"three main needs for future science and policy agendas are: 1) produce stronger evidence for nature-based solutions in adaption and mitigation, 2) use reflexive governance approaches when implementing strategies, 3) consider environmental justice and social cohesion and integrative and transdisciplinary participation of diverse actors."

Enhancing quality of life through environmental remediation and addressing gaps in perspective is limited by environmental stressors and ecological fragmentation in cities (Kabisch, 2016 pg. 4). As densification increases and new residential and commercial spaces are developed, the challenge of incorporating and maintaining green spaces for health benefit and ecosystem well-being warrants increased attention (Kabisch, 2016).

This chapter has provided an overview of the general CAP development process. Background knowledge of how CAPs are formed, the levels of leadership and participation to needed inform objectives, and what the costs and impacts are provide critical insight for municipalizes. Despite the generalizable nature of CAP targets and objectives in the formation process, all cities possess specific assets and resources to facilitate the CAP process. Narrowing perspective on regional and local CAP development can provide further critical knowledge to cities and communities seeking to advance climate planning, as well as provide insight as to regional progress and overall climate readiness.

Chapter Two

Climate Action Planning: Regional and Local Perspective

Chapter Two highlights the regional characteristics of the Pacific Northwest, with an emphasis on the states of Washington and Oregon. It explains the regional parameters of this study and provides a summary of state-wide initiatives to reduce emissions. With influence of state movement or stagnancy on climate, this chapter provides an overview how county and city influence work to accommodate changes at the state level and how local climate planning can also influence larger governmental entities.

2a. Defining Region: The Pacific Northwest

Many researchers specify that honing in on regional and local initiatives is one of the most impactful ways to outwardly diffuse policies and ideas (Geddes, 1949; Berry & Berry, 1999; Bassett & Shandas, 2010; Boswell, Greve, Seale, 2012). There is a colloquial saying attributed from renowned biologist and urban planner Sir Patrick Geddes' *Cities in Evolution (*1949) that in essence states, "Think globally, act locally." While this quote is not stated in Geddes' words, it is a reflective statement purposed to be an impetus for regional and local innovation in urban planning. While many analyses have been conducted around national CAP development and strategies (Basset & Shandas, 2010; Greve, Boswell, & Seale, 2012), researchers are still working to narrow perspective on the Pacific Northwest region. Even fewer have focused on small city CAP directives, strategies, and leadership roles in the region.

The Pacific Northwest region has been defined in a variety of ways, as there are no distinguished political boundaries defining the region. Geographically, the Pacific Northwest is characterized by the Cascade Range which extends from southeastern

Alaska to Northern California. A core connector of the Pacific Northwest region is the 1,381-mile Interstate-5 corridor that spans the length of the West Coast from Canada to Mexico. This study focuses on the stretch from Northern WA to Southern OR. This specific region is characterized by the two metropolitan cities of Seattle, WA and Portland, OR, and the dominant prevalence of environmental features such as iconic douglas fir and sitka spruce forests as well as the prestige of mountain peaks from Mount Rainier, Mount Saint Helens, Mount Adams, and Mount Hood.

Addressing regional scale, this study defines region through state, county, and large city planning and perspective. Though it is difficult to state with certainty the cultural characteristics of the Pacific Northwest regions highlighted in this study, environmental perspectives tend to parallel the inimitable features of the surrounding environment. There is clear indication that people in Western Washington and Oregon are very concerned about climate change (Marlon et. al 2016). The Yale Climate Communications Partisan Climate Opinion Maps (2016) indicate that over 85 percent of citizens within my study range believe that global warming is occurring (Marlon et. al 2016). Over 70 percent of that representation believe that climate change is caused by human activity and 90 percent believe carbon dioxide (CO2) should be regulated as a pollutant (Marlon et. al, 2016). This contrasts with the counties in Eastern Oregon and Washington, where on average 50 percent believe that climate change is caused by human activity and around 70 percent on average believe that CO2 should be regulated as a pollutant (Marlon et al., 2016)

2b. State-Level Emissions Reduction Standards and Planning in Washington State

Washington State is acting aggressively to address the aforementioned concerns,

working to reduce and eliminate pollution within cities (Saavedra & Budd, 2008). Legislation targeted at emissions reduction and technological advancement for increasing renewable energy capacity are of prominent focus. Washington State Initiative 937 (I-937), requires electric utilities serving more than 25,000 customers in Washington State to source 15% of electricity from renewable resources by 2020 (Washington State Department of Commerce, 2017; City of Bellevue Environmental Stewardship Initiative Strategic Plan, 2013). As a result of I-937, the Union of Concerned Scientists confirm by 2025 a 2.9% or $1.13-billion savings on customer electricity bills, the creation of 2,000 jobs, $138 million in additional income, $148 million increase in gross state product, and $167 million in property tax revenue for local communities (City of Bellevue Environmental Stewardship Initiative Strategic Plan, 2013; Deyette & Clemmer, 2006).

In 2014, Governor of Washington Jay Inslee released Executive Order 14-04 titled “Washington Carbon Pollution Reduction and Clean Energy Action”. In this he confirms the science and history of anthropogenic climate change, details the climate impacts Washington State is currently experiencing, and anticipates risks in the absence of swift political and social change. In the Executive Order, he proposes The Governor’s Carbon Emissions Reduction Taskforce. This group was comprised of representatives of business, labor, public health, tribal nations, local governments, etc. (Inslee, 2014). It was designed to provide policy recommendations for offsetting carbon pollutions and to create a fair and responsible policy model for energy sourcing and utilization.

Designating state agencies to oversee specific tasks, Governor Inslee created a model for strategic planning. Specifically, he assigned The Governor’s Legislative Affairs and Policy Office (LAPO) to organize and secure the Taskforce, provided

background information, and informed program design. He instated The Office of Financial Management (OFM) to oversee all economic facets of the Taskforce, cost impact of emissions reduction (cost per ton), calculation of costs and benefits for the overall economy, the impact on job creation or loss, and household energy price. With an emphasis on transportation, Inslee (2014) called upon The Department of Transportation, Commerce, and Ecology to work within regional transportation networks. Together, these larger state entities worked with localities to produce Comprehensive Plans that increase efficiency to transportation, travel, and land-use matrices. The Department of Commerce monitored all Energy Efficiency performance through the State Building Code Council. It also worked to measure the accuracy of energy use and savings, support vulnerable communities, improve access to financing, and perform cost-benefit tests.

Governor Inslee's 14-04 showcases the level of commitment, organizational development, and collaboration needed to achieve preliminary successes at the state, regional, and local levels. Since its inception, it appears that this Taskforce was only active for the 2014-2015 legislative session. It proves useful to observe the power dynamic and leadership levels in emissions reduction planning at the state level. It provides evidentiary support for the research of (Tang, et al. 2010). According to their study *Moving from agenda to action: Evaluating Climate Action Plans*, "the most significant predictor contributing to high plan quality is the presence of state mandates" (pg. 17). Top-down direction from state-level experts pressure localities to enact impactful measures that address the roots to pollution and social inequity. Bringing heightened awareness to localities, state-wide planning also provides examples of leadership roles as well as organizational and community cooperation (Tang, et al. 2010).

In 2013, $36 million was allocated by the Washington State Legislature for the inception of the Clean Energy Fund (CEF) (Nordstrom & Sharp, 2017). The CEF supports an array of clean energy technology projects across the state. The projects enable communities to conserve energy while reducing costs, avoid pollution, and increase economic and energy independence (Nordstrom & Sharp, 2017). The program continued to grow in 2015, with the Washington State Legislature approving $40 million for CEF2. While many of the CEF1 projects continued to flourish, CEF2 incorporated stakeholder outreach and advisory panels to ensure that program goals are met and that outcomes of the program are monitored (Nordstrom & Sharp, 2017). On January 19, 2018, Governor Jay Inslee signed CEF3 into the capitol budget bill to improve program dynamics including increasing public and private electrical utilities participation, offer funding for electrifying transportation, expanding strategic research and development, and deploying solar projects throughout the state (Department of Commerce, 2018).

This is only a snapshot of initiatives and actions Washington State has enacted to accelerate the clean energy transitions, prepare residents for climate impact, and conserve the natural environment. Most recently, the 2018 Washington State Legislative Session has largely focused on dramatically reducing pollution, particularly Senate Bill (SB) 6203 (2018, pg.1-2). Described as "reducing carbon pollution by moving to a clean energy economy, the bill "imposes a carbon pollution tax to equal $20 per metric ton of carbon on the sale or use of fossil fuel within Washington and the sale or use of electricity beginning in July 1, 2019" (Inslee et al., 2018, pg. 1). However, reluctance to tax pollution and questions of the bill's effectiveness are called into question in both

professional and personal testimonies. Some key highlighted cons to the proposal include: 1) Poor representation of people of color, minorities, and vulnerable communities, 2) Failing to take leakage into account, 3) Lack of collaboration between agencies on fiscal impacts, as well as other concerns (Inslee et. al, 2018, pg. 10).

In contrast, resounding support from state and community organizations continue to prompt Washington to more aggressive and progressive policies and resource allocation. The State of Oregon also possesses a set of distinct visioning goals, ordinances, and policies that address climate adaptation and emissions reduction. Officially stated by the Oregon Department of Energy, "Oregon's Renewable Portfolio Standard requires that 50 percent of the electricity Oregonians use must come from renewable resources by 2040, phasing out coal by 2030" (Oregon.gov/Renewable Energy Portfolio Standard, 2018). Facilitating this process is the Oregon Global Warming Commission, a 25-member committee responsible for tracking GHG trends and providing reports for state and local emissions reduction coordination and communication (Oregon,gov/Oregon Global Warming Commission, 2018). In partnership with the Commission, ODOE provides analysis for Commission reports, revisions, and technical assistance. The Commission produces a biannual Report to the Legislature and provides recommendations for reducing Oregon's GHG emissions reduction target of 10 percent below 1990 levels by 2020 (Oregon.gov/Oregon Global Warming Commission, 2018.)

The Oregon Department of Energy also extends its resources to public school and institutions through the SB 1149 Energy Efficient School Program (Oregon.gov, Energy Efficient Schools Program, 2017). The program provides staff resourcing to ensure that "schools understand their energy needs, identify improvements, and connect with

financial resources to improve learning environments" (Oregon.gov, Energy Efficient Schools Program, 2017). This is accomplished through assessment of building requirements and updates, developing a planning strategy, and collaboration with school leadership (Oregon.gov, Energy Efficient Schools Program, 2017).

Oregon also possess the Oregon Sustainable Transportation Initiative (OSTI) led by the Oregon Department of Transportation (DOT), Department of Land Conservation and Development, Department of Environmental Quality, Department of Energy (DOE), and stakeholder committees comprised of elected officials, business owners, and residents throughout the state (Oregon.gov/Oregon Sustainable Transportation Initiative, 2018). Building from 2010 Oregon Legislature SB 1059, OSTI is "an integrated statewide effort" that examines state-level transportation trends including the movement of people and goods. It identifies core strategies to reduce GHG emissions, enhances vehicle technology, and accounts for urban land use patterns and development as regulated under Oregon's Land Conservation and Development Commissions' Metropolitan Transportation Planning Rule (Oregon.gov/Oregon Sustainable Transportation Initiative, 2018).

Despite Oregon's progress with these and many other initiatives, the challenge of aggressively reducing emissions remains a challenge. The Global Warming Committee's 2017 Report to the Legislature states that Oregon is slated to miss the 2020 target and is not on track to achieve the 2035 and 2050 reductions objectives (Keeporegoncool.org /2017 Report to the Legislature). Additionally, Oregon is paralleling Washington's challenge to price carbon and move away from fossil fuels. Most recently, House Bill (BH) 4001, titled *Relating to GHG emissions; declaring an emergency* which would

require the Environmental Quality Commission to adopt a program to a GHG cap-and-trade program, did not pass in the 2018 Oregon Legislative Session (Oregon State Legislature, HB 4001, 2018).

2c. County-Level Emissions Reduction Standards and Climate Planning

In addition to state movement around CAP, it is important to subsequently highlight county-level action. All counties possess a unique set of cities, and therefore county influence pertaining to CAP varies. Examples of these variations can be observed throughout Western Washington and Oregon. King County, Washington is the most active county in Washington State addressing climate change (Saavedra & Budd, 2009). King County is one of the largest counties in the United States, and according to US census data (2016), it is home to over 2.1 million people. While most of the county's population in centralized in the City of Seattle, the King County region is experiencing rapid growth and development.

To ensure King County is poised to absorb the pressure of population increase paired with environmental impact, the county has been in active collaboration with city governments, environmental organizations, and key stakeholders. In 2015, King County released their Strategic Climate Action Plan (SCAP), which is incorporative of all cities and communities within county borders. SCAP "sets the long-term goals and priorities of the county, is focused on performance-based measuring, and reflects county priorities for Equity and Social Justice" (King County, SCAP, pg. 9). Thirteen cities comprise the King County-Cities Climate Collaboration (K4C), which serves to enhance the measures and targets reflected in the plan. These cities include Bellevue, Burien, Issaquah, Kirkland, Mercer Island, Normandy Park, Redmond, Renton, Sammamish, Seattle,

Shoreline, Snoqualmie, and Tukwila. Together these cities work with one another to develop outreach and coordination strategies, secure grant funding for climate-related programs/projects, and finally share solutions, local successes, and challenges. (Kingcounty.gov/King County-Cities Climate Collaboration).

Multnomah County, Oregon, home to the bustling metropolis of Portland, is also leading regional and state efforts to address climate. The county's office of sustainability released a 2015 Local Strategies to Address Climate Change Action Plan that seeks to "strengthen awareness of climate as a public health risk, empower vulnerable communities, reduce emissions, expand alternative fuel and transportation options, and advocate for climate equity and development" (Multco.us, 2015 Climate Action Plan). With over 170 actions encompassed in the Plan, the county is continuously monitoring and reporting progress (Multco.us, 2015 Climate Action Plan). Most recently, this progress is highlighted in 2017 City of Portland and Multnomah County Progress Report (Multno.gov). This report is an overview of updated annual emissions data and major accomplishments in achieving 2030 objectives (Multno.gov., 2017 Portland and Multnomah County Progress Report).

Another instrumental county for CAP is Thurston County, Washington. Home to Washington's capitol of Olympia, Thurston County is working to improve regional collaboration. The Thurston Regional Planning Council (TRPC) is a collaboration of local city governments that focus on plans and studies concerning population, growth management, and environmental quality (TRPC.org, About Us). Particularly notable is their work on hazard mitigation, adaptation planning, sustainability initiatives, and most recently an emissions mitigation effort. TRPC works within the county to provide

information sharing and incorporative enlightenment to its operations so that cities have the tools and plans needed to create and implement impactful policy innovation (TRPC.org, Agency Mission).

Overall, these examples highlight how county innovation and directives can bring individual cities together around policy innovation planning. However, not all counties are as advanced in CAP or have established connections between cities, local institutions, and organizations for the purpose of CAP. The role of CAPs "refer to the functions that the plan performs in the community". The content "refers to the topics or issues that the plan covers" (Boswell, Greve, and Seale, 2010 pg. 7). Since communities within a county do not always possess the same capabilities, levels of growth, or shared visions, some counties may be more reluctant to impose overarching standards and targets. An example of this within the frame of my research is Lane County, Oregon - home to Springfield and Eugene. Lane County and Springfield do not possess CAPs. However, The City of Eugene is actively engaging with stakeholders in their community to address climate change impacts through updating their 2010 Climate Action and Energy Plan (CEAP) to be released in 2018-2019. The movement of cities to climate action despite county limitations indicates that cities possess a significant power over regulations and policy formation.

2d. Municipal Policy Cores: Buildings and Energy, Land Use and Transportation, Waste Management, Public Health and Safety

Cities have a tangible impact on communities, as they are the core of inhabitance and livelihood of people. Concerning CAP, this influence helps to determine the formation of objectives for the four areas of concentration that are commonly shared across municipal and stand-alone CAP documents. These are: 1) Building and Energy, 2)

Land Use and Transportation, 3) Waste Management, and 4) Public Health and Safety. These categories are significant as they often possess objectives that have substantial co-benefits between categories. An example of this is densification resulting in lower commute times, which in turn has positive impacts on public health (Younger et al., 2008). Some cities also incorporate Natural Resources Planning and Economic Planning as individual sections, but generally these values are incorporated into the frame of these four areas.

Highlighted in stand-alone CAP and municipal plans are growth and resource demand projections. The City of Bellevue's 20-year planning targets include the incorporation of 17,000 additional housing units and 53,000 additional employment opportunities (City of Bellevue Comprehensive Plan, pg. 105). Land use assessments are imperative to accommodate the increased demand. For cities this means replacing and retrofitting aged infrastructure and increasing service provider coordination, and compiling with evolving laws and regulations (City of Bellevue Comprehensive Plan, pg. 106). To ensure that there is an equal distribution of work within city departments, many of the components of land use development are emphasized in master plans such as Waster Comprehensive Plans, Wastewater Systems Plans, Parks and Recreation Master Plans, as well as many others.

Downtown strategies possess a specific role in CAP development. For most cities, downtowns are centers of growth, wealth, residence, business, and entertainment. For the City of Bellevue, situated just East of Seattle, "in 2012 there were more than 45,000 jobs located in downtown center and more than 10,000 residents (City of Bellevue Comprehensive Plan, pg. 44)." As these numbers steadily increase, Downtown Bellevue

is considered to be one of the most intense centers for development in King County (City of Bellevue Comprehensive Plan, pg. 44). Paired with infrastructural accommodation expectations and challenges, cities such as Bellevue must foster strong, diverse, and adaptive economies. To ensure that this is achieved, Bellevue must creatively consider land capacity, evaluate how to maintain historic character, create and revitalize mix-use centers, and ensure open and public spaces for community connection (City of Bellevue Comprehensive Plan).

Among the most important considerations for municipalities is transportation. Since transportation is the most prevalent source of emissions within cities, all cities possess a Transportation Element within a general Comprehensive Plan. The city of Kent, Washington, for example, has "established a 20-year planning horizon that extends into 2035 (Kent, Transportation Element, 2015, pg. 1)" Transportation elements are similar between municipalities in that they support community and economic vitality "by addressing connections for people and places and designing streetscapes that compliment and contribute to current land use" (City of Kent, Transportation Element, 2015, pg. 2). Coordinating land use and transportation planning, cities develop strategies to ensure they are meeting demand while complying with state and federal regulations. These actions include the promotion of multimodal transportation (i.e. biking, walking, public transportation), coordination with local transportation entities (i.e. rail, bus, and port institutions), installation of electric car-charging stations, as well as many others (City of Kent, Transportation Element, 2015, pg. 59-64).

As cities improve the connection of people to place, they must also consider the energy needed to power residential dwellings as well as retail and industrial centers. Each

city possesses varying capacities to influence electricity sources and consumption. For example, the City of Ashland, Oregon's electrical utility is municipally owned and therefore allows the city of have direct control of business decisions, operations, and program implementation. (City of Ashland, Climate and Clean Energy Plan, 2017, pg. 33) However, Washington cities like Lakewood and Olympia use utility providers like Puget Sound Energy (PSE). Cities must therefore choose to financially invest in energy-saving and reducing permits and practices. This typically results in the reduction of energy within the municipality and less so in the community and retail arenas.

To address community emissions, cities must incentivize and provide support for transitioning community energy sourcing and consumption. The City of Bellingham, Washington is an example of where providing incentives is proving successful. Through the creation of the Bellingham Energy Prize, sponsored by organizations including Northwest Clean Air Agency, PSE, Sustainable Connections, Cascade Natural Gas, and many others, the city is prompting the community to take collective action to reduce emissions for the opportunity to win $5 million from Georgetown University for clean energy development (Bellinghamenergyprize.org, 2018). Using characters such as the Kilowatt Kitty, Bellingham has created an online forum to engage residents, create achievable targets, and function as a place for participants to track progress with a user-friendly online profile format (Bellinghamenergyprize.org, 2018).

As cities develop creative and incorporative ways for their communities to reduce energy, they are also addressing issues concerning waste. Waste in cities takes many forms (e.g. water, food, demolition debris, and waste from consumption). At the municipal and community levels, cities such as Corvallis, Oregon are encouraging the

purchase local, sustainability-packed, and sustainably-sourced products (City of Corvallis, CAP, 2016 pg. 71). Cities such as Olympia and Bellingham are working on city-wide composting programs, using the waste for education and beautification throughout the city while reducing landfill in-flow (City of Olympia, Comprehensive Plan, 2014; City of Bellingham, Climate Protection Action Plan, 2017). Water conservation and management are top priorities for many cities. There are great amounts of resources and energy being funneled into projects concerning greywater, storm and wastewater retention/treatment, and water conservation, and preservation of natural space.

Human services and public health and safety are at the forefront of attention when cities consider new CAP policy. According to the City of Kent's Human Service's Element, "to achieve community impact, investments must be made to 1) Meet Community Basics, 2) Increase Self-Reliance, 3) Strengthen Children and Families, 4) Build Safe Communities 4) Improve Health and Well-Being, and 4) Improve and Integrate Systems" (City of Kent, Human Services Element 2015, pg. 116). Cities rely on partnerships with education districts, local organizations, businesses, and institutions to ensure community representation in CAP and municipal planning processes.

Chapter Three
Frameworks and Methods

Chapter Three describes the frameworks that guide this research project: the internal determinants and the regional diffusion frameworks. This chapter also provides an overview of the methods used to collect and analyze the Climate Actions Inventory (CAI) as well as city-staff and consultant interviews.

3a. Policy Innovation: Internal Determinants & Regional Diffusion Frameworks

This research is framed in the context of two theoretical perspectives purposed for conceptualizing policy innovation. These are the **internal determinants model** and the **regional diffusion model** (Bassett & Shandas, 2010; Berry & Berry 1999). Though emphasized in recent climate action planning research by Bassett and Shandas (2010) the model was formed by Ormrod's (1990) critical work on spatial diffusion, local relevance and the support of policy innovation and transformation. Berry and Berry (1999) elaborated on this work in their analysis of state policy formation and influence of decision-making across many states. The models have subsequently been used by researchers Shipan & Volden (2006) in their demonstration of how antismoking policies have diffused between states across the United States. However, there is a strong indication that these frameworks are particularly useful in climate policy visioning. Specifically, studies suggest that city size, incorporation of external consultants, as well as state and federal policy-decisions facilitate the spread of policy perspectives (Shandas, Graybill, & Ryan, 2008; Mills & Graybill, 2004).

This contributes theory and application of these models through analyzing local relevance of climate action planning in small and medium-sized Pacific Northwest cities. Incorporating collective contributions of Ormrod, Berry & Berry, and Bassett & Shandas,

this study defines internal determinants as core values and facets of cities such as municipal policies, community needs and values, businesses, schools, and organizations that play collective roles in shaping new public policy (Bassett & Shandas, 2010; Brody et al., 2008. Berry & Berry 1999; Ormrod, 1990). Policy innovation informs cities of how to create goals and structure city and community operations. The regional diffusion model highlights the collective influence of these policies in county, state, and city planning (Bassett & Shandas, 2010; Berry & Berry 1999; Ormrod, 1990). For example, the research of Matioff (2008), demonstrates how internal factors such as citizen demand can recreate a groundswell that influences state and local polices regarding climate adaptation measures. The two models work together to form a system of influence. As regional trends either advance or regress toward climate commitments, internal determinants within municipalities will follow suit, and vice versa (Bassett & Shandas, 2010; Berry & Berry 1999).

According to Bassett & Shandas (2010) extrapolation of Ormrod's (1990) work, there are three internal determinants that affect the decision to adopt CAP innovations within particular municipalities. These are 1) the relevance of the innovation, 2) the availability of local resources to support adoption, and 3) the capacity to innovate. "Other studies suggest that size of the municipality, the use of external consultants, and the extent of involvement by state or federal actors may also influence innovation" (Bassett & Shandas, 2010 pg. 3; Ormrod, 1990, pg. 109). Table 1 highlights components of the two theoretical frameworks that are used in this analysis. This table comprises a list of internal and regional factors to consider. For internal determinants, these are local relevance and community participation, resource restrictions such as time, monetary, and

staff, feasibility of infrastructural changes, and city population and size. For regional diffusion, these are connectedness to other cities, adherence to state and federal policies, use of external consultants, and overall population and land use changes.

Identifying core common values within and between municipalities is a critical way of connecting communities under a common frame of resilience. Increasing capacity for collectively addressing needs and stresses, accentuating cultural diversity, and maintaining safe and welcoming environments are just some of many values that connect cities together. (Bellevue Comprehensive Plan: Neighborhoods, 2015). These values can be internalized and externalized through the assistance of consultants, streamlined through state polices, facilitated through regional alliances and networks, and influenced by land use and population changes throughout the region.

These connections between internal determinants and regional diffusion are highlighted as Converging Factors in Table 1. An example of convergence between models is demonstrated by the city of Bellingham, WA. Bellingham hired a full-time staff consultant to work within a local context to ensure CAP objectives were informed by regional movement.

Table 1: Factors of the Internal Determinants and Regional Diffusion Models		
Internal Determinants	**Converging Factors**	**Regional Diffusion**
Local relevance	Use of Consultants (RFPs)	Connectedness (Are cities referencing and working together?)
Resources/Restrictions (Expertise, Money, Time, Values, Motivation, State and National Leadership)	State Policy	Awareness and Adherence to State Policy & Regional Directives/Organizations (Are cities ICLEI members?)
Viability/ Feasibility	Regional Alliances and Networks	Use of Consultants (Are cities using consultants to form GHG Inventories and CAP plan strategies?
City Population/City Size	Land and Resources Use	Population Growth (What is the influence of overall growth in CAP?)

3b. Sample Size and City Selection

This study critically analyzes ten small and medium-size cities in the State of Washington and ten in the State of Oregon. Though there are varying classifications for city-size, this study uses the definition for medium-small size cities from the Organization for Economic Co-operation and Development (OECD). The OECD states "Large metropolitan areas have a population of 1.5 million or more, medium-sized urban areas contain a population of 200,000-50,000 or less, and small urban areas possess a population of 50,000 or less" (OCED Data, 2017). The OECD classification places all of the Western Oregon and Washington cities in the analysis within medium-small city status.

All cities selected are located along the Interstate-5 Corridor beginning at the southern-most border of Oregon extending to the northern-most border of Washington.

This location was selected because Interstate-5 is a major regional arterial roadway. Research indicates that large freeway systems specifically determine the urban ecological form and footprint of a region (Grimm et al. 2008) Additionally, if cities seek to decrease the amount of urban sprawl, lower the number of vehicle miles traveled (VMTs), and consider densification as it pertains to social climate perspectives such as political fragmentation, Interstate-5 may have specific influence as it pertains to population growth, land use changes, and policy diffusion through regional movement (Carruthers, 2003).

Proximity and influence of large cities are important components in policy innovation. Shipan & Volden test this diffusion theory in their analysis of anti-smoking policy decisions made within 675 of the largest cities within the United States between 1976 and 2000. (Shipan & Volden, 2008) This research draws from evidence that smaller cities can learn from and imitate from early policy adopters. However, Shipan & Volden found that simply imitating larger cities results in short-lived diffusion. They conclude that large cities are more equipped to learn from and incorporate policy practice from other large cities (Shipan & Volden, 2008). This finding is significant because if large cities can influence large cities more impactfully, perhaps the same is true of small cities.

Expanding this idea, an observation of policy decisions at the county level have substantial value for smaller cities and may have an authority in municipal CAP development. While cities are continuously acknowledging their obligations to protect public health, particularly at the international level (i.e. Global Compact of Mayors), counties combine city-localized values to form tiers of influence that may be useful when modeling internal determinants and regional diffusion (Bassett & Shandas, 2010; Shipan

& Volden, 2012).

Tables 2 and 3 provide descriptive characteristics of the cities in this study. This information includes city name, state, county, population, municipal comprehensive plan, CAP title or both, and the year the municipal plan and/or the CAP was written. Cities marked with an asterisk (*) currently possess a CAP. Cities marked with a wave (~) are currently developing a climate action plan. Together there are eight climate action plans and nineteen municipal comprehensive plans incorporated in this study. Comprehensive plans were introduced to account for cities that do not possess stand-alone CAPs or sustainability plans. Comprehensive plans often incorporate similar goals and objectives outlined within climate plans such as land use strategies, transportation initiatives, and many others. Principally, comprehensive plans evaluate a city's capacity for developmental change through overarching community values and assets.

Table 2: Oregon Cities, Counties, City Populations, Planning Titles, and Planning Years

City	*State*	*County*	*City Population*	*CAP Title/Municipal Plan Title*	*CAP/Municipal Plan Year*
Albany	OR	Linn	53,211 (2016)	City of Albany Comprehensive Plan	2013
Ashland*	OR	Jackson*	21,639 (2016)	Ashland Climate and Energy Action Plan & City of Ashland Comprehensive Plan	2017/2016
Beaverton*	OR	Washington	97,590 (2016)	Sustainability Strategy/ City of Beaverton Comprehensive Plan	2014/2017
Corvallis*	OR	Benton*	57,110 (2016)	Corvallis Climate Action Plan/City of Corvallis Comprehensive Plan	2016/2000
Eugene*	OR	Lane	166,575 (2016)	Climate and Energy Action Plan (CEAP) / Envision Eugene Comprehensive Plan	2017/2017
Gresham	OR	Multnomah*	111,523 (2016)	Salem Area Comprehensive Policies Plan	2009
Grants Pass	OR	Josephine	37,779 (2016)	Salem Area Comprehensive Policies Plan	1982-2014
Medford	OR	Jackson*	81,636 (2016)	Medford Municipal Plan	2016
Salem	OR	Marion	167,419 (2016)	Salem Area Comprehensive Policies Plan	2017
Springfield	OR	Lane	60,757 (2015)	Springfield 2030 Comprehensive Plan	N/A

Cities and counties marked by a wave symbol (~) are forming CAPs. Cities marked by an asterisk (*) possess climate action plans (CAPs). In this sample area, Oregon has four cities with CAPs, and four counties with CAPs.

Table 3: Washington Cities, Counties, City Populations, Planning Titles, and Planning Years

City	*State*	*County*	*City Population*	*CAP Title/Municipal Plan Title*	*CAP/Municipal Plan Year*
Auburn~	WA	King*/Pierce*	77,472 (2016)	Imagine Auburn Comprehensive Plan	2015
Bellevue*	WA	King*	141,400 (2016)	Bellevue Environmental Stewardship Initiative/ Bellevue Comprehensive Plan	2015/2016
Bellingham*	WA	Whatcom	87,574 (2016)	City of Bellingham Climate Protection Plan/ Bellingham Comprehensive Plan	2017/2016
Everett~	WA	Snohomish*	109,043 (2016)	City of Everett Comprehensive Plan	2014
Kent*	WA	King*	127,514 (2016)	City of Kent Comprehensive Plan	2016
Lakewood	WA	Pierce*	60,665 (2016)	City of Lakewood Comprehensive Plan	2016
Mount Vernon	WA	Skagit*	34,590 (2016)	City of Mount Vernon Comprehensive Plan	2016
Olympia~	WA	Thurston~	51,202 (2016)	City of Olympia Comprehensive Plan	2016
Shoreline*	WA	King*	55,333 (2016)	Shoreline Climate Action Plan/ City of Shoreline Comprehensive Plan	2013/2012
Vancouver*	WA	Clark	174,826 (2015)	Vancouver Sustainability Plan/ City of Vancouver Comprehensive Plan	2009/2030

Cities and counties marked by a wave symbol (~) are forming CAPs. Cities marked by an asterisk (*) possess climate action plans (CAPs). In this sample area, Washington has five cities with CAPs, one city in the CAP formation process, four counties with CAPs, and one county creating a climate mitigation plan.

3c. Acquisition of Data and Quantitative Analysis: Climate Actions Inventory

This study is comprised of two types of data. The first dataset is a Climate Actions Inventory (CAI). The CAI is a compilation of 117 strategies and actions proposed by municipalities in eight stand-alone CAPs and nineteen comprehensive plans. Both types

of plan can be sourced from municipal websites. The action items within the CAI are derived from four focus areas that are commonly highlighted in climate and comprehensive plans. These focus areas are: 1) Buildings and Energy, 2) Land Use and Transportation, 3) Consumption and Waste, and 4) Public Health and Safety. Within these focus areas, a categorical list of strategic actions proposed by municipalities was formed. Strategic actions within these plans include items such as creating pedestrian and bicycle master plans, offering assistance for energy-efficient programs, curbing waste and monitoring community behavior purchasing practices, conserving natural resources for a healthier community and economy, and many others.

Each climate and municipal plan was analyzed a total of three times to ensure that all climate action items were extracted from each document. Items that were too specific to generalize for every city were omitted from the analysis. All other CAP items were incorporated into the inventory. Only items that pertained directly to the environment and emissions reduction were selected from comprehensive plans and incorporated into the CAI. These include objectives such as land use and growth management, multi-modal transportation goals, and access to community health resources and partnerships. If a city stated an item in either document the item box was marked *1* under the city name. All empty fields were marked with *left blank*. A total of three spreadsheets were created for the analysis, one with Washington cities, one with Oregon cities, and a master with all cities and actions.

The CAI was then analyzed for most common actions, least common actions, most to least active cities, most to least prioritized categories, and average number of actions per city for both Washington and Oregon. Results are presented in Chapter 4:

Results. All CAI data was compiled, analyzed, and calculated using a MacBook Pro in Microsoft 360 Excel.

3d. Acquisition of Data and Qualitative Analysis of Municipal and Consultant Interviews

Interviews are a crucial parallel to the CAI. They expand perspective by addressing the core value systems of municipal policy-making and can more accurately detail the barriers to planning and implementation. Therefore, the second dataset are transcripts from fifteen semi-structured interviews with city staff and consultants who have worked to form CAP criteria and oversee strategic implementation within the study cities. Participants were recruited using publicly available information online. Some localities do not possess climate change or sustainability staff positions; therefore, city planners, public works, or natural resources staff were also interviewed.

Each interview participant was emailed an introduction to the researcher and the study. Attached to the email was a Letter of Information which provided a higher-level detail of the study. Once a response was received, interviews were scheduled. Municipalities who did not respond right away were sent a follow-up email a week later. Together, twenty municipalities and four consultant groups were contacted. In total, fifteen interviews were conducted. These included eight Washington municipal staff, five Oregon municipal staff, and two private consultants. Table 4 provides the full list of cities that participated in the interview process. Table 5 provides a list of the city staff and consultant titles (separated and randomized to respect the anonymity of participants). The interview protocol included fourteen semi-structured interview questions for city-staff and ten interview questions for consultants. Interview questions and protocol are located in Appendices A and B.

Table 4: Interview Participants	State
Auburn	WA
Bellevue	WA
Bellingham	WA
Lakewood	WA
Mount Vernon	WA
Olympia	WA
Shoreline	WA
Vancouver	WA
Kulshan LLC.	Consultant
ICELI	Consultant
Albany	OR
Ashland	OR
Corvallis	OR
Eugene	OR
Springfield	OR

Table 5: City Staff and Consultant Titles
Climate Analyst
Sustainability Analyst
Comprehensive Planning Manager
Environmental Specialist
Program Director for Tools and Innovation
Public Works Director
Long Range Planning Manager
Long Range Planner
Senior Planner- Long Range Planning
Environmental Consultant
Assistant Manager for Developmental Services
Assistant to the City Administrator
Environmental Stewardship Initiative Director
Natural Resources Policy Manager
Sustainability Program Specialist

Interviews ranged from 25-40 minutes. Each interview was audio-recorded using a voice recorder on MacBook Pro Voice Notes and hand-transcribed into Microsoft OneNote. Transcripts were hand-coded using open-coding process. Using conventional content analysis to code interview transcripts, reoccurring themes were transferred to Microsoft Excel, with quotes from each city that acknowledge the theme included. Within Excel, a spreadsheet that included Key Limitations, Accomplishments in Climate Planning, and Prevalent Themes was formed. A conventional content analysis draws codes from text data. Directed content analysis begins with a hypothesis or theoretical guidelines to inform coding figures (Hsieh & Shannon, 2005). This content analysis was

also used to determine how consultant and city-staff perspective integrate into the internal determinants and regional diffusion models in climate planning and implementation.

Chapter Four

Results, Discussion, & Suggestions for Future Research

Chapter Four provides an overview of results from the Climate Actions Inventory (CAI) as well as city-staff and consultant interviews. Additionally, this chapter engages in discussion regarding how both data items integrate or defer from the internal determinants and regional diffusion frameworks. Finally, Chapter Four outlines data limitations and offers suggestions for future research.

4a. Climate Action Inventory (CAI) Results

The Climate Actions Inventory (CAI) is designed to determine the number of actions municipalities include within their comprehensive plans and stand-alone CAP documents. It addresses how planning goals parallel and differ between municipalities and which cities are more or less advanced in climate planning. This section also identifies the most prevalent and least common actions, the combined total actions per category, and the difference in average actions per city in Washington and Oregon.

An extrapolation of the CAI data indicates an interconnectedness and interchangeability of actions between the 1) Buildings and Energy, 2) Land Use and Transportation, 3) Food, Water, and Solid Waste, and 4) Public Health categories. For example, the objective to emphasize land use design could be applied not only in the Land Use and Transportation section, but also in the Buildings & Energy and Public Health categories. The incorporation of multimodal street schemes could expand local transport options which would then improve air quality. It could also increase community health resources through the integration of open space and connecting communities

together in a more fluid and cohesive method. These are just some of many ways CAI actions can be interlinked to form co-beneficial outcomes.

Of additional significance is the shared responsibility of municipal governments and community members to prioritize and integrate the same action. Most CAPs separate community and municipal targets, actions, and leadership, yet many actions are relevant to both the community and the municipality. For example, creating partnerships with school districts and businesses, improving air quality, composting, and recycling require shared obligations of both city and community entities and therefore require collaborative strategic planning and implementation. Examples of actions enacted solely by the municipality include expanding anti-idling regulation, updating district and downtown ordinances, monitoring and improving species habitats and urban design, as well as many others. While municipalities are specifically responsible for ensuring that CAP targets are addressed, the CAI indicates that communities require municipal leadership to progress on all action items. Therefore, actions are signified as either Municipal or Comm/Muni in Tables 6 and Table 7 below.

Table 6 identifies the most common actions listed across comprehensive and CAP documents. Most common actions were selected if fifteen or more cities have state a written commitment for addressing the objectives with higher priority derive primarily from municipal plans; however, all CAI items pertain specifically toward the environmental and climate planning. This includes but is not limited to actions concerning affordable housing, growth management, land use development, and increasing community health resources. There is particular emphasis across the region to ensure that infrastructure growth and development are managed in congruency with

community involvement. All cities encourage neighborhood planning and formation of partnerships as well as increasing community health through air and water quality improvements, expanding local transport options for more multimodal activity, supporting cultural diversity, and encouraging density while providing a variety of single and multi-family housing options.

In addition to these items, small- and medium-sized cities are placing prominent attention on land use, natural design, creating space for cultural diversity, addressing budget constraints for human services (medical care, hunger, poverty, etc.), and many others. There is also a critical interest to improve regional and local partnerships between city officials, businesses, universities, and non-profits and community organizations. Partnerships like this include the Green Everett Partnership, Thurston Climate Action Team, and local chapters of 350.org and Climate Reality. These partnerships are not only formulated for emissions reductions, but for also addressing the objectives of improved access to community health and educational resources.

Table 6: Most Common Actions Across Study Municipalities

Leadership	**Building & Energy Actions**	**# Cities**
Comm/Muni	Create Partnerships with School Districts, Businesses, and the Community*	20
Comm/Muni	Emphasize Design, Landscaping, and Building Materials*	20
Comm/Muni	Prioritize Affordable Housing Projects*	19
Comm/Muni	Promote Live-Work Units, Diverse Housing Options, and Density*	18
Leadership	**Land Use & Transportation Actions**	**# Cities**
	Land Use	
Comm/Muni	Coordinate with Conservation Districts, Non-Profits, Institutions, and Local Governments*	20
Comm/Muni	Protect and Enhance Downtown and Mixed-Use Centers*	20
Municipal	Increase Distribution of Parks and of Open Space*	20
Municipal	Evaluate Growth and Growth Boundaries*	20

Comm/Muni	Monitor and Improve Species Habitats and Remove Invasive Species*	19
Municipal	Balance Interest for Commercial, Industrial, and Residential Zoning*	19
Comm/Muni	Protect Existing Trees and Increase Tree and Vegetation Planting*	19
Municipal	Update Downtown and District Ordinances*	18
Municipal	Preserve Low-Impact Development Areas*	16
Municipal	Improve Wildlife Quality and Water Efficiency for Streetscapes*	16
Comm/Muni	Increase Education about Public Lands, Community Amenities, and Assets*	15
	Transportation	**# Cities**
Comm/Muni	Expand Local Transport Options*	20
Comm/Muni	Maintain and Improve Air Quality*	20
Comm/Muni	Coordinate with County, State, and Regional Groups*	20
Municipal	Implement Bicycle and Pedestrian-Friendly Projects*	20
Municipal	Contain Urban Growth Boundary*	20
Municipal	Monitor Population Growth Rate*	20
Municipal	Update and Maintain Transit Plan*	18
Municipal	Evaluate Options for Reducing Vehicle Use (VMTs)*	17
Comm/Muni	Support Equitable Development around Transit Hubs*	16
Municipal	Identify Funding for Planning and Implementation Efforts*	16
Municipal	Convert Streets to Possess Multimodal Connectivity*	15
Leadership	**Food, Water, and Materials Waste Actions**	**# Cities**
	Water	
Municipal	Ensure Growth Rate Does Not Exceed Water Supply*	20
Municipal	Make Storm Drain/Sewer Improvements*	20
Comm/Muni	Improve Water Quality*	20
Municipal	Encourage Industrial and Commercial Water Conservation*	15
	Solid Waste and Consumption	
Comm/Muni	Improve Recycling Programs, Education, and Outreach*	15
Leadership	**Public Health Actions**	**# Cities**
Comm/Muni	Incorporate Community Perspective in Planning*	20
Comm/Muni	Encourage Neighborhood District Planning*	20
Comm/Muni	Increase Community Partnerships*	20
Comm/Muni	Improve Multi-Family Livelihoods*	20
Community	Improve Single-Family Residential Livelihoods*	20

Comm/Muni	Support and Enhance Cultural Diversity*	19
Comm/Muni	Increase Community Health Resources*	18
Comm/Muni	Preserve historical and cultural places and structures*	18
Com/Muni	Work with Vulnerable/Low-Income Populations*	18
Comm/Muni	Address Vulnerability Communities and the Homeless*	18
Comm/Muni	Addressing Funding and Budget Constraints for Human Services*	18
Comm/Muni	Address Community Health Impacts and Comprehension*	17
Comm/Muni	Work with and Improve Local Businesses and Schools*	17

In contrast, Table 7 details the Least Common Actions found within the CAI. Least common actions were selected if less than fourteen cities stated commitment for addressing the item. Of the observed twenty cities, only eight cities possess active CAP or sustainability documents. Thus, the remainder of cities were evaluated on their comprehensive plans. Many of the actions in the Table 7 contain objectives that are specific to climate action plans, and therefore there marked with lower numbers. While some actions rank as higher priorities for cities (i.e. targeting occupant behavior to reduce energy use and increase conservation, expanding urban forestry initiatives, and educating city staff and public service), other items fall short of city attention. This is particularly true in the consideration of Solid Waste and Consumption and Buildings, Food Waste, and Energy Average Actions. One reason for this could be that objectives are highlighted in other planning documents such as transportation master plans and other city documents. Another reason could be a result of outsourcing services and utility providers for waste management and energy. Objectives reflected in the CAI that have little to no significance in municipal comprehensive planning include requiring building and energy scorecards/ratings, developing renewable energy projects, implementing a local fuel tax, supporting edible food donation, and exploring material package bans.

Table 7: Least Common Actions Across Study Municipalities

Leadership	Building & Energy Actions	# Cities
Municipal	Implement Housing Rehabilitation, Retrofitting, and Construction Programs	12
Comm/Muni	Target Occupant Behavior to Reduce Energy Use and Increase Conservation	12
Comm/Muni	Promote Use of Low and Non-Carbon Fuels	12
Municipal	Continue to Monitor and Update GHG Emissions Inventory/Additional Inventories	11
Municipal	Expand Utility Partnerships	11
Comm/Muni	Incentivize Solar Energy Production	10
Comm/Muni	Expand Community Participation in Energy Efficiency and Conservation	10
Municipal	Increase Renewable Energy Portfolio Standards (ENERGY STAR & LEED)	8
Comm/Muni	Develop Community-Scale Renewable Energy Project	7
Municipal	Expand Day Shading and Weatherization Techniques	6
Comm/Muni	Incentivize Small Home Energy Reduction (prizes, rebates)	6
Municipal	Convert Municipal Lighting (traffic lights, offices etc.) to LED	6
Community	Reduce Energy Efficiency Barriers in Rent/Lease Properties	5
Comm/Muni	Create Minimum Efficiency Standards for Affordable Housing Units	4
Municipal	Enhance Retailer and Contractor Best Practices	4
Municipal	Require Building Energy Scorecards/ Ratings	4
Leadership	**Land Use & Transportation Action**	**# of Cities**
	Land Use	
Comm/Muni	Promote Native Species Planting*	14
Municipal	Expand Urban Forestry Efforts	13
Comm/Muni	Facilitate Communication Between Community and Developers*	13
Municipal	Expand Tree Canopy in Urban Heat Island Areas*	5
Comm/Muni	Encourage Lawn Reduction	3
	Transportation	
Municipal	Limit New Development in Risk Areas*	12
Municipal	Increase Capacity for Electric Charging Stations	11
Comm/Muni	Support Equitable Development around Transit Hubs*	11
Comm/Muni	Promote Purchasing of Electric and Hybrid Vehicles	9
Municipal	Designate Carpool, Hybrid, and EV Parking	9
Comm/Muni	Enhance Trail Connections and Maintenance*	8
Municipal	Research Minimum and Maximum Parking Requirements	7

Municipal	Upgrade Signal Management Systems to Improve Traffic Flow	7
Comm/Muni	Expand Anti-Idling*	6
Municipal	Increase Fuel Efficiency for Buses	4
Municipal	Require Carbon Analysis for Large Asphalt Projects	4
Municipal	Expand Biofuel Research/Capacity	3
Comm/Muni	Implement a Local Fuel Tax*	1
Leadership	**Food, Water, and Materials Waste Actions**	**# of Cities**
	Food	
Comm/Muni	Expand Community Garden and Urban Agriculture Projects*	14
Comm/Muni	Promote Purchase and Manufacturing of Local Food/Material Products*	14
Comm/Muni	Compost All Organic Materials in City/Community Operations*	7
Comm/Muni	Support Edible Food Donation*	3
	Water	
Comm/Muni	Create Residential Water Metering Program	3
	Solid Waste and Consumption	
Comm/Muni	Develop a Plan for Infrastructure and Waste Service Adequacy*	14
Comm/Muni	Implement Waste and Consumption Education Campaigns*	13
Comm/Muni	Update Residential Recycling Ordinances*	9
Comm/Muni	Introduce Environmentally Preferable Purchasing Guidelines (EPP)	8
Comm/Muni	Increase Resource Efficiency in Schools and Organizations	8
Community	Provide Kitchen Best Practices and Purchases Guide	7
Comm/Muni	Expand Community Cleanups and Special Events*	7
Comm/Muni	Encourage Use and Funding for Reuse*	6
Municipal	Partner with Businesses to Safely Collect Hard-To-Recycle/Hazardous Material*	6
Municipal	Develop Ways to Tack Waste and Consumption-Based Emissions	6
Comm/Muni	Develop Stewardship Programs for Responsible Recycling/Manufacturing*	6
Municipal	Establish Range of Diverse and Stable Funding for Waste Divergence	6
Comm/Muni	Develop Strategy to Reduce Paper Product Consumption and Purchasing	5
Municipal	Strengthen Demolition Debris Diversion	4
Municipal	Support Stewardship Policy for End-of-Life Product Management	3
Comm/Muni	Explore Material Package Bans*	1
Leadership	**Public Health Actions**	**# of Cities**
Municipal	Educate City Staff and Identify Service Roles*	13
Municipal	Bolster Emergency Services*	13

Municipal	Map Potential Areas at Risk of Sea-Level Rise and Flooding*	12
Municipal	Conduct a Vulnerability Assessment and Create/Update Hazard Mitigation Plan*	10
Community	Establish Resident Engagement and Civics Programs*	8
Comm/Muni	Promote Crime Prevention Through Environmental Design*	7
Municipal	Reduce Risk of Wildfire/Fire in Urban Area*	6
Comm/Muni	Facilitate Training for Emergency Responders*	5
Comm/Muni	Educate Public Health Professionals*	5
Community	Increase Communication through Social Media*	4
Comm/Muni	Strengthen Hunger Relief Systems and Services*	4
Municipal	Develop Heat-Warning Systems*	2

Table 8 identifies the total number of actions per city in Western Washington and Oregon. These tables provide insight as to what cities are underscoring climate in municipal and community planning. Cities marked by an asterisk (*) possess stand-alone CAPs. Cities marked with a wave (~) are creating CAPs. Emphasizing regional leadership, it is significant that Ashland, OR ranks first among all of the cities with a total of 113 total actions. While Ashland is one of the smallest cities in the study, Ashland's CAP is the newest, and includes an implementation strategy. Through the support of the community, Ashland was also able to incorporate consultant expertise for both their GHG inventory and community workshops to inform objectives. Following Ashland are the cities of Bellevue, WA and Shoreline, WA. These cities are located in King County close to Seattle, WA. Both Shoreline and Bellevue possess environmental city-staff members and have the highest populations and budgets across the study area. Their city staff and councils also consider climate to be a major infrastructural and social priority, and therefore, have allocated resources to implementing their CAP measures.

Table 8: Total City Actions by Municipality

City	State	Total Actions
Ashland*	OR	113
Bellevue*	WA	99
Shoreline*	WA	99
Corvallis*	OR	94
Eugene*	OR	93
Olympia~	WA	92
Bellingham*	WA	89
Everett~	WA	78
Beaverton*	OR	77
Vancouver*	OR	73
Lakewood	WA	70
Mount Vernon	WA	63
Auburn	WA	59
Gresham	OR	59
Albany	OR	53
Kent	WA	52
Grants Pass	OR	45
Medford	OR	44
Salem	OR	38
Springfield	OR	22

In contrast, cities with the lowest number of action items are Springfield, Salem, and Medford, OR. Springfield is the only city in this study that does not possess a fully-formed comprehensive planning document. To account for Springfield's actions, the city's Comprehensive Plan website page was analyzed instead. In the absence of both a comprehensive and climate plan, Springfield significantly lowers OR's average action items. Medford's rank, just slightly above Salem, could be a result of a Medford's incorporation into the 2013 Jackson County Climate and Health Action Plan. However, there is some indication that citizen demand and regional movement are stimulating Salem to create a CAP in the near future.

The average number of actions per city was 76.9 in Washington and 63.4 in Oregon. While Ashland, OR is the city with the highest number of CAP objectives, Washington has the highest average CAP goals per city, with an average difference of about 13.5 actions. While both states possess an equal number of city CAPs in this research (four in WA and four in OR), Washington has more cities motioning toward creating stand-alone CAPs. These cities are Auburn, Everett, and Olympia. Oregon cities such as Springfield, Grants Pass, Medford, and Salem possess notably lower CAP commitments. This could be due to a number of factors such as a lack of political and social will, the absence of internal resources, or state and county collaborations/guidelines.

Table 9. Total Combined Actions by Category

Category	Total Actions
Transportation	340
Public Health	339
Water Waste & Consumption	268
Land Use	250
Buildings & Energy	238
Solid Waste & Consumption	177
Food Waste and Consumption	91

Lastly, Table 9 details the combined number of actions city prioritize in each category. Transportation and Public health are paralleled categories, illuminating city perspective and emphasis on social well-being as it pertains to regional movement and accessibility to community centers and residences. Water consumption, waste, and

management are also addressed as a high concern with municipal and CAP documents, as water is a crucial facet for all aspects of ecological, economic, biological, and physiological life. Land use items have tremendous precedence within cities, and its status on this table is simply reflective of the lower number of actions included in the CAI. Buildings and Energy fall just below land use, as many of the objectives fall within the scope of stand-alone CAPs and are less likely to be included in municipal comprehensive plans. It is significant that lowest on this table is solid materials, food waste, and consumption. Lower prioritization and incorporation of these items can be indicative of many things, such as deference of obligation from cities to waste management utilities and operations beyond city limits. Budget constraints may also pose as limitations as cities struggle to prioritize some areas over others. Finally, cities may be relying on communities to substantiate behavioral changes around food waste and consumption, and there may be insecurity from city entities concerning the behavioral components of climate planning. These and other data extrapolations are explored in environmental, city planning, and consultant interviews in the following section.

4b. Interview Results & Discussion

While much of the interview data complements the results of the CAI, city staff and consultant interviews provided a number of considerations that extend beyond written documents. These considerations include staff concerns, insights, personal feelings, and levels of responsibility. Interviews provide deeper and more meaningful discussions around the barriers inhibiting CAP, and more intricately pronounce commonality and differences between municipalities. For example, interviews revealed that overarching state decisions facilitate the policy-making process within both counties

and cities. Additionally, jurisdictional reign over utilities also plays a tremendous role in determining energy efficiency goals and targets. Though these may be present in the CAI, the descriptive articulation of these and many factors contribute to a more thorough analysis of CAP determinates and diffusion. Prevalent themes that emerged from interviews are highlighted in Table 10. This section will address these themes, highlight key struggles, and emphasize opportunities cities are currently experiencing when forming CAPs.

Table 10: Prevalent Interview Themes
1. Affordable Housing and Homelessness
2. Land Use and Urban Growth
3. Community Engagement
4. Staff Resourcing
5. Use of Consultants
6. Utility Relations
7. Implementation Measures and Actions
8. Successes and Limitations
9. Money and Budgeting
10. Political Affiliations
11. Buildings and Energy
12. Planning Vision, Progress, and Updates
13. GHG Inventories and Emissions Targets
14. Risk and Hazard Management
15. Personal Thoughts and Future Projections

To address the research question *what factors shape the decision-making process of small- and medium-sized city climate action plan (CAP) creation, and how do these plans differ between Western WA and OR?*, common themes were extracted from

consultants as well as city and environmental planning staff. Quotations and insights from conversations were organized and discussed by theme. From these themes, key successes and limitations were formed. Insights from interviews and CAI data were then intertwined with the context of the internal and regional diffusion frameworks to determine the levels of influence and leadership needed when forming municipal CAPs.

Staff Resourcing, Use of Consultants, Utility Relations, Money and Budgeting

Staff resourcing, use of consultants, collaboration with utility corporations, management of city services, money, and budgeting were some of the most prevalent themes formed in conversations. While some cities possess capabilities to advance in these areas (i.e. hiring full time sustainability analysts into city positions, owning electrical, waste, and storm water utilities, etc.), many municipal staff expressed these as prominent barriers to climate planning. For cities to circumnavigate some of these constraints there must be resounding state, county, and community-level demand. There must be implicit understanding that if cities and communities seek formation and implementation of CAPs, other important budget items must either be cut or redirected. This also puts pressure on city planners and environmental consultants, as many individuals who hold city positions often have other responsibilities:

> *"I'm the city's environmental specialist. The city has an environmental service division that is a part of community development and Public Works. It is myself and my manager, the Environmental Services Manager, who are the sum of environmental services (laughs). We have taken on the role of initiating the climate action plan and moving it forward with our consultants and working with them. As the division of environmental services, we are the midpoint or connecting point between various other departments and sustainability."*

While this municipality is able to resource at least two people to substantiate sustainability directives between city departments, many municipalities do not possess this resource.

> *"Let me just say it this way, the city is poor. It struggles with its budget even though it's a city of about 60,000 people. It doesn't have the economic base that more mature cities have, and so as a result we struggle. And so, when you start talking about climate change, other things get to the top of the list and have priority very quickly."*

In addition to pressing city demands, there are concerns that investments in CAPs often do not result in much tangible impact within cities unless objectives and actions are measured to targets. Use of consultants can assist in creating measurable targets, however cities often do not have the resources to maintain consultant connection or to hire full-time staff to ensure CAP objectives are implemented.

> *"We're looking at filling a permanent position next year to be the climate lead on our implementation. But what I did this last round was work with an intern, and he did a lot of the updating material. I then hired a local consultant here. It was a little complicated, but the guy I had working for me was working for a consultant firm in town. Instead of paying him the minimum wage I was required to pay him, I hired the consultant so we were able to make his compensation align with his work. He was actually more of a hybrid-internal staff person."*

These quotes demonstrates that new staff-resourcing for CAP creation can be impermanent given funding restrictions. While consulting firms can assist cities with some of the regional components of climate action planning, cities often require dedicated staff to monitor progress as well as enforce and facilitate sustainability transitions between departments.

Land Use and Growth Management, Housing and Homelessness

Internally and regionally, cities have very challenging feats ahead. A foremost concern for municipalities is population growth and affordable housing. Within the CAI, housing and growth management ranked among the top resounding priorities across all municipalities in the study. Additionally, concerns about urban growth boundaries and land use interweave with adaptive infrastructural innovation (Carter et. al, 2015). One

city planner accounts, *"We are pretty much up to our boundary limits. We have a few urban growth areas that have been worked out through the county. We have no plans to annex that area in a foreseeable future and are looking at redevelopment opportunities to move forward.*" Projected population spikes have many cities concerned. This is apparent for the City of Albany, OR. In the next 65 years, the city is projected to grow from 40,000 to 70,000 people - a difference of approximately 30,000 people.

One key consideration for city planners is the Washington State Growth Management Act (GMA). Instated in 1990, the GMA requires all rapidly growing cities and counties to develop a comprehensive plan to manage population, reduce urban sprawl, improve regional transportation, and implement affordable housing projects. The GMA also requires cities to include economic development planning, streamline permitting processes for housing, and ensure protection and preservation of the natural and built environment (MRSC.org, 2015). Through the identification of urban growth areas (UGAs), counties and cities possess the shared responsibility of reducing sprawl.

While Oregon does not possess a GMA, it has a similar policy called the Oregon State Transportation and Growth Management Program. While Oregon does not possess the same stipulations as Washington, Oregon cities can use program workshops and grants to improve community design and transportation accessibility, collaborate with the Oregon Department of Transportation, and remove some of the technical and financial barriers associated with capitol design and public facilities projects. These programs are pivotal, as the substantial increases in population that small cities and counties are experiencing will continue to impact Oregon and Washington. The case for consideration of land use and growth management should be strengthened as deliberations over public

and environmental health become increasingly diminished as a result of this change (Perrot & Holland, 2005).

Paired with these concerns is ecosystem health, well-being, and strength. In Mount Vernon, WA many city planners are concerned about the impacts of homelessness on the environment.

> *"I will let you know the largest impact is felt in our wetlands and to the Skagit River, because those wetlands feed Skagit River really for the homeless that are in these wetland protected areas. I mean the opioids and other drugs. When we clean up these areas they are having a very determinately huge impact to the water system. Fecal matter, that's usually the biggest thing we see."*

Despite an overall lack of research on this issue, it is becoming increasingly apparent that growth management, homelessness and housing, and land use concerns are at the top of the list of priorities for almost all Pacific Northwest cities. However, there remains some uncertainty regarding how these variations can best be incorporated into municipal CAPs as well as within larger county and state planning.

Key Success and Limitations in Planning Vision, Progress, and Implementation

Despite the limitations of resource and population demands, key successes are being met throughout the region. These are highlighted in Table 10. This demonstrates some of the core priorities of implementing CAP directives within the municipal frameworks and capabilities. It also highlights some innovative approaches cities are taking to ensure that their plan is actively addressing the needs of the community. Cities that do not possess key successes can thus use this as a guide for what to prioritize in their own CAP creation, and who to connect with to facilitate and inform guidelines and objectives.

Table 11: Key Successes Identified in Interviews	**Cities**
Releasing a New or Updated CAP within the next 1-2 years	Auburn Bellingham Eugene Everett Olympia
Increasing Coordination Between CAP and Utility Ownership	Ashland Bellingham Lakewood Olympia
Addition of Equity Element into CAP Process	Bellingham Eugene
Introduction of New Methods (i.e. Strategic-Doing Approach)	Eugene
Incorporation of Local Cities and County into CAP Process	Olympia
Addition of Climate Analyst Position into City Staff	Ashland
Structural Document Changes to Emphasize and Focus on Solutions	Bellingham
Establishing Incentive Programs for Energy Conservations	Bellingham
Creation and Updating of Assessable Carbon Monitoring Tools (C-LEAP)	ICLEI
Increasing Transportation Options and Capacity for Multi-Modal Travel	Shoreline

While these successes express how CAP is advancing, there are pronounced key struggles and limitations. These are highlighted in Table 11. It is significant to note that this research presents more struggles than success, and struggles are also most commonly shared throughout all cities within this research frame. These expressed barriers to success include limitations within the city policy-making structure vs. state and federal levels, substantive lack of community interest and participation, technical and economic complexities, lack of utility control and ownership, time and organizational management, and many others. The interview participant from Vancouver, WA stated,

> *"To me it's one thing to have a CAP, it's another thing to actually measure things. CAPs are good, but if you don't measure your progress, it's sort of less effective. We're pretty good at aspirational thinking and I think generally our leadership is very supportive in this kind of work, but we don't have the resources to measure it."*

This quote emphasizes the desire within cities to not only create sustainability and climate plans, but also to be able to measure progress, correct where necessary, and restructure plans and visions as circumstances shift. Technical complexity regarding GHG inventories and challenges regarding other systems also present confliction in prioritization of items within municipal and city operations.

Table 12: Key Struggles and Limitations Identified in Interviews
Collaboration, Cooperation, and Negotiating for Change
City-Level Government Control and Operability Political Perspectives and Affiliations
Funding and Budgeting for CAP Development and Implementation
Lack of Methods for Meeting State-Level Directives
Prioritizing and Coupling Adaption and Mitigation
Lack in Consistency of Measuring and Monitoring GHG Inventories
Time Management and Organization of Priorities
Disengaged Community Membership
Lack of Staff Resources and Increased Pressure on Existing Staff
Technical Complexity of Science and Solutions
Critically Demanding City Pressures (i.e. Homelessness, Population Growth)
Economic Complexities and Feasibilities
Reactive Policy Planning and Thinking as Opposed to Preemptive Planning
Lack of Utility Ownership and Control

These limitations create deep frustrations and concerns. One municipal staff person confided *"I am very frustrated with the fact that nothing seems to work anymore and that the answer at the state level is to push it down to the locals and make them fix it. I'm ticked off and I'm not happy that we are put in this position and don't have the resources to fix it."* Another staff person commented, *"It's important to recognize too that a city only has so much power or influence. It's interesting writing a plan that is trying to provide a vision and be aspirational beyond the power of the city government."*

These statements are reflective of the pressure cities feels to address issues around climate while working with minimal resources, limited timeframe, and budgets.

Collaboration, Community Engagement, Advocacy, Demand

While there is variation between cities in terms of political and social engagement with climate planning, some cities are actively allocating specific energy to reduce emissions, increase resiliency, bolster adaptation efforts, and improve quality of life. Successes in progressing CAP measures to the forefront of leadership, creativity, and value are typically prompted from engagement with community activists. This is particularly the case in cities such as Ashland, OR and Olympia, WA. According to A city staff person in Olympia, *"There's a lot of citizens in the community that are very engaged in the topic, wanting the city to show leadership--in fact wanting the whole region to get behind these efforts. So, there is a strong constituency."* In the case of Olympia, this is not only influential for the city itself, but for neighboring cities Tumwater and Lacey.

> *"There are many examples that in which the three cities collaborate on issues. It makes sense to work regionally on this. In order to address the need for emissions reduction we are going to have to work with our energy provider, transportation issues, and land use issues. Those are issues that are collaborative. There a lot of areas where if we come up with reasonably consistent policies and approaches it could be effective."*

For Olympia, the perspective is that increased collaboration will result less competitive and more collaborative systems for addressing climate impacts and emissions reduction. Under the leadership of the Thurston Regional Planning Council (TRPC), the Washington cities of Olympia, Tumwater, and Lacey are in Phase 1: Scoping Process of the regional CAP. This will soon be followed by Phase 2: Formation of Initiatives, and Phase 3: Implementation. The project is expected to culminate in 2019.

Community involvement, perspective, and engagement are critical pieces of diversity and intersectionality. Community intelligence and perspective on climate interest, though overall pronounced in the Pacific Northwest, varies considerably in the scope of small- and mid-sized cities. For example, cities such as Olympia, Bellingham, Shoreline, Vancouver, and Ashland have incredibly supportive and at times adamant community bases. A representative for the city of Vancouver stated, "Yeah, I think there's a very active environmental community here." The representative in Olympia held a similar position, "I would say we have a pretty educated and engaged community on this topic. Maybe as you extend further in our region less so, but I believe the community wants to show leadership on this topic." Cities like Bellingham are emphasizing cultural inclusion and considering restrictions:

> *"This last round of updating our CAP after we had got substantially - well 99% - through that process, there has been a community group that is pushing for carbon emission neutrality by 2030 or 2035. And they've been active, they're trying to get these more aggressive goals into the CAP. I think we all agree that the more aggressive we can get with carbon emissions, the better chance we will have of not changing the world completely. It's also a matter of balancing cultural abilities and things like that, so the timeframe is pretty aggressive when the goal is only several years out. But it's great to have that component of a community that understands and is pushing hard."*

This statement exemplifies that engaged members not only emphasize CAP, but also seek to make CAP more impactful through the construction of solution-based and achievable standards for both the city and community entities.

However, not all cities share the same level of urgency and enthusiasm for climate change policy. One city accounts, *"There are individual groups and people here who do support stronger CAP efforts, but it hasn't risen to the level where it's been debated at council or anything like that."* Political affiliations and worldviews play a critical role in

community involvement on climate change issues, and this holds true for all cities analyzed in this study. Another city states, *"I think that in recent elections we may have voted generally democratic, but at the council level, which is bipartisan, at least at this point, the council leadership and the mayor are more conservative and republican-leaning. And certainly, in contrast to Eugene, we are more conservative."* Other cities such as Lakewood simply struggle with more intense and pressing day-to-day issues, which presses the city council for most of its resources, time, and considerations.

Community engagement, neighborhood advocacy, and demand for climate action all influence local and regional decision-making and planning. This is primarily due to the fact that climate change is a community health threat and that local environmental disruptions ripple out into the larger region and vice-versa (Van Aalst, Cannon, Burton, 2008). Engaged communities highlight these risks to city council and public officials, often posing recommendations for changes officials can take to reduce risks and vulnerabilities. Cities have central responsibilities for incorporating concerns. Forums for leadership and advocacy must therefore be made available to cities that possess the same levels of engagement. Narratives around personal connection with nature, experience with climate disruptions, and how work on climate can illuminate economic and social prosperity must be center focus for all communities.

4c. Discussion: Internal Determinants and Regional Diffusion, Intertwining the CAI and Interviews

This section intertwines CAP data from the Climate Actions Inventory (CAI) with the city-staff and consultant interviews. Identifying correlations, deviations, and gaps between data sources provides perspective as to how CAPs are formed and what local

and regional influences inform the development process. While the CAI primarily highlights internal operations and strategies, regional trends and internal determinants are formed through the statement of common objectives and asserted through the perspectives of limitations and successes from city planners and consultants. Finally, while all CAPs are designed for each individual city, climate plans are not currently created to function as policies themselves but rather as guidelines. Cities must critically evaluate this current system to ensure the money, time, and energy spent in climate planning is invested wisely, and that objectives are adequately designed to achieve emissions reduction and resilience targets.

To address this, cities are beginning to understand the integral relationship between university presence and municipal and community operations. There appears to be a strong correlation between university influence and the possession of a municipal CAPs in the study cities. The representative from the City of Ashland notes this in their interview: *"Our university (SOU - Southern Oregon University) had a climate action plan before we did, and they've been very involved at the university-level in many commitments."* The City of Eugene, home to University of Oregon, spoke similarly about the university's climate commitments and involvement in climate action planning:

> "*The plan approach focuses on 'strategic doing,' which means that we are working with large-level shareholders for each of the chapters. In a nutshell, 'systems change' shareholders such as local utilities, cities, universities, school district, the natural gas provider, and our transit district--entities that have control over systems."*

This and other examples of cities within the frame of this research strongly suggest partnerships with universities are prominent of the determinant factors for cities in the Western Washington and Oregon to adopt CAP objectives. Regionally, there is evidence universities mold perspective, create communities, facilitate the scientific consensus

processes, and in some cases shape the way CAPs are formed and enacted (Eliasson, 2000). The two other cities who possess CAPs are situated outside of Seattle or the Portland metropolitan areas. Though inconclusive, this suggests that cities within close proximity to large metropolitan areas who have robust CAPs are more likely to have developed a CAP or to develop one in the near future.

A way for environmentally proactive cities to extend their resources beyond city structures is to develop partnerships with cities who struggle to adhere to the pressing demands of climate change. Regionally, university partnerships between cities could emphasize collaborative development between stakeholders across city and state boarders. Forums, workshops, and developmental trainings for community members, businesses, policy-makers, and municipal operations staff could provide constructive learning opportunities for both individualizing and generalizing CAPs so that all cities are adhering to climate development in both unique and collective ways.

Another significant limitation to climate planning is that there exists no true commitment or accountability to enact or adopt policies that will ensure goals and targets are met. One city states, "*The climate action plan is committed to reducing 80% by 2050, 50% by 2030, 25% by 2020. We're not going to be close to meeting the 2020 goals."* Of all eight CAPs in this research, only Ashland possesses an implementation strategy. In current inception, all proposed goals and strategies are simply guidelines. Without ordinances to ensure CAP goals possess a legal structure and are made actionable, there is no basis for accountability when CAP targets and objectives are created.

Climate and comprehensive plans are expansive and costly documents that possess great detail. To make the most of the investment and garner community

participation, cities must adopt climate objectives into legal frameworks for all facets of city life and operations. If individual cities begin reframing climate actions into legally-binding obligations, it is possible that more cities will begin to consider their climate objectives as policy. Cities across the Pacific Northwest have an amazing opportunity to come together and address affordable housing, land use, and environmental planning standards. All cities analyzed have stated this as a core objective within their municipal visions and can incorporate CAP objectives within the frame of community and environmental health. More on how cities can do this will be discussed in Chapter 5.

Green technologies and modernizing conservation occur on three levels: municipal, community, and utility (Calthorpe, 2011, pg. 18) Both the CAI and the interviews conducted for this research suggest that cities identify CAPs to be specifically municipal-focused but fail to engage communities on how cities can integrate changes at the community and utility levels. One staff-person asserted, *"We have traditionally focused our emissions reduction targets within municipal operations. We have made a huge amount of progress. The next big jump is focus on actions the city can take to influence emissions more broadly within the community."* Another city staff stated, *"I think folks in us community are doing what they can. Climate change is something that's difficult for many folks to act on because they are operating on limited budgets and maybe don't know what they can do to make a difference on the issue or they just really feel like they can."* In some cases, green technology and infrastructural development is even being challenged within environmentally active communities. One participate stated, *"We have many people who are in opposition to re-zoning that are really active environmentalists. And these people often aren't able to make the connection that high density transit as*

opposed to green field development is the environmental solution." These statements highlight a significant element of distrust between city governments and stakeholders as it pertains to CAP and land use development. This means cities must spend a significant amount of time and allocate funding for consultant facilitation to educate community groups and receive feedback about large capital projects for them to successfully implement these ideas.

The results of the CAI and the interviews offer significant understanding of the internal determinants and regional diffusion model frameworks. Local relevance and community assets such as schools, organizations, businesses, and city governments are all key stakeholders in CAP. Additionally, the viability and feasibility of a city to accommodate and afford social and infrastructural changes also plays a major role in whether a city is able to create a focused plan with attainable goals. While having an overarching general vision is imperative, many cities must work to narrow focus and create supplemental implementation and budgeting strategies to meet targets. Lastly, projected city growth has many cities nervous about the future—especially as tensions around homelessness and affordable housing increase.

Regional diffusion of CAP objectives is more difficult to measure, though there are some indications in this research that confirm regional influence within and between cities. Comprehensive plans throughout all cities analyzed share many of the same action items pertaining to land use, water conservation and consumption, and public health. While this may be do directives from the state, CAP items also possess commonalities in structure and context. This may be primarily due to the incorporation of consultants within the planning process. Additionally, this study confirms that regional (i.e. county

and city) alliances foster cooperation in creating common goals and deriving objectives to strategies to achieve common targets.

Given concerns and necessities to create stronger CAPs and elicit community support and impacts, cities must prominently focus on the converging points of internal capacities and regional movement. Some methods for cities to connect themselves to larger networks include through the use of consultants as well as through the formation of coalitions and organizations (i.e. Thurston Regional Planning Council, K4C, Global Compact of Mayors, ICLEI, etc.). Cities should also be encouraging community members to join larger regional and networks such as 350.org, Climate Reality, the Sierra Club, etc. In doing so, cities and communities can best work together to form regional connection while bolstering internal progress.

State policy decisions can act as inhibitors and as a beneficial components of CAPs within cities. Cities without resources select to use state regulation as a means of incorporating CAP into comprehensive, transportation, and land use plans. However, cities with CAPs and with environmental staff sourcing may not find state goals or ordinances to be aggressive enough, and therefore some cities may surpass state and county regulations in emissions reductions. In fact, these cities may be setting the stage for climate regulation that surpass the larger frames of government. Though this remains an optimistic perspective, the contributions of regional perspective and resources from other localized cities have the potential to build momentum, influence regulation, and safeguard assets from climate impacts. Continued research and application of these models is critical in ensuring that climate policy has developed as well as how it is adopted locally and regionally.

4d. Research Limitations: Climate Actions Inventory

Despite the small sample size, a key limitation associated with this study is the contrast between comprehensive and stand-alone CAPs. Comprehensive plans do not provide GHG inventory analysis, project targets for energy consumption reduction, or propose actions for implementation and measuring progress regarding CAP values. While some contain environmental elements, comprehensive plans often do not incorporate actions pertaining to energy efficiency, food consumption and waste, and materials consumption and waste. Therefore, it is recommended that research works to address these gaps.

Verbiage is also a limitation in creating the CAI. Many CAP and municipal actions are often over-generalized. While generalized actions are critical in ensuring that attention is brought to a specific issue, the broad nature of many comprehensive and CAP goals inevitably means that details are too vague, are either overlooked, or are too momentous for a city to undertake. Words like “encourage” and “explore” signify a broadness in planning, whereas more concrete words such as “reduce”, “facilitate”, and “educate” are more authoritative and actionable. However, some municipal actions were too specific to be included in the CAI.

The Climate Actions Inventory (CAI) requires routine maintenance and advanced research. For instance, in the duration of this study the City of Bellingham announced that it will transition to 100 percent renewable energy by 2030. This will inevitably shift Bellingham’s status in the inventory up some ranks as the city updates planning procedures to accommodate this change. It is recommended that now this inventory has

been created that it be maintained and updated as well. The maintenance and upkeep of data is imperative from year to year.

Finally, the field of climate action plan (CAP) creation is new. The information provided in this study requires further development to enhance understanding of this type of policy innovation. There is minimal research regarding internal determinants and regional diffusion in climate planning. Furthermore, relevant scientific data, such as climate modeling, changes rapidly. Therefore, continued efforts to strengthen planning objectives and achieve targets while staying abreast of current climate research must prioritized by climate researchers, city planners and officials, and community members.

4e. Limitations: Research Limitations: City Staff & Consultants Interviews

There is a wealth of information about CAP planning and development from the interview process. However, future research should incorporate questions that address specific implementation measures and budgeting strategies for climate action planning. Additionally, for cities that do not have communities that believe in the necessity of CAP creation, research must explore how other community values such as job security, social equality, and public health can be best emphasized.

Limitations also exist in interviewing city staff. Often answers were pragmatic and neglected the tonal urgency expressed in scientific and sensational literature about climate change. While practical solutions and technical fixes are imperative for the progress and development of cities, many failed to mention the role the community plays in facilitating efforts within the municipality. Highlighted in the CAI, collaborating between both entities is needed for actions to be appropriately conceived and implemented. Therefore, city leaders must begin to develop partnerships between

departments, with other cities, and with their communities if they intend to promulgate resilience.

Chapter Five

Suggestions and Considerations for Creating Stronger CAPs

Chapter Five provides suggestions and considerations for creating stronger and impactful community climate action planning strategies. While much of the CAP forming process incorporates technological solutions, climate planning requires that cities think in creative ways to accommodate community needs such as living and mental health services. While these considerations are largely missing from climate planning in its current inception, inclusive living, reimagining cities through developments in urban planning, and creating a foundation for transformational resilience can make climate planning more relatable and more impactful.

5a. Promises of Togetherness, Communalism, and Sacrifice

There is evidence that communalism within and between city entities and communities must be considered and prioritized in CAP and municipal planning (Ludwig, 2017; Berkhout, 2010). For cities meeting successes in accomplishing objectives, community members must know and believe that they have ownership over tasks and projects. Paired with technological fixes, cities must work to prepare and position people to change foundational components of livelihoods and perspective (i.e. jobs, practices, diets, etc.). This process must be encouraging, profitable, and all people must be guided to work collectively to "leverage sharing and cooperation as main tools for becoming more ecological" (Ludwig, 2017, pg. 9). An integral way of achieving this will be through the revitalization of land use planning, infrastructural building structure, and energy sourcing for culture and creation.

Cities seek to maintain and improve quality of living now and into the future. This

objective is severely threatened by and through climate disruption. One way to address this is to recognize the importance of united action and perspective. “Cohousing has done a lot for expanding the appeal of intentional communities in the US and provides creative ways that lead to significantly reducing ecological footprints” (Ludwig, pg. 16). Due to the significance of necessity for community participation in CAP paired with the economically underprivileged, vulnerable, and homeless populations throughout the Pacific Northwest, cities must creatively consider constructs such as income-sharing and deep community living into planning structures.

A common barrier among cities is the acknowledgment of city limitations as it pertains to CAP. Collective perspective in city leadership requires immediate recovery and restoration, as the significance of the moral and environmental benefits for society and the environment must take a stronghold. The core of our cultural attitudes down to the physicality of the body is a “battleground fought over by a host of interests, from the largest multi-national food companies and media corporations, to the smallest hairdressing salon and restaurants” (Holmes, 2016). Cities are aware of the enormity of factors beyond their operations that contribute to climate change. However, this does not render cities powerless or weak in the face of resilience building and mitigation.

According to Ma’ike Ludwig, author of *Together Resilient: Building Community in the Age of Climate Disruption,* “Worldview is the place where everything starts: our ecological practices are the result of our worldview, and the social and economic systems that generate it” (Ludwig 2017, pg. 6) Ludwig emphasizes that a critical part in reducing emissions within communities requires deep consideration of the ways we live and consume. She proposes, in this recognition, that community itself is a living laboratory in

which we are able to monitor, account for, and change our systematic ways of living. This however, must be done with intention. Once this is acknowledged, one is able to begin the process by forming what are called "intentional communities" (Ludwig 2017).

Intentional communities are designed to address the social and economic obstacles that prohibit and prevent practice-based solutions from entering the communal forum (Mudler, Costanza, & Erickson, 2005). According to the Fellowship for Intentional Community (FIC, 2018), intentional communities foster the values of "1) Cooperation, 2) Sustainability, 3) Social Justice, 4) Nonviolence, and 5) Non-coercion" (Ic.org, 2018). This is supported by community structures that include ecovillages, cohousing, communes, student co-ops, and spiritual centers (Ic.org, 2018). The true purpose of these establishments is to build group resilience through "shared decision-making, enhancing the local economy, creating social enrichment, participation in natural building, and food security practices" (Ic.org, 2018). Intentional communities are groups of people who are easily able to identify and connect with one another on fundamental values and acknowledgement of needing and wanting to change for the betterment of the self and the environment (IC.org, 2018; Ludwig, 2017; Mudler, Costanza, & Erickson, 2005).

Ludwig (2017) determines that the prohibitive nature associated with change for many comes from an inherent fear of changing ecological practices to meet our needs. Suggesting that ecological practice is in essence the basis of economics, she outlines five categories for which the needs of communities can be met. These are: "1) Redefining needs and wants, and eliminating or reducing wants, 2) Sharing to reduce individual burden, 3) Encouraging and incentivizing do-it-yourself projects (DIY), 4) Increasing trade and barter, and 5) Reducing our dependency on money as a primary means of

exchange (Ludwig, pg. 45). Currently, CAPs are not designed to deviate from standardized norm, but to work within existing and failing social, political, and economic systems. However, integration of these categories into CAP could aid in forming new governance and social structures that are impactful and beneficial as cities are readying for climate impact.

Ludwig (2017) provides many examples of why intentional communities should be encouraged in city comprehensive and climate planning. Accounting from her personal experience in communal dwellings, she asserts "income sharing can be kind of a secret weapon in overcoming the American worldview of hyper-individualism" (Ludwig 2017, pg. 51). It additionally fosters cooperation as opposed to competition, emboldens ecologically responsible decisions (e.g. emphasizing community space and sharing food and resources), incorporates economic justice principles, increases options for how to adequately spend one's time, increases economic resilience, increases the value of labor, and aids in redefining and breaking down gender-roles (Ludwig 2017, pgs. 51-52). The mitigation and adaption of co-benefits of intentional communities are what makes the idea of the movement so attractive and the reality of them so successful. The core component of resilience in this model is the ability to establish cooperation and leadership through trust-building and applied practice. Intentional communities foster this lifestyle daily and with almost unperceivable attentiveness.

Ludwig (pg. 55) highlights ecovillage Twin Oaks, VA, an income-sharing community of 100 residents, as an example of blending all five of her criteria for ensuring needs are met. Twin Oaks is an Ecovillage, with a community mission that seeks to "sustain and expand a community that values cooperation… and to be a model

system that includes human-scale solutions to problems of land use, food production, energy conservation, and appropriate use of technology" (Ludwig, pg. 54). Cities should be considering the substantial benefits of intentional communities. Particularly, cities should place specific attention on the integration of communal living and dwelling as it pertains to population growth and land-use planning.

All cities highlighted in this study identify population and land use change as a core for forming objectives in both comprehensive and CAP documents. Though it is not within city's authority to dictate how community members should live, intentional communities possess the ability to inspire others and to show how cities can foster and promote the evolution of behavior and community participation as climate change intensifies. Support for the creation of intentional communities within CAPs can aid in bridging community value with city vision, address issues of homelessness and housing, and provide examples of how density and land use can be beneficial for fostering local economic and social welfare and growth.

5b. Redefining Urbanism

Cities in the Pacific Northwest are rapidly realizing their potential for urban development and innovation. "Urbanism generates a fortuitous web of co-benefits—it is our most potent weapon against climate change" (Calthrope, 2011, pg. 10) Among one of the top priorities for small-medium cities in the Pacific Northwest is to create and promote live-work units, offer diverse housing and transportation options, and join people together through the formulation of denser development. Peter Calthorpe, an influential architect from Berkeley California accounts for this movement in his book *Urbanism in the Age of Climate Change.* He states,

> *"Urbanism's compact forms lead to less land consumed and more farmland, parks, habitat, and open space preserved. A smaller footprint results in less development costs and fewer miles of roads, utilities, and services to build and maintain, which then leads to fewer impervious surfaces, less polluted storm runoff, and more water directed back to aquifers" (Calthorpe, 2011, pg. 10)*

Calthorpe demonstrates the interconnectivity between urban systems and the outcomes of redevelopment of the urban landscape.

According to Steiner's (2011) *Landscape Ecological Urbanism: Origins and Trajectories,* the meaning of landscape is to "offer a complex way of seeing, understanding, and shaping environments (pg. 333). He adds, "Developments in urban ecology and landscape urbanism open up new possibilities to restructure ecosystem understanding and city design" (pg. 333). This is a critical component of CAP that is incredibly understated in the context of progression on climate goals within cities. To facilitate change to meet the urgency of urban reform, cities must be collaborative bodies that work together to reinvigorate the regions in which they are set. "Regionalism sets city and community into contemporary reality of our expanding metropolis. Our cultural identity, open space resources, transportation networks, social links, and economic opportunities all function at a regional-scale (Calthorpe, 2011, pg. 16)" Calthorpe is making the critical point that because so much of life exists within the proximity of the individual, at the core there is significant need to consider the social geography of the region to understand what and who extends into our local lives (2011, pg. 16).

An instrumental tool to understanding regional context and perspective is through the integrated use of green technologies and modernizing conservation. This occurs on three levels: municipal, community, and utility. However, just a little over half (11) of the cities analyzed seek to expand utility partnerships to ensure sustainability and climate

goals are growing. Utilities are a major regional link between communities and cities, and many municipalities recognize their influence in CAP. Olympia, WA states, "I think working regionally will mean being more impactful when working with utilities and organizations. As a collective voice we can assert more influence." Cities have varying authority over jurisdictional utilities. For example, while the city of Albany, OR outsources its electricity, it manages its wastewater. However, the city of Ashland, OR is unique. Ashland owns and controls its electric utility and is therefore able to make internal changes as to how energy is sourced and used. In this consideration, Olympia raises a crucial point: cities must collaborate together to pressure utilities to change their sourcing practices.

Additionally, cities should be assessing how to create microgrid systems, energy-sharing programs, and expansive renewable energy projects and incentives (Hawkin, 2017). In contrast to a macro grid, which is a "massive electrical network of energy sources that connects utilities, energy generators, storage, and controls," microgrids are "small localized grouping of energy sources such as wind, solar, in-stream hydroelectric energy, biomass, and many others" (Hawken, 2017, pg. 5). Microgrids provide the opportunity for whole communities to power individual neighborhoods, reduce cost, gain profit, and lessen environmental impact. Germany is rapidly adopting and embracing microgrid-energy, with a modern neighborhood in Frieburg receiving positive energy balance. Each home produces $5,600 per year in solar benefits and each home functions at maximum efficiency without sacrificing on style, sophistication, or comfort (Hawken, 2017, pg. 5).

In addition to residential, commercial, and industrial energy use, transit accounts for over 48% of GHG emissions throughout Washington and over 30% throughout Oregon (Ecology.wa.gov; Oregon.gov). While all cities have identified expanding local transit options and improving air quality, many cities must confront and address significant consumption issues. Incorporating "economic and social welfare, human health, and ecological integrity" into transportation and infrastructure planning is critical (Litman & Burwell, 2006; Jackson, 2003). Air pollution from respirable particulate matter (PM2.5 and PM10), carbon dioxide (CO2), nitrogen oxides (NOx), heavy metals, etc. will be dramatically reduced and eliminated through incentivizing multimodal transportation development, resulting in dramatic diminishment of chronic respiratory and heart disease, lung cancer, and asthma (Kampa & Castanas, 2008).

According to Paul Hawken's esteemed *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming* (2017), "Transportation is a double-edge sword. The use and sustainability of transportation cannot be separated from how and where people live, work, and play; two major influences going forward will be the design of the urban environment and reduction of excess consumption" (pg. 135). There are several modes of transport which PNW cities must consider in urban design. These are: 1) mass transit (busses, trains, high-speed rail, and ships), 2) automobiles (electric and hybrid vehicles), 3) trucks, 4) bicycles and pedestrian pathways Hawken, 2017). The relationship between urbanism and travel behavior is quantified through vehicle miles traveled (VMTs). The evaluation, calculation, and reduction of localized VMTs are noted as a primary objective within cities regardless of climate. To successfully implement vehicle reduction, Calthorpe asserts that transit should be approached hierarchically.

He states, “from walkable and bikeable streets supporting local bus and streetcar lines to trunk transit lines with dedicated rights-of-way—this hierarchy is essential to transit’s success” (pg. 84). Calthorpe notes that as process is formed it substantiates what planners call transit-oriented development (TOD).

Primary locations for TOD include urban centers, first-ring suburbs, and new growth areas. Transit-oriented development possesses many economic and social promises. Rescaling and orienting transit around community health and increased service can lessen dependency on vehicles and vehicle infrastructure cost, transform local and regional economies through the promotion of local business and retail, increase land value through public investment, revitalize inner-city areas and provide access and connection in hard-to-reach and high-traffic places. A successful example of such development can be seen and experienced in Portland, OR, which is home to the highly efficient and dependable MAX- Trimet Light Rail Service, Bus Service, and Rail service. Particularly, the MAX light rail has five color-coded lines that carry people throughout the city and to neighboring towns Gresham, Hillsboro, Beaverton, and Milwaukie. Prices for the MAX are also reasonable, with adults riding for $2.50 or $5 for the day (Trimet.org). There is also a discount for senior citizens and youth high-school age or younger. While wait times vary, they are approximately 5-20 minutes during times of high demand (Trimet.org). The website is clear, simple, easy to understand and use. Portland’s transportation system and level-of-service can be a key example of how to integrate efficient and reliable transit options for cities as they increase in density and population.

Another incredibly important facet of urbanism is materials, food, and water consumption and waste. According to the CAI, cities significantly fall short on prioritizing objectives for consumption and waste. Cities have a critical obligation to reimagine the purpose of materials created and used, as well redesign reduction and consumption standards and models (Hawken, 2017). Ordinances have particular benefits when considering waste reduction and conservation. Plastic bag bans in Thurston County, WA are one example of how local municipalities can reduce plastic waste, protect natural wildlife, and encourage waste reduction while increasing efficiency. According to Hawken (2017, pg. 159), "the most effective systems make collection easy and use incentives to nudge behavior." Cities must consider a wide-range of stakeholder practices (e.g. businesses, industry, and residences), and reframe the *take, make, waste* model into one that is productive and mutually beneficial for the community (Hawken, 2017). One way cities may begin to do this is through the enhancement of recyclable and reusable goods. Partnering with internal and external waste utility operators can enhance technologies that would remove components like plastics, metals, alloys, and chemicals from materials and redistribute them for other purposes and uses (Hawken, 2017).

Concerns around water rank among one of the highest considerations when forming CAPs and municipal comprehensive plans. There are a number of environmental, political, and social and influences that impact water-related regulatory practices. Principally, cities are most concerned with drinking water quality and management, wastewater management, storm water management, and coastal resilience. Due to water's inextricable link to urban prosperity, leadership is increasingly moving safeguarding water supplies to ensure population demands do not overwhelm systems,

intense rain and flooding does not contaminate potable water, and that water can be accessed and sourced from clean and well-regulated sources.

5c. Promotion of Transformational Resilience in CAP

There is critical evidence that despite technological and infrastructural development within cities, variations in climate will be detrimental to the mental health and safety of all people. (Doppelt 2017; Bellard et al. 2012; Fritze et. al, 2008; McMichael, Woodruff, Hales, 2006).

> *"The prevailing mantra in the climate field is that reducing GHG emissions, hardening physical infrastructure and adapting agriculture and other natural assets to withstand climate impacts, mainly through better science and new technologies, are what matter most." (Doppelt, 2017, pg. 9).*

While this mantra is significant in addressing many facets of the climate emergency, Doppelt argues that the sole reliance on technical fixes will simply not be enough to ameliorate the devastation imposed from climate change. He warns that in the absence adequate policies and educational networks to provide tools, skills, and resources for substantiating transformational resilience, "climate disruption will create a bleak future for most of humanity" (Doppelt, 2017, pg. 9).

Addressing this future with innovative and optimistic perspective, Doppelt characterizes the capacity to overcome climate adversity as Transformational Resilience (TR). He argues that "using toxic stress associated with climate disruption as catalysts to finding new sources of meaning and hope" will aid in alleviating many psycho-social-spiritual maladies (2017, pg.11). Bob Doppelt's definition and movement of TR seeks to provide safeguarding mechanisms to increase well-being by addressing the psychological, social, and spiritual elements of climate disruption and increased warming.

As cities continue to grow and urbanize, significant mental and physical threats threaten communities as a result of climate. Some of the foreseen impacts include increases in toxic stresses and trauma, fear of personal safety, depletion and destruction of social and financial resources, domestic violence, organized crime, and other mental and physical health impacts (Doppelt, 2017; Fritze et. al, 2008). Researchers in the fields of neuroscience, psychology, sociology, history and social movement, counseling, and education are quickly galvanizing to address region-specific ways to integrate TR into common practice. They are able to do this by providing behavioral analyses for consumption patterns, wealth generation, perceptions of want and need, and contextualizing norms against the weighted projections of climate disruption (Swim et. al, 2009).

TR uses many different components both individually and organizationally to achieve multiple models of resilience. Similar to the techniques used by intentional communities, TR emphasizes acknowledgement and adherence to one's core values, pursuance of enlightenment amidst adversity, and altering perspective and narrative to restructure worldview and perceptions to overcome trauma (Doppelt, 2017). Doppelt draws an important distinction between values, goals, and results which is particularly important in context of CAP within cities. He claims that values are not the same as goals, as values cannot merely be obtained. Values are rather a set of intrinsic guidelines that determine action for the achievement of goals. Values are also not rules, as they should not contain directives that are "restrictive and burdensome" (Doppelt. 2017, pg. 172). Values instead are the opposite of rules, and provide free space to think, learn, grow, and cultivate one's being in a community with enrichment for others.

Pervasive hope can only be substantiated through a positive vision of the future. This is something both CAPs and TR can accomplish simultaneously. By following the directive steps of "1) Acknowledging the situation, 2) Reviewing the best practices for self-care, 3) Accurately describing external physical dynamics and circumstances, 4) Visioning future ramifications and likely conditions can and will assist in reframing the reality of climate disruption while assisting in presencing and preparation for change. Engaging with this visioning process means being honest within the descriptive imagination and creating scenarios of how situations could be better or worse. This includes conceptualizing what physical skills (i.e. climbing, making a fire, etc.) and mental skills (critical problem-solving, witnessing and diffusing arguments, etc.), as well as the incorporation of "magical thinking" to promote "optimism and self-transcendence" (Doppelt, 2017, pg.193).

Community engagement ranked among one of the important components of climate planning. CAPs must engage in these deeper intrinsic qualities of human resilience and imagination if any objectives are to be achieved and progress sustained. Individuals, businesses, organizations, government entities must become trauma-informed. This means observing and discussing their purpose, values, and visions for success. It also means establishing regulation of emotion and agreement about shared practice (Doppelt, 2017, pg. 215-217). To form attainable city and climate objectives, fragmented silos and functions must be unified, acknowledge and work to correct injustice, allow for grieving, loss, and healing, incorporate interdisciplinary decision-making, emphasize trust, empathy, compassion, and support, and finally acknowledge the importance of personal safety and health (Doppelt, 2017, pg. 215-217).

Ways for cities, community educators, and behavioral health specialists can accomplish these tasks are through the use of meditation and mindfulness. Companies such as IBM and Aetna are incorporating mindfulness skills and offering yoga to their employees to facilitate clearer thinking and stabilize stress and emotions (Doppelt, 2017, pg. 228). In 2014, Aetna found that 28% of workers experienced a reduction in stress and a raise in productivity time by about 62 minutes, or a return of about $3,000 per employee. (Doppelt, 2017, pg. 228).

If cities adequately leverage the culture of their organizations to restructure rules for engagement, communities would more fluidly adhere to structural and cultural changes due to climate disruption. To achieve this, new social narratives must entirely reimagine and reinvigorate what cities could be and how they should operate. This would result in an altering of principles and guidelines and redistribute the flow of information within and between city entities to influence regional perspective (Doppelt, pg. 241-243). Working together to adjust policies, procedures, and regulations to accommodate collective moral value, health, equity, as well as create a clean energy and eco-centric socio-economic culture are the primary outcomes of transformational resilience.

It is imperative CAP objectives on public health and infrastructural planning be framed around reimagining community health, wellness, livability, and access. Incorporating inclusive communities into land use development, reinvigorating urban development to incorporate green technological innovations, and administering transformational resilience practices into schools, businesses, institutions, and governments will be critical for local and regional process on climate. All three mechanisms cover the importance of mitigation and adaption and create opportunities for

communities to connect through contributive problem-solving. It is becoming apparent that this type of collaboration is needed to reduce losses and empower community to motion toward solutions (Pearce et al., 2009; Van Aalst, Cannon, & Burton, 2008).

Conclusion
Re-CAP

This research addressed the question, *what factors shape the decision-making process of small- and medium-sized city Climate Action Plan creation, and how do these plans differ across municipalities in Western Washington and Oregon?* The combined outcomes of the Climate Actions Inventory (CAI) and city-staff and consultant interviews indicate that limitations within municipal governments (i.e. city-staff, financial impediments, utility management discrepancies, etc.) are very significant. Cites that are able to incorporate environmental elements into comprehensive plans are largely driven to do so by regional climate vulnerabilities and risks, land use changes and population fluctuations, and community advocacy and demand.

This research concludes with the critical point that PNW cities remain within what Wheeler (2008) calls "the first generation of climate action planning." Remaining consistent with the findings of Wheeler (2008) climate change planning should: 1) in corporate objectives rooted in feasible outcomes, 2) monitored regularly and revised as necessary, 3) prioritize adaptation and mitigation equally, 4) include resource commitments necessary for implementation, and 5) deepen the need for fundamental changes in behavior within the community (Wheeler, 2008, pg. 481). Many cities struggle to create plans that are designed to adequately achieve emissions reduction targets. This is due to the formation of action items that are too broad in nature, possess no implementation strategy, and have no assigned budgets.

Municipal and environmental planning specialists express deep frustrations from limited resources. These emotions stem from the acknowledging the importance of strengthening mitigation goals and solidifying adaptation strategies within the

community. Planners are specifically focused on land use and development as a means to address issues of homelessness, affordable housing, transportation ease and access, and to accommodate growing populations. Many planners believe that deepening collaboration between cities and communities can bolster regional understanding of these changes and can help to inform cities across planning scales.

While climate change is a priority for some municipalities, levels of commitment for achieving climate objectives vary throughout Washington and Oregon. Overall, Washington has a higher number of average actions per city. This could be for a variety of reasons such as faster growth rates, and memberships to organizations like Local Governments for Sustainability (ICLEI) and the Global Compact of Mayors. Additionally, many WA cities have selected to consultants to mediate community relations and inform CAP structure and objective and have incorporated growth management and state mandates into climate planning possess. These all create commonalty between neighboring cities and therefore result in increased reflection of regional perspectives in planning documents. However, Oregon cities are also strengthening their commitments to address climate, with Ashland, OR a shining example of how community determination and political will can infuse to create an actionable and robust plan.

Though climate strategies are intentioned to reduce emissions, for CAPs to be most impactful actions be centered on community participation and behavioral change. Municipal formation of CAP should be harnessing the concepts of communal living and intentional communities and ensuring infrastructure and green technologies are harnesses to redefine and reimagine the urban landscape. Urbanism must be scoped through socio-

ecological models and foundations of ecocentrism, which emphasizes human operations on the basis of the natural health of the environment (Eskersley, 1992;

Finally, the wellness of individuals and communities must be a key motivation of cities when forming CAPs. There is little to no mention particularly of the mental health impacts of climate or associated strategies to directly assess mental illness. The future of climate planning must emphasize nurturing relationships to reduce stress during times of hardship and improve the ability to overcome depression (O'Neill et al. 2014). It can be anticipated that the "next generation of CAPs" creatively integrate instruction for planners, professionals, active community members, and many other to value the principles of mental wellness. This can occur through creating new narratives, forming resilience team and advisory boards, communicating the mission and purpose, and embedding new policies and regulations into standard operating procedures (Doppelt, 2017, pg. 243)

In conclusion, climate action planning presents significant challenges. However, policy innovation and development of CAPs is both continuously evolving and endlessly promising. This research was conducted with the hope that cities will use its findings as a tool for construction and reformation of their climate and municipal plans. Additionally, findings from this project will be useful for those seeking to further insight about local climate policy creation and its local and regional impact. Together, cities can formulate key strategies to regionally align performance criteria, create incentives and reward systems within communities, change purchasing and procedures that facilitate behavioral transitions to sustainable practices, and build capacity for health and transformational resilience (Doppelt, 20217, 242).

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Appendix A: Interview Questions for Municipal City Staff

1. What are your city's climate reduction targets?
2. Is your city on track to meet these targets?
3. What have been some major barriers or setbacks to planning?
    a. What have been your greatest achievements?
4. Does your city consider a long-term or short-term planning process?
5. How much has CAP cost your municipality?
6. Who is the primary leadership working on emissions reduction?
    a. City-staff
    b. Consultants
    c. Community/Academic
7. Has your city used outside consultation for GHG inventory work or CAP formation?
    a. Has working with them been a positive experience?
8. Is your city an ICLEI member city? If so, has membership been beneficial?
    a. Has ICLEI connected you to others in the region working on CAP?
9. How is your city monitoring emissions reduction?
10. Does your city have an implementation plan?
11. Is your city in communication with others in the region for information-sharing?
12. What is the primary political association of your city council? Of your community?
13. Do you know if people want CAP in their community? Is there urgency?
14. What does the community expect the municipality to do/services to provide?
15. What has been the cost of CAP planning?
    a. Is cost a significant barrier?

Appendix B: List of Interview Questions for Consultants

1. How does your work with municipalities influence the PNW?
2. What services do you provide for emissions reduction?
3. How much do your services cost?
4. What trends do you see between municipalities?
    a. What are the similarities? (in leadership, in strategies, targets, etc.)
    b. What are some of the major differences between municipalities?
5. What new knowledge and innovation are you developing?
6. What are some of the largest barriers to CAP development you notice?
   a. What are these for implementation?
7. What are some of the best successes?
8. How does a small municipality initiative become a regional effort? (Has it happened before?)
9. Do you think cost of service is a major barrier for cities when they are considering developing a CAP?
    a. How do you believe you can remedy this concern?
10. What are some other barriers you notice?