

SCALES OF LAW: RETHINKING CLIMATE CHANGE GOVERNANCE

by

HARI M. OSOFSKY

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DISSERTATION APPROVAL PAGE

Student: Hari M. Osofsky

Title: Scales of Law: Rethinking Climate Change Governance

This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Geography by:

| | |
|---------------------|------------------------------|
| Alexander B. Murphy | Chair |
| Susan W. Hardwick | Core Member |
| W. Andrew Marcus | Core Member |
| Kyu Ho Youm | Institutional Representative |

and

| | |
|-----------------------|--|
| Kimberly Andrews Espy | Vice President for Research and Innovation; Dean of the Graduate School |
|-----------------------|--|

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

Degree awarded June 2013.

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DISSERTATION ABSTRACT

Hari M. Osofsky

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Title: Scales of Law: Rethinking Climate Change Governance

The international treaty regime on climate change is failing to address this problem adequately and cannot fully capture the scales of the problem or of efforts to address it. This dissertation draws from geographic conceptions of scale and legal governance theory to: (1) argue for the value of polycentric, multi-scalar approaches to climate change governance, (2) explore the nuances of what such approaches entail, and (3) propose strategies for improving their effectiveness. It does so by applying these theoretical approaches to three case studies: climate change litigation, federal climate change regulation, and suburban action on climate change. For each of these case studies, it demonstrates the complexity of defining scales and scalar dynamics and considers how the activity being described does and should fit into multi-scalar governance approaches. It concludes by reflecting upon the lessons from the case studies for how to understand the geography of multi-level governance approaches and to approach its core principles of hybridity, multi-scalar, and inclusion.

This dissertation includes previously published material.

CURRICULUM VITAE

NAME OF AUTHOR: Hari M. Osofsky

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene
Yale Law School, New Haven, Connecticut
Yale College, New Haven, Connecticut

DEGREES AWARDED:

Doctor of Philosophy, Geography, 2013, University of Oregon
Juris Doctor, 1998, Yale Law School
Bachelor of Arts, Philosophy and Studies in the Environment, 1993, Yale College

AREAS OF SPECIAL INTEREST:

Climate Change and Energy Transition
Law and Geography
Multi-Scalar Governance

PROFESSIONAL EXPERIENCE:

Associate Professor with Tenure, University of Minnesota Law School,
Minneapolis, 2010 to Present

Affiliated Faculty, Conservation Biology & Geography, Environment and
Society; Fellow, Institute on the Environment, University of Minnesota,
Minneapolis, 2010 to Present

Interim Director, Consortium on Law and Values in Health, Environment & the
Life Sciences and Joint Degree Program in Law, Health & the Life Sciences,
University of Minnesota, 2012-Present

Associate Director of Law, Geography & Environment, Consortium on Law and
Values in Health, Environment & the Life Sciences, 2010–2012

Associate Professor, Washington and Lee University School of Law, Lexington,
VA, 2008-2010

Assistant Professor, University of Oregon School of Law, Eugene, 2006-2008

Visiting Assistant Professor, University of Oregon School of Law, Eugene, 2005-2006

Assistant Professor and Director, Center for International and Comparative Law, Whittier Law School, Costa Mesa, CA, 2003-2006

Fellow (Non-Residential), Carnegie Council for Ethics and International Affairs, New York, NY 2003-2004

Adjunct Professor, Loyola Law School, Spring 2003

Visiting Assistant Professor, Vermont Law School, South Royalton, VT, Fall 2002

Visiting Scholar, Yale-China Legal Education Fellow, and China Law Center Fellow, Sun Yat-sen (Zhongshan) University School of Law, Guanzhou, China, 2001-2002

Fellow, Center for Law in the Public Interest, Los Angeles, CA, 1999-2001

Law Clerk, Judge Dorothy W. Nelson, 9th Circuit Court of Appeals, Pasadena, CA, 1998-1999

Visiting Lecturer, Yale College of Arts and Sciences, New Haven, CT, Spring 1998

Research Assistant, Professor Daniel C. Esty, Yale Law School, New Haven, CT, 1997-1998

Research Assistant and Teaching Assistant, Professor Judith Resnik, Yale Law School, New Haven, CT, Fall 1997

Summer Legal Intern, Office of the Legal Adviser, Political-Military Affairs, United States Department of State, Washington, D.C., Summer 1997

Summer Intern, Hong Kong Human Rights Monitor, Hong Kong, Summer 1997

Assistant Director for Programs, Global Environment and Trade Study, New Haven, CT, 1995-1997

Research Assistant, Professor W. Michael Reisman, Yale Law School, New Haven, CT, Spring 1997

Summer Intern, Redress Trust, London, England, Summer 1996

Summer Intern, Foundation for International Environmental Law and Development, London, England, Summer 1996

Part-Time Development Assistant to Executive Director, Supportive Children's Advocacy Network, New York, NY, 1994-1995

Urban Fellow, New York City Department of General Services, New York, NY, 1993-1994

GRANTS, AWARDS, AND HONORS:

2013-14 Fesler-Lampert Chair in Urban and Regional Affairs, University of Minnesota

Grant from Australian Research Council with Jacqueline Peel, 2013-Present

Grant from Initiative for Renewable Energy and the Environment with Elizabeth Wilson and others, 2012 to Present

Grant from the University of Minnesota Institute for Advanced Study with Bradley Karkkainen, 2010-2012

Grant from University of Minnesota Institute on the Environment with Alexandra Klass and Elizabeth Wilson, 2012

Lampert Fesler Research Fellow, University of Minnesota Law School, 2011

Awarded the Association of American Geographers' Climate Specialty Group's Student Paper Competition, 2011

Awarded the Daniel B. Luten Award for the Best Paper by a Professional Geographer by the Association of American Geographers' Energy and Environment Specialty Group, 2008

Runner-Up for *Land Use and Environment Law Review's* Annual Compilation of the Top Land Use and Environmental Law Articles, 2007 and 2006

PUBLICATIONS:

HARI M. OSOFSKY & LESLEY K. MCALLISTER, CLIMATE CHANGE LAW AND POLICY (*Elective Series*) (2012, Aspen Publishers).

Hari M. Osofsky, *Suburban Climate Change Efforts: Possibilities for Small and Nimble Cities Participating in State, Regional, National, and International Networks*, 22 CORNELL J. L. & PUB. POL'Y 35 (2012).

Hari M. Osofsky, Kate Baxter-Kauf, Bradley Hammer, Ann Mailander, Brett Mares, Amy Pikovsky, Andrew Whitney & Laura Wilson, *Environmental Justice and the BP Deepwater Horizon Oil Spill*, 20 N.Y.U. ENV'T'L L.J. 99 (2012).

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- Hari M. Osofsky, *Litigation's Role in the Path of U.S. Federal Climate Change Regulation: Implications of AEP v. Connecticut*, 46 VALPARAISO U. L. REV. 447 (2012).
- Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 FLORIDA L. REV. 1077 (2011).
- Hari M. Osofsky, *The Role of Climate Change Litigation in Establishing the Scale of Energy Regulation*, 101 ANNALS ASSOC. AM. GEOGRAPHERS 775 (2011) (special issue on Energy).
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- Hari M. Osofsky, *Scaling "Local": The Implications of Greenhouse Gas Regulation in San Bernardino County*, 30 MICH. J. INT'L L. 689 (2009).
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- 2 HUMAN RIGHTS DIALOGUE 11 (Joanne Bauer & Hari M. Osofsky, eds.) (Carnegie Council on Ethics and International Affairs, 2004).
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CHAPTER I

INTRODUCTION: WHY THE GEOGRAPHY OF SCALE MATTERS TO CLIMATE CHANGE REGULATION

This chapter contains edited portions of Hari M. Osofsky, *Climate Change and Crises of International Law: Possibilities for Geographic Reenvisioning*, 44 CASE W. RES. J. INT'L L. 423 (2011).

Climate change is one of the most vexing problems facing the United States and the world today. This problem's human and physical geography is an important part of what makes it so hard to solve. Climate change interacts with multiple levels of governance, from the international to the sublocal. It involves a wide range of governmental and nongovernmental participants at those different levels with geographic ties to a variety of places around the United States and world. The applicable legal frameworks constitute and are constituted by cultural, economic, political, and social conditions in those places.

This dissertation argues that the primary approach to addressing climate change through law fails to engage its complex, multi-scalar geography. Rather, it tries to match the scale of law to what is viewed as the primary scale of the problem. Specifically, because climate change clearly has global dimensions, nation-states have tried to solve it through international law. The dominant multilateral climate change regime consists of the United Nations Framework Convention on Climate Change (UNFCCC)¹ and agreements negotiated under that convention. The UNFCCC provides general

¹ See United Nations Framework Convention on Climate Change, May 9, 1992, S. TREATY DOC NO. 102-38, 1771 U.N.T.S. 107 [hereinafter UNFCCC], available at http://untreaty.un.org/English/notpubl/unfccc_eng.pdf.

commitments and a structure for achieving more specific targets and timetables.² Parties to the UNFCCC meet regularly in conferences under its auspices, most recently in Doha in 2012, to attempt to negotiate additional agreements. The 2011 Conference of the Parties (COP) in Durban resulted in an agreement to reach a universal agreement by 2015 and established an “Ad Hoc Working Group on the Durban Platform for Enhanced Action” to begin negotiating towards this 2015 goal.³ These efforts are complemented by the December 2012 decision of thirty-seven of the Parties to the Kyoto Protocol⁴—the only agreement negotiated under the UNFCCC which provides binding targets and timetables—to extend that Protocol to a second commitment period running from 2013–2020.⁵

The dominant international-law-focused approach to climate change faces two difficult geographical challenges that undergird this dissertation’s analysis. First, and least problematically for an account in which we solve “global” problems through international treaties, this scale-matching approach is not adequate on its own to solve the problem. The existing regime and negotiations are struggling to achieve their goals.⁶ The Kyoto

² *Id.*

³ See Draft decision -/CP.17, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action (Advance unedited version), Nov./Dec., 2011, http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durbanplatform.pdf (last visited Jan. 20, 2011).

⁴ Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22 (1998).

⁵ Outcome of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol, 8 December 2012, Draft Decision -/CMP.8, FCCC/KP/CMP/2012/L.9, available at <http://unfccc.int/resource/docs/2012/cmp8/eng/109.pdf>.

⁶ I have explored these failures in my prior scholarship, some of which is reproduced in this dissertation. See, e.g., Hari M. Osofsky, *Is Climate Change “International”?: Litigation’s Diagonal Regulatory Role*, 49 VA. J. INT’L L. 585 (2009).

Protocol's first period commitments were not enough to close the emissions gap and some parties failed to meet even those limited commitments. Moreover, participation by important developed country emitters in the Kyoto regime is declining. Despite its active role in initial negotiations, the United States, the largest total developed country emitter, never joined.⁷ Key emitters that participated in the first commitment period—most notably, Canada, Japan, and Russia—are not making second period commitments.⁸ Even if nation-states successfully negotiate a rigorous universal agreement under the Durban Platform process, which seems unlikely, such an agreement will not come into effect until we are even further down the path of inadequate mitigation.⁹

These difficulties do not necessarily suggest the need for innovative geographical theorizing about climate change governance. A Westphalian¹⁰ narrative of addressing this vexing problem, which focuses on international law arising from the consent of sovereign and equal nation-states, would likely acknowledge the regime as creating limited international legal obligations and assess it as not entirely successful in achieving its

⁷ LEGAL ASPECTS OF IMPLEMENTING THE KYOTO PROTOCOL MECHANISMS: MAKING KYOTO WORK (David Freestone & Charlotte Streck eds., 2005); RUSSIA AND THE KYOTO PROTOCOL: OPPORTUNITIES AND CHALLENGES (Anna Korppoo et al. eds., 2006); Alastair R. Lucas, *Mythology, Fantasy and Federalism: Canadian Climate Change Policy and Law*, 20 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 41, 52–56 (2007).

⁸ Outcome of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol, 8 December 2012, Draft Decision -/CMP.8, FCCC/KP/CMP/2012/L.9, available at <http://unfccc.int/resource/docs/2012/cmp8/eng/l09.pdf>.

⁹ Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action, 15 Mar., 2012, Decision 1/CP.17, FCCC/CP/2011/9/Add.1, available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

¹⁰ By “Westphalian,” I mean guided by the core notions of nation states as primary subjects and objects of international law and of international law being created through the consent of sovereign and equal nation-states. For expositions of Westphalian understandings of international law, see IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 287–88 (6th ed. 2003); Michael J. Kelly, *Pulling at the Threads of Westphalia: “Involuntary Sovereignty Waiver”—Revolutionary International Legal Theory or Return to Rule by the Great Powers*, 10 UCLA J. INT’L L. & FOREIGN AFF. 361, 383 (2005).

goals.¹¹ However, the substantive problem of addressing climate change effectively through international law at that scale would remain. A core question that this dissertation asks is whether current international legal efforts should focus primarily on achieving better agreements in negotiations among nation-state parties, or whether more inclusive geographic conceptions of climate change governance which shift that focus somewhat might actually serve as a tool in addressing this problem.

Second and more fundamentally, there is a great deal of activity with legal significance on climate change outside of the UNFCCC structure. Some of this activity includes a wide range of additional formal international legal agreements among nation-states, which, for completeness, should be included in even a traditional account of international law creation.¹² For example, the Montreal Protocol's¹³ efforts to address ozone have a significant impact on greenhouse gas emissions.¹⁴ In addition, and less acknowledged in most of the commentary on the UNFCCC, nation-states have crafted many bilateral and multilateral agreements (with fewer parties) on relevant issues such as alternative/renewable energy.¹⁵ These agreements arguably should also be included in almost any account of problem solving relevant to climate change.

¹¹ For an in-depth discussion of a Westphalian approach compared to other approaches, see *infra* Chapter XIV.

¹² I have discussed some of this activity in Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 ALABAMA L. REV. 237 (2011).

¹³ Montreal Protocol on Substances that Deplete the Ozone Layer art. 5, Sept. 16, 1987, 26 I.L.M. 1550.

¹⁴ For an analysis of the relationship between the Montreal Protocol and climate change and a proposal for the future, see Mark W. Roberts & Peter M. Grabel, *A Window of Opportunity: Combating Climate Change by Amending the Montreal Protocol to Regulate the Production and Consumption of HFCs and ODS Banks*, 22 GEO. INT'L ENVTL. L. REV. 99 (2009).

¹⁵ See, e.g., Press Release, White House, U.S.-Mexico Announce Bilateral Framework on Clean Energy and Climate Change (April 16, 2009), available at http://www.whitehouse.gov/the_press_office/US-Mexico-

The conceptual conundrum comes not from these additional formal agreements among nation-states, though they contribute to the simultaneous overlap and fragmentation of international law. Rather, the complexity arises from the geography of the many less formally binding agreements and interactions among nation-states and among a broader range of other governmental and nongovernmental entities. This dissertation focuses in particular on multi-level interactions about climate change taking place through litigation, the formulation of the Obama Administration's approach to reducing greenhouse gases, and efforts by cities. As relevant entities and individuals help to constitute, and are influenced by, multiple levels of governance, they help to shape climate change mitigation and adaptation in fundamental ways that an analysis focused only on the treaty regime cannot fully capture.

As with the first problem of insufficient formal international law, one could use a traditional, Westphalian approach to global problem solving with its focus on international-scale decisionmaking through national-scale actors to describe these complex interactions. The lawsuits, policies, and agreements that are the focus of this dissertation have no formal international legal significance under traditional notions of international law. They involve many subnational and nongovernmental actors who, as a matter of international law, are not subjects and objects of international law and could rescind their commitments at any time. With the exception of formally unsuccessful petitions to the Inter-American Commission on Human Rights and the World Heritage Commission, the

Announce-Bilateral-Framework-on-Clean-Energy-and-Climate-Change; International Council on Clean Transportation, *Athens Resolution* (2010), <http://www.transport2012.org/bridging/ressources/files/1/1138,ICCT-Athens-Resolution.PDF>; Press Release, White House, U.S.-China Energy Announcements (Nov. 17, 2009), *available at* <http://www.whitehouse.gov/the-press-office/us-china-clean-energy-announcements>.

lawsuits are in national-level and sub-national-level courts. Similarly, the Obama Administration's decisions about how to structure its approach to reducing greenhouse gas emissions take place within the U.S. nation-state. Commitments in the agreements by cities to reduce climate change likewise involve subnational, not international, legal action. Under the Statute of the International Court of Justice, agreements among cities and states would not serve as sources of international law. They are not treaties, and are unlikely to be treated as evidence of nation-states' customary international law obligations or of the general legal principles that they recognize.¹⁶ Moreover, the lawsuits, policies, and subnational agreements and actions do not need formal international legal significance to help supplement the international legal efforts by nation-states under the UNFCCC. They all can be treated as part of the nation-state meeting its commitments.

However, such a description captures the transnational, multi-level geography of these national and subnational activities in a limited fashion that this dissertation argues is inadequate. In this description, the lawsuits, policies, and agreements among localities are legally insignificant. Their actions only matter to international law-making to the extent that they influence nation-states' behavior in the UNFCCC meetings or help them to meet their commitments.¹⁷

This dissertation analyzes how the geography literature's nuanced engagement of scale can help to provide a needed fuller understanding. The dissertation represents the culmination of several years of work on multi-level climate change governance and contains edited portions of several solo-authored articles and book chapters that I have

¹⁶ See Statute of the International Court of Justice art. 38, June 26, 1945, 59 Stat. 1055, 33 U.N.T.S. 993.

¹⁷ For further discussion of local participation in international climate change negotiations, see Chapter XIII.

permission/authority to reproduce here. By chapter in the dissertation, these articles and book chapters include: Chapter I: Hari M. Osofsky, *Climate Change and Crises of International Law: Possibilities for Geographic Reenvisioning*, 44 Case W. Res. J. Int'l L. 423 (2011); Chapter II: Hari M. Osofsky, *The Geography of Justice Wormholes: Dilemmas from Property and Criminal Law*, 53 Villanova L. Rev. 117 (2008), and Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 Florida L. Rev. 1077 (2011); Chapter III: Hari M. Osofsky, *Is Climate Change "International"?: Litigation's Diagonal Regulatory Role*, 49 Va. J. Int'l L. 585 (2009); Chapter IV: Hari M. Osofsky, *The Intersection of Scale, Science, and Law in Massachusetts v. EPA*, 9 Oregon R. Int'l L. 233 (2007); Chapter V: Hari M. Osofsky, *Is Climate Change "International"?: Litigation's Diagonal Regulatory Role*, 49 Va. J. Int'l L. 585 (2009); Chapter VI: Hari M. Osofsky, *Is Climate Change "International"?: Litigation's Diagonal Regulatory Role*, 49 Va. J. Int'l L. 585 (2009); Chapter VII: Hari M. Osofsky, *Is Climate Change "International"?: Litigation's Diagonal Regulatory Role*, 49 Va. J. Int'l L. 585 (2009); Chapter VIII: Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 Alabama L. Rev. 237 (2011); Chapter IX: Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 Alabama L. Rev. 237 (2011); Chapter X: Hari M. Osofsky, Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 Alabama L. Rev. 237 (2011), and Hari M. Osofsky, *Litigation's Role in the Path of U.S. Federal Climate Change Regulation: Implications of AEP v. Connecticut*, 46 Valparaiso U. L. Rev. 447 (2012); Chapter XI: Hari M. Osofsky, *Suburban Climate Change Efforts: Possibilities for Small and Nimble*

Cities Participating in State, Regional, National, and International Networks, 22 Cornell J. L. & Pub. Pol’y 35 (2012); Chapter XII: Hari M. Osofsky, *Suburban Climate Change Efforts: Possibilities for Small and Nimble Cities Participating in State, Regional, National, and International Networks*, 22 Cornell J. L. & Pub. Pol’y 35 (2012); Chapter XIII: Hari M. Osofsky, *Suburban Climate Change Efforts: Possibilities for Small and Nimble Cities Participating in State, Regional, National, and International Networks*, 22 Cornell J. L. & Pub. Pol’y 35 (2012); Chapter XIV: Hari M. Osofsky, *The Creation of the International Law of Climate Change Complexities of Sub-State Actors, in Non State Actors, Soft Law and Protective Regimes* 355 (Cecilia M. Bailliet, ed.) (2012, Cambridge University Press), and Hari M. Osofsky, *Multiscalar Governance and Climate Change: Reflections on the Role of States and Cities at Copenhagen*, 25 Maryland J. Int’l L. 64 (2010).

Over the past two decades, an extensive body of work has emerged in geography that asks basic questions about what scale is and how it interacts with society.¹⁸ Yet this scholarship’s analysis of law is often quite limited and legal commentators’ rarely grapple significantly with this literature or engage explicitly the issues raised by it. Even the developing law and geography scholarship tends to focus more on space and place than on scale.¹⁹ This dissertation fills that gap by showing how the geography scale literature could be intertwined with theoretical work in law and other disciplines on scale to inform

¹⁸ For a discussion of that literature, see *infra* Chapter II.

¹⁹ For example, neither of the broad anthologies on law and geography has scale as a central focus. See LAW AND GEOGRAPHY (Jane Holder & Carolyn Harrison eds., 2003); THE LEGAL GEOGRAPHIES READER: LAW, POWER AND SPACE (Nicholas Blomley, David Delaney & Richard T. Ford eds., 2001). Similarly, leading law and geography scholar David Delaney’s most recent book, which attempts to create a new vision for law and geography, focuses on spatiality and law without significant discussion of scale. DAVID DELANEY, NOMOSPHERIC INVESTIGATION: THE SPATIAL, THE LEGAL AND THE PRAGMATICS OF WORLD-MAKING 31–33 (2010).

more “polycentric”²⁰ approaches to climate change governance. The rest of this introductory part frames the remainder of the dissertation by providing an in-depth discussion of these scholarly literatures in Chapter II and the multi-scalar nature of climate change and regulation of it in Chapter III.

Building on that conceptual base, the dissertation provides three in-depth case studies of multi-scalar dynamics in U.S. efforts to address climate change in order to explore this geography and consider its governance implications. First, as discussed in Chapter IV through VII of the dissertation, many key actors in the international negotiations interact with a wide variety of public and private entities and individuals through litigation over climate change. Second, as explored in Chapters VIII through X, U.S. national approaches to climate change, which influence international negotiations, involve complex multi-scalar interactions and choices about how to include key actors at multiple levels. Third, the agreements to mitigate emissions reached among cities, states, and provinces during negotiations parallel to the last several COPs—discussed in Chapter XI through XIII—include significant emissions reduction pledges from subnational governments located within nation-states that are making much more limited national-level commitments. At a local level, these leader cities vary in their characteristics, needs, and participation in multi-level networks; suburban mitigation plays a critical role in reducing metropolitan emissions.²¹

²⁰ Elinor Ostrom, *A Polycentric Approach for Coping with Climate Change*, Background Paper, World Bank’s *World Development Report 2010: Development in a Changing Climate* (2009).

²¹ I have previously analyzed these agreements and the dilemmas that they pose for international lawmaking in Hari M. Osofsky, *Multiscalar Governance and Climate Change: Reflections on the Role of States and Cities at Copenhagen*, 25 MD. J. Int’l L. 64 (2010).

While acknowledging that an analysis focused on the United States is incomplete and often not generalizable, the dissertation chooses to base its three case studies within one nation-state in order to achieve greater depth of analysis. Each nation-state has a distinct physical geography, political and legal system and tradition, and social and cultural context. Within a large state like the United States, there is substantial internal variation. By looking at three different variations of multi-scalar climate change governance that have their primary place-based ties to the United States, the dissertation is able to interconnect the case studies and their significance for governance more clearly.

The dissertation chooses the United States in particular as its area of focus because of that nation-state's status as a major developed country greenhouse gas emitter that has made comparatively limited international- and national-level commitments. The United States has the second largest total emissions in the world, surpassed only by China. Moreover, its per capita emissions are far higher than China's, the seventeenth highest in the world as of 2009.²² Its greenhouse emissions, including carbon dioxide emissions from fossil fuels, have been consistently increasing over time, including during the past decade.²³ It also is one of the largest producers in the world of oil, coal, and natural gas.²⁴ The dissertation provides extensive consideration of electricity generation and

²² LARRY PARKER & JOHN BLODGETT, CONG. RESEARCH SERV. RL32721, GREENHOUSE GAS EMISSIONS: PERSPECTIVE ON THE TOP 20 EMITTERS AND DEVELOPED VERSUS DEVELOPING NATIONS (2010); Mark McCormick & Paul Scruton, *World Carbon Dioxide Emissions Data by Country*, THE GUARDIAN, Jan. 31 2011, available at <http://www.guardian.co.uk/news/datablog/2011/jan/31/world-carbon-dioxide-emissions-country-data-co2?intcmp=239>.

²³ E.P.A., DRAFT INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990 – 2010 (2012).

²⁴ WORLD ENERGY COUNCIL, SURVEY OF ENERGY RESOURCES 2010 (World Energy Council 22d ed. 2010).

transportation in its three case studies because those two sectors together comprised 61 percent of total U.S. greenhouse gas emissions in 2010.²⁵

Despite the significant U.S. contribution to the problem of climate change through these comparatively high emissions levels, the United States, as discussed in depth in Chapter VIII, has not joined the Kyoto Protocol or passed comprehensive climate change legislation.²⁶ This failure to act at larger scales—particularly under President George W. Bush’s administration—paired with its democratic, federalist, common-law-based legal system has made the United States a particularly ripe environment for litigation and subnational action. Although each of the dissertation’s three examples centers around distinct legal interactions and particular types of law, they share core similarities. They all reflect the U.S. legal system’s delineation of levels of governance—local, state, national, regional, international—and the ways in which action at one level interacts with multiple levels. With the rapid pace of globalization, the intertwining of law, society, culture, and economy at different levels of governance has only become more marked.²⁷ These case studies also illustrate the immense complexity involved in addressing problems similar to climate change, which are so hard to solve that they could accurately be described as “wicked,” and maybe even “super wicked.”²⁸

²⁵ E.P.A., DRAFT INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS, *supra* note 23.

²⁶ *See infra* Chapter VIII.

²⁷ An extensive scholarly debate exists over what globalization means and what its implications should be. For a useful summary of that discourse, see David Held & Andrew McGrew, *The Great Globalization Debate: An Introduction*, in *THE GLOBAL TRANSFORMATIONS READER: AN INTRODUCTION TO THE GLOBALIZATION DEBATE 1* (David Held & Andrew McGrew, eds., 2d ed., 2003); *see also* Terence C. Halliday & Pavel Osinsky, *Globalization of Law* 32 *ANNUAL REV. SOCIOLOGY* 447 (2006).

²⁸ Richard Lazarus has argued that climate change is not simply a wicked problem, but a super wicked one because it becomes harder to solve over time, those who have the power to address it have conflicting incentives, and there is not an adequate institutional framework to address it. *See* Richard J. Lazarus, *Super*

The dynamics explored in the case studies infuse climate change governance, which makes the application of geography's richer understanding of scale particularly relevant to this context. As described in more depth in Chapter III, regulatory efforts simultaneously involve individual choices, local land use planning, state land use planning and energy law, regional efforts and markets, federal legislation (mostly the Clean Air Act due to the stalled efforts at comprehensive climate change legislation) and financial incentives, and treaty negotiations under the United Nations Framework Convention on Climate Change (UNFCCC).²⁹ These different regulatory pieces are not simply discrete interactions happening at multiple levels; many interactions cross-cut levels, such as climate change lawsuits involving states on both sides of the dispute, as well as the federal government and nongovernmental coalitions of NGOs and corporations.³⁰ Geographical approaches to scale help to provide a richer understanding of these dynamics, and the ways in which they are both constitutive of and constituted by different scales and their interaction.

As explored in more depth in Chapter II, this dissertation interweaves geographic conceptions of scale with multiple other types of theory: dynamic and intersystemic

Wicked Problems and Climate Change: Restraining the Present to Liberate the Future, 94 CORNELL L. REV. 1153 (2009).

²⁹ For a discussion of these multi-level aspects of climate change governance, see Hari M. Osofsky, *Is Climate Change "International"?: Litigation's Diagonal Regulatory Role*, 49 VA. J. INT'L L. 585 (2009); Elinor Ostrom, *A Polycentric Approach for Coping with Climate Change*, Background Paper, World Bank's *World Development Report 2010: Development in a Changing Climate* (2009).

³⁰ For example, twelve states, three cities, a U.S. territory, and thirteen nongovernmental organizations brought the petition in *Massachusetts v. EPA*. Ten other states, nineteen industry and utility groups organized into six conglomerate entities, and the U.S. EPA served as respondents. A complete list of parties in *Massachusetts v. EPA* is available at International Center for Technology Assessment (ICTA), Global Warming Petitioners, <http://www.icta.org/doc/global%20warming%20petitioners%20final.pdf> (last visited Sept. 17, 2011).

federalism, the New Haven School, global legal pluralism, transnational legal process, new governance, regulatory institutions theory, polycentric governance theory, adaptive management, and work on the law-science-politics interface. In so doing, it focuses on what these conceptual strands have in common: a belief that governance approaches must acknowledge the complicated relationships of diverse actors across multiple levels. The following excerpt from Elinor Ostrom's 2009 World Bank Research Working Paper captures this dissertation's challenge to a governance approach to climate change that focuses primarily on the international level through scale-matching:

Given the complexity and changing nature of the problems involved in coping with climate change, there are no "optimal" solutions that can be used to make substantial reductions in the level of greenhouse gases emitted into the atmosphere. A major reduction in emissions is, however, needed. The advantage of a polycentric approach is that it encourages experimental efforts at multiple levels, as well as the development of methods for assessing the benefits and costs of particular strategies adopted in one type of ecosystem and comparing these with results obtained in other ecosystems. A strong commitment to finding ways of reducing individual emissions is an important element for coping with climate change. Building such a commitment, and the trust that others are also taking responsibility, can be more effectively undertaken in small- to medium-scale governance units that are linked through information networks and monitoring at all levels.³¹

The dissertation draws from these diverse, but conceptually related approaches to argue for geographically aware governance approaches that incorporate hybridity, multi-scalar inclusion, and regulatory responsiveness.

The dissertation's three case examples are pieces of such a polycentric approach and highlight the nuanced multi-scalar dynamics taking place within each piece of the climate change puzzle. These examples demonstrate the ways in which geographic assumptions about the scale of the problem and applicable regulation define and constrain

³¹ Ostrom, *supra* note 20, at 39.

options. The dissertation argues that acknowledging and evaluating these scalar assumptions provide the basis for more effective multi-level regulatory approaches to complex problems.

Using climate change governance as an example, the dissertation not only describes complexity, but also explores what geographically-aware governance might look like and proposes strategies for improvement. It recommends four core steps for rethinking governance in these contexts: (1) analyzing the multi-level aspects of and geographic presumptions regarding complex problems; (2) matching levels of government to what they do best; (3) structuring cross-cutting approaches that incorporate the dynamic intertwinement among levels of government; and (4) embracing its three core principles of hybridity, multi-scalar inclusion, and responsiveness in institutional design. Its three case studies provide such a rethinking of U.S. climate change governance in the context of litigation, federal policy, and local action.

In so doing, the dissertation also fills an important gap in the burgeoning law and geography literature³² by bringing together two important streams of that literature, the critical and the environmental.³³ Although the critical law and geography literature of the

³² Although a significant law and geography literature predates the last two decades, this book focuses primarily on the more recent literature because of its greater relevance for its approach to multi-level governance. Examples of that earlier literature include JOHN H. WIGMORE, *A PANORAMA OF THE WORLD'S LEGAL SYSTEMS* (1928); HANS WEIGERT, *GENERALS AND GEOGRAPHERS: THE TWILIGHT OF GEOPOLITICS* (1942); GILBERT F. WHITE, *HUMAN ADJUSTMENT TO FLOODS* (1945); John Henry Wigmore, *A Map of the World's Law*, 19 *GEOGRAPHICAL REV.* 114 (1929); FRANCIS C. MURPHY, *REGULATING FLOOD-PLAIN DEVELOPMENT* (1958); RUTHERFORD H. PLATT, *LAND-USE CONTROLS: INTERFACE OF LAW AND GEOGRAPHY* (1976).

³³ A number of important contributions to the law and geography literature do not fall primarily into these categories. For example, scholarship using GIS technology in numerous substantive legal contexts, such as redistricting and desegregation (*See, e.g.,* Munroe Eagles, Richard S. Katz & David Mark, *GIS and Redistricting: Emergent Technologies, Social Geography, and Political Sensibilities*, 17 *SOC. SC. COMPUTER REV.* (1999); Benjamin Forest, *Information Sovereignty and GIS: The Evolution of "Communities of Interest" in Political Redistricting*, 23 *POLITICAL GEOGRAPHY* 425 (2004); Institute on Race and Poverty, University of Minnesota Law School, *A Comprehensive Strategy to Integrate Twin*

last twenty years often gets more attention in law and geography anthologies and critical geographers have played a lead public role in, for example, establishing a Legal Geography collaborative research network with the Law and Society Association,³⁴ the first acceleration in law and geography scholarship came in the 1980s from those interested in environmental and land use issues.³⁵ This initial growth in scholarship followed a period of massive development in federal environmental law and state environmental and land use law in the United States.³⁶ The scholarship has flourished since, aided by the increase of people interested in these issues in geography departments

Cities Schools and Neighborhoods (2009), http://www.irpumn.org/uls/resources/projects/Regional_Integration_Draft_3_-_Long_Version.pdf (last visited May 30, 2011.); criminal law creation and enforcement (*See, e.g.*, GIS IN LAW ENFORCEMENT: IMPLEMENTATION ISSUES AND CASE STUDIES (M.R. Leipnik & D.P. Albert eds., 2003); Cecil E. Greek, *Tracking Probationers in Space and Time: The Convergence of GIS and GPS Systems*, 66-JUN FED. PROBATION 51 (2002); Tony Grubestic & Alan Murray, *Methods to Support Policy Evaluation of Sex Offender Laws*, 89 PAPERS IN REGIONAL SCIENCE 669 (2010).); and environmental regulation (*See, e.g.*, Cinderby & Forrester, *Facilitating Local Governance of Air Pollution Using GIS for Participation*, *infra* note 37; Matthews, Scuderi, Brookshire, Gregory, Snell, Krause, Chermak, Cullen & Campana, *Marketing Western Water*, *infra* note 37; Matthews & Pease, *The Commerce Clause, Interstate Compacts, and Marketing Water Across State Boundaries*, *infra* note 37; Osofsky, *Is Climate Change "International"?*, *infra* note 37; Salkin, *GIS in an Age of Homeland Security* *infra* note 37; Flannery, Notes and Comments, *How to Pry with Maps*, *infra* note 37.) overlaps with these two scholarly streams but has a distinct focus. Law and geography literature has also emerged on a wide range of other substantive topics, particularly property arrangements and geopolitics. Frode Flemsaeter, *Holding Property in Trust: Kinship, Law, and Property Enactment on Norwegian Smallholdings*, 41 ENV'T & PLANNING A 2261 (2009); Jeremy Forman, *A Tale of Two Regions: Diffusion of the Israeli "50 Percent Rule" from Galilee to the Occupied Weest Bank*, 34 LAW & SOCIAL INQUIRY 671 (2009); Jeremy Forman & Alexandre (Sandy) Kedar, *From Arab Land to "Israel Lands": The Legal Dispossession of the Palestinians Displaced by Israel in the Wake of 1948*, 22 ENV'T & PLANNING D: SOCIETY & SPACE 809 (2004); Alexander B. Murphy, *Territoriality, Morality, and International Law: Thoughts on Hendrix's "Moral Theory of State Territory,"* 6 GEOPOLITICS 163 (2001).

³⁴ *See* Law and Society Association, Collaborative Research Networks, <http://www.lawandsociety.org/CRN/crn5.htm#35> (last visited May 25, 2011).

³⁵ The law and geography scholarship of the 1980s focused on environmental and land use concerns, *see, e.g.*, OLEN PAUL MATTHEWS, WATER RESOURCES: GEOGRAPHY AND LAW (1984); JAMES L. WESCOAT, INTEGRATED WATER DEVELOPMENT: WATER USE AND CONSERVATION PRACTICE IN WESTERN COLORADO (1984); judges and cities, *see, e.g.*, GORDON L. CLARK, JUDGES AND THE CITIES: INTERPRETING LOCAL AUTONOMY (1985); and questions of governmental structure, *see, e.g.*, GORDON L. CLARK & MICHAEL DEAR, STATE APPARATUS: STRUCTURES AND LANGUAGE OF LEGITIMACY (1984).

³⁶ For an overview of these regulatory developments, see DANIEL J. FIORINO, THE NEW ENVIRONMENTAL REGULATION (2006).

and in law departments, many of whom also bring other disciplines such as ecology into their work. It largely focuses on relationships among physical and social spatial arrangements and law, with a sub-group of pieces on physical, social, and legal scale. Substantively, topics range from land use to water law to biodiversity to climate change.³⁷ At recent Association of American Geographer meetings, multiple panels including law professors, geography professors, and geography graduate students have

³⁷ See, e.g., IRUS BRAVERMAN, *PLANTED FLAGS: TREES, LAND, AND LAW IN ISRAEL/PALESTINE* (2009); GEOGRAPHY, ENVIRONMENT, AND AMERICAN LAW (Gary L. Thompson, Fred M. Shelley & Chand Wije, eds. 1997); RUTHERFORD H. PLATT, *LAND USE AND SOCIETY: GEOGRAPHY, LAW, AND PUBLIC POLICY* (1996); Matthew R. Auer, *Geography, Domestic Politics and Environmental Diplomacy: A Case from the Baltic Sea Region*, 11 *GEO. INT'L ENVTL. L. REV.* 77 (1998); Peter J. Atkins, M. Manzurul Hassan & Christine E. Dunn, *Toxic Torts: Arsenic Poisoning in Bangladesh and the Legal Geographies of Responsibility*, 31 *TRANS. INST. BR. GEOGR.* 272 (2006); Carl J. Bauer, *In the Image of the Market: The Chilean Model of Water Resources Management*, 3 *INT. J. WATER* 146 (2005); Carl J. Bauer, *Results of Chilean Water Markets: Empirical Research Since 1990*, 40 *WATER RESOURCES RESEARCH* 1 (2004); Melinda Harm Benson, *Integrating Adaptive Management and Oil and Gas Development: Existing Obstacles and Opportunities for Reform*, 39 *ENVTL. L. REP.* 10962 (2009); Melinda Harm Benson, *Adaptive Management Approaches by Resource Management Agencies in the United States: Implications for Energy Development in the Interior West*, 28 *J. ENERGY & NAT'L RESOURCES L.* 87 (2010); Melinda Harm Benson, *Regional Initiatives: Scaling the Climate Response and Responding to Conceptions of Scale*, 100 *ANNALS ASSOC. AM. GEOG.* 1025, 1028 (2010); Nicholas Blomley, *Simplification is Complicated: Property, Nature, and the Rivers of Law*, 40 *ENV. & PLANNING A* 1825 (2008); Steve Cinderby & John Forrester, *Facilitating Local Governance of Air Pollution Using GIS for Participation*, 25 *APPLIED GEOGRAPHY* 143 (2005); Olen Paul Matthews, Louis Scuderi, David Brookshire, Kirk Gregory, Seth Snell, Kate Krause, Janie Chermak, Bradley Cullen & Michael Campana, *Marketing Western Water: Can a Process Based Geographic Information System Improve Reallocation Decisions*, 41 *NAT. RESOURCES J.* 329 (2001); Olen Paul Matthews & Michael Pease, *The Commerce Clause, Interstate Compacts, and Marketing Water Across State Boundaries*, 46 *NAT. RESOURCES J.* 601 (2006); Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 *ALABAMA L. REV.* 237 (2011); Hari M. Osofsky, *Is Climate Change "International"?: Litigation's Diagonal Regulatory Role*, 49 *VA. J. INT'L L.* 585 (2009); Hari M. Osofsky, *The Geography of Climate Change Litigation Part II: Narratives of Massachusetts v. EPA*, 8 *CHICAGO J. INT'L L.* 573 (2008); Hari M. Osofsky, *The Geography of Climate Change Litigation: Implications for Transnational Regulatory Governance*, 83 *WASH. U. L.Q.* 1789 (2005); J.B. Ruhl, *Ecosystem Services and Federal Public Lands*, 20 *DUKE ENVTL. L. & POL'Y F.* 275 (2010); J.B. Ruhl, *Sustainable Development: A Five-Dimensional Algorithm for Environmental Law*, 18 *STAN. ENVTL. L.J.* 31 (1999); Patricia E. Salkin, *GIS in an Age of Homeland Security: Accessing Public Information to Ensure a Sustainable Environment*, 30 *WM. & MARY ENVTL. L. & POL'Y REV.* 55 (2005); Robert R.M. Verchick, *Critical Space Theory: Keeping Local Geography in American and European Environmental Law*, 73 *TUL. L. REV.* 739 (1999); Robert R.M. Verchick, *Feathers or Gold? A Civic Economics for Environmental Law*, 25 *HARV. ENVTL. L. REV.* 95 (2001); Peter M. Flannery, Notes and Comments, *How to Pry with Maps: The Fourth Amendment Privacy Implications of Governmental Wetlands Geographic Information Systems (GIS)*, 29 *RUTGERS COMPUTER & TECH. L.J.* 447 (2003).

focused on law, geography, and environmental concerns, which suggests potential for continued growth.³⁸

Parallel to this environmental/land-use stream, a critical stream of legal geography scholarship developed significantly on both the geography and law side in the early to mid-1990s of which key works included geographer Nicholas Blomley's 1994 book, *Law, Space and the Geographies of Power*; Richard Ford's 1994 article, *The Boundaries of Race: Political Geography in Legal Analysis*; a 1996 *Stanford Law Review* symposium spearheaded by law professor Richard Ford on *Surveying Law and Borders*; and David Delaney's 1998 book *Race, Place, and the Law, 1836-1948*.³⁹ Since then, there has been an explosion of critical legal geography scholarship from both legal and geography scholars, often drawing from this earlier work. Critical perspectives, drawing out of both the critical geography and critical legal literature, often have dominated

³⁸ Association of American Geographers, 2011 Annual Meeting Preliminary Program, Paper Session: 1681 Regulatory Geographies: State Action and the Role of Law, <http://meridian.aag.org/callforpapers/program/SessionDetail.cfm?SessionID=11667> (last visited May 25, 2011); Association of American Geographers, 2011 Annual Meeting Preliminary Program, Paper Session: 2111 Geographies of Law and Environmental Regulation I, <http://meridian.aag.org/callforpapers/program/SessionDetail.cfm?SessionID=12134> (last visited May 25, 2011); Association of American Geographers, 2011 Annual Meeting Preliminary Program, Paper Session: 2211 Geographies of Law and Environmental Regulation II, <http://meridian.aag.org/callforpapers/program/SessionDetail.cfm?SessionID=12135> (last visited May 25, 2011); Association of American Geographers, 2010 Annual Meeting Preliminary Program, Paper Session: 2426 Geography, Law, and Environmental Policy, <http://meridian.aag.org/callforpapers/program/SessionDetail.cfm?SessionID=8904> (last visited May 25, 2011); Association of American Geographers, 2010 Annual Meeting Preliminary Program, Panel Session: 2526 Law and Geography: Examining Intersections of Theory and Application within Legal Geography, <http://meridian.aag.org/callforpapers/program/SessionDetail.cfm?SessionID=8700> (last visited May 25, 2011) (comprised largely of scholars engaged in environmentally-focused law and geography scholarship); Association of American Geographers, 2010 Annual Meeting Preliminary Program, Paper Session: 2626 Ecosystem Management: Facing the Complexity of Ecological and Political Boundaries, <http://meridian.aag.org/callforpapers/program/SessionDetail.cfm?SessionID=8736> (last visited May 25, 2011).

³⁹ NICHOLAS K. BLOMLEY, *LAW, SPACE, AND THE GEOGRAPHIES OF POWER* (1994); DAVID DELANEY, *RACE, PLACE, AND THE LAW, 1836-1948* (1998); Richard Thompson Ford, *The Boundaries of Race: Political Geography in Legal Analysis*, 107 HARV. L. REV. 1841, 1857-60, 1887-92 (1994); Symposium, *Surveying Law and Borders*, 48 STAN. L. REV. 1037 (1996).

descriptions of law and geography in this growth period.⁴⁰ For example, in *The Legal Geographies Reader*, one of two broad edited volumes on law and geography published in the early 2000s that covers a range of substantive areas, a preface by Delaney, Ford, and Blomley introduce the rest of the book by saying: “What follows then is a set of provocative explorations into the intersections of meaning and world, power and experience, imaginary and positivity brought together under the rubric of Law and Geography.”⁴¹ The other broad edited volume has similarly diverse substantive coverage

⁴⁰ See, e.g., DAVID DELANEY, NOMOSPHERIC INVESTIGATION: THE SPATIAL, THE LEGAL AND THE PRAGMATICS OF WORLD-MAKING 31–33 (2010); DON MITCHELL, THE RIGHT TO THE CITY: SOCIAL JUSTICE AND THE FIGHT FOR PUBLIC SPACE (2003); Keith Aoki, *Space Invaders: Critical Geography, the “Third World” in International Law and Critical Race Theory*, 45 VILL. L. REV. 913 (2000); Paul Schiff Berman, *The Globalization of Jurisdiction*, 151 U. PA. L. REV. 311 (2002); Sarah Blandy & David Sibley, *Law, Boundaries and the Production of Space*, 19 SOCIAL & LEGAL STUDIES 275 (2010); Nicholas Blomley, *How to Turn an Beggar into a Bus Stop: Law, Traffic, and the “Function of Place”*, 44 URBAN STUDIES 1697 (2007); Nicholas Blomley, *Law, Property, and the Geography of Violence: The Frontier, the Survey, and the Grid*, 93 ANNALS ASSOC. AM. GEOG 121 (2003); Nicholas Blomley, *The Borrowed View: Privacy, Propriety, and the Entanglements of Property*, 30 LAW & SOCIAL INQUIRY 617 (2005); Nicholas Blomley, *Un-Real Estate: Proprietary Space and Public Gardening*, 36 ANTIPODE 614 (2004); Chris Butler, *Critical Legal Studies and the Politics of Space*, 18 SOCIAL & LEGAL STUDIES 313 (2009); David Delaney, *Geographies of Judgment: The Doctrine of Changed Conditions and the Geopolitics of Race*, 83 ANNALS ASSOC. AM. GEOGRAPHERS 48 (1993); David Delaney, *Making Nature/Marking Humans: Law as a Site of (Cultural) Production*, 91 ANNALS ASSOC. AM. GEOGRAPHERS 487 (2001); David Delaney, *Trading Displacements: Or Evictions in the Nomosphere*, 22 ENV. & PLANNING D: SOC’Y & SPACE 847 (2004); Allan Erbsen, *Constitutional Spaces*, 95 MINN. L. REV. 1168 (2011); Richard Thompson Ford, *Geography and Sovereignty: Jurisdiction Formation and Racial Segregation*, 49 STAN. L. REV. 1365 (1997); Richard T. Ford, *Law’s Territory (A History of Jurisdiction)*, 97 MICH. L. REV. 843 (1999); Benjamin Forest, *The Legal (De)Construction of Geography: Race and Political Community in Supreme Court Redistricting Decisions*, 5 SOCIAL & CULTURAL GEOGRAPHY 55 (2004); Nicolas Howe, *Thou Shalt Not Misinterpret: Landscape as Legal Performance*, 98 ANNALS ASSOC. AM. GEOGRAPHERS 435 (2008); Ron Levi, *Gated Communities in Law’s Gaze: Material Forms and the Protection of a Social Body in Legal Adjudication*, 34 LAW & SOCIAL INQUIRY 635 (2009); Deborah G. Martin, Alexander W. Scherr & Christopher City, *Making Law, Making Place: Lawyers and the Production of Space*, 34 PROGRESS IN HUMAN GEOGRAPHY 175 (2010); Reginald Oh, *Re-Mapping Equal Protection Jurisprudence: A Legal Geography of Race and Affirmative Action*, 53 AM. U. L. REV. 1305 (2004); A. White, *Geographies of Asylum, Legal Knowledge and Legal Practices*, 21 POLIT. GEOG. 1055 (2002). Some of the above-cited work on geography, land-use, and the environment is also grounded in critical geography theory. See, e.g., Blomley, *Simplification is Complicated*, *supra* note 37; Osofsky, *Diagonal Federalism and Climate Change*, *supra* note 37; Osofsky, *Is Climate Change “International”?*, *supra* note 37; Osofsky, *The Geography of Climate Change Litigation Part II*, *supra* note 37; Osofsky, *The Geography of Climate Change Litigation*, *supra* note 37; Verchick, *Critical Space Theory*, *supra* note 37; Verchick, *Feathers or Gold?*, *supra* note 37.

⁴¹ David Delaney, Richard T. Ford & Nicholas Blomley, *Preface: Where is Law?*, in THE LEGAL GEOGRAPHIES READER, *supra* note 19. Another edited volume on law and geography was published in 2006, but it includes only one geographer and one law professor among its contributors and focuses narrowly on issues of landscape, identity, and regulation, so I am not addressing it in depth in this brief

paired with a critical orientation.⁴² This dominance of critical legal geography in representations of the law and geography intersection at times has resulted in a feeling of marginalization among non-critical legal geographers. These disparate streams also raise hard questions about whether a unified vision of law and geography is possible and, if so, what it might look like; these ongoing discussions lack an easy resolution.⁴³

Through focusing on the geography of legal scale and its impact on multi-level climate change governance, the dissertation cross-cuts these areas of law and geography analysis and adds to them. It draws from both the critical human geography literature interrogating what scale is and how it connects to power, and from the cross-cutting human, GIS, and physical geography literatures⁴⁴ that analyze the relationships among

essay. See THE GEOGRAPHY OF LAW: LANDSCAPE, IDENTITY, AND REGULATION (William Taylor, ed., 2006).

⁴² LAW AND GEOGRAPHY, *supra* note 19.

⁴³ I have been told stories of marginalization and exclusion by non-critical legal geographers that I omit the details of from this document out of respect for confidentiality.

⁴⁴ For examples of the physical geography literature on scale, see Peter M. Atkinson & Nicholas J. Tate, *Spatial Scale Problem and Geostatistical Solutions: A Review*, 54 PROFESSIONAL GEOGRAPHER 607 (2000); L. H. Cammeraat, *A Review of Two Strongly Contrasting Geomorphological Systems Within the Context of Scale*, 27 EARTH SURFACE PROCESSES & LANDFORMS 1201 (2002); Jérôme Chave & Simon Levin, *Scale and Scaling in Ecological and Economic Systems*, 26 ENV'T & RESOURCE ECON. 527 (2003); B. Dixon, H. D. Scott, J. C. Dixon & K. F. Steele, *Prediction of Aquifer Vulnerability to Pesticides Using Fuzzy Rule-Based Models at the Regional Scale*, 23 PHYSICAL GEOGRAPHY 130 (2002); Peter Döll & Sara Vassolo, *Global-scale v. Regional-scale Scenario Assumptions: Implications for Estimating Future Water Withdrawals in the Elbe River Basin*, 4 REG. ENVIRON. CHANGE 169 (2004); Prakash Loungani, Ashoka Mody & Assaf Razin, *The Global Disconnect: The Role of Transactional Distance and the Scale of Economies in Gravity Equations*, 49 SCOTTISH J. OF POLITICAL ECON. 526 (2002); Miska Luoto & Jan Hjort, *Scales Matters—A Multi-resolution Study of the Determinants of Patterned Ground Activity in Subarctic Finland*, 80 GEOMORPHOLOGY 282 (2006); M. D. Newson & C. L. Newson, *Geomorphology, Ecology, and River Channel Habitat: Mesoscale Approaches to Basin-Scale Challenges*, 24 PROGRESS IN PHYSICAL GEOGRAPHY 195 (2000); Malcolm Newson, *Time, Scale and Change in River Landscapes: The Jerky Conveyor Belt*, 22 LANDSCAPE RESEARCH 13 (1997); Maxim Ogurtsov, Hogne Junger & Markus Lindhom, *A Potential Century-Scale Rhythm in Six Major Paleoclimatic Records in the Northern Hemisphere*, 89 GEOGR. ANN. 129 (2007); Kathleen C. Parker, Albert J. Parker & Thomas R. Vale, *Vertebrate Feeding Guilds in California's Sierra Nevada: Relations to Environmental Condition and Change in Spatial Scale*, 91 ANNALS OF THE ASSOC. OF AM. GEOGRAPHERS 245 (2001); John D. Phillips, *Entropy Analysis of Multiple Scale Causality and Qualitative Causal Shifts in Spatial Systems*, 57 THE PROFESSIONAL GEOGRAPHER 83 (2005); Katrina Richards, *A Review of Scaling Theory for Hardware Models and Application to an Urban Dew Model*, 23 PHYSICAL GEOGRAPHY 212 (2002); Colin R.

physical and social spatial arrangements and law. In so doing, the dissertation creates a bridge between law and geography approaches and contributes to them.

This dissertation is not the first attempt to address the legal dimensions of complex, multi-level governance in these contexts or others. Each of the strands that this dissertation interweaves with geographic conceptions of scale has made important contributions to thinking about multi-level governance. For example, beginning before this country was established, the U.S. federalism discourse has debated many aspects of federal-state-local regulatory dynamics; different streams of this scholarship explore which levels of government can and should address particular regulatory needs⁴⁵ and how dynamic, multi-level approaches should be structured.⁴⁶ New governance adherents work

Townsend, Sylvain Dolédec, Richard Norris, Kathi Peacock & Chris Arbuckle, *The Influence of Scale and Geography on Relationships Between Stream Community Composition and Landscape Variables: Description and Prediction*, 48 FRESHWATER BIOLOGY 768 (2003); Robert J. Whittaker, Katherine J. Willis & Richard Field, *Scale and Species Richness: Towards a General, Hierarchical Theory of Species Diversity*, 28 J. BIOGEOGRAPHY 453 (2001).

⁴⁵ For a discussion of the traditional focus in environmental federalism scholarship on state versus federal, see Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141 (1995). For example, an extensive environmental federalism dialogue in the mid-1990s focused on whether federal or state environmental regulation was more likely to lead to a race to the bottom. Compare Kirsten H. Engel, *State Environmental Standard-Setting: Is There a “Race” and Is It “To the Bottom”?*, 48 HASTINGS L.J. 271 (1997) (arguing for federal environmental regulation as valuable), Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996) (same), Joshua D. Sarnoff, *The Continuing Imperative (but Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVTL. L. & POL’Y F. 225 (1997) (same), and Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 YALE L. & POL’Y REV. 67 (1996) (same), with Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 YALE L. & POL’Y REV. 23 (1996) (presenting the downside of extensive federal environmental regulation), Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the “Race-to-the-Bottom” Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992) (same), Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535 (1997) (same), and Richard B. Stewart, *Environmental Regulation and International Competitiveness*, 102 YALE L.J. 2039 (1993) (same).

⁴⁶ For a discussion of the dynamic federalism literature in an environmental context, see Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 176 (2006). For an earlier exploration of dynamic federalism in a corporate law context, see Renee M. Jones, *Dynamic Federalism: Competition, Cooperation and Securities Enforcement*, 11 CONN. INS. L.J. 107 (2004). For additional examples of this burgeoning literature, see ERIN RYAN, FEDERALISM AND THE TUG OF WAR WITHIN (2011); ROBERT A. SCHAPIRO, POLYPHONIC FEDERALISM: TOWARD THE PROTECTION OF

to structure governance arrangements that are inclusive and decentralized,⁴⁷ while the adaptive management literature considers how to make regulation more responsive.⁴⁸ The Regulatory Institutions network in Australia similarly explores ways in which regulatory choices could more effectively incorporate a multiplicity of actors in formal and informal interactions.⁴⁹ In international legal scholarship, the New Haven School views law as authoritative decisionmaking grounded in effective power⁵⁰ and global legal pluralism

FUNDAMENTAL RIGHTS (2009); Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863, 879–83 (2006); William W. Buzbee, *Recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1, 49–56 (2003); Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097 (2009); Erwin Chemerinsky, *Empowering States When It Matters: A Different Approach to Preemption*, 69 BROOK. L. REV. 1313, 1328–32 (2004); Judith Resnik, *Law's Migration: American Exceptionalism, Silent Dialogues, and Federalism's Multiple Ports of Entry*, 115 YALE L.J. 1564 (2006); J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CAL. L. REV. 59 (2010).

⁴⁷ For examples of new governance scholarship beyond the above-cited piece by Ruhl and Salzman (see Ruhl & Salzman, *supra* note 46), see generally LAW AND NEW GOVERNANCE IN THE EU AND US (Gráinne de Búrca & Joanne Scott eds., Hart Publ'g 2006); Bradley C. Karkkainen, Reply, "New Governance" in *Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471, 471–75 (2004); Orly Lobel, Surreply, *Setting the Agenda for New Governance Research*, 89 MINN. L. REV. 498, 498 (2004); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004).

⁴⁸ For examples of the interdisciplinary adaptive management scholarship, see Alejandro E. Camacho, *Assisted Migration: Redefining Nature and Natural Resource Law Under Climate Change*, 27 YALE J. ON REG. 171 (2010); Robin Kundis Craig, "Stationarity is Dead"—Long Live Transformation: Five Principles for Climate Change Adaptation Law, 34 HARV. ENVTL. L. REV. 9, 60–61 (2010); C.S. Holling, Lance H. Gunderson & Donald Ludwig, *In Quest of a Theory of Adaptive Change*, in PANARCHY: UNDERSTANDING TRANSFORMATIONS IN HUMAN AND NATURAL SYSTEMS 3, 5 (Lance H. Gunderson & C.S. Holling eds., 2002); Bradley C. Karkkainen, *Information-Forcing Environmental Regulation*, 33 FLA. ST. U. L. REV. 861, 884–88 (2006); J.B. Ruhl & Robert L. Fischman, *Adaptive Management in the Courts*, 95 MINN. L. REV. 424 (2010); Ruhl & Salzman, *supra* note 46; Sandra Zellmer, Essay, *A Tale of Two Imperiled Rivers: Reflections from a Post-Katrina World*, 59 FLA. L. REV. 599 (2007).

⁴⁹ For examples of scholarship from the Regulatory Institutions Network at Australia National University, see Valerie Braithwaite, *Ten Things You Need to Know About Regulation and Never Wanted to Ask*, RegNet Occasional Paper No. 10 (2006), available at <http://ctsi.anu.edu.au/publications/occasionalpapers.htm>; Charlotte Wood, Mary Ivec, Jenny Job & Valerie Braithwaite, *Applications of Responsive Regulatory Theory in Australia and Overseas*, RegNet Occasional Paper No. 15 (2010), available at <http://ctsi.anu.edu.au/publications/occasionalpapers.htm>.

⁵⁰ For an explanation of the New Haven School approach, see 1 HAROLD D. LASSWELL & MYRES S. MCDUGAL, *JURISPRUDENCE FOR A FREE SOCIETY: STUDIES IN LAW, SCIENCE AND POLICY* xxix (1992); Richard A. Falk, *Casting the Spell: The New Haven School of International Law*, 104 YALE L.J. 1991 (1995); Myres S. McDougal & Harold D. Lasswell, *The Identification and Appraisal of Diverse Systems of Public Order*, 53 AM. J. INT'L L. 1 (1959); Myres S. McDougal, Harold D. Lasswell & W. Michael

acknowledges multiple normative communities relevant to decisionmaking;⁵¹ both approaches thus present a model of global-level governance that includes the potential for hybrid arrangements of formal law and informal relationships across scales.

Rather, this dissertation's unique contribution stems from its intertwining of the geography scale literature with these theories to create a richer, contextualized approach to multi-level governance. It explores the ways in which different assumptions about the geography of scale infuse contrasting approaches to these problems and argues for the importance of lawyers and policymakers understanding those assumptions. The dissertation shows how more effective multi-level governance can emerge from conscious decisionmaking that reflects such an understanding.

Over the course of its analysis, the dissertation aims to accomplish two primary goals. First, it tries to make a practical difference in law and policy approaches to climate change. It seeks to raise awareness about the ways in which geographic assumptions often unconsciously shape people's assumptions about regulatory options in these contexts and, in the process, to create more openness to responsive, multi-level governance. Second, the dissertation contributes to a richer exploration of the law and

Reisman, *The World Constitutive Process of Authoritative Decision*, 19 J. LEGAL EDUC. 253 (1967); Myres S. McDougal, W. Michael Reisman & Andrew R. Willard, *The World Community: A Planetary Social Process*, 21 U.C. DAVIS L. REV. 807 (1988); W. Michael Reisman, *International Lawmaking: A Process of Communication*, 75 AM. SOC'Y INT'L L. PROC. 101 (1981).

⁵¹ For examples of global legal pluralism scholarship, see generally Ahdieh, *Dialectical Regulation*, *supra* note 9; Diane Marie Amann, *Abu Ghraib*, 153 U. PA. L. REV. 2085 (2005); Diane Marie Amann, *Calling Children to Account: The Proposal for a Juvenile Chamber in the Special Court for Sierra Leone*, 29 PEPP. L. REV. 167 (2001); Elena A. Baylis, *Parallel Courts in Post-Conflict Kosovo*, 32 YALE J. INT'L L. 1 (2007); Paul Schiff Berman, *Global Legal Pluralism*, 80 S. CAL. L. REV. 1155 (2007); William W. Burke-White, *International Legal Pluralism*, 25 MICH. J. INT'L L. 963 (2004); Janet Koven Levit, *A Bottom-Up Approach to International Lawmaking: The Tale of Three Trade Finance Instruments*, 30 YALE J. INT'L L. 125 (2005); Ralf Michaels, *The Re-State-Ment of Non-State Law: The State, Choice of Law, and the Challenge from Global Legal Pluralism*, 51 WAYNE L. REV. 1209 (2005).

geography intersection and its potential role in rethinking governance. It models how the sometimes disconnected streams of the law and geography literature and additional scholarly literatures could come together in the context of multi-scalar governance strategies.

CHAPTER II

INSIGHTS FROM THE GEOGRAPHY SCALE LITERATURE FOR MULTISCALAR LEGAL APPROACHES

This chapter contains edited portions of Hari M. Osofsky, *The Geography of Justice Wormholes: Dilemmas from Property and Criminal Law*, 53 VILLANOVA L. REV. 117 (2008), and Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 FLORIDA L. REV 1077 (2011).

The geography literature on scale provides important insights for how to structure multi-level legal approaches to complex problems because it interrogates the nature of scales that legal scholarship often treats as inert categories. Many of the U.S. federalism debates, including those over climate change and clean energy, center on questions of which level of government most appropriately matches a problem or how those levels could work together to address a problem. These debates generally assume that each scale is a space clearly defined by the level of governance involved. “International,” “federal,” “state,” and “local” refer to jurisdictional levels delineated by the legal system without further interrogation of what each category means.⁵²

This chapter provides the theoretical underpinnings for the dissertation by bringing together the geography scale literature with legal and other literatures that help to frame dynamic, multi-actor approaches to multi-level climate change governance. It demonstrates how geographic understandings of scale can inform emerging dialogues

⁵² For example, a 2010 volume of the *Connecticut Law Review* contained several articles analyzing the benefits, limitations, and political viability of a national renewable portfolio standard. See, e.g., Lincoln L. Davis, *Power Forward: The Argument for a National RPS*, 42 Conn. L. Rev. 1339 (2010); Joshua P. Fershee, *Moving Power Forward: Creating a Forward-Looking Energy Policy Based on a National RPS*, 42 Conn. L. Rev. 1405 (2010); Lynn M. Fountain, *Johnny-Come-Lately: Practical Considerations of a National RPS*, 42 Conn. L. Rev. 1475 (2010); Jim Rossi, *The Limits of a National Renewable Portfolio Standard*, 42 Conn. L. Rev. 1425 (2010); David B. Spence, *The Political Barriers to a National RPS*, 42 Conn. L. Rev. 1451 (2010).

about polycentric approaches to climate change governance. Section 1 provides an overview of the relevant geography literature on scale, with a particular focus on scholarship that (1) provides overall framing of geography’s contribution to conceptualizing scale, (2) brings together geographic and ecological conceptions of scale, (3) debates the nature of scale, (4) analyzes the origins of and continued emphasis on Westphalian presumptions in problem-solving, and (5) peers inside activity at levels of governance to identify key actors and interactions. Section 2 highlights a set of predominantly legal interdisciplinary scholarship that helps to form the dissertation’s approach to (1) hybridity, (2) multi-scalar inclusion, and (3) regulatory responsiveness, and explores how the geography scale literature might interact with it. The chapter concludes by explaining how its conceptual approach will be used to frame the case studies and their exploration of multi-scalar climate change governance throughout the rest of the dissertation.

1. The Relevance of Geographic Conceptions of Scale for Multi-Level Climate Change Governance

The key insight of geography scholarship for conceptualizing multi-level governance is that “scale” emerges from an ever-shifting social and cultural terrain, which makes understanding particular scales and their relationships more complicated than the traditional federalism debates suggest. As McMaster and Sheppard summarize,

[a]lthough the relative merits of, and relations among . . . different perspectives of the construction of scale are still the subject of lively debate . . . , there is consensus on the need to move away from thinking about geographic scales as pre-given dimensions of society, to thinking about their social construction.⁵³

⁵³ Robert B. McMaster & Eric Sheppard, *Introduction: Scale and Geographic Inquiry*, in *SCALE AND GEOGRAPHIC INQUIRY: NATURE, SOCIETY AND METHOD* 1, 18-19 (Eric Sheppard & Robert B. McMaster eds., 2004).

While geographers disagree substantially on (1) how scales are constructed and in turn construct social and legal conditions, (2) what should be included in the category of scale, and (3) how different scales interact, they have in common a richer analysis of scale than the relevant legal literature generally provides. Even the more dynamic federalism scholarship that considers complex, multi-actor relationships across scales tends to treat the individual scales as predetermined levels that interact in complex ways.⁵⁴

Moreover, when the geography and ecology literatures on scale are brought together, as geographer Nathan Sayre has done in his work, further possibilities for contributing to legal analysis exist. Both the geography and the ecology literatures, which engage scientific issues interconnected with climate change, have their own distinct discourses about scale. Sayre's article, *Ecological and Geographical Scale: Parallels and Potential for Integration*, attempts to interweave the two debates. He explains that:

In both ecology and human geography, the adequacy of research at any single scale is clearly in question, but the concept of scale itself remains unclear. Most participants in the debates acknowledge the need for studies that span multiple scales, and most conceive of different scales as being organized in some sort of hierarchical fashion. Within human geography, recent contributions have established several further points of general agreement: that scale is socially constructed and thus historically contingent, that it is politically contested, and that it is centrally important to understanding a variety of political, sociocultural, economic and environmental phenomenon. The debate has foundered on basic conceptual and methodological questions, however. What exactly is scale? How should researchers theorize and use it?⁵⁵

He goes on to argue that human geographers should draw three primary lessons from the

⁵⁴ For a discussion of dynamic federalism scholarship, see *infra* Section 2.

⁵⁵ Sayre, *supra* note 4, at 277–78.

ecologists' work on scale: that it is critical to distinguish between scale and level,⁵⁶ that rescaling processes are about “shift[ing] the level at which some process occurs” within “an existing structure of social organization,”⁵⁷ and that hierarchical models of scale can be misleading at times.⁵⁸ These insights are important to understanding rescaling dynamics in the context of climate change governance, particularly in the first case study on litigation, in which people use courts to fight out differences about the appropriate level for regulating climate change.

In contrast to the scalar presumptions of the relevant legal literature, then, the geography and ecology literatures contain multiple possibilities for understanding these scales and their interaction with one another. Neil Brenner has summarized a number of the definitions of scale which geographers use: (1) “a nested hierarchy of bounded spaces of differing size;” (2) “the level of geographical resolution at which a given phenomenon is thought of, acted on or studied;” (3) “the geographical organizer and expression of collective social action;” and (4) “the geographical resolution of contradictory processes of competition and cooperation.”⁵⁹ Nathan Sayre has highlighted additional concepts that ecologists bring to an understanding of scale. They often define the two core components of scale as grain, “the finest level of spatial or temporal resolution available within a given data set,” and extent, “the size of the study area or the duration of the study.”⁶⁰

⁵⁶ *See id.* at 283–85.

⁵⁷ *See id.* at 285.

⁵⁸ *See id.* at 286.

⁵⁹ NEIL BRENNER, *NEW STATES SPACES: URBAN GOVERNANCE AND THE RESCALING OF STATEHOOD* 9 (2004) (internal quotations omitted).

⁶⁰ Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 (3) *PROGRESS HUM. GEOGRAPHY* 276, 281 (2005).

Current environmental and energy federalism analyses relevant to climate change, however, generally focus on Brenner's first definition and do not acknowledge the ecological complexities that Nathan Sayre highlights; the scholarship maps the levels interacting as enclosed spaces and describes and prescribes their dynamic interactions.⁶¹ The existence of these many alternative possibilities to the limited understanding of scale in the legal literature opens interesting questions about how different definitions might change the current scholarly debates and policy decisions, questions that this dissertation engages throughout its case studies.

What makes the geography literature's analysis of scale helpful is not simply its agreement over the need to treat scale as a social phenomenon and the many new analytical approaches to such treatment that it provides, but also its debates over what should be included in the category of "scale." An interchange among leading geographers Sally Marston, Neil Brenner, Neil Smith and Mark Purcell is emblematic of the issues raised. Marston wrote an article in 2000 that criticizes scholarship on scale for "ignoring social reproduction and consumption."⁶² Brenner replied in 2001 by raising a concern about the "the analytical blunting of the concept of geographical scale as it is applied, often rather indeterminately, to an expanding range of sociospatial phenomena, relations and processes."⁶³ His piece accuses Marston, among other things, of "overstretching of the concept of geographical scale"⁶⁴ and argues that scale analysis

⁶¹ For an example, *see supra* note 52.

⁶² Sallie A. Marston, *The Social Construction of Scale*, 24 *PROGRESS IN HUM. GEOGRAPHY* 219, 219 (2000).

⁶³ Neil Brenner, *The Limits to Scale? Methodological Reflections on Scalar Structuration*, 25 *PROGRESS IN HUM. GEOGRAPHY* 591, 592 (2001).

⁶⁴ *Id.* at 598.

should focus only on what he terms “plural” conceptions of the politics of scale, which focus on interactions among levels rather than within a level.⁶⁵ Marston, together with Smith, replied in 2001.⁶⁶ Most notably, for the purposes of this discussion, they criticize Brenner for “the same slippage between scale and space that he rejects”⁶⁷ in his analysis and of being unreflective in his categorizing of her analysis as not about scale.⁶⁸ Purcell commented on this exchange in 2003 as an example of what he terms “islands of practice”; he argues that each scholar makes important points, but fails to engage with the other’s ideas.⁶⁹ In 2007, Marston, together with John Paul Jones III and Keith Woodward, responded to the ongoing debate by writing a controversial piece arguing for the abandonment of the idea of scale in favor of a “flat ontology.”⁷⁰

While Purcell arguably is right that Marston and Brenner insufficiently engage one another’s ideas in this particular interchange—though I have argued elsewhere that he overstates this somewhat—these debates are emblematic of the contribution that the geography literature can make to legal analysis of scalar issues. Namely, this literature asks basic questions, often underexplored in the legal discourse, about what we should be including when we delineate a scale or describe multiscale dynamics. For example, it provides the basis for exploring more deeply the extent to which the levels of governance

⁶⁵ *Id.* at 600-01.

⁶⁶ Sallie A. Marston & Neil Smith, *States, Scales and Households: Limits to Scale Thinking? A Response to Brenner*, 25 *PROGRESS IN HUM. GEOGRAPHY* 615, 616 (2001).

⁶⁷ *See id.*

⁶⁸ *Id.* at 617-18.

⁶⁹ Mark Purcell, *Islands of Practice and the Marston/Brenner Debate: Towards a More Synthetic Critical Human Geography*, 27 *PROGRESS IN HUM. GEOGRAPHY* 317 (2003).

⁷⁰ Sallie A. Marston, John Paul Jones III & Keith Woodward, *Human Geography Without Scale*, 30 *TRANSACTIONS OF THE INST. OF BRIT. GEOGRAPHERS* 416 (2005).

that law delineates are fixed or fluid.⁷¹ Most critical for an analysis of multi-level climate change governance, the geography scale literature considers the nature of the rescaling processes that take place in the creation, implementation, and interpretation of law.⁷²

Erik Swyngedouw's scholarship on "glocalization" processes has particular salience in analyzing scalar fixity and fluidity in this context because of the ways it brings together the international with the local, an intertwining explored in each of the three case studies and particularly the third one. Swyngedouw explains:

[R]ecent political-economic transformations are characterized by a parallel and simultaneous movement to the smaller and the larger scale, to the local and the global (a "glocalization" process). This process does not in itself assign greater validity to a global or local perspective, but alters us to a series of sociospatial processes that changes the importance and role of certain geographical scales, re-asserts the importance of others, and sometimes creates entirely new significant scales. More importantly, however, these scale redefinitions alter and express changes in the geometry of social power by strengthening the power and the control of some while disempowering others....These scales are, of course not operating hierarchically but simultaneously, and the relationships between different scales are "nested". Clearly, social power along gender, class, ethnic, or ecological lines refers to the scale capabilities of individuals and social groups. As power shifts, scale configurations change both in terms of their nesting and interrelations and in terms of their spatial extent.⁷³

⁷¹ For discussion of issues of fixity and fluidity in the geography literature, see Andrew Herod, *Scale: The Local and the Global*, in KEY CONCEPTS IN GEOGRAPHY 229, 234-42 (Sarah L. Holloway, Stephen P. Rice & Gill Valentine eds., 2003); Erik Swyngedouw, *Excluding the Other: The Production of Scale and Scaled Politics*, in GEOGRAPHIES OF ECONOMIES 167, 169 (Roger Lee & Jane Wills eds., 1997); Erik Swyngedouw, *Neither Global nor Local: "Glocalization" and the Politics of Scale*, in SPACES OF GLOBALIZATION: REASSERTING THE POWER OF THE LOCAL 137, 141 (Kevin R. Cox ed., 1997); Neil Brenner, *Between Fixity and Motion: Accumulation, Territorial Organization and the Historical Geography of Spatial Scales*, 16 ENV'T AND PLAN. D: SOC'Y AND SPACE 459, 461 (1998); Kevin R. Cox, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, Or: Looking for Local Politics*, 17 POL. GEOGRAPHY 1, 19-21 (1998); David Delaney & Helga Leitner, *The Political Construction of Scale*, 16 POL. GEOGRAPHY 93, 93 (1997); Deborah G. Martin, *Transcending the Fixity of Jurisdictional Scale*, 17 POL. GEOGRAPHY 33, 35 (1998); Anssi Paasi, *Place and Region: Looking through the Prism of Scale*, 28 PROGRESS IN HUM. GEOGRAPHY 536, 542-43 (2004).

⁷² For an example of an in-depth examination of those processes, see BRENNER, *supra* note 165, at 9-11.

⁷³ Swyngedouw, *Neither Global nor Local*, *supra* note 71, at 41.

This concept of “glocalization” processes helps to characterize the dynamic nature of scalar interactions over climate change. Swyngedouw’s approach further illuminates why treating scales as inert jurisdictional levels, as much of legal analysis does, misses key attributes of complex interactions.

Geographic conceptions of scale also assist with an analysis of how the territorial extent of a legal entity does and should compare to the scale of the problems that it considers.⁷⁴ For instance, a substantial number of these geography scholars have analyzed how the nation-state as a scale and as a space fits within the changing structure of transnational governance.⁷⁵ Alexander Murphy’s recent work is particularly relevant to understanding how the Westphalian presumptions that dominate treaty-centric approaches to climate change have emerged and continue to endure through modernist territorial presumptions. Murphy argues that even though the preexisting spatial order has been undermined through material and functional shifts, “the territorial norms of the modern state system continue to exert a powerful hold on the identities, ideologies, and

⁷⁴ For analyses of issues of extent and resolution, see Robert B. McMaster & Eric Sheppard, *Introduction: Scale and Geographic Inquiry*, in *SCALE AND GEOGRAPHIC INQUIRY: NATURE, SOCIETY AND METHOD* 1, 5-6 (Eric Sheppard & Robert B. McMaster eds., 2003); Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 *PROGRESS IN HUM. GEOGRAPHY* 276, 281 (2005); Neil Smith, *Geography, Difference and the Politics of Scale*, in *POSTMODERNISM AND THE SOCIAL SCIENCES* 57, 73-74 (Joe Doherty, Elspeth Graham & Mo Malek eds., 1992).

⁷⁵ See, e.g., John A. Agnew, *The Territorial Trap: The Geographical Assumptions of International Relations Theory*, 1 *REV. INT’L POL. ECON.* 53 (1994); BRENNER, *supra* note 165; Becky Mansfield, *Beyond Rescaling: Reintegrating the ‘National’ as a Dimension of Scalar Relations*, 29 *PROGRESS IN HUM. GEOGRAPHY* 458 (2005); Alexander B. Murphy, *The Sovereign State System as Political-Territorial Ideal: Historical and Contemporary Considerations*, in *STATE SOVEREIGNTY AS SOCIAL CONSTRUCT* 81, 107 (Thomas J. Biersteker & Cynthia Weber eds., 1996). Legal scholars grapple with questions of evolving sovereignty as well, at times with more complex understandings of its spatial and scalar geography. See, e.g., *THE FLUID STATE: INTERNATIONAL LAW AND NATIONAL LEGAL SYSTEMS* (Hilary Charlesworth et al. eds., 2005); Keith Aoki, *(Intellectual) Property and Sovereignty: Notes Toward a Cultural Geography of Authorship*, 48 *STAN. L. REV.* 1293 (1996) (drawing from human geography scholarship in its analysis).

geopolitical aspirations around the world.”⁷⁶ The dominant focus on the solving climate change through treaties reflects these norms.

While the geography scale literature has much to add to analyses of multi-level governance, characterizing this literature as a coherent whole is difficult beyond the kinds of broad descriptions that McMaster and Sheppard, Brenner, and Sayre have given. As this section illuminates, each individual contribution to this literature provides specific insights, which at times conflict with the ideas in other pieces and at times simply do not discuss them. Moreover, as the Brenner and Marston debate illustrates, even conflicts among scholars may not always include full, direct engagement of each other’s ideas.

Given the diversity of this literature, this dissertation does not simply draw from it holistically. Rather, the dissertation draws particularly heavily not only from the above-described work, but also from scholarship by Julie Cidell and Kevin Cox in its application the geography scale literature to multi-level climate change governance because they provide nuanced discussion of how key actors at multiple levels help to constitute both scale at each level and multi-scalar interactions. Their approaches show in specific ways the incompleteness of legal analysis that simply treats each level as a contained space. The case studies in Chapters IV through XIII follow the model of their approach by tracing the many key actors with ties to multiple scales that help constitute and are constituted by efforts in the context of litigation, federal policy, and local action at multi-level climate change governance.

Specifically, Cidell’s work shows that governmental and other key entities in the climate change governance are ever-evolving because they are all composed of many

⁷⁶ Alexander B. Murphy, *Territory’s Continuing Allure*, __ ANNALS. ASSOC GEOG. 1, 2 (2013) (forthcoming).

individuals. Those individuals shape both the space that each entity occupies and the scale at which it operates. As part of her analysis, Cidell has explored the many ways in which individuals help to scale institutions. She notes:

In the literature on the politics of scale, the individual has largely been treated as a separate scale: the site of multiple and conflicting identities, a locus of struggle for political power and control, or an entry point into the sphere of social reproduction. However, jurisdictions and organizations at higher scales are themselves composed of individuals, and therefore consideration needs to be made of the role that individuals play within the politics of scale In multi-scalar conflicts . . . individuals *as* scales are not politically powerful Because individuals are themselves the sites of multiple scales, they can be torn between those scalar identities, sometimes expressed as keeping the professional separate from the personal Finally, there is the question of individuals *within* scales. The conflation of the identities of individuals with the identities of their jurisdiction is a common practice.⁷⁷

Through the individuals that comprise it, the governmental and nongovernmental entities involved in climate change governance have “multiple and conflicting identities.” As people move in and out of key actors and evolve over time, the nature of and possibilities each scale shift.

In each of the three case studies in this dissertation, individuals play a crucial role in the scalar dynamics relevant to multi-level governance. For example, particular individuals are triggering litigation, either through their regulatory opposition or their lead role in bringing suits. However, the key individuals within governmental and nongovernmental entities change over time, which then reconstitutes the level and its potential role in climate change governance. The transition from the Bush to the Obama Administration, for instance, brought a new EPA Administrator with a commitment to

⁷⁷ Julie Cidell, *The Place of Individuals in the Politics of Scale*, 38 *AREA* 196, 202 (2006). As noted previously, related issues have been explored in other disciplines, but not through the particular lens that geography brings. See Brenner, *supra* note 177.

regulating greenhouse gas emissions and reaching a compromise with California and the automobile industry.⁷⁸ Similarly, interviews with a variety of people involved with local decisions to regulate climate change in the Twin Cities area made clear that motivated individuals are particularly powerful drivers in smaller urban environments.⁷⁹

Kevin Cox's approach to scale in his article *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, or: Looking for Local Politics* complements the insights that Cidell brings through its focus on the dynamics and networks among key actors that constitute scalar levels and their interaction. Cox's conception of scale provides a particularly helpful lens through which to view climate change governance because of its unpacking of intra- and inter-level spatial networks. Specifically, his article envisions core local functions interacting across multiscale networks by introducing what he terms "spaces of dependence" and "spaces of engagement."⁸⁰

Cox views "[s]paces of dependence [as] defined by those more-or-less localized social relations upon which we depend for the realization of essential interests and for which there are no substitutes elsewhere; they define place-specific conditions for our material well being and sense of significance."⁸¹ In the context of climate change governance, as discussed in more depth in Chapter III, such spaces include the way in which we structure our personal and professional lives on a day-to-day basis. For example, how far do members of our household drive to work, child care, the grocery

⁷⁸ See *infra* Chapters IV–X.

⁷⁹ See *infra* Chapters XI–XIII.

⁸⁰ Cox, *Spaces of Dependence*, *supra* note 19.

⁸¹ *Id.* at 2.

store, and entertainment? How does the regulatory structure where we live impact those choices?⁸²

Spaces of engagement, on the other hand, are “the space[s] in which the politics of securing a space of dependence unfolds.”⁸³ These are multiscale spaces that in the context of debates over climate regulation might include political institutions, courts, the popular press, and community gatherings. Cox describes the dynamic interaction among spaces of dependence and spaces of engagement by noting that “[p]eople, firms, state agencies, etc., organize in order to secure the conditions for the continued existence of their spaces of dependence but in so doing they have to engage with other centers of social power: local government, the national press, perhaps the international press, for example.”⁸⁴ This organizing and use of polycentric power sources is evident throughout the dissertation’s three case studies.

Network dynamics, in particular, play a crucial role throughout each of the case studies, and Cox’s work provides a helpful way to envision complex scalar dynamics in network terms. Cox argues that scale can be more aptly described by thinking about networks than through the traditional “areal” approach, which focuses on specific territory like the United States. He explains:

Networks signify unevenness in the penetration of areal forms. They are also rarely entirely contained by areal forms; boundaries tend to be porous. The territorial reach of state agencies is imperfect. Even in the

⁸² See *infra* Chapter III. Who or what the regulators are can also have an important impact on the spaces. In a very different substantive context, for example, Steven Ratner explores the different legal and political treatment of occupation by states and administration by international organizations. See Steven R. Ratner, *Foreign Occupation and International Territorial Administration: The Challenges of Convergence*, 16 EUR. J. INT’L L. 695 (2005).

⁸³ Cox, *Spaces of Dependence*, *supra* note 19, at 2.

⁸⁴ *Id.*

case of the most totalitarian of states, there are always spaces of resistance. The same applies to other agents with territorially defined powers like the utilities, political parties and labor unions. To be sure, they all enjoy power, in the sense of rights, with respect to particular bounded areas or enclosures, but it is a *formal* power which is affected in its actual application by contingent conditions. Conversely, agents, in the associations that they can form and indeed do form, are by no means limited by particular enclosures. Local government policies can be appealed to higher levels of authority. Networks of association are created across national boundaries, as in the fight against apartheid.⁸⁵

Seen in these terms, the case studies involve a constant push and pull between formal and informal associational networks within and across scales. Cox's work helps to illuminate the complexity of each scale and interactions across them in each of the specific contexts that this dissertation examines.

Together, then, these articles by Cox, Cidell, and others exemplify how considering the geography of scale can help more informed approaches to multi-level governance. Their looking within each level and considering the multi-scalar ties through individual and entities that constitute it models the kind of analysis needed in the climate change context. However, Cidell and Cox are not alone in identifying the need for nuanced, multi-actor analysis. Outside of the geography literature, numerous streams of scholarship consider how a variety of governmental and nongovernmental entities and individuals interact to address complex challenges like climate change. The following section highlights that scholarship and how geographic conceptions of scale could help deepen its multi-scalar analysis.

⁸⁵ Kevin R. Cox, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, Or: Looking for Local Politics*, 17 POL. GEOGRAPHY 1 (1998).

2. *Interweaving Geographic Conceptions of Scale with Legal Theory*

Many thoughtful scholars, often in clusters isolated from one another, have grappled with the complexity of structuring law and institutions to achieve appropriate and effective governance strategies across jurisdictional levels. While a comprehensive assessment of all potentially applicable scholarship across disciplines is beyond the scope of this dissertation, an exploration of multiple interrelated approaches helps to inform a richer conceptualization of multiscale climate change governance.

Interweaving multiple scholarly literatures across disciplines is a daunting task,⁸⁶ but these interconnections among ideas are important to explore because complex governance problems such as climate change are so challenging. In order to address these problems most effectively, we need to break down the walls that separate disciplines and substantive areas within them and consider the interrelated ideas that these literatures produce. While many more than the ten streams of ideas paired with the geography scale literature in this section are potentially relevant, this dissertation focuses on this set because of their insights into issues of scale, substantive overlap, and multiplicity of actors that are critical to crafting better regulatory approaches to climate change. The dissertation has mentioned these diverse conceptual streams in the introductory chapter, but this section focuses on how they fit together with each other and with the geography scale literature to provide interwoven ideas for multidimensional governance.

⁸⁶ See, e.g., Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 Florida L. Rev. 1077 (2011) (analyzing these literature in the context of the BP *Deepwater Horizon* oil spill and its aftermath); Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 Alabama L. Rev. 237, 273–78 (2011) (analyzing some of these literatures in the context of climate change regulation).

More specifically, this section builds from these literatures in tandem with the geography scale literature to suggest three key principles for framing effective regulatory solutions in the face of geographic complexity that underlie the rest of the dissertation's analysis. First, both the New Haven School and global legal pluralism scholarship suggest the need to identify the various overlapping formal and informal regulatory vehicles. When paired with polycentric and new governance and regulatory institutions theory, they provide frameworks for crafting polycentric approaches and hybrid structures. The geography literature on scale can help to ensure that these hybrid approaches are responsive to the complexities of each level and actor. Second, dynamic federalism, intersystemic governance, and transnational legal process analyses, when combined with the geography literature on scale, help to develop strategies that allow key actors at each level to interact meaningfully and effectively. Finally, the adaptive management literature and work on the law-science-politics interface, especially when it draws from dynamic federalism and nuanced geographic understandings of scale, indicates that these hybrid multiscale structures need to be systematically aware of and responsive to change.

As the analysis below details, while each of these conceptual streams represent distinct ideas that undergird the three principles, these ideas overlap, and several scholars have made contributions to more than one grouping. Moreover, the nuanced conceptions of scale discussed in the previous section should be brought to bear on this intertwining.

a. Legal Hybridity

The foundation of this dissertation’s polycentric governance model involves an embrace of legal hybridity—that is, the simultaneous and often interacting legal and quasi-legal structures addressing climate change. Hybridity is more than just the overlap that results from the crosscutting nature of this problem. Rather, this approach, at its best, involves intentional overlap that incorporates key actors and their interactions into the governance process. Four of the ten streams of scholarship—together with the insights from geographic conceptions of scale—help to shape this dissertation’s conception of hybridity.

First, the New Haven School provides a vision of lawmaking that helps to open up the possibilities for hybridity. To New Haven School scholars, law is “a process of authoritative decision by which the members of a community clarify and secure their common interests” in multiple arenas.⁸⁷ In an international law context, the School represents a significant shift from the traditional state-centric view of lawmaking.⁸⁸ For the purposes of this dissertation’s analysis, the New Haven School’s importance is not so much its implications for international law, but rather its broader implications for how regulatory behavior relevant to climate change might be conceptualized. The New Haven School helps to shape an understanding of relevant law as encompassing a variety of

⁸⁷ 1 HAROLD D. LASSWELL & MYRES S. MC DOUGAL, JURISPRUDENCE FOR A FREE SOCIETY: STUDIES IN LAW, SCIENCE AND POLICY xxi (1992); accord Myres S. McDougal, W. Michael Reisman & Andrew R. Willard, *The World Community: A Planetary Social Process*, 21 U.C. DAVIS L. REV. 807 (1988). For a discussion of the New Haven School’s goals, see LASSWELL & MC DOUGAL, JURISPRUDENCE FOR A FREE SOCIETY, *supra* at xxix.

⁸⁸ For further explanation of the New Haven School approach, see LASSWELL & MCDUGAL, *supra* note 87; Richard A. Falk, *Casting the Spell: The New Haven School of International Law*, 104 YALE L.J. 1991 (1995); Myres S. McDougal & Harold D. Lasswell, *The Identification and Appraisal of Diverse Systems of Public Order*, 53 AM. J. INT’L L. 1 (1959); Myres S. McDougal, Harold D. Lasswell & W. Michael Reisman, *The World Constitutive Process of Authoritative Decision*, 19 J. LEGAL EDUC. 253 (1967); W. Michael Reisman, *International Lawmaking: A Process of Communication*, 75 AM. SOC’Y INT’L L. PROC. 101 (1981).

informal and formal arrangements, which allows for a more inclusive view of how to approach governance more effectively in this context.

Global legal pluralism, which owes an intellectual debt to the New Haven School but is distinct from it, explicitly acknowledges existing hybridity and provides models for new arrangements.⁸⁹ This approach is one piece of a broader literature on legal pluralism, an approach that emerges from the intersection of law and anthropology—and at times builds on the work of Professor Robert M. Cover—to argue that law is constituted by multiple normative communities that have shared social and legal space.⁹⁰ Global legal pluralism focuses, in particular, on transnational intersections of these normative communities, and views lawmaking at a global scale as taking place through these communities’ often parallel but sometimes conflicting interactions. Thus, like the New Haven School, it has a vision of lawmaking that is broader than the traditional Westphalian (nation-state-centric) account and argues for the importance of including a diverse set of formal and informal interactions in lawmaking accounts. Most relevant to this dissertation’s focus, these scholars have considered how to create hybrid legal structures that accommodate this overlap, a key issue in the context of regulating climate change.⁹¹

Elinor Ostrom’s work on common pool resource management and the approach that she and her many co-researchers have developed (called a Social-Ecological Systems

⁸⁹ See Paul Schiff Berman, *A Pluralist Approach to International Law*, 32 YALE J. INT’L L. 301, 301–02 (2007).

⁹⁰ See Robert M. Cover, *The Supreme Court, 1982 Term—Foreword: Nomos and Narrative*, 97 HARV. L. REV. 4 (1983); Ambreena Manji, “*Like a Mask Dancing*”: *Law and Colonialism in Chinua Achebe’s Arrow of God*, 27 J. LAW & SOC. 626 (2000); Emmanuel Melissaris, *The More the Merrier? A New Take on Legal Pluralism*, 13 SOC. & L. STUD. 57 (2004); Sally Engle Merry, *Legal Pluralism*, 22 LAW & SOC’Y REV. 869 (1988); Dalia Tsuk, *The New Deal Origins of American Legal Pluralism*, 29 FLA. ST. U. L. REV. 189 (2001).

⁹¹ See *supra* note 131 and accompanying text.

(SES) framework) include polycentric governance as a critical component. As quoted in the introduction, Ostrom specifically considered the need for polycentric governance in the climate change context, arguing for the importance of a diversity of formal and informal approaches at multiple scales.⁹² Ostrom's work adds to the dissertation's approach to legal hybridity through its conceptualization of polycentricity in the context of climate change and its focus on the constructive role of informal, community-based arrangements in addressing complex environmental resource problems.

New governance scholars' focus on integrating actors and formal and informal law into regulatory approaches provides helpful models for what hybridity might look like in this context. Professors Kenneth W. Abbot and Duncan Snidal have identified the four core attributes of new governance strategies: (1) state-orchestrated rather than state-centered; (2) decentralized rather than centralized; (3) based on dispersed rather than bureaucratic expertise; and (4) integrating a mix of hard and soft law rather than focusing solely on mandatory rules.⁹³ These strategies help to ground the kind of innovative partnerships needed to address climate change. For example, Professor Bradley C. Karkkainen has used new governance theory to propose new institutional arrangements in the context of Great Lakes management,⁹⁴ and Professors J.B. Ruhl and James Salzman

⁹² See Elinor Ostrom, *A Polycentric Approach for Coping with Climate Change* (World Bank, Policy Research Working Paper No. 5095, 2009), available at <http://wdronline.worldbank.org/worldbank/a/nonwdrdetail/162>. For an example of scholarship building on this approach, see Daniel H. Cole, *From Global to Polycentric Climate Governance*, (European Univ. Inst. Robert Schuman Ctr. for Advanced Studies, Working Paper No. 2011/30, 2011), available at <http://cadmus.eui.eu/handle/1814/17757>.

⁹³ Kenneth W. Abbott & Duncan Snidal, *Strengthening International Regulation Through Transnational New Governance: Overcoming the Orchestration Deficit*, 42 VAND. J. TRANSNAT'L L. 501, 508–09 (2009).

⁹⁴ Bradley C. Karkkainen, "New Governance" in the Great Lakes Basin: Has Its Time Arrived?, 2006 MICH. ST. L. REV. 1249, 1254–55 (2006).

have paired new governance with other theories to propose a typology for addressing complex environmental problems more effectively.⁹⁵

The final strand undergirding the dissertation's conception of legal hybridity emerges from a group of scholars collaborating through the Regulatory Institutions Network at Australian National University. Like many of the other scholars described above, these scholars believe in the importance of integrating formal and informal regulatory behavior. They focus on doing so through crafting responsive regulatory models that: (1) consider context, and the range of informal and formal options that interact and might create change; (2) order options from least to most intrusive, to limit regulatory overreaction; and (3) create dialogue about the necessity of regulation and elicit voluntary commitments to comply.⁹⁶ This strand complements the other approaches because it shares their broader view of regulatory behavior and pairs that view with concrete strategies for navigating the resulting morass, a critical need in the climate change context.

Together, these scholarly approaches provide insights into both how to conceptualize the multiplicity of interactions taking place in this context as legal and how to structure regulation that embraces the complexity of scales and interactions across them articulated in the geography scale literature. In so doing, they set the stage for the dissertation's two primary strategies for implementing hybridity which follow: inclusivity across scales and responsiveness. The types of solutions that emerge from these

⁹⁵ Ruhl & Salzman, *supra* note 6, at 102–08 (2010). For broader new governance analyses, see generally LAW AND NEW GOVERNANCE IN THE EU AND THE US (Gráinne de Búrca & Joanne Scott eds., 2006); Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, *supra* note 132; Karkkainen, Reply, *supra* note 132; Lobel, Surreply, *supra* note 132.

⁹⁶ Braithwaite, *supra* note 132; *see also* Wood, Ivec, Job & Braithwaite, *supra* note 132.

literatures model how conceptualizing what matters in law more broadly allows for needed creative configurations.

b. Multiscalar Inclusion

As described throughout this introductory part, scale forms a critical element of the governance complexities in this context; polycentric governance proposals consistently call for better inclusion of smaller scales in the top-down international treaty approach that dominates regulation in the climate change context. While the above literatures often model multi-level inclusion, three additional streams of scholarship that focus on multiscalar dynamics further undergird this Article's conceptual approach to integration across scales. First, at a primarily U.S. domestic level, dynamic federalism scholars—at times also drawing from new governance scholarship—have grappled with what more inclusive multiscalar governance should look like. The dynamic federalism scholars focus on the many areas of law in which some form of concurrent state and federal (and sometimes local or regional) jurisdiction exists and consider how to structure regulation most effectively in that context. Many of them have developed creative models for multiscalar interaction that do not simply involve complex cooperative approaches, but also integrate conflict as a regulatory tool. For example, Professors William Buzbee, Ann Carlson, Robert Glicksman, Alexandra Klass, and Benjamin Sovakool have considered instances in which floor preemption allowed leader states to push the federal government's regulatory approach.⁹⁷ Professor Robert Schapiro has explored how to

⁹⁷ See Buzbee, *supra* note 129, at 1551–56; Buzbee, *supra* note 128, at 5–6, 58–63; Carlson, *supra* note 72, at 290–92, 310–19; Glicksman & Levy, *supra* note 72, at 583–84; Klass, *supra* note 72, at 1654–58; SOVACOOL, *SUPRA* NOTE 72, AT 405–06.

create workable governance from “polyphony.”⁹⁸ Professor Erin Ryan has analyzed the complex ways in which state and federal governments negotiate with one another through various federalism devices.⁹⁹ This scholarship is helpful in the context of climate change because it suggests ways in which concurrent authority across and within levels can be organized effectively, a key issue in integrating the multi-level conflict and cooperation taking place into a governance model.

A subset of these dynamic federalism scholars are part of a group at Emory Law School working on federalism and intersystemic governance.¹⁰⁰ Both the above-mentioned Buzbee and Schapiro are two of the three directors of this group, and Professor Robert Ahdieh is the third director, though a number of other faculty members are affiliated with the group.¹⁰¹ This Section separates out the intersystemic governance group as a second strand, rather than simply lumping them in with dynamic federalism, because of the ways in which some of them are bringing both international legal theory and conflict into their approach to multilevel governance. This combination makes their work particularly helpful for this context, as they suggest potentially useful mechanisms for inclusion of many scales in structures that allow for both cooperation and conflict. For example, Schapiro has considered the value of recognizing multiple regulatory nodes in

⁹⁸ See SCHAPIRO, *supra* note 129, at 7–9. For other analyses of uncooperative federalism, see Bridges, *supra* note 72, at 133–34; Bulman-Pozen & Gerken, *supra* note 72, at 1258–60; Junker, *supra* note 72, at 94–95.

⁹⁹ See Erin Ryan, *Negotiating Federalism*, 52 B.C. L. REV. 1 (2011) (analyzing methods, tools, and procedural constraints of negotiated state/federal governance).

¹⁰⁰ See *Center on Federalism and Intersystemic Governance*, EMORY LAW, <http://www.law.emory.edu/centers-clinics/cfig.html> (last visited July 10, 2011).

¹⁰¹ See *Faculty: Center on Federalism and Intersystemic Governance*, EMORY LAW, <http://www.law.emory.edu/centers-clinics/cfig/faculty.html> (last visited July 10, 2011).

intersystemic interactions that span from the local to the international.¹⁰² Ahdieh has provided a schema for structuring “dialectical” interactions in which regulatory overlap and interaction improve regulation.¹⁰³

Third, transnational legal process provides another important way in which to connect the international and transnational with activity happening at other levels. This approach, developed by Harold Koh, analyzes the way in which transnational norms emerge from diverse, multi-level behavior. In particular, it focuses on the way in which a range of actors in a variety of interactions helps internalize norms transnationally. Koh argues that transnational norms emerge and have effect through a process of interpretation, internalization, and enforcement. Such an analysis fits together well with both new governance and dynamic and inter-systemic federalism approaches because it recognizes the nuanced interactions among a range of actors at different levels of government.¹⁰⁴

The geography literature on scale, through its interrogation of what constitutes scales and how movement between levels takes place, complements these four literatures’ conceptual framing of multiscale inclusivity. It helps to identify, in a more nuanced manner, the pieces of the regulatory puzzle being crafted by the above streams and ways in which they might fit together. Several pieces that I have highlighted in section 1 are particularly illuminating in this context. Sayre’s work on scale at the intersection of geography and ecology could help to identify the implications of different choices about

¹⁰² See Robert A. Schapiro, *Federalism as Intersystemic Governance: Legitimacy in a Post-Westphalian World*, 57 EMORY L.J. 115, 121 (2007).

¹⁰³ See Ahdieh, *Dialectical Regulation*, *supra* note 9, at 914–26.

¹⁰⁴ See Harold Hongju Koh, *Why Transnational Law Matters*, 24 PENN ST. INT’L L. REV. 745 (2006); Harold Hongju Koh, *Jefferson Memorial Lecture: Transnational Legal Process After September 11th*, 22 BERKELEY J. INT’L L. 337, 339 (2004); Harold Hongju Koh, *Why Do Nations Obey International Law?*, 106 YALE L.J. 2599 (1997); Harold Hongju Koh, *Transnational Legal Process*, 75 NEB. L. REV. 181 (1996).

mitigation and adaptation and the scales at which ecological and human concerns are considered.¹⁰⁵ Professor Kevin Cox's network conception of scale, which elucidates the way in which interactions at a certain level and between that level and other levels constitute a scale, helps to frame the multiscale, multiactor interactions taking place in proposed regulatory solutions.¹⁰⁶ Julie Cidell's work serves as a reminder to those crafting regulatory strategies of the key role that individuals play in each institution and level.¹⁰⁷ Finally, the debate between Professors Neil Brenner and Sallie Marston (with the support of Neil Smith), which Professor Mark Purcell has further characterized, provides an important exposition of the contested terrain in which the key actors and their interactions are being determined and how characterization of those interactions matters. Marston's call for greater consideration of social reproduction and consumption, in particular, highlights the need for a more inclusive picture of the people and activities that matter; the case studies highlight the complexity of governance strategies reflecting an understanding of the larger social and political picture.¹⁰⁸

Together, these three streams of scholarship, paired with the geography scale literature, help to demonstrate how the hybrid structures described above might be inclusive across scales, and in the process, help to foster broad buy-in and to encourage learning from smaller scale knowledge. These scholarly approaches explore how regulatory strategies could encompass the nuances of interactions across governmental levels and by so doing provide the foundation for the case studies' more detailed analysis.

¹⁰⁵ See Sayre, *supra* note 119, at 276–78.

¹⁰⁶ See Cox, *Spaces of Dependence*, *supra* note 139 and accompanying text.

¹⁰⁷ See Cidell, *supra* note 139 and accompanying text.

¹⁰⁸ See *supra* note 140 and accompanying text.

c. Regulatory Responsiveness

The prior eight streams of scholarship all provide the basis for creative governance forms, but the adaptive management literature and Holly Doremus's work on the scientization of politics brings the concept of regulatory responsiveness in more clearly. Adaptive management informs a growing body of legal scholarly analysis of environmental regulatory approaches. Most relevant to this dissertation, a number of scholars, such as Professors J.B. Ruhl (often in collaboration with Professor James Salzman), Robin Craig,¹⁰⁹ Alejandro E. Camacho,¹¹⁰ and Brad Karkkainen,¹¹¹ have analyzed adaptive management in a multilevel governance context. Ruhl, Craig, and Camacho have combined adaptive management with dynamic federalism to propose strategies for approaching climate change adaptation more effectively. In so doing, Ruhl and Camacho both draw from Professors C.S. Holling and Lance Gunderson's theory of panarchy, a "cross-scale, interdisciplinary, and dynamic" approach to conceptualizing global change that integrates "economic, ecological, and institutional systems."¹¹² Karkkainen, Ruhl, and Salzman combine new governance and adaptive management approaches in their innovative environmental regulatory proposals.¹¹³

¹⁰⁹ See Robin Kundis Craig, "Stationarity is Dead"—*Long Live Transformation: Five Principles for Climate Change Adaptation Law*, 34 HARV. ENVTL. L. REV. 9, 60–61 (2010); Ruhl & Salzman, *supra* note 6, at 97–98, 103–06.

¹¹⁰ Alejandro E. Camacho, *Assisted Migration: Redefining Nature and Natural Resource Law Under Climate Change*, 27 YALE J. ON REG. 171 (2010).

¹¹¹ See Karkkainen, *supra* note 72.

¹¹² C.S. Holling, Lance H. Gunderson & Donald Ludwig, *In Quest of a Theory of Adaptive Change*, in PANARCHY: UNDERSTANDING TRANSFORMATIONS IN HUMAN AND NATURAL SYSTEMS 3, 5 (Lance H. Gunderson & C.S. Holling eds., 2002). For examples of Ruhl using panarchy in his approach, see J.B. Ruhl & Robert L. Fischman, *Adaptive Management in the Courts*, 95 MINN. L. REV. 424 (2010), and Ruhl & Salzman, *supra* note 6.

¹¹³ See Karkkainen, *supra* note 72; Ruhl & Salzman, *supra* note 6. Sandra Zellmer also has made an interesting proposal for an Interior Rivers Management Act that would integrate adaptive management principles into post-Katrina management of the Mississippi and Missouri Rivers. See Sandra Zellmer, Essay, *A Tale of Two Imperiled Rivers: Reflections from a Post-Katrina World*, 59 FLA. L. REV. 599 (2007).

Holly Doremus's scholarship on the interface of science and politics provides important insights into the difficulties of regulatory responsiveness in contexts like climate change where there is contestation over complex science. She argues that both sides in natural resource debates attempt to leverage science in what she calls the scientizing of politics.¹¹⁴ She explains that due to actual uncertainties and public expectations around certainty, science can be used both offensively and defensively in a regulatory context.¹¹⁵ These insights pair well with the geography scale literature as a tool for exploring how complex, multi-level contestation, such as in litigation, form part of climate change regulation.

These two streams of scholarship have special salience for addressing the complexity posed by climate change because they provide models for creating dynamic, integrative regulatory approaches that can change over time and for understanding the barriers to such approaches. A core problem in regulating climate change effectively is the difficulty of creating a regime that can respond to the ecological and technological uncertainty and change. The case studies draw from adaptive management and Doremus's work on the law-science-politics interface to explore how the multiscale

¹¹⁴ See Holly Doremus, *Science Plays Defense: Natural Resource Management in the Bush Administration*, 32 *ECOLOGY L.Q.* 249 (2005) [hereinafter *Science Plays Defense*]; Holly Doremus & A. Dan Tarlock, *Science, Judgment, and Controversy in Natural Resource Regulation*, 26 *PUB. LAND & RESOURCES L. REV.* 1 (2005); Holly Doremus, *The Purposes, Effects, and Future of the Endangered Species Act's Best Available Science Mandate*, 34 *ENVTL. L.* 397 (2004); Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 *WASH. U. L.Q.* 1029 (1997). For additional analyses of the intersection between law and science in public policymaking, see *ADAPTIVE GOVERNANCE: INTEGRATING SCIENCE, POLICY, AND DECISION MAKING* (Ronald D. Brunner et al. eds., 2005); *RESCUING SCIENCE FROM POLITICS: REGULATION AND THE DISTORTION OF SCIENTIFIC RESEARCH* (Wendy Wagner & Rena Steinzor eds., 2006); Donald T. Hornstein, *Accounting for Science: The Independence of Public Research in the New, Subterranean Administrative Law*, 66 *LAW & CONTEMP. PROBS.* 227 (2003).

¹¹⁵ *Id.* at 266–95.

dynamics in the context of litigation, federal regulation, and local action can help foster that needed evolution.

3. The Dissertation's Conceptual Approach

The wealth of potentially applicable conceptual approaches from geography, law, and other disciplines poses a problem. On the one hand, intellectual completeness suggests the importance of acknowledging these diverse set of interrelated approaches that are rarely treated together. On the other hand, each approach has a good deal of nuance, which is lost in lumping them together in broad categories.

This dissertation attempts to strike a balance by both drawing from all of these streams as part of its overall approach, and by highlighting individual pairings in its particular chapters throughout the case studies. This chapter provides an overall context, so that when terms like hybridity, polycentricity, multiscale inclusion, or regulatory responsiveness are used, the rich conceptual context underlying those terms is clear. Individual chapters refer back to this overall conceptual picture throughout the dissertation.

However, the dissertation also aims to demonstrate in a detailed fashion how geographic conceptions of scale might be brought together with legal and other relevant interdisciplinary theory. To that end, individual chapters interweave specific theories introduced in this chapter in more depth. For example, Chapter IV brings together the work of Holly Doremus and Nathan Sayre, and Chapter VII integrates Harold Koh's theory of transnational process with Kevin Cox's network approach to scale.

Through this paired approach, the dissertation aims to provide a cohesive account of a polycentric regulatory landscape that acknowledges the complexity and richness of the scales that comprise it. It argues that an understanding of detailed interactions that comprise scale, which the geographers help provide, is critical to making progress on this super-wicked problem.

CHAPTER III

THE MULTI-LEVEL GEOGRAPHY OF CLIMATE CHANGE REGULATION

This chapter contains edited portions of Hari M. Osofsky, *Is Climate Change “International”?: Litigation’s Diagonal Regulatory Role*, 49 Va. J. Int’l L. 585 (2009).

This final introductory chapter focuses on describing the geography of climate change and efforts to address it. It explains some of the ways in which mitigation, impacts, and adaptation interact with multiple levels of government, and current failures of regulation at any level to address the problem adequately. In so doing, it provides the overall context in which the case studies take place and frames why the kind of conceptual analysis that Chapter II introduces is necessary.

Even the most diehard climate skeptics generally acknowledge the global dimensions of the carbon cycle.¹¹⁶ Greenhouse gases and their impacts involve complex interactions among the atmosphere, ocean, and terrestrial forms that interconnect the entire planet.¹¹⁷ Given the international dimensions of the problem of anthropogenic climate change, only a few outliers would contest the value of creating an effective treaty regime to address emissions.¹¹⁸ Rather, as demonstrated repeatedly in the recent and pending litigation over climate change discussed in Chapters IV through VII, the debate

¹¹⁶ See, e.g., Richard S. Lindzen, Op-Ed., *There Is No ‘Consensus’ on Global Warming*, WALL ST. J., June 26, 2006, at A14. For a discussion of the broad scientific consensus on climate change, even before the latest Intergovernmental Panel on Climate Change (IPCC) report, see Naomi Oreskes, *Beyond the Ivory Tower: The Scientific Consensus on Climate Change*, 306 SCI. 1686 (2004).

¹¹⁷ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS OF CLIMATE CHANGE (2007), available at <http://www.ipcc.ch/ipccreports/ar4-wgl.htm>.

¹¹⁸ Eric Posner and Cass Sunstein, for example, acknowledge: “It is increasingly clear that an international agreement to control climate change would be in the world’s interest.” Eric A. Posner & Cass R. Sunstein, *Climate Change Justice*, 96 GEO. L.J. 1565, 1611 (2008). The difficulty from their perspective is that such an agreement may not be in the United States’ interest and that it thus raises complex justice issues about the best way to address climate change.

often centers at a smaller scale. Namely, regulatory opponents use the large temporal and spatial scale of climate change to fight against national and subnational regulation.¹¹⁹

This dissertation supports a rigorous international treaty regime, but contends that the nature of climate change regulation necessitates multiscale legal approaches—that is, ones that simultaneously engage more than one level of governance. Climate change is an individual, local, state, national, regional, and international problem.¹²⁰ Because carbon is so deeply embedded in the global economy and its impacts manifest in specific ways in different places, emissions and impacts occur at multiple levels simultaneously.¹²¹ This dissertation argues that the valorization of the “international” in the climate change debate, which likely results at least in part due to the modernist territorial presumptions that Alexander Murphy has analyzed,¹²² serves as an impediment to such cross-cutting efforts. If regulatory strategies focus only on top-down, international-level approaches grounded in nation-state consent, we will miss opportunities for much needed innovation and emissions reduction.

Although questions of the appropriate scale of climate change regulation are particularly salient in this country as President Obama’s administration crafts major

¹¹⁹ I examine this phenomenon across multiple cases *infra* Chapters IV–VII.

¹²⁰ See *Commission Report on the Impacts and Costs of Climate Change* (Sept. 2005) (prepared by Paul Watkiss et al.), available at http://ec.europa.eu/environment/climat/pdf/final_report2.pdf; INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 2; NICHOLAS STERN, *THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW* (2007), available at http://www.hm-treasury.gov.uk/stern_review_report.htm.

¹²¹ See generally INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY* (2007), available at <http://www.ipcc.ch/ipccreports/ar4-wg2.htm> [hereinafter IPCC, IMPACTS]; INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *CLIMATE CHANGE 2007: MITIGATION OF CLIMATE CHANGE*, available at http://www.mnp.nl/ipcc/pages_media/AR4-chapters.html [hereinafter IPCC, MITIGATION].

¹²² Alexander B. Murphy, *Territory’s Continuing Allure*, __ ANNALS. ASSOC GEOG. 1, 2 (2012) (forthcoming).

initiatives in the face of Congressional inaction,¹²³ efforts to engage climate change at smaller scales in the United States are not new. In the early to mid-1990s, Minnesota courts upheld the inclusion of carbon dioxide in environmental cost valuation,¹²⁴ and Portland, Oregon joined international climate initiatives.¹²⁵ But the growth in U.S. state and local activity on climate change over the past several years has been staggering.¹²⁶ With over one thousand mayors pledging to meet the Kyoto standards and a host of states attempting to exceed federal regulatory standards, smaller-scale emissions efforts make

¹²³ White House, Office of the Press Secretary, Remarks of President Barack Obama—As Prepared for Delivery, State of the Union Address, Feb. 21, 2013, <http://www.whitehouse.gov/the-press-office/2013/02/12/president-barack-obamas-state-union-address>; U.S. EPA, Climate Change, Regulatory Initiatives, <http://www.epa.gov/climatechange/EPAactivities/regulatory-initiatives.html>; John M. Broder & Andrew C. Revkin, *Hard Task for New Team on Energy and Climate*, N.Y. TIMES, Dec. 16, 2008, at A24, available at http://www.nytimes.com/2008/12/16/us/politics/16energy.html?_r=1&scp=3&sq=Salazar&st=cse; John Vidal, *Obama Victory Signals Rebirth of US Environmental Policy*, GUARDIAN, Nov. 5, 2008, at <http://www.guardian.co.uk/environment/2008/nov/05/climatechange-carbonemissions>; President Barack Obama, Address to Joint Session of Congress (Feb. 24, 2009), http://www.whitehouse.gov/the_press_office/Remarks-of-President-Barack-Obama-Address-to-Joint-Session-of-Congress/; Obama for America, Barack Obama and Joe Biden: New Energy for America, at http://www.barackobama.com/pdf/factsheet_energy_speech_080308.pdf (last visited Dec. 22, 2008).

¹²⁴ *In re* Quantification of Environmental Costs, 578 N.W.2d 794, 796–97 (Minn. App. 1998). For analyses of this case, see Hari M. Osofsky, *Local Approaches to Transnational Corporate Responsibility: Mapping the Role of Sub-National Climate Change Litigation*, 20 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 143 (2007) and Stephanie Stern, *State Action as Political Voice in Global Climate Change Policy: The Minnesota Environmental Cost Valuation Regulation*, in ADJUDICATING CLIMATE CHANGE: SUB-NATIONAL, NATIONAL, AND SUPRA-NATIONAL APPROACHES (William C.G. Burns & Hari M. Osofsky eds., forthcoming 2009).

¹²⁵ Using bottom-up lawmaking and law and geography, Janet Koven Levit and I have focused on the significance of cities' climate initiatives for multiscalar regulation. See Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks?: Local Climate Coalitions*, 8 CHI. J. INT'L L. 409 (2008).

¹²⁶ See Kevin McCarty, *Bloomberg, Palmer Lead USA and World Mayors on Climate Protection: US Mayors Climate Agreement Hits 500 Milestone*, U.S. MAYOR NEWSPAPER, May 21, 2007, at 1, available at http://www.usmayors.org/USCM/us_mayor_newspaper/documents/05_21_07/pg1_NYC_climate.asp; Mayors Climate Protection Center, About the Mayors Climate Protection Center, at <http://www.usmayors.org/climateprotection/about.htm> (last visited Jan. 28, 2009); U.S. Conference of Mayors, The U.S. Mayors Climate Protection Agreement (2005), available at <http://www.usmayors.org/climateprotection/documents/mcpAgreement.pdf>.

an important impact even as the U.S. federal government reengages opportunities for greater national and international action.¹²⁷

In this context, courtroom battles over the scale of climate regulation in the United States are particularly salient. When opponents to stronger regulation at state and local levels repeatedly argue that climate change is “too big” or that emissions and impacts are “too uncertain” at smaller levels, they potentially block needed action.¹²⁸ At a moment in which the scientific evidence regarding anthropogenic climate change is becoming ever more alarming,¹²⁹ each lost opportunity to limit emissions and respond constructively to this problem increases the risks. Because the litigation and policy debates are deeply intertwined, this “scaling up” thus poses both practical and normative concerns.¹³⁰

Moreover, battles over scale are not unique to the problem of climate change. In controversies over topics as diverse as the use of the Internet, immigration policy, terrorism, and the current financial crisis, policymakers struggle with the appropriate role of multiple levels of government. Similarly, new governance and “dynamic” federalism approaches, to name two examples among a burgeoning literature described in Chapter II, engage complexities of regulatory scale, as well as the appropriateness of top-down and

¹²⁷ *List of Participating Mayors*, MAYORS CLIMATE PROT. CTR., <http://www.usmayors.org/climateprotection/list.asp> (last visited Jan. 10, 2012); *About the Mayors Climate Protection Center*, MAYORS CLIMATE PROT. CTR., <http://www.usmayors.org/climateprotection/about.htm> (last visited Jan. 10, 2012).

¹²⁸ As discussed in more depth *infra* Chapters IV–VII, often at stake in this litigation are emissions that constitute a significant percentage of the U.S. contribution.

¹²⁹ See sources cited *supra* note 6.

¹³⁰ For a discussion of the strategy of “scaling up,” see Hari M. Osofsky, *The Geography of Climate Change Litigation Part II: Narratives of Massachusetts v. EPA*, 8 CHI. J. INT’L L. 573 (2008) and Osofsky, *supra* note 4.

bottom-up approaches.¹³¹ This dissertation’s law and geography analysis of multiscale regulatory strategies in the climate context, therefore, forms part of a broader dialogue about how to scale law, a topic that I plan to explore in more depth in future work.

This chapter’s overview focuses in particular on the scale of the problem and regulatory efforts to address it. Using the recent fourth report by the Intergovernmental Panel on Climate Change (IPCC),¹³² the chapter argues that climate change is not solely an international problem, but rather a multiscale one. Moreover, the regulatory difficulties to date reflect the fact that carbon and other greenhouse gases are deeply embedded in our economy and way of life at multiple levels. Our demarcation of law into distinct levels of governance and the overlapping sovereignty that accompanies it make engagement of multiple scales simultaneously very challenging.

The structure of law poses a fundamental difficulty for effective regulation of multiscale problems like climate change. Namely, law’s scales are sticky despite the fluid scalar nature of greenhouse gas emissions and impacts. In other words, we have subdivided law into levels of governance—a sensible idea for creating order and administrability—and formal regulation tends to happen within the fixed frames of those structures. As a result, we generally approach regulation as choosing or coordinating among those levels.¹³³

¹³¹ For further discussion of the new governance scholarship and other literature engaging local-international dynamics, see *infra* notes 74–75. For examples of the “dynamic” federalism scholarship, see *infra* note 128.

¹³² See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 2.

¹³³ For discussion of questions of scalar fixity and fluidity in the geography literature, see Neil Brenner, *Between Fixity and Motion: Accumulation, Territorial Organization and the Historical Geography of Spatial Scales*, 16 ENV’T & PLAN. D: SOC’Y & SPACE 459, 461 (1998); Cox, *Spaces of Dependence*, *supra* note 19, at 20–21; David Delaney & Helga Leitner, *The Political Construction of Scale*, 16 POL. GEOGRAPHY 93, 93 (1997); Andrew Herod, *Scale: The Local and the Global*, in KEY CONCEPTS IN

The current dilemmas over climate regulation reflect those constraints. This chapter analyzes climate change as an example of a multiscale problem that law struggles to address effectively. It begins by examining the multiscale nature of emissions and impacts, and then turns to the barriers to an effective regulatory regime.

1. The Nature of the Problem

This section describes the ways in which climate change interacts simultaneously with many jurisdictional levels and spatial and temporal scales. It begins with an analysis of emissions and then turns to impacts and adaptation.

a. Emissions

Greenhouse gas emissions result from individual, local, state, national, regional, and international decisions.¹³⁴ At an individual level, each person, within parameters, makes choices about what his or her carbon footprint will be. Regarding transportation, for example, people decide whether to walk or to rely upon a bike or motor vehicle; if a motor vehicle, whether to use public, carpool, or individual options; and, if individual options, whether to use high or low emissions cars. Although each individual's choices

GEOGRAPHY 229, 234, 242 (Sarah L. Holloway, Stephen P. Rice & Gill Valentine eds., 2003); Deborah G. Martin, *Transcending the Fixity of Jurisdictional Scale*, 18 POL. GEOGRAPHY 33, 35 (1999); Anssi Paasi, *Place and Region: Looking through the Prism of Scale*, 28 PROGRESS IN HUM. GEOGRAPHY 536, 542–43 (2004); Erik Swyngedouw, *Excluding the Other: The Production of Scale and Scaled Politics*, in GEOGRAPHIES OF ECONOMIES 167, 169 (Roger Lee & Jane Wills eds., 1997); and Erik Swyngedouw, *Neither Global nor Local: "Globalization" and the Politics of Scale*, in SPACES OF GLOBALIZATION: REASSERTING THE POWER OF THE LOCAL 137, 141 (Kevin R. Cox ed., 1997).

¹³⁴ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 2. For a discussion of the multiscale dimensions of land use regulation, see Craig Anthony Arnold, *The Structure of the Land Use Regulatory System in the United States*, 22 J. LAND USE & ENVTL. L. 441 (2007) (analyzing the structure of the land use regulatory system and possibilities for incorporating considerations of ecosystem services).

have a minor impact on total greenhouse gas emissions, trends in personal decisions add up, even at the global scale.

Those individual choices occur not simply in a sociocultural context—the past couple of years, for instance, have seen a significant shifts back-and-forth in public opinion about climate change¹³⁵—but also in a multiscalar legal one. As explored in litigation between California and San Bernardino County described in Chapter VI, urban growth plans significantly impact emissions trajectories.¹³⁶ Many studies have shown, for example, the ways in which suburban zoning and planning—with large individual lots, separation between residential and commercial uses, and limited public transportation— increase vehicle miles traveled and, as a result, overall emissions from that locality.¹³⁷

¹³⁵ See The Chicago Council on Public Affairs, Poll Finds Worldwide Agreement that Climate Change is a Threat (Mar. 2007), at http://www.worldpublicopinion.org/pipa/pdf/mar07/CCGA-ClimateChange_article.pdf; see also Juliet Eilperin & Jon Cohen, *Growing Number of Americans See Warming as Leading Threat*, WASH. POST, Apr. 20, 2007, at A20, available at <http://www.washingtonpost.com/wp-dyn/content/article/2007/04/19/AR2007041902527.html>; cf. Cass R. Sunstein, *On the Divergent American Reactions to Terrorism and Climate Change*, 107 COLUM. L. REV. 503 (2007) (comparing reactions to terrorism and climate change).

¹³⁶ See Confidential Settlement Agreement, *People v. County of San Bernardino*, No. 07 Civ. 329 (Cal. Super. Ct. Aug. 28, 2007), available at http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf [hereinafter Confidential Settlement Agreement]. This case is discussed in depth *infra* Chapter VI.

¹³⁷ See REID EWING, ROLF PENDALL & DON CHEN, *MEASURING SPRAWL AND ITS IMPACT* (2002), available at <http://www.smartgrowthamerica.org/sprawlindex/MeasuringSprawl.PDF>; JIANGUO WU & DOUGLAS GREEN, *A HIERARCHICAL PATCH DYNAMICS APPROACH TO REGIONAL MODELING AND SCALING* (2002), at http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/457/report/F; Molly O'Meara Sheehan, *City Limits: Putting the Brakes on Sprawl* (Worldwatch, Paper No. 156, 2001). But see Ronald D. Utt & Wendell Cox, *City Limits: Putting the Brakes on Sprawl: A Contrary View* (June 29, 2001), at <http://www.heritage.org/Research/SmartGrowth/WM20.cfm>. For broader discussions of urbanization and environmental management, see Robert H. Freilich & S. Mark White, *Transportation Congestion and Growth Management: Comprehensive Approaches to Resolving America's Major Quality of Life Crisis*, 24 LOY. L.A. L. REV. 915 (1991); G.S. Kleppel, *Urbanization and Environmental Quality: Implications of Alternative Development Scenarios*, 8 ALB. L. ENVTL. OUTLOOK J. 37 (2002); Edward H. Ziegler, *China's Cities, Globalization, and Sustainable Development: Comparative Thoughts on Urban Planning, Energy, and Environmental Policy*, 5 WASH. U. GLOBAL STUD. L. REV. 295 (2006).

Chapters XI through XIII explore the panoply suburban efforts on climate change and their interaction with multi-level networks in more depth.¹³⁸

State-level decisionmaking further impacts those individual transportation choices, as discussed in Chapter V. Following California's lead, a number of states attempted to exceed federal limitations on motor vehicle emissions by enacting more stringent regulations.¹³⁹ Cases challenging and supporting these efforts wound their way through state and federal courts and interacted with the Bush administration Environmental Protection Agency's (EPA) decision to deny California's waiver request and the Obama administration EPA's reconsideration of it.¹⁴⁰ The Obama Administration EPA, upon completing its reconsideration, reached a historic compromise with California and the recently bailed-out automobile industry to have escalating national standards for motor vehicles emissions that would harmonize with California standards. Moreover, it brought together energy and environmental law and agencies for the first time through joint rule making that regulated motor vehicle fuel efficiency together with tailpipe emissions.¹⁴¹

¹³⁸ See *infra* Chapters XI–XIII.

¹³⁹ For example, prior to the EPA's waiver denial and the California suit over it, a district court in Vermont upheld that state's heightened emissions standards for new motor vehicles subject to EPA's waiver grant. See *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295 (D. Vt. 2007).

¹⁴⁰ For the U.S. EPA's waiver denial, see Letter from Stephen L. Johnson, Adm'r, U.S. Env'tl. Prot. Agency, to Arnold Schwarzenegger, Governor of Cal. (Dec. 19, 2007), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epa-letter.pdf [hereinafter Waiver Denial]. For California's Petition for Review to the Court of Appeals for the Ninth Circuit, see *Petition for Review of Decision of the United States Environmental Protection Agency, California v. EPA*, No. 08-70011 (9th Cir. Jan. 2, 2008), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epapetition-1.pdf [hereinafter Petition for Review]. For the Obama Administration's reconsideration, see sources *infra* note 125.

¹⁴¹ U.S. EPA, Climate Change, Regulatory Initiatives, <http://www.epa.gov/climatechange/EPAactivities/regulatory-initiatives.html>.

As the disputes over these state laws make clear, the federal government also regulates individual transportation decisions through each of its three branches. Congress has passed several statutes regulating vehicle emissions—which the executive branch then implements—and is considering additional legislation targeted at climate change.¹⁴² The judicial branch evaluates agency choices about whether and how those statutes should be used to regulate vehicle emissions.¹⁴³ These standards drive what options consumers have and how expensive they will be.¹⁴⁴

In the globalized economy and its web of legal interconnections, these interactions do not stop at U.S. borders. Regional and international trade agreements determine which vehicles we import and export and how expensive they will be, again impacting what options are available to consumers.¹⁴⁵ U.S. participation in international negotiations—as well as formal and informal agreements—regarding climate change puts

¹⁴² For example, some of these statutes have been the basis of the preemption suits discussed *supra* notes 27–28. For a discussion of possible statutory approaches, see Victor Flatt, *Taking the Legislative Temperature: Which Federal Climate Change Legislative Proposal is “Best”?*, 102 NW. U. L. REV. COLLOQUY 123 (2007).

¹⁴³ *Massachusetts v. EPA*, for example, focused on the extent to which provisions in the Clean Air Act regarding pollution encompassed greenhouse gas emissions from motor vehicles. See *Massachusetts v. EPA*, 549 U.S. 497 (2007).

¹⁴⁴ Arguments about consumer choices have weighed heavily in the arguments in *Central Valley Chrysler-Jeep v. Witherspoon*. See, e.g., First Amended Complaint for Declaratory and Injunctive Relief ¶ 41, *Central Valley Chrysler-Jeep v. Witherspoon*, 456 F. Supp. 2d 1160 (E.D. Cal. 2004) (No. 04 Civ. 6663), available at 2004 WL 5001055 (“Manufacturers manage their fleet average by controlling production, supply, and price in response to market demands. For example, if consumer demand for larger, less fuel-efficient vehicles increases, a manufacturer might be forced to limit supply or raise prices for those vehicles. The fuel economy regulations thus can have significant effects on the supply of vehicles available to consumers.”).

¹⁴⁵ For an example of a bilateral agreement on motor vehicles, see Memorandum of Understanding Regarding Foreign Motor Vehicles, U.S.-S. Korea, Oct. 20, 1998, available at http://tcc.export.gov/Trade_Agreements/All_Trade_Agreements/exp_005688.asp.

pressure on our national policies, which influence the price and availability of high and low emissions vehicles.¹⁴⁶

This type of analysis does not simply apply to vehicles, of course, but to the broad panoply of emissions decisions that individuals and governmental and nongovernmental entities make. From the multiscalar energy industry¹⁴⁷ to the emergence of complex transnational coalitions on climate change,¹⁴⁸ current and future emissions are shaped through multiscalar regulatory dynamics.

¹⁴⁶ For example, in her speech at the UN General Assembly High-Level Event on Climate Technology Session, former Secretary of State Condoleezza Rice specifically referenced hybrid vehicles. Condoleezza Rice, U.S. Sec'y of State, Remarks at the United Nations General Assembly High-Level Event on Climate Technology Session (Sept. 24, 2007), available at <http://www.state.gov/secretary/rm/2007/09/92662.htm>.

¹⁴⁷ For a discussion of complex regulatory interactions governing the transnational energy industry, see Hari M. Osofsky, *The Geography of Climate Change Litigation: Implications for Transnational Regulatory Governance*, 83 WASH. U. L.Q. 1789, 1795–97 (2005).

¹⁴⁸ For a discussion of climate networks in a local context, for example, see Carolyn Kousky & Stephen H. Schneider, *Global Climate Policy: Will Cities Lead the Way?*, 3 CLIMATE POL'Y 1, 11 (2003); Janet Koven Levit, *Bottom-Up International Lawmaking: Reflections on the New Haven School of International Law*, 32 YALE J. INT'L L. 383, 402–05 (2007); and Judith Resnik, *Law's Migration: American Exceptionalism, Silent Dialogues, and Federalism's Multiple Ports of Entry*, 115 YALE L.J. 1564, 1627–33 (2006). See generally Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J.L. & PUB. POL'Y 369 (2006); Donald A. Brown, *Thinking Globally and Acting Locally: The Emergence of Global Environmental Problems and the Critical Need to Develop Sustainable Development Programs at State and Local Levels in the United States*, 5 DICK. J. ENVTL. L. & POL'Y 175 (1996); Ann E. Carlson, *Implementing Greenhouse Gas Emissions Caps: A Case Study of the Los Angeles Department of Water and Power*, 55 UCLA L. REV. 1479 (2008); Kirsten Engel, *State and Local Climate Change Initiatives: What is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015 (2006); Alice Kaswan, *Climate Change, Consumption, and Cities*, 36 FORDHAM URB. L.J. 253 (2008); Laura Kosloff & Mark Trexler, *State Climate Change Initiatives: Think Locally, Act Globally*, 18 NAT. RESOURCES & ENV'T 46 (2004); Robert B. McKinstry, Jr., *Laboratories for Local Solutions for Global Problems: State, Local and Private Leadership in Developing Strategies to Mitigate the Causes and Effects of Climate Change*, 12 PENN ST. ENVTL. L. REV. 15 (2004); Hari M. Osofsky, *Climate Change Litigation as Pluralist Legal Dialogue?*, 26A STAN. ENVTL. L.J. 181 & 43A STAN. J. INT'L L. 181 (2007); Osofsky, *supra* note 8; Osofsky & Levit, *supra* note 9; Resnik et al., *supra* note 20; Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008); Katherine Trisolini & Jonathan Zasloff, *Cities, Land Use, and the Global Commons: Genesis and the Urban Politics of Climate Change*, in ADJUDICATING CLIMATE CHANGE: SUB-NATIONAL, NATIONAL, AND SUPRA-NATIONAL APPROACHES, *supra* note 8, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1267314; William Andreen et al., *Cooperative Federalism and Climate Change: Why Federal, State, and Local Governments Must Continue to Partner* (Ctr. for Progressive Reform, White Paper No. 803, 2008), available at http://progressiveregulation.org/articles/Cooperative_Federalism_and_Climate_Change.pdf.

The Fourth IPCC Report's volume on mitigation reinforces this point; it relies on a mix of what it calls bottom-up and top-down economic studies to assess emissions reduction scenarios.¹⁴⁹ The bottom-up studies consider specific options, generally with an unchanged macroeconomy, whereas the top-down studies engage economy-wide options. The IPCC summary for policymakers reports:

Bottom-up and top-down models have become more similar since the TAR [Third Assessment Report] as top-down models have incorporated more technological mitigation options and bottom-up models have incorporated more macroeconomic and market feedbacks as well as adopting barrier analysis into their model structures. Bottom-up studies in particular are useful for the assessment of specific policy options at [the] sectoral level, e.g. options for improving energy efficiency, while top-down studies are useful for assessing cross-sectoral and economy-wide climate change policies, such as carbon taxes and stabilization policies. However, current bottom-up and top-down studies of economic potential have limitations in considering life-style choices, and in including all externalities such as local air pollution. They have limited representation of some regions, countries, sectors, gases, and barriers. The projected mitigation costs do not take into account potential benefits of avoided climate change.¹⁵⁰

This consensus analysis suggests that in order to regulate emissions most efficiently, we must consider strategies at multiple levels, as well as find ways of incorporating cultural questions into economic models.

In addition, the mitigation volume makes clear how difficult the multiple geographic and time scales make this project. For example, the chapter entitled "Transport and Its Infrastructure" covers transportation issues in mostly sweeping terms and does not have the space to delve into the nuances of how its approach can be applied

¹⁴⁹ Intergovernmental Panel on Climate Change, *Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change: Summary for Policymakers*, in IPCC, MITIGATION, *supra* note 6, at 8, available at http://www.mnp.nl/ipcc/pages_media/FAR4docs/final_pdfs_ar4/SPM.pdf.

¹⁵⁰ *Id.*

within specific contexts.¹⁵¹ More generally, the introduction to the volume explains that inertia in both climate and socioeconomic systems, combined with the multiple time scales involved regarding the problem and responses to it, pose serious challenges.¹⁵² Not only will many measures need to be taken in the short term in order to prevent medium- and long-term issues, but policymakers also will have to navigate the fact that the same radiative forcing may cause the atmosphere to respond in decades as the ocean changes over centuries.¹⁵³ Effective legal regulation somehow must bridge these complexities of how emissions and their interaction with the physical environment are scaled and of the greater scientific uncertainty that currently exists at smaller scales.¹⁵⁴

b. Impacts and Adaptation

These complexities of scale are not limited to emissions, but also span issues of mitigation and adaptation. The Fourth IPCC Report makes clear that we have passed the

¹⁵¹ Suzana Kahn Riberios et al., *Transport and its Infrastructure*, in IPCC, MITIGATION, *supra* note 6, at 324, available at http://www.mnp.nl/ipcc/pages_media/FAR4docs/final_pdfs_ar4/Chapter05.pdf.

¹⁵² H-Holder Rogner et al., *Introduction*, in IPCC, MITIGATION, *supra* note 6, at 101.

¹⁵³ *Id.*

¹⁵⁴ See NATIONAL RESEARCH COUNCIL, EVALUATING PROGRESS OF THE U.S. CLIMATE CHANGE SCIENCE PROGRAM: METHODS AND PRELIMINARY RESULTS 5 (2007), available at <http://books.nap.edu/openbook.php?isbn=0309108268> (“Information at regional and local scales is most relevant for state and local resource managers and policy makers, as well as for the general population, but progress on these smaller spatial scales has been inadequate. Improving understanding of regional-scale climate processes and their impacts in North America, for example, would require improved integrated modeling, regional-scale observations, and the development of scenarios of climate change and impacts.”); Patrick J. Bartlein, Professor, Dep’t of Geography, Univ. of Or., Remarks at Seminar on Reading the Fourth IPCC Assessment Report 2007 (Oct. 17, 2007) (author’s notes, on file with author). For an interesting exploration of an integrative theory of resource management, see C.S. Holling, Lance H. Gunderson & Donald Ludwig, *In Quest of a Theory of Adaptive Change*, in PANARCHY: UNDERSTANDING TRANSFORMATIONS IN HUMAN SYSTEMS 3 (Lance H. Gunderson & C.S. Holling eds., 2002) (introducing the term “panarchy” to describe their “cross-scale, interdisciplinary, and dynamic” theory of global change that integrates “economic, ecological, and institutional systems”).

point at which prevention of impacts is possible.¹⁵⁵ Rather, a host of impacts already have been felt, and scientific consensus suggests that they will only get worse as time passes.¹⁵⁶ The explosion of climate change litigation over the past few years, and its increasing viability in courts around the world, reflects this reality.¹⁵⁷

Just as the extent of emissions interacts with multiscalar regulatory behavior, mitigation and adaptation present quandaries at every level of governance. As a physical matter, climate change manifests uniquely in each specific place, and the likelihood of severe impacts are not distributed equally.¹⁵⁸ Unfortunately, current predictions suggest that the places with the least economic and political resources often will bear the brunt of these physical changes.¹⁵⁹

At an individual level, people must make hard choices in response to the changes in their physical environment. As glacial lakes loom above them or risks from coastal storms grow more severe, should individuals leave their communities? Are they able to do so? What steps are realistic options to limit the damages that they will suffer from the changing climate where they live? These are not just decisions facing the very poor; European ski resorts have begun wrapping their glaciers, and wine growers try to take

¹⁵⁵ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 2; IPCC, IMPACTS, *supra* note 6; IPCC, MITIGATION, *supra* note 6.

¹⁵⁶ See IPCC, IMPACTS, *supra* note 6.

¹⁵⁷ For example, the discussion of harms underlying the nuisance claims in *Connecticut v. American Electric Power* and *People v. General Motors* describes a set of present harms and future risks. Complaint at 30–55, *California v. General Motors Corp.*, No. 06 Civ. 5755, 2007 WL 2726871 (N.D. Cal. 2007), available at http://ag.ca.gov/newsalerts/cms06/06-082_0a.pdf; Complaint at 53–64, *Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265 (S.D.N.Y. 2005) (No. 104 Civ. 5670). Because that set of harms and risks will likely worsen without significant policy intervention, litigation over harms will probably become more viable over time. See IPCC, MITIGATION, *supra* note 6; STERN, *supra* note 5.

¹⁵⁸ See IPCC, IMPACTS, *supra* note 6.

¹⁵⁹ *Id.*

climate change into account when planting new grapes.¹⁶⁰ But the choices are often more fundamental for those who have few resources and live in close connection with the land. Major climate change scenarios include troubling projections of displaced people, armed conflict, and economic loss in some of the poorest places in the world.

As with emissions, these individual choices occur within a multiscale regulatory framework. Localities, states, and national governments decide what their plans will be in response to these changes and the extent to which they want to and are able to support the individuals making those hard decisions.¹⁶¹ From the details of land use planning to the availability of federal disaster relief, governmental decision makers help to structure how palatable life will be in particular places as climates change.

Moreover, these policy decisions have impacts at multiple time scales. As time passes, impacts evolve and, in many places, according to consistent scientific data, likely will worsen.¹⁶² In addition, as we load the atmosphere with more and more greenhouse gases, the risks of a sudden catastrophic event—such as ice sheet collapse—increase.¹⁶³ Decisionmaking on impacts thus has to grapple with current and predicted future issues.

Together, the multiscale dimensions of both emissions and impacts suggest that climate change will be very difficult to regulate effectively at any one scale. Local action must be tied to larger-scale decision making, whereas international action must make room for the nuances of smaller-scale variation. Moreover, because the substances being

¹⁶⁰ See *Cloak Protects Glacier from Sun*, BBC NEWS, May 10, 2005, at <http://news.bbc.co.uk/2/hi/europe/4533945.stm>.

¹⁶¹ *Id.*

¹⁶² *Id.*

¹⁶³ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 2; IPCC, IMPACTS, *supra* note 6.

regulated are so deeply embedded in economies and cultures, political complexities abound that likely will manifest differently at each level of governance.¹⁶⁴

3. Current Regulatory Failures

The need to cross cut levels of governance is, of course, not lost on those attempting to address climate change at any particular level. The major treaties on climate change build in flexibility mechanisms to allow for the nation-state parties to address emissions in ways that work for their particular contexts.¹⁶⁵ Local efforts often use international standards as a benchmark, such as in cities' pledges to comply with the Kyoto Protocol's emissions reductions.¹⁶⁶ Moreover, a wide range of actors at different levels of governance—including governmental entities, nongovernmental and quasigovernmental organizations, corporations, and individuals—are working collaboratively on crafting better regulatory strategies.

But even with this recognition, multiscale efforts on climate change at this point are falling short. As described in Chapter I, the international legal regime suffers from both a lack of political will and the complexities of national implementation. Once one gets below the international level, however, policy efforts on climate change become more piecemeal, which is a persistent issue in discussions of the appropriate role of

¹⁶⁴ IPCC, *IMPACTS*, *supra* note 6. I plan to explore some of these issues of culture and identity in a future article, tentatively entitled *The Geography of Climate Change Litigation Part III: Issues of Culture and Identity*.

¹⁶⁵ Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22, 33, *available at* <http://untreaty.un.org/English/notpubl/kyoto-en.htm> [hereinafter Kyoto Protocol]; United Nations Framework Convention on Climate Change art. 2, May 9, 1992, S. TREATY DOC. No. 102-38, 1771 U.N.T.S. 164, 166, 170, *available at* http://untreaty.un.org/English/notpubl/unfccc_eng.pdf.

¹⁶⁶ *See sources cited supra* note 10.

smaller-scale regulation and the difficulties of leakage at the subnational level.¹⁶⁷ The national and international coalitions of cities, for example, continue to grow—and at this point these cities represent a significant percentage of global emissions—but they do not yet come close to including all cities around the world.¹⁶⁸ Those that join these coalitions also tend to be more amenable to taking needed regulatory steps than those that do not join. Moreover, many cities still face major internal political battles as they try to navigate the practical effect of meeting those obligations on their other goals.¹⁶⁹

Furthermore, as a formal matter, multiscalar regulatory approaches not only have to deal with specific barriers at each level of governance, but also have to bridge the way in which we categorize and cabin law. For example, treaties and customary international law—the bulwarks of international legal regulation—are based on the nation-state as the key decision maker. Under current legal models, international law can only be created through the consent of sovereign and equal nation-states.¹⁷⁰ With such an approach, the ability of subnational governments to interact with international law is limited; even if their participatory role increases, the structure of how formal international law is created

¹⁶⁷ See Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961, 1962 (2007) (“[S]ubnational state-level action is not the best way to combat global climate change.”). See generally Abate, *supra* note 37.

¹⁶⁸ See ICLEI Global, How it started?, at <http://www.iclei.org/index.php?id=811> (last visited Nov. 8, 2008).

¹⁶⁹ Janet Koven Levit and I have explored these complexities in the context of Portland and Tulsa. See Osofsky & Levit, *supra* note 9. Although our analysis of cities focuses primarily on the emissions reduction/economic growth tension, multiple conceptual balances need to be struck in environmental regulation. For an exploration of the complexities of navigating conservation and preservation, see generally Louise A. Halper, *The Adirondack Park and the Northern Forest: An Essay on Preservation and Conservation*, 19 VT. L. REV. 335 (1995).

¹⁷⁰ See IAN BROWNLIE, *PRINCIPLES OF PUBLIC INTERNATIONAL LAW* 287–88 (6th ed. 2003); Michael J. Kelly, *Pulling at the Threads of Westphalia: “Involuntary Sovereignty Waiver”—Revolutionary International Legal Theory or Return to Rule by the Great Powers*, 10 UCLA J. INT’L L. & FOREIGN AFF. 361, 383 (2005).

prevents entities other than nation-states from being treated as full subjects and objects of international law.¹⁷¹

Formal barriers occur at the other end of the scale spectrum as well. Localities are constituted through a combination of state and local law and entities. When localities choose to make Kyoto Protocol commitments, they are not binding themselves to the treaty but rather incorporating its terms into local law. In fact, if they tried to do more, national and state governments might attempt to intervene on the basis that the localities are overstepping their boundaries.¹⁷² Similarly, their freedom to revise their greenhouse gas policies and commitments over time stems from the fact that international entities have no binding authority over them. As discussed in Chapter VI, some of the primary efforts to push localities on emissions policies that have showed some teeth are those undertaken by states in the context of direct litigation, such as the suit by the State of California against San Bernardino County, which resulted in a settlement agreement.¹⁷³ In addition, as explored in depth in Chapters XI through XIII, initiatives by major cities—which are often the focus of the scholarly literature—capture only a small portion of metropolitan regional emissions because of the substantial percentage of population based in smaller suburban cities.

¹⁷¹ For an exploration of greater inclusion of individuals in the customary international law formation process, see Christiana Ochoa, *The Individual and Customary International Law Formation*, 48 VA. J. INT'L L. 119, 143 (2007). I have explored the possibilities for more pluralist approaches in the climate change context in other work. See Osofsky, *supra* note 14, at 592–93, 604. See generally Osofsky, *supra* note 37.

¹⁷² See Resnik, *supra* note 37, at 1627–33. For a discussion of some of these dynamics in a more general context, see generally Gerald E. Frug & David J. Barron, *International Local Government Law*, 38 URB. LAW. 1 (2006).

¹⁷³ See generally Confidential Settlement Agreement, *supra* note 24.

The combination of regulatory barriers at each level of governance and structural constraints on meaningful multiscalar regulation poses a formidable obstacle to addressing climate change. Despite determined advocacy by numerous committed entities, the world is still far from adequately addressing emissions and their looming impacts at any level of governance. Although particular localities certainly have shown leadership, even those at the forefront of emissions control are not reducing them at the rate scientists say are needed, and regulatory failures elsewhere are dwarfing their efforts.

These regulatory failures and complexities make it critical to consider the role of litigation and of national and subnational action in multi-level climate change governance. Chapters IV through XIII provide detailed case studies of these developments and their scalar dynamics in the United States. Chapter XIV then locates these case studies in possibilities for reenvisioning multi-level climate change governance.

CHAPTER IV

DEBATES OVER SCIENCE, SCALE, AND LAW IN *MASSACHUSETTS V. EPA*

This chapter contains edited portions of Hari M. Osofsky, *The Intersection of Scale, Science, and Law in Massachusetts v. EPA*, 9 OREGON R. INT'L L. 233 (2007).

Justice Scalia: But I always thought an air pollutant was something different from a stratospheric pollutant, and your claim here is not that the pollution of what we normally call “air” is endangering health [Y]our assertion is that after the pollution leaves the air and goes up into the stratosphere it is contributing to global warming.

Mr. Milkey: Respectfully, Your Honor, it is not the stratosphere. It’s the troposphere.

Justice Scalia: Troposphere, whatever. I told you before I’m not a scientist.

(Laughter).

Justice Scalia: That’s why I don’t want to deal with global warming, to tell you the truth.¹⁷⁴

The above exchange occurred between Justice Scalia and James Milkey, Assistant Attorney General of Massachusetts, during the oral argument in *Massachusetts v. EPA*,¹⁷⁵ the first case heard by the U.S. Supreme Court on governmental regulation of greenhouse gas emissions. It not only illustrates the complexities of judicial engagement with the climate change science, but provides a window into one of the greatest obstacles to effective regulatory approaches to the problem of climate change. Namely, as discussed in depth in Chapter III, greenhouse gas emissions and their impacts are foundationally multiscalar; they range from the most individual to global levels.

Referencing climate change as a multiscalar problem, however, only serves as a starting point for further discussion. As described in more depth in Chapter II, “scale” is

¹⁷⁴ Transcript of Oral Argument at 22–23, *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007) (No. 05-1120), 2006 WL 3431932 at 22–23.

¹⁷⁵ *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007).

a complex and contested concept in both the geography and ecology literatures.¹⁷⁶ Moreover, a wide range of interrelated but largely non-interacting scholarship explores the polycentric possibilities for regulatory interaction.

This part of the dissertation—comprised of Chapters IV through VII—draws from the geography scale literature and that interdisciplinary scholarship on hybridity, multi-scalar inclusion, and regulatory responsiveness to explore the role of climate change litigation in debates over regulatory scale and their resolution. It demonstrates that on the surface of these disputes, in their official documents and arguments, pro- and anti-regulatory forces contest the appropriate scale of climate change regulation. But the part also looks below that surface to the complexity of scalar dynamics in these lawsuits. It reveals the panoply of public and private actors interacting across levels, and the multi-scalar character of many of the actors and scales. In so doing, it demonstrates the ways in which this litigation exemplifies and embodies the nuances of scale definition and rescaling as part of polycentric governance.

The part explores these issues of scale through a multi-scalar organization. Its first three chapters focus primarily on national, state, and local regulation respectively. Each chapter considers an exemplar dispute that has played a significant role in shaping U.S. climate change regulation at those levels. However, for each conflict over the appropriate role of a particular type of regulation at a specific level of governance, the part reveals complex multi-scalar dynamics and interweaves theoretical approaches from Chapter II.

¹⁷⁶ NEIL BRENNER, *NEW STATES SPACES: URBAN GOVERNANCE AND THE RESCALING OF STATEHOOD* 9 (2004) (internal quotations omitted); Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 (3) *PROGRESS HUM. GEOGRAPHY* 276, 281 (2005).

The final chapter of this part draws in depth from two of the conceptual streams described in Chapter II, geographer Kevin Cox's network-based conceptualization of scale and legal scholar Harold Koh's theory of transnational legal process, to argue for the diagonal—across vertical and horizontal—character of multi-scalar interactions taking place throughout litigation and to explore the regulatory role of those interactions. In so doing, it shows a deeper interweaving of geographic and legal conceptual approaches can help inform an understanding of litigation's governance role.

This first chapter of the part begins with the case that has had the most significant regulatory impact of any of the lawsuits over climate change, *Massachusetts v. EPA*. This case challenged the U.S. Environmental Protection Agency's decision not to regulate greenhouse gas emissions under the Clean Air Act, and the opinion in this case has been used by the Obama Administration as the basis for its regulation of motor vehicle and power plant emissions. The case is important not only for its major regulatory and public impact, but also for the way in which it became a site for dialogue over how the science of climate change affects the appropriate scale for regulation. This chapter brings together the work of two of the scholars highlighted in Chapter II, geographer Nathan Sayre and legal scholar Holly Doremus with a detailed examination of the scientific-scalar dynamics in this case to illustrate how interconnecting particular geographical and legal approaches can inform regulatory approaches.

Specifically, this chapter analyzes the interaction of scale (in its many guises), science, and law in the Supreme Court briefs, oral argument, opinion, and dissents in *Massachusetts* as a window into the complex dynamics at play in climate change litigation. Formally, the case primarily occurs at a national level; the parties dispute the

interpretation of federal law in an action that was heard by federal courts at every level. It is precisely this apparently “national” character of the case, however, that makes it a good example of the multiscalar dynamics of international decisionmaking. Despite the formal federal level of this case, both its actors and arguments have subnational and supranational dimensions that are deeply intertwined with the science of climate change.

Section 1 delves more deeply into Holly Doremus’ work on the use of science as a tool in, and an obstacle to, regulatory approaches and into Nathan Sayre’s analysis of the concept of scale to consider the particular challenges posed by the multiscalar context of climate change. The section intertwines their theories to argue that both sides in *Massachusetts v. EPA* use scientific uncertainty together with the scale of the problem to forward their version of appropriate regulation. Section 2 then supports this argument through a detailed analysis of the interaction of scale, science, and law in the briefs and opinions. Section 3 examines the implications of that interaction for how this case should be fit into a model of international legal decision making with respect to climate change. The chapter concludes with broader reflections on strategies for improving the way in which courts engage the scale-science confluence.

1. The Science-Scale Intersection as an Argumentative Tool

This section interweaves the work of two California-based academics whose work was highlighted in Chapter II: (1) Holly Doremus, a law professor whose scholarship explores the way in which science is used in natural resource regulation,¹⁷⁷ and (2)

¹⁷⁷ See Holly Doremus, *Science Plays Defense: Natural Resource Management in the Bush Administration*, 32 *ECOLOGY L.Q.* 249 (2005) [hereinafter *Science Plays Defense*]; Holly Doremus & A. Dan Tarlock, *Science, Judgment, and Controversy in Natural Resource Regulation*, 26 *PUB. LAND & RESOURCES L. REV.* 1 (2005); Holly Doremus, *The Purposes, Effects, and Future of the Endangered Species Act’s Best*

Nathan F. Sayre, a geographer whose recent scholarship has compared the analysis of scale in geography and ecology literatures.¹⁷⁸ This Part summarizes each of their approaches and then connects them in the context of *Massachusetts v. EPA*.

a. Defensive Uses of Scientific Uncertainty

Holly Doremus' article, *Science Plays Defense: Natural Resource Management in the Bush Administration*, explains that the biggest difficulty regarding science and politics in natural resources management is not the politicization of science, but rather the scientizing of politics. Both conservationists and those who seek to block regulation can use science as a tool. Doremus notes: "The combination of actual uncertainty and public expectations of certainty makes the rhetoric of science equally available to the regulatory offense and defense."¹⁷⁹ She traces offensive and defensive uses of science and then explores four main ways in which the Bush Administration has used science defensively:

Available Science Mandate, 34 ENVTL. L. 397 (2004); Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 WASH. U. L.Q. 1029 (1997). For additional analyses of the intersection between law and science in public policymaking, see ADAPTIVE GOVERNANCE: INTEGRATING SCIENCE, POLICY, AND DECISION MAKING (Ronald D. Brunner et al. eds., 2005); RESCUING SCIENCE FROM POLITICS: REGULATION AND THE DISTORTION OF SCIENTIFIC RESEARCH (Wendy Wagner & Rena Steinzor eds., 2006); Donald T. Hornstein, *Accounting for Science: The Independence of Public Research in the New, Subterranean Administrative Law*, 66 LAW & CONTEMP. PROBS. 227 (2003).

¹⁷⁸ See Sayre, *supra* note 176. A substantial geography literature engages these questions of scale and science. See, e.g., Louis Lebel, Po Garden & Masao Imamura, *The Politics of Scale, Position, and Place in the Governance of Water Resources in the Mekong Region*, 10(2) ECOLOGY AND SOCIETY 18 (2005); James McCarthy, *Scale, Sovereignty, and Strategy in Environmental Governance*, 37(4) ANTIPODE 731 (2005); Erik Swyngedouw, *Scaled Geographies: Nature, Place, and the Politics of Scale*, in SCALE AND GEOGRAPHIC INQUIRY: NATURE, SOCIETY, AND METHOD 129 (Eric Shepard & Robert B. McMaster eds. 2004). I choose to focus on Nathan Sayre's approach here, however, because of the particular way in which he interweaves ecological and scalar issues.

¹⁷⁹ Doremus, *Science Plays Defense*, *supra* note 5, at 258.

high burden of proof, value choices in the face of ambiguity, resolution of scientific certainty issues at the agency level, and limits to information gathering.¹⁸⁰

These offensive and defensive strategies around science are apparent in the debates over climate change regulation in the United States. In fact, Doremus even quotes a memorandum from communication professional Frank Luntz on the topic to illustrate the defensive approach:

The most important principle in any discussion of global warming is your commitment to sound science. Americans unanimously believe all environmental rules and regulations should be based on sound science and common sense. Similarly, our confidence in the ability of science and technology to solve our nation's ills is second to none. Both perceptions will work in your favor if properly cultivated.¹⁸¹

If Luntz is correct, a reinforcement of current scientific uncertainty and of the importance of waiting for future technological and scientific developments can serve as a powerful tool in blocking more stringent regulation of greenhouse gas emissions.

Moreover, as Doremus has explained, in judicial decision making, the framing of science is often outcome-determinative.¹⁸² The climate change context is no exception. The regulatory debates at the core of the arguments in *Massachusetts v. EPA*, discussed in detail in Part 2, exemplify the offensive and defensive uses of science that she has highlighted.

¹⁸⁰ *Id.* at 266–95.

¹⁸¹ *Id.* at 255 (quoting The Luntz Research Companies, *Straight Talk, The Environment: A Cleaner, Safer, Healthier America* 138, available at <http://www.luntzspeak.com/graphics/LuntzResearch.Memo.pdf> (last visited June 16, 2008)).

¹⁸² Doremus, *Science Plays Defense*, *supra* note 5.

b. Debates over Scale

The arguments over science in *Massachusetts v. EPA*, however, consistently have a particular geographic dimension to them: scale. As described in Chapter II, Nathan Sayre's work has considered the ways in which the geography and ecology literatures have treated scale in contexts particularly relevant to the interface of science with regulation. His article, *Ecological and Geographical Scale: Parallels and Potential for Integration*, explores what these literatures have in common and can learn from one another. He explains that both geography and ecology struggle with adequately researching issues at a particular scale and with defining what scale is. He notes that even if accepting geographers' main areas of agreement—that scale is socially constructed, politically contested, and critically important—key questions remain about the nature of scale and how it should be conceptualized.¹⁸³ This lack of agreement and clear coherence about important questions in the geography literature is an important reason, as noted in Chapter II, that the dissertation chooses to both look at the literature as a whole but also focus on specific interconnections between particular geography scale scholarship and particular legal scholarship.

Sayre's insights about what human geographers should draw from ecological work on scale is particularly helpful in the context of *Massachusetts v. EPA* and climate change litigation more generally. First, he emphasizes the important of distinguishing between scale and level.¹⁸⁴ This distinction becomes important in climate change litigation as actors with ties to multiple levels make arguments about the appropriate level

¹⁸³ Sayre, *supra* note 4, at 277–78.

¹⁸⁴ *See id.* at 283–85.

for regulation that often miss the fuller nuance of scale beyond regulatory level. Second, he argues that rescaling processes involve efforts to shift the level of particular processes within existing social organizational structures.¹⁸⁵ Climate change litigation focuses in particular on the organizational structures provided by courts and existing governmental divisions as it serves as a site for scalar claims. Third, he contends that hierarchically ordered models of scale can be misleading at times.¹⁸⁶ This misleading quality of hierarchy becomes particularly clear in litigation throughout this part, as multi-scalar sets of actors attempt to construct a more simplistic hierarchical ordering.

For the purposes of this chapter, Sayre's analysis of scale, like Doremus' discussion of the scientizing of politics, is reflected most clearly in the arguments of *Massachusetts v. EPA* in two ways. As discussed in detail in Part 2, both sides consistently try to (1) rescale, i.e., change the relevant level for the argument, and (2) create hierarchies among levels – i.e., assert the primacy of a particular level – in order to accomplish their goal of proving the appropriateness or inappropriateness of the EPA exercising its discretion to regulate motor vehicle greenhouse gas emissions.

c. Scale as a Lens on Science and the Law

The key point of this chapter is not simply that both scientizing and rescaling occur in this case, but rather that they are being used together to accomplish litigative goals. The large scale – both spatially and temporally – of climate change, and the resulting scientific uncertainties about subnational contributions to it and impacts from it,

¹⁸⁵ See *id.* at 285.

¹⁸⁶ See *id.* at 286.

are combined by the respondents in an attempt to block regulatory behavior. In contrast, petitioners assert the appropriateness of nation-level regulation of supranational phenomenon and certainty around subnational contributions and effects to try to push for EPA action.¹⁸⁷

These dynamics suggest that offensive and defensive strategies around science have particular nuances in multiscalar contexts in which relevant levels range from the individual to the global. Namely, the existence of multiple levels to jump and many possible arrangements of hierarchy allows for intersecting efforts at rescaling that place judges in a particularly difficult decision-making position. Moreover, the nexus of uncertainty around both science and scale creates additional judicial discretion and opportunities for litigants to attempt to manipulate the outcome.¹⁸⁸

2. *The Collision of Scale and Science in Massachusetts v. EPA*

Massachusetts v. EPA involves the appropriateness of the U.S. EPA's denial of a petition requesting that it regulate motor vehicles' greenhouse gas emissions under section 202(a)(1) of the Clean Air Act.¹⁸⁹ The case is just one of many petitions and lawsuits related to global climate change that have been filed around the world in

¹⁸⁷ See *infra* Chapters IV–VII. As Holly Doremus has noted, the dynamics of this case represent only one variation of the intersection of scale, science, and regulation. In other contexts, such as debates over critical habitat, scaling down also can be an anti-regulatory strategy because scientific uncertainty is often magnified at smaller scales. Email from Holly Doremus, Professor, UC Davis School of Law, to Hari Osofsky, Assistant Professor, University of Oregon School of Law (Mar. 20, 2007) (on file with author).

¹⁸⁸ Frederic Kirgis has explored similar issues in the context of legal formulas that contain two elements. In particular, he notes that courts and other decision makers are often unaware, or at least do not articulate an awareness, that they are using a sliding scale – “[t]he greater the degree to which one element is satisfied, the lesser the degree to which the other need be” – in such situations. Frederic L. Kirgis, *Fuzzy Logic and the Sliding Scale Theorem*, 53 ALA. L. REV. 421, 422–23 (2002).

¹⁸⁹ *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007).

subnational, national, and supranational fora. These litigative efforts tend to take two main approaches: (1) claims against governmental entities to force or limit regulatory behavior and (2) claims against corporate emitters to limit emissions directly. *Massachusetts v. EPA* falls into the first category. In both forms, the cases serve as part of state-corporate regulatory interactions around climate change.¹⁹⁰

This section explores the dynamics among scale, science, and law in the case. It considers the scales represented by the petitioners and respondents in the case, the use of science and scale in the claims by petitioners and respondents, and the implications of these approaches for efforts to use science as a tool for and against regulation.

a. Actors

The parties to *Massachusetts v. EPA* constitute a diverse group that cuts across scales. Figures 1 and 2 portray the governmental and nongovernmental petitioners; twelve states, three cities, a U.S. territory, and thirteen nongovernmental organizations brought the lawsuit.

¹⁹⁰ For a discussion of the geography of many of these suits, see Hari M. Osofsky, *The Geography of Climate Change Litigation: Implications for Transnational Regulatory Governance*, 83 WASH. U. L.Q. 1789 (2005) [hereinafter *Geography of Climate Change Litigation*]. For other analyses of climate change litigation, see, for example, JOSEPH SMITH & DAVID SHEARMAN, CLIMATE CHANGE LITIGATION: ANALYSING THE LAW, SCIENTIFIC EVIDENCE & IMPACTS ON THE ENVIRONMENT, HEALTH & PROPERTY (2006); RODA VERHEYEN, CLIMATE CHANGE DAMAGE AND INTERNATIONAL LAW, PREVENTION DUTIES AND STATE RESPONSIBILITY (2005); William C.G. Burns, *The Exigencies that Drive Potential Causes of Action for Climate Change Damages at the International Level*, 98 AM. SOC'Y INT'L L. PROC. 223 (2004); Richard W. Thackeray, Jr., Note, *Struggling for Air: The Kyoto Protocol, Citizens' Suits Under the Clean Air Act, and the United States' Options for Addressing Global Climate Change*, 14 IND. INT'L & COMP. L. REV. 855, 884–98 (2004).

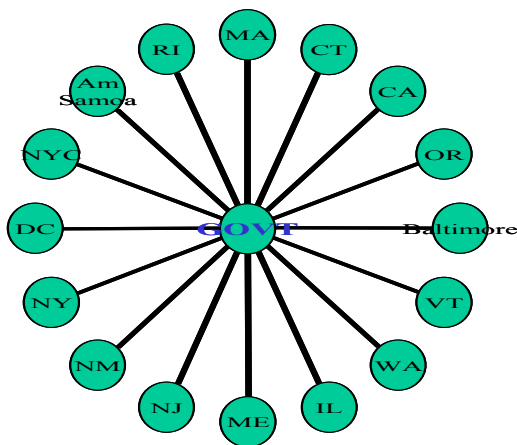


Figure 1. Governmental petitioners in *Massachusetts v. EPA*.

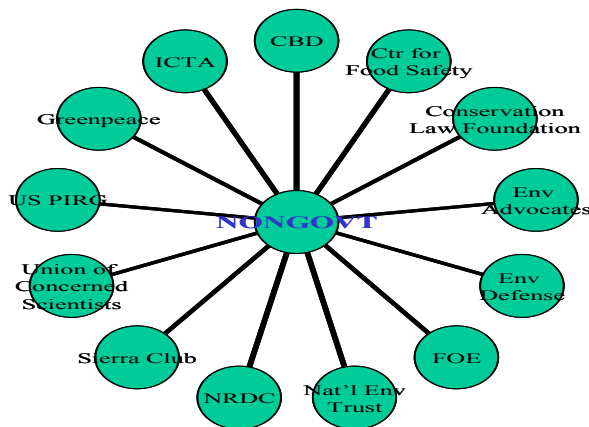


Figure 2. Nongovernmental petitioners in *Massachusetts v. EPA*.

Ten other states and nineteen industry and utility groups – organized into six conglomerate entities – and the U.S. EPA served as respondents. Figures 3 and 4 portray the governmental and nongovernmental respondents.¹⁹¹

¹⁹¹ A complete list of parties is available at International Center for Technology Assessment (ICTA), Global Warming Petitioners, <http://www.icta.org/doc/global%20warming%20petitioners%20final.pdf> (last visited June 16, 2008) [hereinafter ICTA Parties Listing].

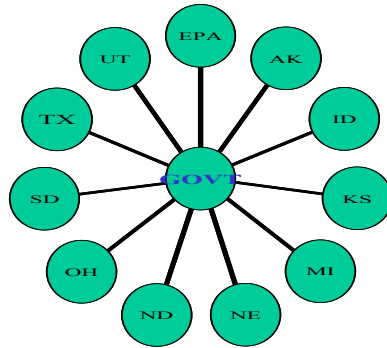


Figure 3. Governmental respondents in *Massachusetts v. EPA*.

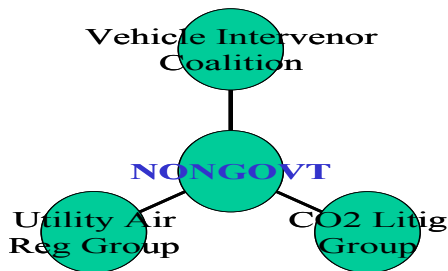


Figure 4. Nongovernmental respondents in *Massachusetts v. EPA*.

These petitioners and respondents span numerous geographic regions at multiple levels of governance. The state and local level governmental petitioners tend to be located toward the coasts and respondents mostly are based in the middle of the country. The national level governmental respondent, the U.S. EPA, is based in Washington, D.C., but has ten regional offices located in major cities throughout the country; it thus engages national policy issues through interacting in multiple places with various levels of government.¹⁹² The nongovernmental entities similarly have a mix of local, state, national,

¹⁹² EPA Organizational Chart, <http://www.epa.gov/epahome/organization.htm> (last visited June 16, 2008). *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007).

and international ties.¹⁹³ And the above lists do not even include the many who filed amicus briefs or other actors engaged in responding to the Supreme Court's ruling.

From a scalar perspective, then, this case interacts with far more than simply the federal level at which it occurs. The actors reveal *Massachusetts v. EPA* as a situs for contestation across levels of governance between a wide variety of interested actors. As I have analyzed elsewhere, these dynamics pose difficult questions about how to locate this case in an analysis of transnational regulatory governance of climate change.¹⁹⁴

b. Claims

The facts in this case involve the U.S. EPA's denial of a national-level rulemaking petition under a national-level law, the Clean Air Act, to address emissions by vehicles in places around the United States. These localized emissions contribute to the supranational phenomenon of climate change, which produces varying specific effects in particular places at a subnational level. The substantive and procedural claims made by the petitioners rely upon national-level statutes to address a situation that occurs across spatial and temporal scales. Moreover, this intersection of scalar issues and scientific data was at the core of both the standing and substantive issues debated in the U.S. Supreme Court. Figure 5 portrays efforts by petitioners to scale down and by respondents to scale up.

¹⁹³ For an in-depth discussion of those ties, see *Geography of Climate Change Litigation*, *supra* note 190, at 1830–34.

¹⁹⁴ See Hari M. Osofsky, *The Geography of Climate Change Litigation Part II: Narratives of Massachusetts v. EPA*, 8 CHICAGO J. INT'L L. 573 (2008); Hari M. Osofsky, *Climate Change Litigation as Pluralist Legal Dialogue?*, 26 STANFORD ENVTL. L.J. & 43 STANFORD J. INT'L L. 181 (2007) (Joint Issue).

Petitioners Scaling Down

Respondents Scaling Up

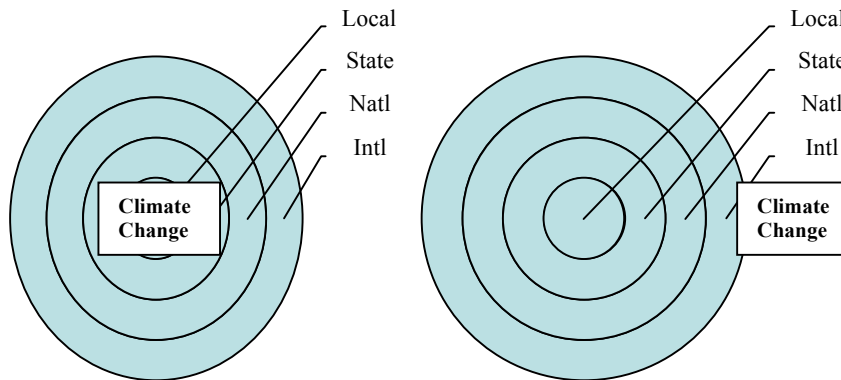


Figure 5. Scaling down by petitioners and scaling up by respondents.

(1) Standing

Although standing was not one of the issues initially before the court,¹⁹⁵ the respondents raised it in their briefing and the Supreme Court justices discussed it extensively in oral argument. The Brief of the Federal Respondent claimed that the supranational and extended time scales of climate change limited the impact of national-level decisions to limit reductions:

Global climate change is, by definition, a global phenomenon. The greenhouse gases at issue here are “fairly consistent in concentration, everywhere along the surface of the earth.” The vast majority – as much as 80 percent – of all greenhouse gas emissions emanate from countries other than the United States. For that reason, reducing greenhouse gas emissions within the United States is unlikely, as a general matter, to have a

¹⁹⁵ The questions presented in the petition for writ of certiorari were: “1. Whether the EPA Administrator may decline to issue emission standards for motor vehicles based on policy considerations not enumerated in section 202(a)(1). 2. Whether the EPA Administrator has authority to regulate carbon dioxide and other air pollutants associated with climate change under section 202(a)(1).” Petition for Writ of Certiorari at i, *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007) (No. 05-1120), 2006 WL 558353 at i.

significant long-term impact on climatic conditions in this country without reductions of greenhouse gas emissions in other parts of the world.¹⁹⁶

The respondents further argue with respect to standing that the impacts at state and local levels are too speculative because of the extent of both the space and time involved. As the Brief for Respondents Alliance of Automobile Manufacturers, Engine Manufacturers Association, National Automobile Dealers Association, and the Truck Manufacturers Association (Brief for Respondents AAA) put it:

[B]ecause they do not face any imminent injury, petitioners are forced to rely on predictions of harm decades in the future, the occurrence of which is largely (if not entirely) dependent on actions other nations take in their own regulation of greenhouse gas emissions. Petitioners' hypotheses, each of which is the subject of an active scientific debate, are reduced to conjecture by the inherent uncertainty of global events that will unfold between now and the time of the predicted injury.¹⁹⁷

These claims by respondents thus use scientific uncertainty together with the alleged global scale of the problem to argue against the appropriateness of the petitioners being allowed to be before the Supreme Court.

The petitioners' reply to the standing argument rescales the issue back to the state and local levels and the present time. They note:

Rising temperatures have injured petitioners in the following specific and concrete ways: coastal States have lost and are losing land to rising sea levels; ground-level ozone (smog) is exacerbated by rising temperatures, leading to adverse health effects and costly efforts on the part of States to address the problem; glaciers are melting, causing distinct injuries to particular individuals. These injuries span a broad range, from the Commonwealth of Massachusetts losing coastal land to Frank Keim no longer being able to hike on the Alaskan glaciers he used to enjoy.

¹⁹⁶ Brief for Federal Respondent at 13, *Massachusetts v. EPA*, 127 S. Ct. 1438 (No. 05–1120), 2006 WL 3043970, at *13 (citation omitted).

¹⁹⁷ Brief for Respondents Alliance of Automobile Manufacturers, Engine Manufacturers Ass'n, Nat'l Automobile Dealers Ass'n, Truck Manufacturers Ass'n at 13, *Massachusetts v. EPA*, 127 S. Ct. 1438 (No. 05–1120), 2006 WL 3023028 at *13 (citations omitted).

Petitioners' injuries are not "some day" injuries, as respondents contend; they are injuries in the here and now. Nor do petitioners' declarations describe mere "generalized grievances"; they attest to harms being visited – right now – upon particular individuals and particular States.¹⁹⁸

This reply relies on the same scientific data set, but by scaling down the argument, engages the alleged injuries in ways that tie them more easily to legal standing requirements.

The Supreme Court's opinion sides with the petitioners and indicates that the "widely shared" character of climate-change risks does not prevent Massachusetts from having an interest in the case's outcome.¹⁹⁹ It concludes the standing analysis:

In sum – at least according to petitioners' uncontested affidavits – the rise in sea levels associated with global warming has already harmed and will continue to harm Massachusetts. The risk of catastrophic harm, though remote, is nevertheless real. That risk would be reduced to some extent if petitioners received the relief they seek. We therefore hold that petitioners have standing to challenge the EPA's denial of their rulemaking petition.²⁰⁰

Although the Court's holding on standing narrowly focuses on the interests of state parties, its approach to them scales down the problem of climate change and its regulation; this "global" phenomenon can cause harm at a state level and choices at a federal level influence the risks faced by states.

The dissenters, unsurprisingly, side with the respondents. Chief Justice Robert's dissent, for example, explains how, in his view, the multiscalar nature of the problem defeats standing.

¹⁹⁸ Reply, *Massachusetts v. EPA*, 127 S. Ct. 1438 (No. 05–1120), 2006 WL 3367871, at *2-*3 (citations omitted).

¹⁹⁹ *Massachusetts v. EPA*, 127 S. Ct. 1438, 1456 (2007).

²⁰⁰ *Id.* at 1458.

The Court's sleight-of-hand is in failing to link up the different elements of the three-part standing test. What must be *likely* to be redressed is the particular injury in fact. The injury the Court looks to is the asserted loss of land. The Court contends that regulating domestic motor vehicle emissions will reduce carbon dioxide in the atmosphere, *and therefore* redress Massachusetts's injury. But even if regulation *does* reduce emissions – to some indeterminate degree, given events elsewhere in the world – the Court never explains why that makes it *likely* that the injury in fact – the loss of land – will be redressed.²⁰¹

In so doing, Chief Justice Roberts articulates his concerns about whether the occurrence of emissions around the world (essentially, local emissions taking place at a global scale) makes the impact of U.S. national-level regulatory behavior less clear at a subnational scale.

At the core of this battle over standing lies scientific data. Both sides acknowledge the problem of climate change, but they part ways in how to map the scientific information, and its uncertainties, onto existing legal structures. As emissions and their impacts connect to multiple levels of governance, the parties and Court are forced to grapple with how to apply the more-simply structured standing doctrine to this problem.

(2) Substantive Claims

The substantive arguments reveal a similar dynamic of scaling climate change and regulatory authority over it up and down. For example, the respondents claim that states cannot implement National Ambient Air Quality Standards (NAAQS) in this context because their regulatory level fails to match the global level at which the problem was occurring. The brief of respondent CO₂ litigation group argues:

²⁰¹ *Massachusetts*, 127 S. Ct. at 1470.

None of these regulatory authorities makes sense if the “air pollutant” to which they are applied is CO₂ or another greenhouse gas being regulated for the purpose of mitigating potential global climate change. Since the projected effect of greenhouse gas emissions is a function of changes in the global atmosphere, rather than local or regional air quality, and it is the aggregate contribution of all greenhouse gas emissions around the world to global atmospheric greenhouse gas contributions that is believed by many to cause global climate change, notions of attaining or not attaining an ambient air quality standard within a state or air quality control region are inapplicable.²⁰²

The theme of scientific uncertainty is intertwined with the claim of scalar mismatch, as represented in language like “believed by many” in that statement. As with the standing argument, respondents are portraying climate change as something occurring at a supranational level and over a long period of time with substantial deficits in current understanding about how anthropogenic greenhouse gas emissions fit into that model.

The petitioners’ argument on this point, in contrast, relies upon the various levels at which the Clean Air Act provides regulatory authority. They note in their opening brief:

Whatever question exists about the applicability of the NAAQS program to the air pollutants at issue here cannot excuse the failure to adopt emission standards under section 202. Section 202 *does* provide a perfectly feasible mechanism for regulating emission of these pollutants from motor vehicles: the establishment of the same sort of limits on these pollutants that EPA has already imposed on pollutants such as carbon monoxide and hydrocarbons.²⁰³

In other words, regulation can work according to the petitioners if one changes levels – to the national one – and type of regulatory approach.

²⁰² Brief for Respondent CO₂ Litigation Group at 20, *Massachusetts v. EPA*, 127 S. Ct. 1438 (No. 05–1120), 2006 WL 3043971, at *20 (citation omitted).

²⁰³ Brief for Petitioners, *Massachusetts v. EPA* (No. 05–1120), 2006 WL 2563378, at *29 (emphasis original).

A similar debate among the parties takes place over whether Congress' specific action with respect to ozone limits EPA's ability to regulate prior to a similar type of action regarding global climate change. The Brief for Respondents AAA argues:

Congress has previously dealt with emissions issues relating to non-localized gases that implicate global environmental concerns. For example, when Congress addressed stratospheric ozone depletion it used an express delegation under a new regulatory framework: Title VI of the Clean Air Act. The addition of Title VI to address global issues reflects Congress's views about the regulatory limits of Titles I and II of the Act.

Much like carbon dioxide, anthropogenic substances that deplete ozone are emitted around the world and are very long-lived. Their upper-atmosphere ozone depleting effects – and the consequences of those effects – occur on a global scale.²⁰⁴

This approach indicates a presumption that similarities in the scale and time frame of two problems, as described in the existing scientific literature, means that a Congressional approach to one of them limits regulatory discretion with respect to another.

The petitioners, unsurprisingly, resist such an interpretation of the ozone legislation. Beyond arguing that the ozone provisions have been used to regulate “air pollutants associated with climate change,” they note:

EPA cannot seriously maintain that “coordination with the international community” is a prerequisite for regulating pollutants that “are emitted around the world and are very long-lived,” the consequences of which “occur on a global scale.” Congress directed EPA to regulate ozone-depleting substances themselves without awaiting such coordination.²⁰⁵

²⁰⁴ Brief for Respondents Alliance of Automobile Manufacturers, Engine Manufacturers Ass'n, Nat'l Automobile Dealers Ass'n, Truck Manufacturers Ass'n, *supra* note 197, at 38–39 (emphasis and citation omitted); *accord* Brief for Federal Respondent, *supra* note 196, at 27–30.

²⁰⁵ Brief for the Petitioners, *Massachusetts v. EPA*, 127 S. Ct. 1438 (No. 05–1120), 2006 WL 2563378, at *27 (citation omitted).

The petitioners thus use the same analogy between ozone and global climate change to indicate that national-level regulation of multiscale problems is appropriate.

As with the standing issue, the majority opinion substantively sides with the petitioners over a vigorous dissent. It holds that Clean Air Act section 202(a)(1), read together with the Act's broad definition of "air pollutant," gives the EPA statutory authority to regulate greenhouse gas emissions from motor vehicles.²⁰⁶ Moreover, the Court rejects the EPA's alternative argument that even if it has statutory authority, it should not exercise it.²⁰⁷ In so doing, the opinion notes that the agency cannot avoid its regulatory responsibilities simply by invoking scientific uncertainty. Rather, the EPA must address the statutory question of whether "sufficient information exists to make an endangerment finding."²⁰⁸

Although Chief Justice Roberts' dissent engages only the standing question, Justice Scalia's dissent – joined by the other three dissenting judges – addresses the merits. Justice Scalia's dissent begins by arguing that EPA's discretion is broader than the majority holds,²⁰⁹ but then further indicates that the majority is wrong on its own terms because of the EPA's statements on scientific uncertainty.²¹⁰ Its final argument addresses scale even more clearly through arguing against the majority's broad interpretation of "air pollutant."²¹¹ In particular, the dissent focuses quite literally on the

²⁰⁶ *Massachusetts v. EPA*, 127 S. Ct., at 1459–62.

²⁰⁷ *Id.* at 1462–63.

²⁰⁸ *Id.* at 1463.

²⁰⁹ *Id.* at 1471–74.

²¹⁰ *Id.* at 1474–75.

²¹¹ *Id.* at 1475–77.

question of the part of the atmosphere in which “pollution” resides. Because greenhouse gases build up in the upper atmosphere, the dissent claims that the EPA’s exclusion of them through focusing on “ambient air at ground level or near the surface of the earth” is statutorily consistent.²¹²

Together, the actors and arguments in this case demonstrate the judicial challenge that the collision of scientific uncertainty and multiscale regulatory problems poses. Although the parties used particular perspectives of that intersection in their argument, the briefs and arguments were not explicit about the fact that the U.S. Supreme Court’s selection of scalar perspective would influence how the scientific data should be viewed. Similarly, even though choices about the scale of climate change and its regulation run through the discourse among the majority and dissenting opinions, those decisions are often buried in the legal analysis.

3. Implications for International Legal Decisionmaking

The strategic use of science with scale in *Massachusetts v. EPA*, especially when not explicit, suggests dangers for the way in which decisionmaking that has supranational dimensions tends to be dichotomized. In particular, the balkanization of both scalar and identity categories allows for distorting efforts at rescaling. This section focuses on three types of divisions that are not only inaccurate descriptors in a multiscale, multi-actor framework, but also provide the basis for the political games being played in the case and in the other two cases analyzed in Chapters V and VI.

²¹² *Id.* at 1477 (internal quotation marks omitted).

a. Domestic vs. International

Is *Massachusetts v. EPA* domestic or international?²¹³ The case clearly was brought under domestic law and many of the petitioners are domestic governmental actors, but simply characterizing it as a domestic case does not encompass all of the scales involved. As was repeatedly expressed by parties on both sides of the litigation, the case involves a problem and broader law and policy discourse that have international dimensions.²¹⁴

Neither “domestic” nor “international” conveys fully the multiscalar character of the case, and a notion that there is an appropriate regulatory level, either domestic or international, fails to capture the many levels at which climate change must be regulated. Moreover, the domestic/international distinction privileges the national level at which the case is taking place by using it as the fulcrum point between relevant categories. Using this dichotomy as a frame thus plays a distorting role in a discourse over problems like climate change, a problem in both this dispute and the other two disputes highlighted in the chapters that follow.²¹⁵

²¹³ For an explication of the traditional Westphalian perspective on international law, see IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 287–88 (6th ed. 2003); see also Michael J. Kelly, *Pulling at the Threads of Westphalia: “Involuntary Sovereignty Waiver,” Revolutionary International Legal Theory or Return to Rule by the Great Powers?*, 10 UCLA J. INT’L L. & FOREIGN AFF. 361 (2005).

²¹⁴ For an interesting analysis of the increasingly blurry boundaries between domestic and international, see Judith Resnik, *Law’s Migration: American Exceptionalism, Silent Dialogues, and Federalism’s Multiple Ports of Entry*, 115 YALE L.J. 1564 (2006).

²¹⁵ See *infra* Chapters V & VI.

b. Local vs. State vs. Federal

Similarly, if domestic, is *Massachusetts v. EPA* simply federal?²¹⁶ The case was brought in a federal court and involved the regulatory discretion of a federal actor, but in both its actors and claims, it involved many other scales and places associated with them in the United States.²¹⁷ After all, a good portion of the above-described debate involved state and local actors, regulatory decisions, and impacts. Moreover, the distinction—local vs. state vs. federal—fails to capture the nuances of the levels involved or the fact that multiple levels are involved in every aspect of the discourse.

This point becomes even clearer if this case is viewed in the broader context of climate change litigation and policy. For example, as Chapters V and VI further illustrate, California is not simply a plaintiff in *Massachusetts v. EPA*; the state is and has also been a plaintiff or defendant in several other cases involving climate change, some of which specifically focus on motor vehicle emissions.²¹⁸ Moreover, California's representatives

²¹⁶ For examples of broader federalism debates in the context of environmental regulations, see Kirsten H. Engel, *State Environmental Standard-Setting: Is There a "Race" and is it "to the Bottom"?*, 48 HASTINGS L.J. 271 (1997); Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996); Joshua D. Sarnoff, *The Continuing Imperative (But Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVTL. L. & POL'Y F. 225 (1997); Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 YALE J. ON REG. 67 (1996); Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 YALE L. & POL'Y REV. 23 & 14 YALE J. ON REG. 23 (1996); Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992); Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535 (1997); Richard B. Stewart, *Environmental Regulation and International Competitiveness*, 102 YALE L.J. 2039 (1993).

²¹⁷ For an interesting analysis of the complexities of regulation at multiple scales, see William W. Buzbee, *Recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1 (2003).

²¹⁸ See, e.g., First Amended Complaint for Declaratory and Injunctive Relief, *Gen. Valley Chrysler-Jeep v. Witherspoon*, 456 F. Supp. 2d 1160 (E.D. Cal. 2006), 2004 WL 5001055; Complaint, *Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265 (S.D.N.Y. 2005) (Nos. 04 Civ. 5669(LAP), 04 Civ. 5670(LAP)), available at <http://caag.state.ca.us/newsalerts/2004/04-076.pdf>; Complaint for Damages and Declaratory Judgment, *People of the State of California v. Gen. Motors Corp.*, No. C06-05755 MJJ (N.D. Cal. Sept. 17, 2007), available at http://ag.ca.gov/newsalerts/cms06/06-082_0a.pdf (last visited June 17, 2008); Petition

in Congress are playing leadership roles in efforts to regulate emissions more aggressively,²¹⁹ and its cities are both engaging in litigation²²⁰ and their own regulatory efforts.²²¹ Divorcing *Massachusetts v. EPA* from that multiscalar context de-contextualizes the case in ways that portray its significance inaccurately.

for Review, *People of the State of California v. NHTSA*, No. 06-2654 SC (N.D. Cal. June 12, 2007), available at http://ag.ca.gov/newsalerts/cms06/06-046_0a.pdf (May 2, 2006) (last visited June 17, 2008); Non-Binding Statement of Issues of Petitioners, *Coke Oven Env'tl. Task Force v. U.S. Env'tl. Prot. Agency*, Case No. 06-1131 (Sept. 3, 2003); See Osofsky, *Climate Change as Pluralist Legal Dialogue?*, *supra* note 194.

²¹⁹ See, e.g., Press Release, Pelosi and Reid: We Should Work Together to Take American in a New Direction (Jan. 27, 2007), available at <http://www.speaker.gov/newsroom/pressreleases?id=0047> (last visited June 17, 2008); NPR Talk of the Nation: Is U.S. Energy Independence a Pipe Dream? (Jan. 24, 2007), available at <http://www.npr.org/templates/story/story.php?storyId=7002504> (last visited June 17, 2008) (“Today Speaker of the House Nancy Pelosi upped the ante and called for energy independence within 10 years.”); Press Release, Boxer, Bingaman and Lieberman Ask President to Commit to Working with Congress to Fight Global Warming (Nov. 15, 2006), available at <http://boxer.senate.gov/news/releases/record.cfm?id=265906&&> (last visited June 17, 2008).

²²⁰ See Complaint for Declaratory and Injunctive Relief (Second Amended), *Friends of the Earth, Inc., v. Watson*, No. 02-4106 (N.D. Cal. Sept. 3, 2002), available at http://www.climatelawsuit.org/documents/Complaint_2Amended_Declr_Inj_Relief.pdf (last visited June 7, 2008).

²²¹ See ICLEI Website, Regional Membership Lists by Country, <http://www.iclei.org/index.php?id=1387®ion=NA> (last visited June 17, 2008); ICLEI Website, CCP: Participants, <http://www.iclei.org/index.php?id=1121> (last visited June 17, 2008); Fact Sheet, California Climate Activities, http://www.climatechange.ca.gov/climate_action_team/factsheets/2005-06_CLIMATE-ACTIVITIES_FS.PDF (last visited June 17, 2008); City of Los Angeles Webpage, Council Actions, http://www.lacity.org/ead/EADWeb-AQD/council_actions.htm (last visited June 17, 2008); City of Los Angeles Webpage, Awards Received, http://www.lacity.org/ead/EADWeb-AQD/awards_received.htm (last visited June 17, 2008); Tomas Alex Tizon, *Mayor Is on a Mission to Warm U.S. Cities to the Kyoto Protocol*, L.A. TIMES, Feb. 22, 2005, at A15. For scholarly analysis of the state and local dimensions of climate change regulation, see BARRY G. RABE, STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY (2004); Donald A. Brown, *Thinking Globally and Acting Locally: The Emergence of Global Environmental Problems and the Critical Need to Develop Sustainable Development Programs at State and Local Levels in the United States*, 5 DICK. J. ENVTL. L. & POL'Y 175 (1996); Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281 (2003); David R. Hodas, *State Law Responses to Global Warming: Is It Constitutional to Think Globally and Act Locally?*, 21 PACE ENVTL. L. REV. 53 (2003); Laura Kosloff & Mark Trexler, *State Climate Change Initiatives: Think Locally, Act Globally*, 18 NAT. RESOURCES & ENV'T 46 (Winter 2004); Robert B. McKinstry, Jr., *Laboratories for Local Solutions for Global Problems: State, Local and Private Leadership in Developing Strategies to Mitigate the Causes and Effects of Climate Change*, 12 PENN ST. ENVTL. L. REV. 15 (2004); Hari M. Osofsky, *Local Approaches to Transnational Corporate Responsibility: Mapping the Role of Subnational Climate Change Litigation*, 20 PACIFIC MCGEORGE GLOBAL BUS. & DEV. L.J. 143 (2007); Barry G. Rabe, *North American Federalism and Climate Change Policy: American State and Canadian Provincial Policy Development*, 14 WIDENER L.J. 121 (2004); Resnik, *supra* note 214, at 1643-47.

c. Public vs. Private

Finally, is this litigation about public or private decision-making?²²² Because this case involves the behavior of a federal regulator, one could argue that it is a public law case. But such a view of the case would suffer from some of the same flaws as the other two efforts to categorize it.

A mix of public and private actors appears on both sides of the lawsuit in *Massachusetts v. EPA*. This pattern repeats in other litigation explored over the course of the chapters that follow. Moreover, some of the cases over vehicle emissions focus on governmental regulatory decisions, and others focus on emissions decisions of private actors directly.²²³ To fail to see these cases as involving a state-corporate regulatory dynamic would be just as flawed as ignoring California's critical role in the multiscalar dialogue about climate change.

As a wide range of actors operates across scales and plays multidimensional roles in the policy and law-making debate, *Massachusetts v. EPA* becomes one step in a complex dance. This reality creates a risk that traditional ways of categorizing the case — which might focus on it as simply a public environmental regulatory dispute over federal

²²² For a historical perspective on the evolution of the public/private distinction in a local government context, see Gerald Frug, *A Legal History of Cities*, in *THE LEGAL GEOGRAPHIES READER* 154 (Nicholas Blomley, David Delany & Richard T. Ford eds., 2001).

²²³ I have discussed this dynamic in depth in Osofsky, *supra* note 190, at 1796–97; see also Robert Dufresne, *The Opacity of Oil: Oil Corporations, Internal Violence, and International Law*, 36 *N.Y.U. J. INT'L L. & POL.* 331 (2004). For an interesting analysis of corporate responsibility in the context of indigenous peoples' land rights, see Lillian Aponte Miranda, *The Hybrid State-Corporate Enterprise and Violations of Indigenous Land Rights: Theorizing Corporate Responsibility and Accountability under International Law*, 11 *LEWIS & CLARK L. REV.* 135 (2007); see also Hari M. Osofsky, *Learning from Environmental Justice: A New Model for International Environmental Rights*, 24 *STANFORD ENVTL. L.J.* 71, 72–76 (2005).

regulation—will miss critical elements of what it is. The disputes in Chapter V and VI, ostensibly over state and local regulation, further illustrate the scalar complexity and its regulatory implications.

CHAPTER V

STATE MOTOR VEHICLES EMISSIONS REGULATION: *CALIFORNIA V. EPA*

This chapter contains edited portions of Hari M. Osofsky, *Is Climate Change “International”?: Litigation’s Diagonal Regulatory Role*, 49 Va. J. Int’l L. 585 (2009).

The relationship between the state and federal levels of government is the most widely discussed scalar intersection in U.S. law. Because the U.S. Constitution and its amendments create a federalist regulatory structure, debates have raged since before its ratification about the appropriate relationship between the state and federal governments.²²⁴ As a result, litigation over state versus federal roles in the context of the Clean Air Act not only reflects the complex geography of the scalar dynamics of climate change regulation highlighted in the previous two chapters, but also has been explicitly analyzed in the legal federalism literature described in Chapter II.

This chapter uses the dispute over the Bush administration EPA’s denial of a Clean Air Act waiver to California, in which the State requested to regulate motor vehicle greenhouse gas emissions more stringently than the federal government, to explore the way in which regulatory dynamics among states and the federal government play out in the climate change litigation context. As with other examples of what I term “litigation,” the lawsuit forms one piece of a broader policy dispute. President Obama ordered the EPA to reconsider the Bush administration’s denial of the waiver request, which the EPA then granted. This waiver, together with the endangerment finding flowing out of the *Massachusetts v. EPA* case discussed in Chapter IV, helped provide the basis for the collaboration between California, the EPA, and the automobile industry on motor vehicle

²²⁴ See generally THE FEDERALIST NOS. 1–62 (examining arguments over the form of government in the U.S. Constitution).

emissions.²²⁵ However, even with this shift from the Bush Administration's approach, the positions on the scale of climate regulation articulated in the filings elucidate core dilemmas for future policy efforts.

The chapter begins by considering in more depth the ways in which the dynamic federalism literature introduced in Chapter II has been applied to California's efforts to exceed federal standards under the Clean Air Act. The chapter then discusses the role that states play in climate regulation as a backdrop to an in-depth scalar analysis of the state waiver dispute which complements Chapter IV's analysis of *Massachusetts v. EPA*. The chapter concludes by examining transnational regulatory governance questions raised by this dispute and their implications for the three false dichotomies highlighted in Chapter 4.

As with the preceding chapter and the one that follows, the focus here is not on the general significance of the state waiver dispute. Rather, the chapter focuses on how disagreements over the appropriate regulatory level are negotiated through this conflict and the implications of these scalar dynamics for governance of climate change. This dispute not only displays a complicated interaction among many different actors, but also provides an opportunity for reflection upon the role of states like California in the transnational regulatory order.

²²⁵ California State Motor Vehicle Pollution Control Standards; Greenhouse Gas Regulations; Reconsideration of Previous Denial of a Waiver of Preemption, 74 Fed. Reg. 7040 (Feb. 12, 2009); Memorandum on the State of California Request for Waiver Under 42 U.S.C. 7543(b), the Clean Air Act, 74 Fed. Reg. 4905 (Jan. 28, 2009), available at <http://edocket.access.gpo.gov/2009/pdf/E9-1939.pdf>.

1. *Scaling Federalism Debates*

As noted in Chapters I and II, debates over federalism represent the area of U.S. legal scholarship in which theories of scale are most fully developed. At its core, federalism scholarship grapples with a dilemma highlighted repeatedly in disagreements over climate regulation: Given the existence of multiple levels of regulatory authority, and particularly the state and federal ones, how should decision making be structured?²²⁶ Climate change is necessarily implicated in these debates because of its multiscalar regulatory dimensions, which are analyzed in Chapter 3.²²⁷ Moreover, addressing the problem of climate change poses particularly difficult structuring concerns because of its intertwinement with so many different substantive areas of law and the social order.

An increasingly well-developed stream of federalism scholarship proposes regulatory models that aim to avoid what it views as the pitfalls of dualist conceptions, that is, ones that delineate distinct state and federal spheres. Rather, these “dynamic” approaches introduced in Chapter II—which come under multiple labels and have nuanced differences among them—treat federal and subnational governments as having overlapping spheres of authority that sometimes cooperate and sometimes compete. They reject ideas of exclusive spheres of authority, but also at times question cooperative models based predominantly on collaborative interaction among levels of government.²²⁸

²²⁶ This dilemma has permeated constitutional discourse since the Constitution’s framing. See THE FEDERALIST NOS. 1–62, *supra* note 124. For an interesting dialogue about how to understand federalism in light of recent Supreme Court opinions, see Randall P. Bezanson & Steven C. Moeller, *The Foundations of Federalism: An Exchange*, 7 J. PHIL. SCI. & L. (2007).

²²⁷ See *supra* Chapters I–III.

²²⁸ Kirsten Engel has termed this collection of theories “dynamic federalism.” Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 176 (2006); see also ROBERT A. SCHAPIRO, *FEDERALISM: TOWARD THE PROTECTION OF FUNDAMENTAL RIGHTS* (2009); Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863, 879–83 (2006); William W. Buzbee,

Robert Schapiro borrows the term “polyphony” from the context of music to represent this regulatory dance.²²⁹ Although some of these analyses focus exclusively or primarily on federal and state governments, others incorporate transnational, regional, and local actors into their discussions.

California’s efforts at climate regulation and, more specifically, its attempts to regulate motor vehicle emissions have been used repeatedly as an example in this discourse.²³⁰ Because the Clean Air Act’s 1967 amendments allow California to set its own tailpipe emissions standards²³¹ and the Act’s 1977 amendments permit other states to choose to follow California,²³² that state’s vehicle emissions choices have long created complex state-federal regulatory dynamics. Differences between California and the federal government over how strict such standards should be in practice often implicate

Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction, 82 N.Y.U. L. REV. 1547, 1549–50 (2007); William W. Buzbee, *Recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1, 49–51 (2003); Erwin Chemerinsky, *Empowering States When It Matters: A Different Approach to Preemption*, 69 BROOK. L. REV. 1313, 1328–32 (2004); Resnik, *supra* note 37; Ruhl & Salzman, *supra* note 75, at 3. *See generally* Robert A. Schapiro, *Toward a Theory of Interactive Federalism*, 91 IOWA L. REV. 243 (2005). The *Emory Law Journal* recently held a series of symposia exploring these themes, one of which includes the above Engel essay. *See Symposium, Interactive Federalism: Filling the Gaps?*, 56 EMORY L.J. 1 (2006); *Symposium, The New Federalism: Plural Governance in a Decentered World*, 57 EMORY L.J. 1 (2007).

²²⁹ *See* SCHAPIRO, *supra* note 128.

²³⁰ For instance, *Arizona Law Review*’s 2008 symposium issue focused on federalism and climate change. *See* Carol M. Rose, *Federalism and Climate Change: The Role of States in a Future Federal Regime—An Introduction*, 50 ARIZ. L. REV. 673 (2008) (introducing the three themes of the symposium as whether state and local actors will impact global climate change, practical constraints on subnational actors’ effectiveness in addressing climate change, and normative and legal limits on their activities). One of the articles in *UCLA Law Review*’s 2008 symposium issue on climate change also highlighted governance issues posed by California. *See* Douglas A. Kysar & Bernadette A. Meyler, *Like a Nation State*, 55 UCLA L. REV. 1621 (2008).

²³¹ Air Quality Act of 1967, Pub. L. No. 90-148, 81 Stat. 485 (codified as amended at 42 U.S.C. §§ 7401–7671 (2004)).

²³² Clean Air Act Amendments of 1977 § 129(b), Pub. L. 95-95, 91 Stat. 750 (codified as amended at 42 U.S.C. § 7507 (2000)) (“[A]ny State . . . may adopt and enforce for any model year standards relating to control of emissions from new motor vehicles or new motor vehicle engines . . . if—(1) such standards are identical to the California standards for which a waiver has been granted for such model year . . .”).

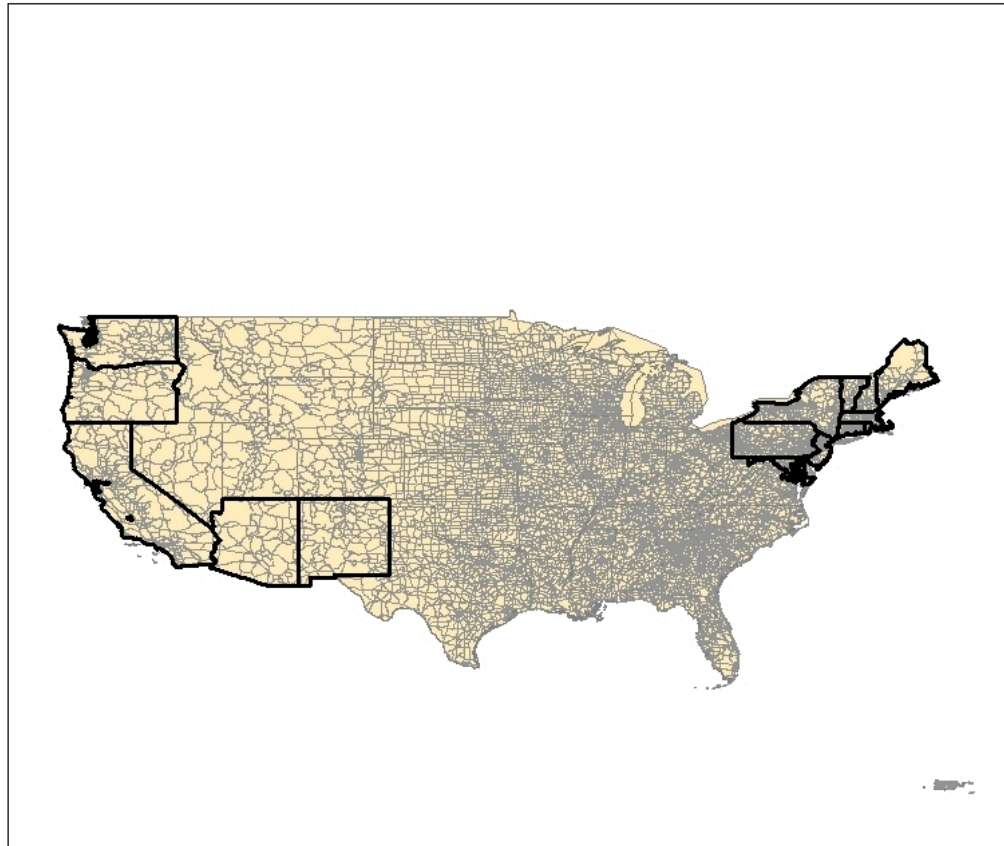
not just one state versus the federal government, but multiple states desiring to regulate more stringently than the “national” standard.²³³ The federalism questions thus involve not simply how the state and federal governments interact, but also the formal and informal legal relationships that states have with one another.²³⁴

The dispute over the EPA’s denial of California’s waiver request for its climate change-oriented vehicle emissions regulations follows this pattern of multiple states wanting to exceed federal standards by following a consistent “California” standard.

²³³ For example, Engel has detailed this phenomenon in the context of the California Low Emission Vehicle standards of the 1990s as part of her argument for dynamic approaches to federalism in the environmental context. Engel, *supra* note 128, at 170–72; *cf.* David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 ARIZ. L. REV. 835 (2008) (contending that states can play a key role in inducing technological change needed to address climate change and that a state-federal regulatory scheme should reflect that role for states); Holly Doremus & W. Michael Hanemann, *Of Babies and Bathwater: Why the Clean Air Act’s Cooperative Federalism Framework is Useful for Addressing Global Warming*, 50 ARIZ. L. REV. 799 (2008) (arguing that a cap-and-trade regime will be insufficient to control climate change on its own and that the federal government should also adopt a climate law modeled on the Clean Air Act’s cooperative federalism approach); Daniel A. Farber, *Climate Change, Federalism, and the Constitution*, 50 ARIZ. L. REV. 879 (2008) (proposing a bifurcated approach to the constitutionality of state efforts to address climate change); Lisa Heinzerling, *Climate, Preemption, and the Executive Branches*, 50 ARIZ. L. REV. 925 (2008) (proposing an approach to preemption based on *Chevron* terms that considers whether the federal or state executive has comparatively more political accountability and technical expertise); Alice Kaswan, *A Cooperative Federalism Proposal for Climate Change Legislation: The Value of State Autonomy in a Federal System*, 85 DENV. U. L. REV. 791 (2008) (proposing a cooperative federalism approach to climate change legislation that includes federal minimum standards which states can exceed and the particularities of delegating program implementation); Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39 (2007) (exploring jurisdiction overlaps in the climate change context and arguing for the importance of state efforts and lawsuits) [hereinafter Kaswan, *The Domestic Response to Global Climate Change*]; Kysar & Meyler, *supra* note 130 (examining U.S. constitutional limitations on California’s efforts to integrate transnationally with greenhouse gas emissions trading systems); Resnik et al., *supra* note 20 (exploring the appropriate legal status of efforts by translocal organizations of government actors to regulate climate change); Stewart, *supra* note 148 (arguing for the value of a plural model of climate regulation that allows subnational governments to continue to act even after federal legislation); Andreen et al., *supra* note 148 (arguing that federal climate legislation should allow states and localities to exceed federal standards and exploring options for cooperation among national, state, and local government).

²³⁴ *Cf.* Noah D. Hall, *Toward a New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 U. COLO. L. REV. 405 (2006) (analyzing water management in the Great Lakes region as an example of cooperative horizontal federalism and arguing for cooperative horizontal federalism as an alternative to the federal versus state regulatory dichotomy).

Map 1 below illustrates the states that passed legislation adopting California's standards as of June 2008, layered over road density in the United States.



Legend

- Major Roads
- State Boundaries

Explanation of Map

This map shows states that have passed laws in accord with California's vehicle emissions standards (outlined in black) layered over major roads in the United States. As the map illustrates, states with these laws are clustered in the Northeastern and in the Western United States. The most dense concentration of major roads, however, is in the Eastern half of the United States.



Created by Hari M. Osofsky on June 14, 2008, based on data collected from <http://nationalatlas.gov/atlasftp.html>.

Map 1. States Attempting to Follow California's Vehicle Emissions Standards.

As indicated on the map, primarily northeastern and western states were attempting to follow California’s heightened greenhouse gas motor vehicle standards—although states from other regions not included on this map were considering such legislation and intervened on California’s side in the state waiver dispute—whereas other states are opting for the less restrictive federal standards.²³⁵

This pattern reinforces a difficulty for both federalism and broader scalar analyses of climate regulation that surfaced in the *Massachusetts v. EPA* dispute described in Chapter IV. Because states do not function in a unified fashion—only some states, tracking a clear geographic pattern, consistently seek to exceed the federal government in climate regulation—disputes between states and the federal government often also reflect disagreements among states. As described in the preceding chapter, in *Massachusetts v. EPA*, states joined both sides of the lawsuit.²³⁶ And, as illustrated in the San Bernardino County example in the next chapter, localities within states may diverge significantly

²³⁵ For examples of state regulations attempting to follow the California approach, see CONN. AGENCIES REGS. § 22a-174-36b (2008) (adopting CARB’s greenhouse gas (GHG) emission reduction standards for vehicles manufactured in the model years (MYs) 2009–2016); 06-096-127 ME. CODE R. §§ 4–8 (Weil 2008) (adopting CARB’s GHG emission reduction standards for vehicles manufactured in the MYs 2009–2016); MD. CODE REGS. 26.11.34.02 (2008); 310 MASS. CODE REGS. 7.40 (2008) (adopting CARB’s GHG emission reduction standards for vehicles manufactured in the MYs 2009–2016); N.J. ADMIN. CODE § 7:27-29.13 (2008) (adopting CARB’s GHG emissions-reduction standards); N.M. CODE R. § 20.2.88.1–.112 (Weil 2008) (adopting CARB’s GHG emission reduction standards for vehicles manufactured in the MY 2011); N.Y. COMP. CODES R. & REGS. tit. 6, § 218-8.2 (2008) (adopting CARB’s GHG emission reduction standards for vehicles manufactured in the MYs 2009–2016); OR. ADMIN. R. 340-257-0050 (2008); 25 PA. CODE §§ 126.401, 126.411, 126.431, 126.451 (2008); 12-031-037 R.I. CODE R. § 37.2 (Weil 2008), available at http://www.dem.ri.gov/pubs/regs/regs/air/air37_07.pdf; WASH. ADMIN. CODE § 173-423-050 (2008); 12-03-001 VT. CODE R. §§ 5-1101 to -1109 (2008), available at <http://www.anr.state.vt.us/air/docs/apcregs.pdf>; and Paul Davenport, *Arizona panel clears new rules on auto emissions*, ASSOCIATED PRESS, May 6, 2008. Other states, such as Florida, Iowa, and Illinois are in the process of adopting the California standards. See Florida Department of Environmental Protection, Greenhouse Gas Emissions Reduction—Adoption of California Motor Vehicle Emissions Standards, at <http://www.dep.state.fl.us/air/rules/ghg/california.htm>; Motion for Leave to Intervene as Petitioners, *California v. EPA*, No. 08-70011 (9th Cir. Jan. 31, 2008), available at http://www.iowa.gov/government/ag/latest_news/releases/feb_2008/EPA_regulation.pdf [hereinafter Motion to Intervene].

²³⁶ For a discussion of these dynamics in *Massachusetts v. EPA*, see Chapter IV.

from one another and from the state itself.²³⁷ Thus, although the state waiver dispute superficially represents a battle between California and the federal government, its scalar characteristics and broader context make it hard to capture fully without resort to a very dynamic model of federalism.

2. *The Contours of State-Level Climate Regulation*

The limited U.S. federal response to the problem of climate change, which predated President George W. Bush's administration but worsened during it, helped to highlight and sometimes to drive state action. States—like cities—play crucial roles in scalar contestation over climate change for structural and substantive reasons that go beyond the particular regulatory climate in Washington, D.C. As the Obama Administration moves forward with international and national-level climate regulation, it must grapple with how states fit into its scheme.

Substantively, states control a myriad of policy decisions that affect emissions greatly.²³⁸ They also vary substantially in their inclinations with respect to those policy decisions. These differences matter because they often not only represent divergent policy approaches, but also translate into gaps in effectiveness at regulating emissions.

Because some U.S. states produce more greenhouse gases than many countries—Texas,

²³⁷ See *supra* note 82 and accompanying text.

²³⁸ For analyses of state-level initiatives on climate change, see BARRY G. RABE, *STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY* 1–37 (2004); Brown, *supra* note 37, at 205–08; Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281, 290–92 (2003); David R. Hodas, *State Law Responses to Global Warming: Is It Constitutional to Think Globally and Act Locally?*, 21 PACE ENVTL. L. REV. 53, 53–65 (2003); Kosloff & Trexler, *supra* note 37, at 47–48; McKinstry, *supra* note 37, at 26–54; Barry G. Rabe, *North American Federalism and Climate Change Policy: American State and Canadian Provincial Policy Development*, 14 WIDENER L.J. 121, 128–51 (2004).

California, Pennsylvania, Ohio, Illinois, and Florida, for example, would all rank among the top thirty emitting countries—state choices impact overall global emissions significantly.²³⁹

This combination of emissions impact, divergence in views, and federal policy that lags behind that of some states makes state-level emissions a crucial battleground in regulatory disputes. The state waivers dispute embodies all three of these issues and reinforces how complex states' roles and dynamics are. Its resolution affects not just how the EPA under President Bush or Obama interprets the Clean Air Act's waiver for California, but which states' vision of climate change will hold sway and, as a result, the extent to which individual states' and U.S. motor vehicle emissions will decline.

Structurally, states' intermediate position in the U.S. scalar hierarchy allows them to serve as a fulcrum point in disputes over regulatory level. Their administrative relationship with local government, as explored in depth in the San Bernardino County example in Chapter VI, gives states the capacity to influence smaller-scale decision making greatly. States can make municipal greenhouse gas regulation more or less likely by their statewide policies and their relationship with local policies.²⁴⁰

In the other scalar direction, states' interactions with larger-scale levels of government, and most notably the federal level, often influence policy at that level. States can exert positive or negative regulatory pressure on the federal government depending on how their policies diverge. Moreover, states' horizontal interactions with one

²³⁹ See *Leading Gas Spewers*, 313 SCI. 1549 (2006), available at <http://www.sciencemag.org/cgi/reprint/313/5793/1549d.pdf>; Sightline Institute, Equivalent greenhouse gas emissions from energy use, at <http://www.sightline.org:80/images/blog-2007/us%20map%207.gif> (last visited Nov. 9, 2008).

²⁴⁰ See *infra* Chapter VI.

another—such as using other states’ climate policies as models or disputing competing conceptions of other states—influences decisionmaking at both state and federal levels, which in turn influences state-local dynamics.²⁴¹

As with localities, the substantive and structural dynamics combine to make state decision making a key node in U.S. climate regulation. The substantial disagreement among decision makers in states and at levels above and below them continues to make litigation a key locus for scalar conflict.

3. Scalar Contestation over California’s Emissions Regulation

The road to California’s dispute with the EPA began in July 2002, with the passage of AB 1493, which requires the California Air Resources Board (CARB) to promulgate vehicle emissions regulations that maximize greenhouse gas emissions reductions.²⁴² CARB created such regulations in 2004,²⁴³ and pursuant to Section 209(b) of the Clean Air Act, petitioned the EPA in 2005 for a waiver of preemption for these standards.²⁴⁴ Although all of California’s previous waiver requests had been granted at least in part through a deferential review process,²⁴⁵ EPA Administrator Stephen Johnson

²⁴¹ The EPA even acknowledged this dynamic in its denial of California’s waiver request. *See infra* note 162 and accompanying text.

²⁴² *See* Vehicular emissions: greenhouse gases, 2002 Cal. Legis. Serv. 696–701 (West) (codified as CAL. HEALTH & SAFETY CODE § 43018.5 (West 2003)).

²⁴³ *See* CAL. CODE REGS. tit. 13, § 1961.1 (2008).

²⁴⁴ *See* Clean Air Act § 209(b), 42 U.S.C. § 7543(b) (2008); EPA Notice of Opportunity for Public Hearing and Comment, 72 Fed. Reg. 21,260 (Apr. 30, 2007).

²⁴⁵ *See* JAMES E. MCCARTHY, CALIFORNIA’S WAIVER REQUEST TO CONTROL GREENHOUSE GASES UNDER THE CLEAN AIR ACT 11–12 (Cong. Research Serv., CRS Report for Congress Order Code RL 34099, Aug. 20, 2007), available at <http://www.azclimatechange.gov/download/082007.pdf>. For an example of the deferential approach the EPA has taken in granting previous

denied California's waiver request in December 2007,²⁴⁶ with a formal denial following in March 2008.²⁴⁷

In January 2008, California—with eighteen other states ultimately moving to intervene in support—petitioned the Court of Appeals for the Ninth Circuit to overturn the waiver denial.²⁴⁸ California also petitioned the District Court for the Northern District of California to obtain records regarding the denial decision.²⁴⁹ Simultaneously, on the congressional front, seventeen senators—including then-Senator Obama—co-sponsored a bill introduced by California Senator Barbara Boxer to overturn the decision, with similar legislation soon following in the House of Representatives.²⁵⁰

In May 2008, California filed a protective petition in the D.C. Circuit challenging the waiver denial,²⁵¹ and the National Highway Traffic and Safety Administration's

waiver requests, see California State Motor Vehicle Pollution Control Standards, 49 Fed. Reg. 18,887, 18,890 (May 13, 1984).

²⁴⁶ See Waiver Denial, *supra* note 28.

²⁴⁷ See EPA Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 73 Fed. Reg. 12,156 (Mar. 6, 2008).

²⁴⁸ See Petition for Review, *supra* note 28; see also Office of the Attorney General, State of California, California's Motor Vehicle Global Warming Regulations, at <http://ag.ca.gov/globalwarming/motorvehicle.php> (last visited Nov. 9, 2008); Motion to Intervene, *supra* note 135.

²⁴⁹ Complaint for Injunctive Relief Under the Freedom of Information Act, California v. EPA, No. 08-00735 (N.D. Cal. Jan. 31, 2008), available at http://ag.ca.gov/globalwarming/pdf/EPA_FOIA_complaint.pdf [hereinafter FOIA Complaint].

²⁵⁰ Reducing Global Warming Pollution from Vehicles Act of 2008, S. 2555, 110th Cong. (2008), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:s2555rs.txt.pdf; Right to Clean Vehicles Act, H.R. 5560, 110th Cong. (2008), available at <http://www.govtrack.us/congress/billtext.xpd?bill=h110-5560>; Richard Simon, *Hearing Grows Warm for EPA Chief*, L.A. TIMES, Jan. 25, 2008, at A13.

²⁵¹ See Protective Petition for Review, California v. EPA, No. 08-1178 (D.C. Cir. May 5, 2008), available at http://www.cleancarscampaign.org/web-content/legal/docs/petition_08-1178.pdf.

proposed new Corporate Average Fuel Economy (CAFE) standards that would preempt states from adopting their own carbon dioxide regulations.²⁵² Shortly thereafter, the House Committee on Oversight and Government Reform issued a memorandum based on its investigation of the EPA's denial, which found that Administrator Johnson reversed the EPA staff's recommendation to grant the waiver following communications with the White House.²⁵³

Following the Ninth Circuit's July 2008 dismissal of California's waiver petition, the courtroom battle focused on the still pending D.C. Circuit case.²⁵⁴ Meanwhile, throughout this period, lawsuits in state courts challenged the California standards, and those courts found them acceptable pending an EPA waiver grant.²⁵⁵

President Obama's election changed the executive branch's approach to the waiver request substantially. Within a week of assuming office, he ordered the EPA to reconsider the waiver denial.²⁵⁶ In his remarks accompanying that order, President Obama noted that "California has shown bold and bipartisan leadership through its effort

²⁵² Average Fuel Economy Standards Passenger Cars and Light Trucks Model Years 2011–2015, 73 Fed. Reg. 24,352, 24,478 (May 2, 2008), *available at* <http://www.nhtsa.gov/portal/site/nhtsa/menuitem.43ac99aefa80569eea57529cdba046a0/>.

²⁵³ STAFF OF H. COMM. ON OVERSIGHT AND GOVERNMENT REFORM, 110TH CONG., MEMORANDUM ON EPA'S DENIAL OF THE CALIFORNIA WAIVER (2008), *available at* <http://oversight.house.gov/documents/20080519131253.pdf>.

²⁵⁴ Order, *California v. EPA*, No. 08-70011 (9th Cir. July 25, 2008), *available at* <http://www.cleancarscampaign.org/web-content/legal/docs/order-appeal-denied.pdf>. For example, numerous associations of state and local governments filed an amicus brief in support of California in November 2008. Joint Brief for National Conference of State Legislatures et al., as Amici Curiae Supporting Petitioner, *California v. EPA*, No. 08-1178 (D.C. Cir. Nov. 24, 2008), *available at* http://www.cleancarscampaign.org/web-content/legal/docs/08-1178_GovtAmiciBrief_11-24-08-1.pdf [hereinafter Joint Brief].

²⁵⁵ *See, e.g.*, *Cent. Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151, 1190 (E.D. Cal. 2007); *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295, 344 (D. Vt. 2007).

²⁵⁶ *See sources supra* note 125.

to forge 21st century standards, and over a dozen states have followed its lead. But instead of serving as a partner, Washington stood in their way.”²⁵⁷ When the Obama Administration EPA granted the waiver, this grant resolved, as a formal matter, most aspects of the dispute.

This section focuses on a particular aspect of this conflict that spans multiple branches and levels of government; it considers the scalar arguments being made by each side. Throughout CARB’s attempt to obtain a waiver and the EPA’s denial, both sides have engaged in rescaling efforts similar to those described with respect the *Massachusetts v. EPA* case in Chapter IV. Namely, California scaled down climate change generally, and motor vehicle emissions in particular, as appropriate for state regulation, while the EPA scaled up, deeming the emissions a federal regulatory issue.

California’s November 2007 complaint to the D.C. District Court seeking to compel the EPA either to grant or to deny its waiver request after a long delay in responding lays out the “scaling down” argument clearly. The complaint details climate change as a problem that impacts California, stating: “The effect of global warming on California’s population, economy and environment has been extensively demonstrated both during CARB’s and USEPA’s administrative proceedings on the GHG [Greenhouse Gas] Regulation and in other public forums and scientific proceedings.”²⁵⁸ California then links the state-level regulation to the problem, explaining: “Motor vehicles are a major source of greenhouse gases, particularly in California. Automotive emissions of

²⁵⁷ The White House Blog, From peril to progress (Update 1: Full Remarks), at http://www.whitehouse.gov/blog_post/Fromperiltoprogress/ (Jan. 26, 2009, 16:35 EST).

²⁵⁸ Complaint for Declaratory and Injunctive Relief ¶ 6, *California v. EPA*, No. 07-2024 (D.D.C. Nov. 8, 2007), available at http://ag.ca.gov/cms_attachments/press/pdfs/n1490_complaint_for_unreason_11-5-07.pdf.

greenhouse gases are increasing more rapidly than any other source. The longer the delay in reducing these emissions, the more costly and harmful will be the impact on California.”²⁵⁹ The arguments throughout the complaint reinforce these two statements, making the case for climate change as a state-level problem demanding state-level regulatory action.²⁶⁰

In contrast, Administrator Johnson’s December 2007 letter to Governor Arnold Schwarzenegger denying the waiver is explicit in its claim that the large scale of climate change drives the decision. The letter notes:

Unlike other air pollutants covered by previous waivers, greenhouse gases are fundamentally global in nature. Greenhouse gases contribute to the problem of global climate change, a problem that poses challenges for the entire nation and indeed the world. Unlike pollutants covered by other waivers, greenhouse gas emissions harm the environment in California and elsewhere regardless of where the emissions occur. In other words, this challenge is not exclusive or unique to California and differs in a basic way from the previous local and regional pollution problems addressed in prior waivers.²⁶¹

The letter is using the large spatial scale of the problem to contrast greenhouse gas emissions with other types of emissions, and thus declare these vehicle emissions inappropriate for state regulation.

Interestingly, at the same time as the letter deems vehicle emissions of greenhouse gases inappropriate for state-level regulation, it acknowledges California’s influence on national-level regulations. The Administrator concludes:

Finally, I want to acknowledge the leadership that you and your state have shown to increase vehicle fuel economy, to address energy

²⁵⁹ *Id.* ¶ 8.

²⁶⁰ *See id.*

²⁶¹ Waiver Denial, *supra* note 28, at 1.

security, and to reduce greenhouse gases. I agree that increased vehicle standards can be a win-win for the environment and the economy. I have no doubt that the national standards Congress adopted and the President signed into law this week were enacted, in part, because of your efforts.²⁶²

This acknowledgment appears to frame California's appropriate regulatory role regarding greenhouse gases as influencing national policy, rather than creating state policy. An ambiguity in this statement, however, potentially cuts against the Administrator's earlier claim. Namely, if some of California's leadership has been involved in nonpreempted state regulation in addition to its influencing of the national government, how would such efforts be commendable with respect to such a large scale problem?

As noted above, California pushed back against Administrator Johnson's framing with two January 2008 filings, a petition to the Ninth Circuit for review of EPA's waiver denial²⁶³ and a petition to the Northern District of California under the Freedom of Information Act (FOIA) to obtain records regarding the denial decision.²⁶⁴ The Ninth Circuit petition criticizes the Administrator's letter, stating: "The document did not make a finding of 'nationwide scope or effect' as provided for in the third sentence of section 307(b)(1) of the Clean Air Act, 42 U.S.C. § 7607(b)(1)."²⁶⁵ In so doing, the petition challenges such "scaling up" without adequate justification.

Similarly, the FOIA petition, relying on language much like that of the complaint seeking to compel the EPA to act on its waiver request, indicates:

²⁶² *Id.* at 2.

²⁶³ Petition for Review, *supra* note 28.

²⁶⁴ FOIA Complaint, *supra* note 149.

²⁶⁵ Petition for Review, *supra* note 28, at 1–2.

Even though the effect of global warming on California's population, economy, and environment were extensively demonstrated during CARB's and EPA's administrative proceedings on the GHG Regulations, as well as in other public fora and scientific proceedings, EPA failed to take action on the waiver request for two years. On December 19, 2007, EPA Administrator Stephen Johnson rejected California's request to implement regulations on tailpipe emissions of greenhouse gases, principally carbon dioxide. As many as 16 other states would have been free to implement such regulations if California had received approval from EPA. The decision, memorialized in a letter to Governor Schwarzenegger . . . represents the first time EPA has denied a request by California to impose its own pollution rules: it previously has granted the state approximately 50 waivers.²⁶⁶

This statement not only argues for the state-level scale of the problem, but also highlights the fact that the waiver denial affects multiple states' ability to regulate emissions. In so doing, it reinforces the complex federalism questions embodied in this dispute and discussed previously. Even as the petition scales the problem down as a state regulatory issue, it also creates upward vertical pressure through the horizontal coalition of states trying to act with California, which, in the process, highlights the differing approaches of states.²⁶⁷

The dynamics represented in these documents reinforce the scalar nature of the regulatory battles taking place in climate change litigation. As in the *Massachusetts v. EPA* example in the previous chapter and the *People v. San Bernardino County* case discussed in the next chapter, the primary dispute centers on what level of regulatory action is appropriate rather than whether climate change should be regulated. The scalar contestation, and the "too big" arguments in particular, become a proxy for limiting

²⁶⁶ FOIA Complaint, *supra* note 149, ¶ 6.

²⁶⁷ These dynamics are reinforced by the recent amicus brief by state and local governments in the still pending D.C. Circuit action. See Joint Brief, *supra* note 154, at 2 ("The history of environmental innovation in the United States, and the current efforts of states and localities here and in other countries, belie EPA's assertion that state and local entities should not address global problems like climate change.").

regulation. The blocked regulation—whether by the smaller-scale government in the first example or by the larger-scale government in this one—means a continuation of a higher emissions status quo during the period in which the smaller scale efforts do not move forward.

4. Implications of State-Federal Scalar Contestation

The state waiver dispute raises complex issues about what multiscalar governance of climate change should look like. In contrast to the San Bernardino County settlement discussed in the next chapter, which has helped to spur regulation that otherwise would not have occurred, the EPA’s waiver denial had the opposite result under the Bush Administration. That administration did not promulgate motor vehicle GHG emissions regulations that go as far as those of California. As a result, emissions were higher than they would have been if California and the other states had been allowed to go forward.²⁶⁸ Even though the waiver was ultimately granted and the federal government passed more stringent regulations in collaboration with California under the Obama Administration, the period from the 2005 waiver request until that point was one of greater emissions than it could have been.

However, the disputes among states and the federal government do not always produce the outcome generated in the waiver case. For instance, *Massachusetts v. EPA*, rather than blocking state regulatory efforts, produced a U.S. Supreme Court decision forcing the EPA to reassess its treatment of motor vehicle greenhouse gas emissions

²⁶⁸ California advanced a variation on this argument in its action under FOIA. See FOIA Complaint, *supra* note 149, ¶ 6.

under the Clean Air Act.²⁶⁹ This decision helped undergird the Obama Administration’s extensive regulation of emissions by motor vehicles and stationary sources. If our goal should not simply be to reduce greenhouse gas emissions as quickly as possible, but to develop an appropriate and effective regulatory scheme that acknowledges the multiscalar nature of climate change, the state waiver dispute and other state-federal—mixed with state-state—variations on climate change litigation raise important questions. Namely, if we accept the complex geography of scale, science, and law highlighted in Chapter IV and the salience of dynamic federalist models, as well as the argument that states are substantively and structurally important in the overall regulatory picture, we still are left with uncertainty about when state action, whether individual or in coalitions, is appropriate.²⁷⁰

Just as most commentators seem to accept the need for a more effective treaty regime, they also likely would not dispute the claim that states make decisions within their regulatory authority that affect emissions. The harder terrain is where federal and state efforts intersect. Even if neither a dualist nor a cooperative model adequately captures the complex dynamics represented in the state waiver dispute,²⁷¹ there are no easy answers about when a group of states, which disagrees with other states, should be allowed to regulate emissions more stringently than the federal government.

Although the Obama Administration displays a drastically different approach to climate change than the most recent Bush Administration did, and resolved this particular

²⁶⁹ *Massachusetts v. EPA*, 549 U.S. 497 (2007).

²⁷⁰ *See supra* Chapter IV.

²⁷¹ Schapiro, for example, not only critiques dualist approaches, but indicates that cooperative federalism does not adequately engage conflicts. Schapiro, *supra* note 128, at 283–85.

conflict in favor of state-level regulation, it still faced the complexities of scale raised by the state waiver dispute. As he ordered the reconsideration of the waiver, President Obama himself noted that Washington’s “refusal to lead risks the creation of a confusing and patchwork set of standards that hurts the environment and the auto industry.”²⁷² While he supports California and the other states moving ahead, he must grapple with the scalar dimensions of “the best way forward,” which “will help us create incentives to develop new energy that will make us less dependent on oil that endangers our security, our economy, and our planet.”²⁷³

The waiver dispute raises critical questions about the structure of our transnational regulatory model for climate governance. Even if we accept the complexity described in Chapter IV of international-domestic, local-state-federal, and public-private in the context of climate change litigation, we still do not have definitive answers about an appropriate scalar approach. For example, when problems have international dimensions, should we presume a top-down model in which states primarily participate through their interaction with the federal government? If multiscalar regulatory concerns like climate change make a more inclusive model appropriate, what role should states have? When, if ever, is preemption appropriate? Is a systematic approach possible, or do these situations have to be resolved individually? And more specific to climate change, what are states’ most appropriate and effective regulatory roles, given their intermediate regulatory level?²⁷⁴ As Chapter VI suggests, if we treat states—like localities—as

²⁷² The White House Blog, From peril to progress, *supra* note 157.

²⁷³ *Id.*

²⁷⁴ For examples of recent scholarship grappling with these issues, see sources cited *supra* notes 130, 133.

embedded in multiscalar climate networks, a complex set of regulatory challenges emerges.

CHAPTER VI

THE INCLUSION OF CLIMATE CHANGE IN LOCAL LAND USE PLANNING:

PEOPLE V. COUNTY OF SAN BERNARDINO

This chapter contains edited portions of Hari M. Osofsky, *Is Climate Change “International”?: Litigation’s Diagonal Regulatory Role*, 49 Va. J. Int’l L. 585 (2009).

Litigation over local climate regulation reflects the push-pull of smaller-scale efforts on emissions and further elucidates the complex scale-science-law interaction framed in Chapter IV by the work of Doremus and Sayre. As Sections 1 and 2 of this chapter introduce and the third case study explores in more depth, urban geographers have long-recognized that the very idea of “local” is complex, which is reflected in climate regulation at that scale. Both substantive and structural forces have made cities and counties critical sites for addressing the problem of climate change. In addition, as highlighted in the example of San Bernardino County, California,²⁷⁵ these questions of local regulation often involve both urban and rural dimensions, which makes a presumption of local as urban problematic at times.²⁷⁶

Sections 3 and 4 analyze the way in which litigation interacts with local regulatory choices by considering the settlement in *People v. County of San Bernardino*. In parallel cases, California and several nongovernmental organizations sued San Bernardino County for failing to include greenhouse gas emissions in its urban growth

²⁷⁵ For maps of San Bernardino County, see County of San Bernardino, San Bernardino County Maps, at <http://www.sbcounty.gov/maps.htm> (last visited Nov. 8, 2008).

²⁷⁶ IPCC, IMPACTS, *supra* note 6; IPCC, MITIGATION, *supra* note 6. For an interesting analysis of the way in which legal rhetoric interacts with the rural, see generally Lisa R. Pruitt, *Rural Rhetoric*, 39 CONN. L. REV. 159 (2005).

plan.²⁷⁷ The landmark settlement that resulted from the action brought by the State of California represents an important compromise;²⁷⁸ it demonstrates how localities might address climate change and the potential for state governments to force greater action.

The focus in this chapter is not on the significance of this settlement generally, which is addressed further in Chapter IX's discussion of the post-settlement activity in San Bernardino County, but rather on how questions of scale are mediated through it. The core substantive question in both suits is whether a state environmental law can be used to compel local government to change the way in which it approaches urban growth. Within the perspectives expressed by both sides, as well as in the settlement itself, are views about localities as an appropriate scale for climate regulation.

1. Scaling the Local

Cities and counties are levels of governance that we typically talk about as “local.” However, these very categories of “local” and “regional” can be confusing. Although “local” conveys smallness, localities can be physically bigger than states.²⁷⁹ Similarly, “regional” is a category that can occur at many different scales. A region can be a subset of a state, a group of states, or a group of countries, just to name a few variations. An extensive scholarly literature in geography and other disciplines

²⁷⁷ See Petition for Writ of Mandate at 12, *Ctr. for Biological Diversity v. County of San Bernardino*, No. 07 Civ. 293 (Cal. Super. Ct. Apr. 11, 2007), available at [http://www.communityrights.org/PDFs/Petition_\(00011023\).PDF](http://www.communityrights.org/PDFs/Petition_(00011023).PDF) [hereinafter *Petition*, *Ctr. for Biological Diversity*]; Petition for Writ of Mandate ¶ 5, *People v. County of San Bernardino*, No. 07 Civ. 329 (Cal. Super. Ct. Apr. 13, 2007), available at http://ag.ca.gov/globalwarming/pdf/SanBernardino_complaint.pdf [hereinafter *Petition*, *People*].

²⁷⁸ See Confidential Settlement Agreement, *supra* note 24.

²⁷⁹ See *infra* note 78 and accompanying text.

interrogates the appropriate structure of decision making within these variously scaled metropolitan regions. In the context of urban metropolitan areas in particular, geographers such as Peter Muller have traced the ways in which urban regions have evolved into polycentric, multi-nodal complex systems in which suburban mini-cities and technopoles participate in global economic networks.²⁸⁰ The new governance scholars highlighted in Chapter II have also focused on the ways in which local knowledge can be integrated into complex, multiscale processes.²⁸¹

Although other lawsuits over local policy choices reflect contestation over the scale of climate regulation more clearly,²⁸² the San Bernardino County dispute provides a particularly interesting example due to the scale of that county and its emissions. San

²⁸⁰ For discussion of the classic U.S. urban geography literature on this issue, see John R. Borchert, *America's Changing Metropolitan Regions*, 62 ANNALS ASSOC. AM GEOG. 352, 352 (1985) (citing ROBERT E. DICKINSON, *CITY REGION AND REGIONALISM* (New York: Oxford University Press, 1947); OTIS DUDLEY DUNCAN, ET AL., *METROPOLIS AND REGION* (Baltimore: Johns Hopkins University Press, for Resources for the Future, 1960); DICKINSON, *CITY AND REGION* (London: Routledge and Kegan Paul, 1964) & BEVERLY DUNCAN & STANLEY LIEBERSON, *METROPOLIS AND REGION IN TRANSITION* (Beverly Hills: Sage Publications, 1970). Peter Muller has talked about the complex spatial evolution of urban metropolitan regions as they have become polycentric participants in globalization. See PETER O. MULLER, *CONTEMPORARY SUBURBAN AMERICA* (1981); Peter O. Muller, *Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis* in *THE GEOGRAPHY OF URBAN TRANSPORTATION* 59 (Susan Hanson & Genevieve Giuliano, eds) (2004); Peter O. Muller, *The Suburban Transformation of the Globalizing American City*, 551 ANNALS AM. ACADEMY POLITICAL & SOC. SCI. 44 (1997). For examples of this literature in law journals, see David J. Barron, *Reclaiming Home Rule*, 116 HARV. L. REV. 2255 (2003) and Gerald E. Frug, *Beyond Regional Government*, 115 HARV. L. REV. 1763 (2002).

²⁸¹ J.B. Ruhl and James Salzman are integrating new governance with dynamic federalism and transgovernmental network theory in an effort to grapple with massive environmental problems like climate change. See J.B. Ruhl & James Salzman, *Managing Massive Problems: Models and Strategies for Administrative Agencies* (Nov. 17, 2008) (unpublished manuscript, on file with author). For broader compilations on new governance approaches and research directions, see generally LAW AND NEW GOVERNANCE IN THE EU AND US (Gráinne de Búrca & Joanne Scott eds., 2006); Bradley C. Karkkainen, "New Governance" in *Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471 (2004); Orly Lobel, *Setting the Agenda for New Governance Research*, 89 MINN. L. REV. 498 (2004); and Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004).

²⁸² Similar dynamics, for example, exist in the briefs and Washington Supreme Court opinion in *Okeson v. City of Seattle*, 150 P.3d 556 (Wash. 2007), but an in-depth analysis of that case is beyond the scope of this Article.

Bernardino County embodies the peculiarity of legal scaling just discussed. Like other local governmental entities, it is simultaneously an administrative subunit of California and an independent policymaker,²⁸³ but as a matter of physical size, it spans 20,052 square miles, an area larger than some states.²⁸⁴

Despite its size, the County is also viewed—together with western Riverside, northern Los Angeles, southern Orange, and northern and southern San Diego counties—as part of Southern California’s “exurban periphery.”²⁸⁵ The County has a rapidly growing population—up 17.7% between 1990 and 1999 by U.S. Census Bureau estimates—and is undergoing major demographic shifts, but also includes significant wilderness areas.²⁸⁶ Its aggressive pro-growth policies have not only been challenged by the State of California and NGOs through climate change suits under the California

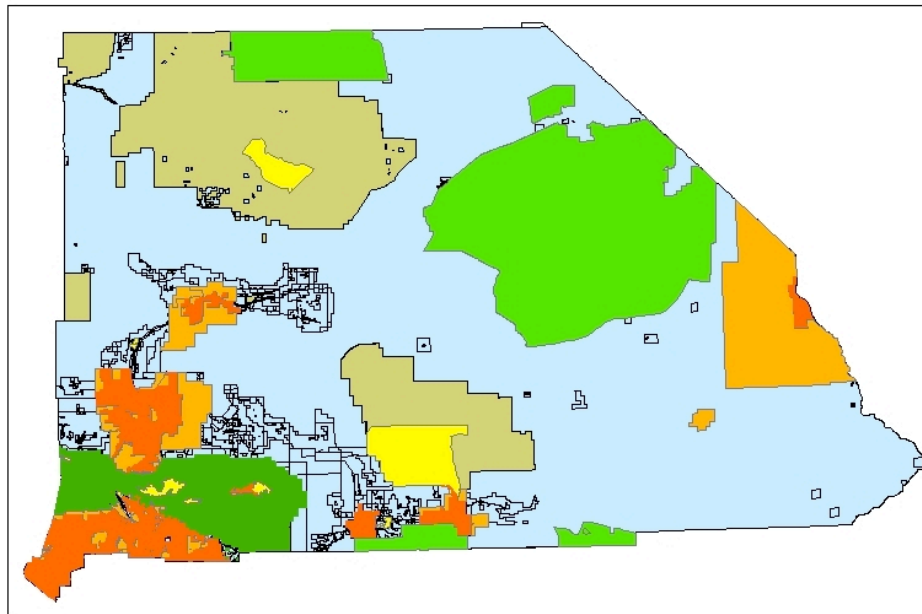
²⁸³ See Gerald L. Neuman, *Territorial Discrimination, Equal Protection, and Self-Determination*, 135 U. PA. L. REV. 261, 303–05 (1987) (discussing the legal status of counties).

²⁸⁴ Petition, People, *supra* note 71, ¶ 2; U.S. Census Bureau, State & County QuickFacts: San Bernardino County, California, at <http://quickfacts.census.gov/qfd/states/06/06071.html> (last visited July 25, 2008).

²⁸⁵ Steven P. Erie & Pascale Joassart-Marcelli, *Unraveling Southern California’s Water/Growth Nexus: Metropolitan Water District Policies and Subsidies for Suburban Development, 1928–1996*, 36 CAL. W. L. REV. 267, 270 (2000). For other discussions of San Bernardino County as part of the Southern California region, see Craig Manson, *Natural Communities Conservation Planning: California’s New Ecosystem Approach to Biodiversity*, 24 ENVTL. L. 603, 611–12 (1994) and G. Nelson Smith & Evelio M. Grillo, *Let’s Clear the Air Once and For All: Municipal Liability for Failing to Comply with Section 110 of the Clean Air Act*, 44 CATH. U. L. REV. 1103, 1121 (1995).

²⁸⁶ Jennifer Schlotterbeck, *Preserving Biological Diversity with Wildlife Corridors: Amending the Guidelines to the California Environmental Quality Act*, 30 ECOLOGY L.Q. 955, 965 (2003) (analyzing U.S. Census Bureau county population estimates for July 1, 1999, and population change from April 1, 1990, to July 1, 1999). Home sales in the city of San Bernardino experienced approximately thirty-five percent growth in 2005. John J. Delaney, *How We Got into a Workforce Housing Crisis: And Why Getting Out of It Will Not Be Easy*, in ALI-ABA COURSE OF STUDY MATERIALS 287, 294 n.9 (2006), available at SM004 ALI-ABA 287 (Westlaw). For analyses of demographic shifts in San Bernardino, with a focus on the growth of Latino and African-American populations, see Stuart Gabriel & Gary Painter, *Pathways to Homeownership: An Analysis of the Residential Location and Homeownership Choices of Black Households in Los Angeles*, 27 J. REAL EST. FIN. & ECON. 87, 92–93 (2003); Kevin R. Johnson & George A. Martinez, *Discrimination by Proxy: The Case of Proposition 227 and the Ban on Bilingual Education*, 33 U.C. DAVIS L. REV. 1227, 1239–40 (2000); and Jorge H. del Pinal, *Latinos and California’s Future: Too Few at the School’s Door*, 10 LA RAZA L.J. 631, 635–36 (1998).

Environmental Quality Act (CEQA),²⁸⁷ but also have been countered by the city council of Redlands, one of twenty-four incorporated communities within its borders.²⁸⁸ Map 2 portrays the county's major land use patterns layered over its plan for future development.



Legend

- County General Plan for Urban Growth
- Cities
- Cities' Spheres of Influence
- Additional Urban Areas
- Forests
- National Parks
- Military

30 15 0 30 Miles

Explanation of Map

This map shows current major land use patterns layered over the County's plan for future development. The black lines in the County's General Plan indicate areas of future development that range from residential to agricultural. These plans have been consistent in the 2002, 2004, and 2006 General Plans. From my GIS analysis, the three plans appear to overlap entirely. This map displays that overlap under the header: "County General Plan for Urban Growth."

Created by Hari M. Osofsky based on data collected from <http://www.sanbag.ca.gov/resources/GIS-data.html>.

Map 2. San Bernardino County, Current Land Use and General Plan for Development

²⁸⁷ CAL. PUB. RES. CODE §§ 21000–21177 (West 2007).

²⁸⁸ See Julie Hayward Biggs, *No Drip, No Flush, No Growth: How Cities Can Control Growth Beyond Their Boundaries by Refusing to Extend Utility Services*, 22 URB. LAW. 285, 288–95 (1990).

This scalar complexity illustrates a basic difficulty of trying to characterize the role that climate change litigation plays in urban responses to climate change. The litigation involves actors functioning at multiple levels of government disputing the way in which we should approach the problem of emissions regulation. And the actors themselves are often made up of smaller entities and form part of larger entities.²⁸⁹ San Bernardino County is certainly “local” as a legal matter, but the nuances of its geography—with its complex horizontal and vertical relationships and dimensions— influence how we should think about its regulatory role.

2. The Contours of Local Climate Choices

Although they vary greatly in size and character, cities and counties, in their many manifestations, serve as particularly important sites for scalar contestation over climate change. Both substantive and structural factors underlie the critical role of localities.

Substantively, localities are both major emitters and laboratories for resolving tensions between climate regulation and economic growth. Most nation-states are subdivided down to this local level, and although any individual city or county provides a relatively small percentage of global emissions, they cumulatively constitute a substantial share. For example, the hundreds of cities participating in the international effort Cities for Climate Protection, a predominantly horizontal effort, now represent a significant percentage of global greenhouse gas emissions.²⁹⁰

²⁸⁹ See Osofsky, *supra* note 36.

²⁹⁰ ICLEI Global, *supra* note 60.

Moreover, major urban areas, with their large populations, have a particularly important effect on total emissions, an effect that likely will grow due to the ongoing massive urbanization taking place around the world.²⁹¹ As discussed in depth in the third case study in Chapters XI through XIII, the patterns of (1) urbanization within metropolitan regions identified by geographers such as Peter Muller and John Borchert and (2) suburban participation in not only multi-level economic, but also climate change mitigation networks reinforces the need for polycentric governance approaches.²⁹² In addition, with respect to the impacts of climate change, as megacities continue to expand in hazard-prone areas, this urbanization increases the risks of property loss from climate change.²⁹³

The pursuit of economic growth creates an important dilemma for local government. Because the economy at every scale is profoundly carbon-centered,

²⁹¹ Beyond any questions of how exactly land use changes impact climate change and the carbon cycle, compare INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 2, with Myles Allen et al., *Scientific Challenges in the Attribution of Harm to Human Influence on Climate*, 155 U. PA. L. REV. 1353, 1374–75 (2007), urban sprawl and planning choices have been linked very directly to vehicle miles traveled and the resultant emissions. See sources cited *supra* note 25. For geographic and other interdisciplinary analyses of cities in a globalizing world, see NEIL BRENNER, *NEW STATE SPACES: URBAN GOVERNANCE AND THE RESCALING OF STATEHOOD* (2004); *CITIES TRANSFORMED: DEMOGRAPHIC CHANGE AND ITS IMPLICATIONS IN THE DEVELOPING WORLD* (Mark R. Montgomery et al. eds., 2003); *GLOBAL NETWORKS, LINKED CITIES* (Saskia Sassen ed., 2002); *GLOBALIZING CITIES: A NEW SPATIAL ORDER?* (Peter Marcuse & Ronald van Kempen eds., 2000); HEIDI H. HOBBS, *CITY HALL GOES ABROAD: THE FOREIGN POLICY OF LOCAL POLITICS* (1994); SASKIA SASSEN, *THE GLOBAL CITY: NEW YORK, LONDON, TOKYO* (2d ed. 2001); H. V. SAVITCH & PAUL KANTOR, *CITIES IN THE INTERNATIONAL MARKETPLACE: THE POLITICAL ECONOMY OF URBAN DEVELOPMENT IN NORTH AMERICA AND WESTERN EUROPE* (2002); RICHARD SENNETT, *THE CONSCIENCE OF THE EYE: THE DESIGN AND SOCIAL LIFE OF CITIES* (1990); *SPACES OF GLOBALIZATION: REASSERTING THE POWER OF THE LOCAL*, *supra* note 21; *WORLD CITIES IN A WORLD-SYSTEM* (Paul L. Knox & Peter J. Taylor eds., 1995).

²⁹² See *infra* Chapters XI–XIII.

²⁹³ For a discussion over how urbanization relates to the costs of climate change in the context of insurance law, see Howard C. Kunreuther & Erwann O. Michel-Kerjan, *Climate Change, Insurability of Large-Scale Disasters, and the Emerging Liability Challenge*, 155 U. PA. L. REV. 1795, 1805–07 (2007) and Christina Ross, Evan Mills & Sean B. Hecht, *Limiting Liability in the Greenhouse: Insurance Risk-Management Strategies in the Context of Global Climate Change*, 26A STAN. ENVTL. L.J. 251 & 43A STAN. J. INT’L L. 251 (2007).

economic growth often translates into more emissions.²⁹⁴ Cities and counties attempting to minimize emissions, therefore, face particular challenges in balancing those two goals. For example, as the first U.S. city with a comprehensive energy plan and the first to join international coalitions of cities on climate change, Portland, Oregon, serves as a model of green growth. Its emissions reduction efforts have been substantial, resulting in a 12.5% per capita decrease in emissions since the early 1990s.²⁹⁵ However, Portland struggled to meet even its scaled back goal of emissions at ten percent below 1990 levels by 2010, in large part due to population growth.²⁹⁶ Although Portland's per capita reductions probably have more significance for the global picture than its total emissions—particularly if immigrants come from higher emissions places—this example suggests the dangers of rapid economic growth not coupled with aggressive per capita reductions. If numerous urban areas grow rapidly without the kind of approach taken by Portland, the global impact could be enormous.²⁹⁷ Moreover, as analyzed in greater depth in Chapters XI through XIII, these efforts by major cities, especially in areas with less extensive regional planning than Portland, are often dwarfed by inaction by the suburbs that surround them and that increasingly dominate economic activity.²⁹⁸

²⁹⁴ See IPCC, MITIGATION, *supra* note 6 (providing different emissions scenarios). For an example of visioning on the issue of a low carbon economy, see comments from the chief executive of Carbon Trust, a private company funded by the UK government. Tom Delay, The Low Carbon Economy, at <http://www.carbontrust.co.uk/climatechange/policy/lce.htm>.

²⁹⁵ CITY OF PORTLAND & MULTNOMAH COUNTY, A PROGRESS REPORT ON THE CITY OF PORTLAND AND MULTNOMAH COUNTY LOCAL ACTION PLAN ON GLOBAL WARMING 1 (2005).

²⁹⁶ *Id.* at 1–2; PORTLAND ENERGY OFFICE, CITY OF PORTLAND, CARBON DIOXIDE REDUCTION STRATEGY: SUCCESS AND SETBACKS 1 (2000). Although Portland originally committed to reducing emissions to twenty percent below 1990 levels by 2010, it scaled back to ten percent below 1990 levels in its 2010 Local Action Plan on Global Warming. *Id.*

²⁹⁷ Urbanization makes this issue particularly concerning. See sources cited *supra* note 85.

²⁹⁸ See *infra* Chapters XI–XII.

As a structural matter, substate entities play a significant role in the climate conversation because they are simultaneously subordinate to larger level government and sites for autonomy tied closely to individuals and community.²⁹⁹ Because cities and counties are administrative subunits of states, their climate choices often are influenced by relevant state policies.³⁰⁰ To the extent that local and state governments are not aligned in their approach to climate change, significant tension can result, as the case by California against San Bernardino County demonstrates.

Local scales also are the levels that individuals experience most intimately. Because U.S. cities and counties have significant autonomy in how they govern, despite their administrative relationship with the state, they make decisions that shape profoundly the contours of their residents' everyday lives.³⁰¹ Residents may have more substantial involvement with the policies that result from choices of whether and how to regulate greenhouse gas emissions locally than with larger scale legal frameworks, resulting in the mitigation opportunities in smaller suburban cities described in Chapters XI through XIII.³⁰² As metropolitan regions continue to trend in ways that urban geographers have

²⁹⁹ See Richard Thompson Ford, *The Boundaries of Race: Political Geography in Legal Analysis*, 107 HARV. L. REV. 1841, 1857–60, 1887–92 (1994).

³⁰⁰ Portland's climate policy, for example, was deeply intertwined with Oregon's state land-use laws of the 1970s. See Timothy Grewe, Susan Anderson & Laurel Butman, *Portland, Oregon: A Case Study in Sustainability*, GOV'T FIN. REV., Feb. 2002, at 8, 9.

³⁰¹ See Ford, *supra* note 91.

³⁰² For an anthropological exploration of the way in which scale operates in political ecology, with a particular focus on the way in which political-economic and sociocultural forces intersect in localities, see POLITICAL ECOLOGY ACROSS SPACES, SCALES, AND SOCIAL GROUPS (Susan Paulson & Lisa L. Gezon eds., 2005). For additional discussion of ecology, environmental management, and scale, see Bradley C. Karkkainen, *Collaborative Ecosystem Governance: Scale, Complexity, and Dynamism*, 21 VA. ENVTL. L.J. 189 (2002); Matthew McKinney, Craig Fitch & Will Harmon, *Regionalism in the West: An Inventory and Assessment*, 23 PUB. LAND & RESOURCES L. REV. 101 (2002); and Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 PROGRESS HUM. GEOGRAPHY 276, 281 (2005).

described towards polycentric economic nodes and complex clusters of socio-economic groupings, the need to focus locally both in terms of metropolitan regions and individual cities become important.³⁰³

Together, these substantive and structural factors make urban governance questions a key policy area of climate regulation.³⁰⁴ Unsurprisingly, a wide range of perspectives—not just among academics but also among policymakers—exists on how to answer them. As the following section explores, these differences play out in litigation over substate climate choices in ways that reflect the complex scale-science-law intersection elucidated by Sayre and Doremus.

3. Scalar Contestation over San Bernardino's General Plan

The legal dispute over San Bernardino County's approach to climate change began with a local planning process. On March 13, 2007, San Bernardino's Board of Supervisors approved an update of its General Plan and certified its accompanying Final Environmental Impact Report (FEIR).³⁰⁵ The updated General Plan—which adopted goals and policies that will underlie future land use, growth, and transportation—projected a sixty-four percent increase in population from 2000 to 2020.³⁰⁶ It noted in conjunction with the projection that “[c]onstant, and relatively high increases in

³⁰³ See sources *supra* note 280.

³⁰⁴ For scholarly analyses of the role of cities in transnational climate regulation, see sources cited *supra* note 148.

³⁰⁵ COUNTY OF SAN BERNARDINO, 2007 GENERAL PLAN (2007), available at http://www.co.san-bernardino.ca.us/landuseservices/general_plan/Default.asp.

³⁰⁶ *Id.* at VI-1.

population growth in the past, have resulted in urban development and increased demand for available land.”³⁰⁷

The General Plan did not include the phrases “climate change,” “global warming,” or “greenhouse gas emissions.”³⁰⁸ The accompanying FEIR did address climate change, however, but used scientific uncertainty together with oblique scalar arguments to explain its lack of plans for specific steps on climate change emissions or impacts. For example, it acknowledged the California Global Warming Solutions Act of 2006³⁰⁹ as creating a statewide regulatory program, but explained that “[i]t is not yet clear how, or if, these future regulations would affect local governments or how they might influence local land use planning decisions.”³¹⁰ Similarly, after noting comments indicating that the Environmental Impact Assessment must include “quantified analysis of greenhouse gas emissions” and “specify mitigation measures,” it declined to provide these specifics on the ground that the California Air Resources Board has not yet given the County enough guidance.³¹¹ Although these arguments took the form of standard objections to action without regulatory guidance, they were being used to avoid any specific steps on emissions reduction.

³⁰⁷ *Id.*

³⁰⁸ I did a search of the 357-page document on October 10, 2007, using each of these terms and found no hits.

³⁰⁹ 2006 Cal. Legis. Serv. 2757–65 (West) (codified at CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West 2008)).

³¹⁰ COUNTY OF SAN BERNARDINO, 2006 GENERAL PLAN PROGRAM, FINAL ENVIRONMENTAL IMPACT REPORT 325 (2007), available at <http://www.sbcounty.gov/landuseservices/General%20Plan%20Update/Environmental%20Review/FEIR.pdf>; see also *id.* at 322–30.

³¹¹ *Id.* at 325–27.

In responding to comments on endangered species concerns, the FEIR made even clearer use of scientific uncertainty arguments to recommend against local action. It explained:

The County does not dispute the scientific basis for global warming; however, as the commenter is well aware, the implications of global warming on common as well as special status-species are difficult to discern at best. Therefore, the General Plan cannot analyze the potential effects of climate change and global warming on rare, threatened, or endangered species as the best minds in science readily acknowledge that the impacts of global warming vary among taxa, benefiting some, while adversely affecting others. . . . [T]he County contends that the impacts and/or effects of global warming on local, state, or federally protected species can not be reasonably ascertained and are currently speculative.³¹²

As with the arguments about lack of guidance, the County was using scientific uncertainty to sidestep any obligation to take action. Thus, although the County claimed that it “will adhere to rules and guidelines currently in place at the local, state and federal level, and will also adhere to any future regulations regarding global warming resulting from the legislative approval of AB [Assembly Bill] 32,”³¹³ it refused to create a well-developed plan on greenhouse gas emissions and impacts as part of its General Plan without specifically directed mandates from other governmental entities operating at a larger scale.

The Center for Biological Diversity, Sierra Club, and San Bernardino Valley Audubon Society—NGOs that interact with a range of local, state, national, and international actors—filed a Petition for Writ of Mandate under the CEQA on April 11, 2007, which asked the superior court to provide a range of injunctive relief.³¹⁴ The

³¹² *Id.* at 607.

³¹³ *Id.* at 330; *see also* CAL. HEALTH & SAFETY CODE §§ 38500–38599.

³¹⁴ Petition, Ctr. for Biological Diversity, *supra* note 71, at 22.

petition claimed that the County of San Bernardino failed (1) to disclose and analyze adequately the project's impacts and mitigation measures and alternatives, (2) to support its Statement of Overriding Considerations with substantial evidence, (3) to recirculate the Environmental Impact Report (EIR), (4) to respond adequately to comments, and (5) to provide an adequate description of the existing environment.³¹⁵ Two days later, the Attorney General of California filed a CEQA suit requesting similar relief, with a single cause of action: failure to comply with the CEQA and prejudicial abuse of discretion.³¹⁶

On August 21, 2007, the State and County entered into a settlement agreement that represented a significant compromise. The County agreed to amend its General Plan to add a policy of emissions reduction and a call for the adoption of a Greenhouse Gas Emissions Reduction Plan.³¹⁷ Under the agreement, that plan would include an extensive inventory of sources and emissions and also reduction targets.³¹⁸ In addition, the County agreed to conduct an environmental review of both the amendments and the reduction plan.³¹⁹ The agreement included a timeline, however, that allowed the County to keep its original plan in place as it prepared these replacement plans and inventories.³²⁰ The Attorney General also agreed to assist the County to obtain funding for its emissions reduction efforts.³²¹

³¹⁵ *Id.* at 11–22.

³¹⁶ Petition, People, *supra* note 71, at 9–12.

³¹⁷ Confidential Settlement Agreement, *supra* note 24, at 2–4.

³¹⁸ *Id.*

³¹⁹ *Id.* at 4.

³²⁰ *Id.*

³²¹ *Id.* at 6.

Since then, the County has been taking steps to implement the settlement agreement, including hiring a consultant to develop its emissions reduction plan. The plan included bringing emissions down to 1990 levels and adopting mitigation measures to achieve that target. Moreover, after the County agreed to some additional environmental protection measures, the nongovernmental petitioners agreed to drop their CEQA action.³²²

As described in more depth in Chapter IX, the County's settlement-mandated steps took place in the context of a broader environmental initiative, Green County San Bernardino, which began during the same month as the settlement.³²³ That initiative includes not only county and regional efforts, but also an effort launched in June 2007—in collaboration with Riverside County—to encourage greenhouse gas emissions reductions by cities within the County.³²⁴

Both the petitions and the settlement reflect contestation over climate change as a locally regulable problem in light of the relevant existing science. The petitioners made “scaling down” arguments that the causes and impacts of climate change occur at a

³²² Imran Ghori, *Challenge to Plan Dropped; San Bernardino County: Three Environmental Groups End Their Lawsuit Against the General Blueprint for Growth*, PRESS-ENTERPRISE, Dec. 18, 2007, at B01, available at http://www.pe.com/localnews/inland/stories/PE_News_Local_H_settle18.31d902e.html; Email from Jonathan Evans, Staff Attorney, Ctr. for Biological Diversity, to author (Dec. 15, 2008, 16:43 EST) (on file with author).

³²³ Green County San Bernardino, About Green County, at http://www.sbcounty.gov/greencountysb/about_gc.htm (last visited Jan. 28, 2009). I have explored this initiative in more depth, as well as its implications for how we envision the local scale, in *Scaling “Local”: The Implications of Greenhouse Gas Regulation in San Bernardino County*, 30 MICH. J. INT’L L. 689 (2009).

³²⁴ Green Valley Initiative, We Invite You to Join the Green Valley Initiative and Become a Green Valley City (Jurisdiction), at http://www.sbcounty.gov/greencountysb/content/green_valley_initiative_cities/gvi_jurisdiction.pdf (last visited Jan. 28, 2009); Green Valley Initiative, Resolution No., at http://www.sbcounty.gov/greencountysb/content/green_valley_initiative_cities/gvi_resolution.pdf (last visited Jan. 28, 2009); Green County San Bernardino, Green Valley Initiative Cities, at http://www.sbcounty.gov/greencountysb/green_valley_initiative_cities.htm (last visited Jan. 28, 2009).

county level. For example, the introduction to the NGOs' petition noted: "Though not addressed by the EIR, the development authorized by the Project would contribute to climate change through the emission of greenhouse gases. Similarly, the County would be affected by climate change through, among other things, greater wildfire hazards, increasing temperatures, and worsening drought."³²⁵ In addition, the Attorney General's recital in the settlement agreement assumed that County emissions impact the problem of climate change:

It is the Attorney General's position that the General Plan EIR did not adequately analyze the adverse effects of implementation of the General Plan Update on air quality and climate change and did not adopt feasible mitigation measures to minimize the adverse effects of implementation of the General Plan Update on climate change and air quality³²⁶

In both instances, petitioners described climate change as having a local regulatory dimension.

In contrast, the County's recital in the settlement agreement, like its statements in the FEIR, relied upon scientific uncertainty to claim that detailed discussion of climate change in the General Plan would be inappropriate and, in so doing, pushed against the need for targeted local action even as it compromised:

It is the County's position that the General Plan EIR, after providing substantial disclosure and analysis of greenhouse gas emission and climate change issues, and including a factual and reasoned determination, appropriately concluded that there is no available methodology for determining whether greenhouse gas emissions attributable to the General Plan Update are significant. Accordingly, it is the County's position that the County correctly determined, based on

³²⁵ Petition, Ctr. for Biological Diversity, *supra* note 71, at 2.

³²⁶ Confidential Settlement Agreement, *supra* note 24, at 1.

substantial evidence, that further discussion in the General Plan EIR of greenhouse gas emissions and climate change would be speculative³²⁷

Although this recital does not explicitly “scale up” in the sense of arguing that some other level of government could regulate climate change more effectively, the County’s reasoning is being used to assert that climate change is too uncertain for local regulation.

4. Implications of Local Scalar Contestation

This case and its resultant settlement represent a particularly interesting variation of the scalar battles over climate change. San Bernardino County likely would not have agreed to these steps without the petitions.³²⁸ Moreover, California Attorney General Jerry Brown indicated in a November 2007 speech to the California State Association of Counties that other California counties must address climate change or the State will sue them too.³²⁹ The settlement agreement, as both a direct regulatory and political tool, thus demonstrates how pressure from state government through the courts can result in localities taking emissions reductions steps they would not otherwise have taken.

Litigation does not always result in greater public policy efforts on climate change, however. Although the San Bernardino County settlement represents litigation being used to force local regulation, other locally focused suits have been used to block regulation.³³⁰

³²⁷ *Id.*

³²⁸ *See id.* at 1–2.

³²⁹ *See* Rob Luke, *Brown Gives California Counties Green Tips to Dodge Lawsuits*, LEGALNEWSLINE, Nov. 13, 2007, [at](http://www.legalnewsline.com/news/203948-brown-gives-cal.-counties-green-tips-to-dodge-lawsuits) <http://www.legalnewsline.com/news/203948-brown-gives-cal.-counties-green-tips-to-dodge-lawsuits>.

³³⁰ *See generally* Okeson v. City of Seattle, 150 P.3d 556, 558 (Wash. 2007) (“We hold that combating global warming is a general government purpose, albeit a meritorious one, and not a proprietary utility

In either variation, though, this litigation has an important influence on local policy, policy that is arguably playing a key role on the front line of emissions reduction.

As importantly, the San Bernardino County settlement reinforces the notion that fitting local action within models of transnational climate governance is only becoming more pressing. If a state can use state law and its courts to force counties to address the problem of climate change, we somehow need to figure out how, if at all, these subnational dynamics should fit into our larger-scale visions of climate governance. Cities and counties have long participated in the dialogues over climate regulation, but lawsuits over local choices create more vertical and horizontal interactions among entities at different scales. In the process of these suits, the governance picture becomes more complicated than even the one posed by an international network of local entities interacting with an international treaty regime.

In particular, the San Bernardino County dispute's combination of scalar contestation and litigation as a forcing tool raises core questions about whether we should think of climate regulation only in traditional, top-down, treaty-based terms or somehow incorporate dynamics among these multiple actors at different levels of government.³³¹ If we choose the latter version, how do we integrate regulation by San Bernardino County with that of other localities, states, nations, and groups of nations? When is it appropriate for a state to force a locality to regulate? When should private entities—whether individuals, NGOs, or corporations—be able to block or compel local regulatory efforts?

purpose. Therefore, such mitigation expenses must be borne by general taxpayers rather than utility ratepayers. Accordingly, we reverse the trial court's order granting summary judgment to Seattle.”).

³³¹ See generally Osofsky, *supra* note 14 (exploring various approaches to situating climate change litigation in international legal theory); sources cited *supra* note 148 (discussing the role of localities in climate regulation).

As explored in more depth in the third case study in Chapters XI through XIII of suburban climate change action and participation in multi-level climate change networks, viewing localities as embedded in multiscalar climate networks means engaging a difficult set of issues that lack straightforward resolution.

CHAPTER VII
THE DIAGONAL REGULATORY ROLE OF CLIMATE CHANGE
LITIGATION

This chapter contains edited portions of Hari M. Osofsky, *Is Climate Change “International”?: Litigation’s Diagonal Regulatory Role*, 49 Va. J. Int’l L. 585 (2009).

This chapter interweaves two of the streams of scholarship highlighted in Chapter II in order to illustrate how an in-depth combining of geographic conceptions of scale with legal theory can provide insights into polycentric climate change governance. Specifically, it draws from geographer Kevin Cox’s scholarship on scale and networks and legal scholar Harold Koh’s theory of transnational legal process to explore the contours of and the possibilities for climate change litigation to play a constructive role in more effective multiscalar governance approaches. It begins by considering the dangers posed by “scaling up,” and the reasons for further multiscalar regulatory analysis. It then draws from these two approaches to develop a conceptual framework for understanding the diagonal regulatory role—across vertical and horizontal governance simultaneously—that climate change litigation plays and argues for broader exploration of such diagonal strategies outside of the litigation context.

In so doing, this chapter builds upon the overall conceptual framework introduced in Chapter II and the particular concerns around scale, science, and law—drawing from geographer Nathan Sayre and legal scholar Holly Doremus—explored throughout this part.³³² By bringing together transnational legal process with Cox’s network-based conception of scale, this final chapter of the first case study constructs a conceptual

³³² For an extensive discussion of their work, see *supra* Chapter IV.

approach for understanding the rescaling role of this litigation and the diagonal interactions that result. This approach helps to provide an alternative to the problematic dichotomies of domestic-international, local-state-federal, and public-private explored throughout this part. Such a conceptual model provides the basis for thinking more broadly about when diagonal regulation is effective and how best to encourage it, which are the focus of the second and third case studies.

1. The Dangers of “Too Big” Arguments

Before turning to an exploration of litigation’s role in multiscalar governance of climate change and its broader implications for the structure of regulatory regimes, a basic issue needs further exploration: namely, why not scale up? Scholars have detailed the difficulties of smaller-scale regulation of this problem with many larger-scale dimensions,³³³ concerns that have been reinforced by those trying to prevent state and local regulatory actions.³³⁴ Given the messy and patchwork quality of “scaling down,” with its accompanying dangers of leakage, a long term multiscalar approach demands justification beyond gap filling the inadequacies of the U.S. federal government.

This section attempts to supply such a justification by focusing on three primary concerns with a “scaled up” approach to climate regulation that does not make room for local, state, and, at times, even national action.³³⁵ In so doing, the section does not argue

³³³ See sources cited *supra* note 59 and accompanying text.

³³⁴ These concerns are reflected, for example, in the scaling up arguments described in the cases *supra* Chapter IV–VI.

³³⁵ I have explored variations on these concerns in less depth in a legislative context. See Hari M. Osofsky, *Climate Change Legislation in Context*, 102 NW. U. L. REV. COLLOQUY 245 (2008).

that climate regulation should be “scaled down,” but rather that strategies should be multiscalar and, as such, include smaller scale efforts.

First, many of these “too big” arguments do not seem to fit the scientific evidence very well. Characterizing climate change as solely an international and national regulatory problem fails to capture its complexity and the way in which it interacts with different levels of governance.³³⁶ Moreover, as discussed in detail in Chapters I and III, current regulatory efforts are not bringing the problem of climate change under control.³³⁷ Although more effective multiscalar initiatives may also fail, the nuanced scales of the problem and the regulatory issues they pose suggest the value of openness towards strategies that treat the problem as multiscalar rather than simply large scale.³³⁸

Second, these consistent arguments against smaller-scale regulation risk eliminating possible ways to bring emissions down. At the moment, it is far from certain that the political will exists at “higher” levels of governance—even under the Obama Administration—to go as far as these smaller-scale efforts do, and so they quite literally are giving us reductions that we would not have otherwise. California’s waiver request and its larger regulatory context exemplify efforts by many states to go farther than the federal government. In ordering the EPA to reconsider the waiver denial, President Obama stated that “the federal government must work with, not against, states to reduce greenhouse gas emissions.”³³⁹ Although President Obama has repeatedly committed to

³³⁶ See *supra* Chapter III.

³³⁷ See *supra* Chapters I & III.

³³⁸ For scholarship exploring the value of multiscalar strategies for regulating climate change, see sources cited *supra* notes 37, 130, 133, and 138.

³³⁹ See The White House Blog, From peril to progress, *supra* note 157.

ambitious plans on climate change, and, as noted above, Obama himself raised concerns about patchwork regulatory approaches when ordering the waiver reconsideration, some localities and states are still ahead of the federal government.³⁴⁰

More importantly for the long term, even if we could create the ideal treaty regime with accompanying rigorous national polices, a predominantly larger-scale approach may not be able to address the details effectively and provide the innovativeness of these smaller-scale efforts. For example, cities are generally more competent than larger-scale government at deciding how streets in their localities should be organized to limit vehicle miles traveled, and more aware of the nuances of the local environment.³⁴¹ If regulatory strategies do not incorporate these kinds of competencies, they will be less effective at reducing emissions.

Finally, a rigid “scaling up” risks blocking creative, holistic regulatory solutions to this problem. As noted in Chapter III, climate change is simultaneously individual, local, state, national, international, and everything in between, and law must find a way of flexibly moving among those levels of governance. Climate change litigation may help to motivate that kind of innovation and to create emissions reduction and responses to impacts that might not have occurred otherwise. But if these “too big” arguments consistently prevail, such litigation could become a way of blocking smaller-scale regulation and forcing us into a less effective approach to the problem.³⁴²

³⁴⁰ *See id.*

³⁴¹ For an analysis of the locally specific aspects of climate policy, see sources cited *supra* note 37.

³⁴² *See supra* note 168 and accompanying text.

None of these arguments for the importance of smaller-scale regulation presupposes bottom-up lawmaking.³⁴³ A top-down approach could be multiscalar, for example, by imposing mandates that allow for flexible smaller-scale implementation. Such a configuration, like many other integrative approaches, might address some of the leakage concerns raised with respect to smaller-scale regulation.³⁴⁴

But the above arguments do suggest the importance of exploring what effective multiscalar governance might look like in more depth. Such an exploration will have many dimensions due to multiple branches and levels of government, as well as a myriad of nongovernmental actors, engaging the problem of climate change. Because litigation involves scalar battles,³⁴⁵ this analysis should include the rescaling effects of litigation and their proper place in a multiscalar regime.³⁴⁶

2. A Transnational Legal Process Narrative of Rescaling Through Climate Change Litigation

Transnational legal process provides a powerful lens for understanding the way in which litigation in forums at different levels of governance around the world form part of

³⁴³ For a discussion of bottom-up lawmaking in the climate change context, see Levit, *supra* note 37, and Osofsky & Levit, *supra* note 9.

³⁴⁴ The EPA program to encourage state climate plans in the late 1990s embodies this phenomenon. See *infra* note 241 and accompanying text.

³⁴⁵ See *supra* Chapters IV–VI.

³⁴⁶ For an analysis of the continuing role for nuisance suits even if a more rigorous federal regime develops, see, for example, Kaswan, *The Domestic Response to Global Climate Change*, *supra* note 133. See generally Jonathan Zasloff, *The Judicial Carbon Tax: Reconstructing Public Nuisance and Climate Change*, 55 UCLA L. REV. 1827 (2008) (arguing for the value of public nuisance climate change suits as a type of judicial carbon tax). More broadly, Alexandra Klass has explored the continuing importance of nuisance suits as a complement to environmental statutes. See Alexandra B. Klass, *Common Law and Federalism in the Age of the Regulatory State*, 92 IOWA L. REV. 545 (2007) (arguing for the complementary regulatory role of state common law in environmental protection efforts).

climate regulation. In particular, it focuses on the way in which a range of actors in a variety of interactions help internalize norms transnationally. Such an analysis fits together well with both new governance and dynamic federalism approaches because it recognizes the nuanced interactions among a range of actors at different levels of government.³⁴⁷ This section analyzes how transnational legal process applies to climate change litigation in general, and then explores particular ways in which the theory helps to explain the rescaling dynamics in these cases.

a. Transnational Legal Process and Climate Change Litigation

Transnational legal process applies especially well to climate change litigation because it focuses on the legal implications of interactions that cut across many of the traditional international law divides. Harold Hongju Koh summarizes the core elements of the theory:

Transnational legal process has four distinctive features. First, it is nontraditional: it breaks down two traditional dichotomies that have historically dominated the study of international law: between domestic and international, public and private. Second, it is nonstatist: the actors in this process are not just, or even primarily, nation-states, but include nonstate actors as well. Third, transnational legal process is dynamic, not static. Transnational law transforms, mutates, and percolates up and down, from the public to the private, from the domestic to the international level and back down again. Fourth and finally, it is normative. From this process of interaction, new rules of law emerge, which are interpreted, internalized, and enforced, thus beginning the process all over again. Thus, the concept embraces not just the descriptive workings of a process, but the normativity of that process. It focuses not simply upon how international interaction among transnational actors shapes law, but also on how law shapes and guides future interactions: in short, how law influences why nations obey.³⁴⁸

³⁴⁷ See *supra* Chapters IV–VI; sources cited *supra* note 75 and accompanying text.

³⁴⁸ Koh, *Transnational Legal Process*, *supra* note 18, at 184.

The impact of climate change litigation can be explained through this four-part analysis. First, the cases constitute a public-private regulatory dialogue. As I explained in Chapter IV, whether the suits involve disputes over the extent of governmental regulation—like the three case examples described in the previous chapters—or directly target major corporate emitters, they all thus far have constituted a state-corporate regulatory interaction around greenhouse gas emissions.³⁴⁹ For example, many of the cases revolve around motor vehicle or power plant emissions, with some focusing on how different levels of government regulate those emissions and others suing those emitters directly under public nuisance and other theories.³⁵⁰

Second, climate change litigation is dominated by non-nation-state actors. Although some cases have been brought against the national level of government of different countries, and national-level courts have resolved some of the disputes, a wide range of other actors—from individuals to NGOs to subnational governments—have served as petitioners and respondents.³⁵¹ This type of litigation thus fits the nonstatist model of transnational legal process.

Third, as I described in depth in *The Geography of Climate Change Litigation: Implications for Transnational Regulatory Governance*, this litigation is multiscalar, multibranch, and multiactor.³⁵² Cases and their legal/policy interactions, exemplified in

³⁴⁹ See, e.g., Osofsky, *supra* note 36 (analyzing these dynamics in depth through a review of climate change litigation at different levels of government).

³⁵⁰ See *id.*

³⁵¹ See *id.* Scholars have discussed the role of a wide range of actors in many different international legal contexts. See sources *supra* Chapter II. For a thoughtful analysis of international organizations, see, for example, JOSÉ E. ALVAREZ, INTERNATIONAL ORGANIZATIONS AS LAW-MAKERS (2006).

³⁵² See Osofsky, *supra* note 36.

the three disputes discussed in this part, move up and down levels of governance and form part of dynamic regulatory interactions.³⁵³ In so doing, these suits create transnational litigative spaces in which “interaction, interpretation, and internalization” take place.³⁵⁴

Finally, climate change litigation is often explicitly normative in its goals and impacts. At the informal end of the spectrum, Sheila Watt-Cloutier, then Chair of the Inuit Circumpolar Conference, acknowledged the likely limited formal impact of the petition that the Inuit filed against the United States in the Inter-American Commission on Human Rights, but framed the case as a valuable opening of dialogue about human rights and climate change with the United States.³⁵⁵ At the formal end, arguably the most successful case to date, *Massachusetts v. EPA*, which resulted in a Supreme Court decision against the EPA for its handling of motor vehicle emissions regulations, played a significant role in the heightened U.S. policy dialogue and put pressure on the Bush administration well beyond the case’s rather limited regulatory impact.³⁵⁶

Moreover, collectively this litigation serves as a conversation that moves from the local to the international, and from branch to branch of government, while including a wide range of public and private actors.³⁵⁷ These interactions allow for a process in which

³⁵³ See *id.*; see also *supra* Chapter IV–VI.

³⁵⁴ Koh, *Jefferson Memorial Lecture*, *supra* note 18, at 339; Osofsky, *supra* note 36, at 1852.

³⁵⁵ See Sheila Watt-Cloutier, Chair, Inuit Circumpolar Conference, *Presentation at the Eleventh Conference of Parties to the UN Framework Convention on Climate Change (Dec. 7, 2005)*, available at <http://www.inuitcircumpolar.com/index.php?ID=318&Lang=En>. I have analyzed the implications of this framing in Osofsky, *supra* note 37, at 209–24 and Hari M. Osofsky, *The Inuit Petition as a Bridge? Beyond Dialectics of Climate Change and Indigenous Peoples’ Rights*, 31 AM. INDIAN L. REV. 675 (2007).

³⁵⁶ One’s theoretical perspective likely impacts how one might frame that impact, however. See Osofsky, *supra* note 14, at 577.

³⁵⁷ Osofsky, *supra* note 36.

norms emerge, and then are translated and internalized, creating pressure on nation-states—and other key actors—to take steps on climate change.

The George W. Bush Administration, for example, evolved somewhat in its willingness to engage the problem more seriously over its final couple of years, a period that intersected with a higher profile for this type of litigation. Although President Bush and his administration avoided taking binding steps, such as in the decision by the EPA under his administration to respond to *Massachusetts v. EPA* months later by requesting public comment,³⁵⁸ the tone shifted. President Bush acknowledged the problem in his State of the Union address for the first time in 2008³⁵⁹ and his administration agreed to the December 2007 Bali Action Plan, albeit only after massive public pressure,³⁶⁰ and to the 2008 G-8 Declaration on Environment and Climate Change.³⁶¹ While the litigation only constitutes and is constituted by some portion of the shifting political and cultural dynamics on the issue, it has served and continues to serve as an important component of norm building and dialogue.

b. Rescaling Through Norm Internalization

The focus of this part, however, is not on climate change litigation in general, but rather on the rescaling processes that take place through it. A transnational legal process

³⁵⁸ See *supra* note 170 and accompanying text.

³⁵⁹ George W. Bush, U.S. President, State of the Union Address (Jan. 28, 2008), *available at* <http://www.whitehouse.gov/news/releases/2008/01/20080128-13.html>.

³⁶⁰ See sources cited *supra* note 57 and accompanying text.

³⁶¹ Press Release, White House, G8 Declaration on Environment and Climate Change, ¶ 22 (July 8, 2008), *available at* <http://www.whitehouse.gov/news/releases/2008/07/20080708-3.html>.

analysis provides insight into rescaling by breaking down the interpretation, internalization, and enforcement of norms. In so doing, it highlights the elements of the dynamic processes involved in these battles over and determinations regarding regulatory scale.

In the three case studies discussed at length in this part, the key actors interpret both the problem itself and the appropriate regulatory scale accompanying it. For instance, those opposed to regulation in *Massachusetts v. EPA* consistently argued for the large scale of the problem, while those supporting regulation emphasized its state and local dimensions.³⁶² In the second example, the smaller-scale actor, California, provided extensive discussion of why climate change impacts the individual state and the difference its proposed regulatory action would make.³⁶³ San Bernardino County explained that while it does not contest the scientific basis for climate change, too much uncertainty exists about the effects on local, state, or federally protected species to take regulatory action.³⁶⁴ These claims, as well as many others detailed in the preceding chapters and viewed through the lens of the scholarship of Sayre and Doremus, provide an assessment of climate science and climate change as a regulatory problem that grounds the contested scalar analysis.³⁶⁵

This interpretive behavior provides the basis for and reinforces internalization. For instance, the arguments of states advocating greater regulation are consistent across multiple lawsuits, congressional action by their representatives, and internal

³⁶² See *supra* Chapter IV.

³⁶³ See *supra* Chapter V.

³⁶⁴ See *supra* Chapter VI.

³⁶⁵ See *supra* Chapters IV–VI.

policymaking.³⁶⁶ As the states reinforced one another and maintained the pressure, the Bush administration increasingly was pushed to take action to defend its scalar argument. In his denial of the state waiver, for example, Administrator Johnson even acknowledged new federal standards emerging from this interaction.³⁶⁷

Through the process of interpretation and internalization, a new multiscale enforcement pattern emerges that differs from the one that preceded the litigation. At times, that result is relatively straightforward. Under the watchful eye of a California state court, San Bernardino County has been developing a more specific greenhouse gas emissions monitoring and reduction plan, and the California executive is assisting the County in that process.³⁶⁸ Often, however, such enforcement occurs through a mix of formal and informal channels. The state waiver dispute has not simply involved the EPA under two presidents and the state of California, but many actors in all three branches of the federal government and multiple states as well. The waiver denial received significant media attention, including coverage of the 2008 presidential campaign as now-President Obama pledged to reverse the decision.³⁶⁹

Transnational legal process, and its narrative of these rescaling dynamics, is necessarily messy. Because this approach attempts to capture a nuanced regulatory dance, it dissects and interprets pieces and the whole simultaneously. This ambitious conceptual work provides transnational legal process with its analytical power and its challenge.

³⁶⁶ California exemplifies this phenomenon particularly well. *See* Osofsky, *supra* note 37, at 196–209.

³⁶⁷ *See supra* note 162 and accompanying text.

³⁶⁸ *See supra* Chapter VI.

³⁶⁹ *See* Petition for Review, *supra* note 28; Ceci Connolly & R. Jeffrey Smith, *Obama Positioned to Quickly Reverse Bush Actions*, WASH. POST, Nov. 9, 2008, at A16, available at http://www.washingtonpost.com/wp-dyn/content/article/2008/11/08/AR2008110801856_pf.html.

3. A Geographic Network Narrative of Rescaling Through Climate Change Litigation

The geography literature on scale provides a complementary narrative for understanding the dynamics and regulatory impact of this litigation. In order to achieve more depth of analysis, this section focuses in particular on the work of geographer Kevin Cox and his network conception of scale. Like the preceding section, this one begins by using his conceptual approach to frame climate change litigation in general and then focuses in particular on the rescaling aspects of the litigation discussed above. This section argues that Cox's approach to scale provides a mechanism for understanding the dynamics at a particular level of governance and interaction among levels of governance, both of which are critical to unpacking courtroom battles over appropriate regulatory levels. Through this dual focus, the section provides a helpful supplement to the transnational legal process analysis of the litigation's scalar dimensions.

Moreover, like transnational legal process, Cox's analysis fits well within multiple legal and interdisciplinary literatures discussed in Chapter II by unpacking the sociolegal spaces of scalar struggles. His approach helps to illuminate the nuanced dynamics that both scholarly approaches analyze by adding further geographic dimensions to their accounts.³⁷⁰ Cox's analysis also complements other interdisciplinary network theory scholarship, such as the literature drawing from transgovernmental network theory.³⁷¹ This chapter focuses on Cox's work in particular, however, because of

³⁷⁰ For further exploration of these literatures, Chapter II.

³⁷¹ See, e.g., ANNE-MARIE SLAUGHTER, *A NEW WORLD ORDER* 18–23 (2004) (proposing a model of governance based in networks of horizontal, vertical, and disaggregated international organizational actors); see also ANNE-LISE RILES, *THE NETWORK INSIDE OUT* (2000) (providing an anthropological account of networks which includes in depth engagement of sociolegal spaces at multiple levels).

its geographic dimensions; his integration of concepts of sociolegal space and scale provide insights into the dynamics that pervade climate change litigation.

a. Geographic Network and Climate Change Litigation

Cox's conception of scale provides a helpful lens through which to view climate change litigation because of its unpacking of intra- and inter-level spatial networks. His article, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, or: Looking for Local Politics*, envisions core local functions interacting across multiscale networks by introducing what he terms "spaces of dependence" and "spaces of engagement."³⁷²

As noted in Chapter II, Cox views "[s]paces of dependence [as] defined by those more-or-less localized social relations upon which we depend for the realization of essential interests and for which there are no substitutes elsewhere; they define place-specific conditions for our material well being and sense of significance."³⁷³ In the context of climate change litigation, such spaces include the way in which we structure our personal and professional lives on a day-to-day basis. For example, how far do members of our household drive to work, child care, the grocery store, and entertainment? How does the regulatory structure where we live impact those choices?³⁷⁴

³⁷² Cox, *Spaces of Dependence*, *supra* note 19.

³⁷³ *Id.* at 2.

³⁷⁴ See *supra* Chapter III. Who or what the regulators are can also have an important impact on the spaces. In a very different substantive context, for example, Steven Ratner explores the different legal and political treatment of occupation by states and administration by international organizations. See Steven R. Ratner, *Foreign Occupation and International Territorial Administration: The Challenges of Convergence*, 16 EUR. J. INT'L L. 695 (2005).

Spaces of engagement, on the other hand, are “the space[s] in which the politics of securing a space of dependence unfolds.”³⁷⁵ In the context of climate change litigation in particular, these multiscalar spaces might include political institutions, courts, the popular press, and community gatherings. Most critically for understanding the complex scales and rescaling role of litigation, Cox describes how spaces of dependence and engagement interact: “People, firms, state agencies, etc., organize in order to secure the conditions for the continued existence of their spaces of dependence but in so doing they have to engage with other centers of social power: local government, the national press, perhaps the international press, for example.”³⁷⁶ The three disputes described in the previous chapters are replete with these sorts of interactions.

In those disputes, a range of actors use the court system together with political institutions and public pressure to attempt to establish the extent of regulation which they deem appropriate at a particular level of governance. In the first, the diverse actors on both sides of the lawsuit reinforced the range of governmental and nongovernmental interests in federal greenhouse gas regulation.³⁷⁷ In the second, the EPA used regulation by another federal agency to justify its waiver denial, while California mustered support from other states, Congress, and even presidential candidates.³⁷⁸ In the third example, California and San Bernardino County—in a case that interacts with one filed by NGOs—both relied upon scientific evidence and multiscalar regulatory structures to

³⁷⁵ Cox, *Spaces of Dependence*, *supra* note 19, at 2.

³⁷⁶ *Id.*

³⁷⁷ *See supra* Chapter IV.

³⁷⁸ *See supra* Chapter V.

dispute whether state environmental law necessitates local climate regulation.³⁷⁹ Although the regulation at issue in each case resides at a particular level of governance—county and state, respectively—the dynamics surrounding that decision involve multiscalar politics that play out through a messy array of interacting spaces of dependence and engagement.

b. Rescaling Through Networks

Cox's conception is not simply one of dynamically interacting spaces, however. Rather, he argues that the relationship among spaces of dependence and spaces of engagement can be best understood by viewing the spatial structure of scale as one comprised of networks. These multiscalar interactions do not just provide arenas for contestation, but frame networks through which battles over appropriate regulatory approaches take place.³⁸⁰

In the context of climate change litigation, Cox's argument suggests that we should treat these disputes as occurring across intricate formal and informal networks, instead of simply characterizing each individual dispute as a debate among actors from multiple levels over what should take place at a particular regulatory level. In other words, these cases are not simply about the appropriateness of more specific climate regulation in San Bernardino County or of California's or the EPA's approaches to motor vehicle emissions, but constitute one movement in a dance among deeply intertwined actors who

³⁷⁹ See *supra* Chapter VI.

³⁸⁰ Cox, *Spaces of Dependence*, *supra* note 19, at 2–3.

together shape the contours of climate regulation. The rescaling process taking place in climate change litigation transforms and is transformed by these dynamic interactions.

A key element in this narrative of climate change litigation is the interaction between space and scale,³⁸¹ both deeply contested concepts in the geography literature.³⁸² Cox's network approach to scale becomes a conceptual mechanism for bringing together the sociolegal spaces created through intra- and interscalar interactions in these cases. Space shapes scale and scale shapes space simultaneously, thereby reconstituting the network in which these interactions take place. Or, in plainer language, the dynamics among interested actors at multiple levels in the disputes shape spaces that help to determine emissions choices at multiple scales. What car one drives and how far one drives it interacts with these lawsuits because the litigation helps to shape what regulations at which levels of government are in place and our political and cultural conceptions of such regulations. At the same time, the existing framework of spaces that these actors inhabit shape the scalar presumptions and resolution of these kinds of disputes.

³⁸¹ *See id.*

³⁸² For an example of a recent exchange disputing the concept of scale discussed in more depth in Chapter II, see Sallie A. Marston, *The Social Construction of Scale*, 24 *PROGRESS HUM. GEOGRAPHY* 219 (2000), and the dialogue that followed. *See* Neil Brenner, *The Limits to Scale? Methodological Reflections on Scalar Structuration*, 25 *PROGRESS HUM. GEOGRAPHY* 591 (2001); Sallie A. Marston & Neil Smith, *States, Scales and Households: Limits to Scale Thinking? A Response to Brenner*, 25 *PROGRESS HUM. GEOGRAPHY* 615 (2001); Mark Purcell, *Islands of Practice and the Marston/Brenner Debate: Towards a More Synthetic Critical Human Geography*, 27 *PROGRESS HUM. GEOGRAPHY* 317 (2003). *See also* Sallie A. Marston et al., *Human Geography Without Scale*, 30 *TRANSACTIONS INST. BRIT. GEOGRAPHERS* 416 (2005), and responses to it. *See* Chris Collinge, *Flat Ontology and the Deconstruction of Scale: A Response to Marston, Jones, and Woodward*, 31 *TRANSACTIONS INST. BRIT. GEOGRAPHERS* 244 (2006) and Scott William Hoefle, *Eliminating Scale and Killing the Goose That Laid the Golden Egg?*, 31 *TRANSACTIONS INST. BRIT. GEOGRAPHERS* 238 (2006). In addition, for analyses of the concept of space, *see* DOREEN MASSEY, *FOR SPACE* 62–98 (2005); YI-FU TUAN, *SPACE AND PLACE: THE PERSPECTIVE OF EXPERIENCE* 6 (1977); Helen Couclelis, *Location, Place, Region, and Space*, in *GEOGRAPHY'S INNER WORLDS: PERVASIVE THEMES IN CONTEMPORARY AMERICAN GEOGRAPHY* 215, 215 (Ronald F. Abler et al. eds., 1992); Michael R. Curry, *On Space and Spatial Practice in Contemporary Geography*, in *CONCEPTS IN HUMAN GEOGRAPHY* 3 (Carville Earle et al. eds., 1996).

A geographic network approach to conceptualizing the scalar dynamics of this litigation adds to the transnational legal process story by teasing out the dynamics of space and scale more clearly. It illuminates the scalar-spatial networks through which the process of interpretation, internalization, and enforcement takes place. The next section builds upon these two accounts by considering a diagonal regulatory narrative that draws from both of them.

4. A Combined Diagonal Regulatory Narrative

Scholars are increasingly turning to the term “diagonal” to describe phenomena that cut across traditional regulatory orderings in one way or another.³⁸³ This chapter uses the term in the context of multiscalar governance to refer to a particular type of regulatory interactions that cut across both horizontal (same level) and vertical (multiple levels) orderings simultaneously. For example, when several U.S. states collaborate with the European Union on a climate initiative, that constitutes a diagonal effort. A coalition of cities working on climate change is simply horizontal, however, and an EPA mandate to a state or local government is merely vertical. This usage parallels the one introduced by Daniel Farber, and expanded upon by Judith Resnik, Joshua Civin, and Joseph Frueh, of “diagonal federalism” in the context of climate change regulation.³⁸⁴ Their engagement of simultaneous vertical and horizontal interactions provides helpful insight into the realities of and future possibilities for climate regulation. I prefer the term “diagonal

³⁸³ See sources cited *supra* note 20.

³⁸⁴ See Resnik et al., *supra* note 20.

regulation” to “diagonal federalism” for my purposes in this chapter, however, because it encompasses a broader range of actors and levels of government more readily.

This section focuses on the diagonal elements of climate change litigation and the implications of those elements for transnational regulatory governance of the problem. It introduces diagonal analysis as an intertwining of transnational legal process and geographic network-based conceptions of scale and considers the value of such an approach in the context of scalar contestation over climate regulation.

a. Climate Change Litigation as Diagonal Dialogue

The diagonal regulatory analysis in this chapter interweaves the dissection of the norm internalization process in transnational legal process with the exposition of multiscale dynamics in Cox’s conception of scale as networks. A combination of these approaches shows that as each regulatory level decides how to approach climate change, it simultaneously confronts forces unique to that level and engages with horizontal and vertical networks. Interpretation, internalization, and enforcement take place through these multiscale spaces interacting and being reconstituted.

The combined diagonal approach could be interpolated from either of the theories individually. Transnational legal process is already a multiscale analysis,³⁸⁵ and Cox’s conception of scale recognizes ongoing dynamic interactions.³⁸⁶ Putting these two approaches together, however, ensures that the subtleties of each theory—unpacking of process and of space/scale—are fully addressed in the analysis. This integrated approach

³⁸⁵ See *supra* Section 2.

³⁸⁶ See *supra* Section 3.

engages both the norm internalization process and spaces of dependence and engagement by focusing on movement across vertical and horizontal axes and the resulting impact on regulatory spaces. In so doing, it shares commonalities with other interdisciplinary approaches using network theory. But as noted above, it focuses on integrating Cox's approach, in particular, due to his delineation of scale and spatiality.³⁸⁷

Moreover, although what I term a "diagonal" regulatory approach draws from transnational legal process and Cox's version of geographic conceptions of scale, it also could be categorized within the new governance, regulatory institutions, global legal pluralism, polycentric governance, dynamic federalism, and other polycentric analyses highlighted in Chapter II. Diagonal regulatory thinking shares in common with these conceptual streams an emphasis on complex, multiactor interactions that take place in a variety of formulations.³⁸⁸ Its contribution to these analyses is its merged unpacking of process, space, and scale and the questions that such an approach raises about how multiscale regulatory strategies can function most effectively. In so doing, a diagonal approach helps to capture the fluidity and complexity that effective climate change regulation requires.

Climate change litigation provides a good starting place for exploring diagonal regulation because it generally involves activity across both horizontal and vertical dimensions.³⁸⁹ This section builds upon that analysis by focusing more specifically on the rescaling taking place in these interactions and its implications for how we situate this

³⁸⁷ See *supra* Section 3.

³⁸⁸ See *supra* Chapter II.

³⁸⁹ See Osofsky, *supra* note 36.

litigation in transnational regulatory governance of climate change. These suits operate within the sticky frameworks of law and litigation as they interact with an intricate web of spatio-temporal spaces and relationships. The diagonal dynamics are often simultaneously bottom-up and top-down as they shift the scale and structure of regulatory spaces.

For example, San Bernardino County's development of its General Plan, a core local function that it can do better than any other decision maker, becomes integrated with transnational spaces engaging the problem of climate change through the *People v. San Bernardino County* lawsuit. More specifically, California's and several NGOs' use of state law and courts to force the County to engage climate change more deeply in local regulation situates the suit within politico-legal debates over the appropriate role of localities in "international" climate governance, as well as the role of California localities in the overall state strategy to address emissions.³⁹⁰

As a formal matter, the litigation serves as a mechanism for greater vertical integration, but does so by involving multiple branches of government, the horizontal piece. Beyond the limited formal boundaries of this lawsuit, a wide range of nongovernmental and governmental actors, such as Attorney General Brown's speech to California counties and the concerned NGOs that also sued, interact with and reconstitute existing social and legal regulatory spaces at multiple and overlapping levels of government. The dispute thus functions as a multifaceted diagonal conversation and helps to reinforce the crucial—but controversial—role that states and localities play in climate regulation.

³⁹⁰ See *supra* Chapter VI.

Similarly, the state waiver dispute, at its core, presents the executive branches of multiple states—most prominently, California—fighting the EPA over the ability to implement state-level legislation. In addition, the other two branches of the federal government become involved in the dispute after the waiver denial.³⁹¹ The case, as a formal matter, is thus vertical through the interaction between the state and federal levels of government and horizontal in its multibranch dimensions at each level, as well as through the multiple states involved.

Like with the San Bernardino County settlement, the formal diagonal quality of the California-EPA dispute over regulatory scale connects it into national debates over the international role that the United States does and should play in addressing climate change. Throughout the process of interpretation, internalization, and enforcement in the dynamics surrounding the waiver dispute, spaces for regulatory behavior at both state and federal levels impact and are impacted by the conflict. These spaces, in turn, interact with those at larger and smaller levels of government through the involvement of numerous governmental and nongovernmental actors.

As these scalar contests play out in the judicial branch, the vertical, horizontal, and diagonal pressure they create may influence policy dialogues at international and local levels—as well as those at every level in between—and encourage greater diagonal integration. For example, as noted previously, San Bernardino County likely would not have agreed to these steps without these petitions, and California continues to push all of its counties aggressively to regulate their greenhouse gas emissions.³⁹² This impact opens

³⁹¹ *See supra* Chapter V.

³⁹² *See supra* Chapter VI.

up broader questions about the scale of regulation and diagonal interactions outside of the litigation context. The next section begins an exploration of these issues in order to frame Part III’s analysis of the value and limits of diagonal regulatory approaches in the context of U.S. “federal” climate change regulation.

b. Broader Regulatory Implications

A basic normative perspective on climate change underlies this chapter’s analysis and assessment of what is appropriate and effective. Namely, as discussed in depth in Chapter III, climate change presents a serious multiscalar regulatory problem that current approaches are failing to get under control.³⁹³ Based on this assessment, the chapter seeks regulatory approaches that will address the problem more effectively and raises concerns about “too big” arguments preventing or limiting needed efforts at multiple scales. Because litigation, as a formal matter, generally involves diagonal forces and impacts, it serves as a tool for norm internalization, either in the direction of more or less multiscalar regulation.

However, litigation is not the only type of diagonal mechanism available. Regulatory arrangements—whether cooperative or conflictual—can have simultaneous horizontal and vertical elements without the involvement of courts. But comparatively few of the current U.S. regulatory approaches formally have this diagonal quality. Many instances exist of horizontal cooperation in which states or cities, sometimes even across international borders, form a coalition. Some of these initiatives have a vertical dimension in the sense that they create a larger-scale entity; for example, California is

³⁹³ See *supra* Chapter III.

collaborating with six other U.S. states and three Canadian provinces on a Western Climate Initiative.³⁹⁴ Even with this somewhat diagonal quality, though, their primary character is horizontal because the main dynamics are among entities at the same regulatory level.

Similarly, a wide array of predominantly vertical efforts exist, some of which take the form of traditional top-down efforts to foster smaller-scale activity. For example, towards the end of President Bill Clinton's administration, the EPA offered states funding to develop climate regulation plans.³⁹⁵ This instance has horizontal dimensions, in that the EPA made the offer to multiple states, but it is predominantly vertical. Here, the states are not behaving as a coalition, but rather are being individually incentivized by the EPA; the top-down quality of the action reduces the horizontal dimension.

Vertical efforts can also be bottom-up, such as when a state requests federal action or a city requests state action. The California waiver case, if it did not have the horizontal elements of multiple states and branches, exemplifies this variation.³⁹⁶ The key question regarding whether an effort is vertical is not the direction of vertical movement, then, but its dominance. As with the primarily horizontal efforts, vertical ones show little simultaneous activity across the other axis. The efforts are multiscale but without strong activity across individual levels.

³⁹⁴ CAL. AIR RES. BD. FOR THE STATE OF CAL., CLIMATE CHANGE PROPOSED SCOPING PLAN: A FRAMEWORK FOR CHANGE (2008), *available at* <http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf>. This arrangement, like the one in the state waivers dispute, is arguably an example of cooperative horizontal federalism. *See* Hall, *supra* note 134.

³⁹⁵ PEW CTR. ON GLOBAL CLIMATE CHANGE, ADAPTATION PLANNING CLIMATE CHANGE, ADAPTATION PLANNING—WHAT U.S. STATES AND LOCALITIES ARE DOING (2008), *available at* http://www.pewclimate.org/docUploads/State_Adaptation_Planning_02_11_08.pdf.

³⁹⁶ *See supra* Chapter V.

The transnational legal process and geographic network conception of scale approaches, from which the chapter’s diagonal model draws, both suggest that informal diagonals likely arise regardless of whether or not they are formally structured.³⁹⁷ As a range of actors interact with and restructure sociolegal spaces across scales, this process moves across horizontals and verticals in multiple directions. Because many entities that are not formally part of structured initiatives interact with these actors, even efforts that are neither horizontal nor vertical in their formal conception often interact across both axes. For example, as noted by Administrator Johnson, California’s efforts on climate change, even when completely under state authority, influence the behavior of other states and the federal government.³⁹⁸ A snapshot of current efforts, even with their limited formal diagonal quality, thus would show an ever-evolving array of vertical, horizontal, and diagonal interactions.³⁹⁹

The relative paucity of formal diagonal approaches with full integration across both axes—as compared to initiatives that are neither horizontal nor vertical or to ones that are predominantly one or the other—raises many difficult questions. Why is climate regulation not more cross-cutting? Should it be? When are diagonal approaches more effective than other approaches? How should diagonal strategies be structured to avoid unnecessary complications? The nature of the regulatory dilemmas that climate change

³⁹⁷ See *supra* Sections 2 & 3.

³⁹⁸ See Waiver Denial, *supra* note 28.

³⁹⁹ Many scholars have grappled with how to characterize these messy arrays and explore their regulatory implications. For example, Tony Arnold analyzes “patch dynamics” in the context of land use regulation. Arnold, *supra* note 22, at 490. Ruhl and Salzman favor adaptive management models that build out of concepts of panarchy. Ruhl & Salzman, *supra* note 281. This Article acknowledges the fluidity and complexity highlighted by Arnold, Ruhl, and Salzman while attempting to contribute through its focus on exploration of diagonal regulatory approaches.

poses—its multiscalar character and the ways in which it cuts across traditional categories—suggest that diagonal structures may be desirable. But the details of implementation, grounded in these conceptual questions, are critical, especially as the Obama Administration develops a more extensive federal regulatory approach.

These issues are particularly hard to resolve because of the transnational character of climate change. In arguing for the value of smaller-scale regulatory initiatives, this chapter fully acknowledges that climate change is also “international.” This part’s case studies raise core questions about how to locate smaller-scale efforts among the dominant, top-down treaty-based approaches. Former San Francisco Mayor Gavin Newsom, despite his leadership on the issue, did not merit official status in international negotiations.⁴⁰⁰ Should that change, or can mayors and their cities be represented adequately by the United States? More broadly, how can a nation-state-based dialogue effectively incorporate smaller-scale efforts in crafting a regulatory framework, especially when these smaller-scale efforts include the little suburban cities that are the focus of the next part?

The diagonal regulatory role of litigation is messy, as exemplified in this part’s case examples, especially when its informal aspects are taken into account. An in-depth exploration of the direct and indirect regulatory impacts of litigation beyond its scalar role is beyond the scope of this dissertation, but the subject of an additional research project.⁴⁰¹ The complexity of the dynamics in litigation reflects the underlying

⁴⁰⁰ Then-Mayor Newsom discussed this problem in answering a question I posed about diagonal regulatory initiatives. Gavin Newsom, Mayor of San Francisco, Remarks following his Keynote Address at the University of California Hastings College of the Law Conference: Surviving Climate Change: Adaptation and Innovation (Apr. 4, 2008) (notes on file with author).

⁴⁰¹ Jacqueline Peel and I are pursuing an extensive comparative study of the direct and indirect impacts of U.S. and Australian climate change litigation, which builds upon the work of this dissertation. JACQUELINE

complexity of the governance problem posed by climate change, as it interacts with so much of our social and legal structure at multiple levels. Moreover, because climate change is not alone in the multiscale regulatory dilemmas it poses, further conceptualization of these dynamics might help us grapple with a wide array of vexing policy problems.

5. Conclusion

This part focuses on issues of regulatory scale and, in the process, highlights current battlegrounds and their implications. It argues for the importance of exploring diagonal approaches in strategies for addressing emissions, impacts, and adaptation. As important as this engagement of scale is, however, climate change does not simply implicate multiple levels and branches of governance. It also cuts across the ways in which we box law and, more broadly, academic disciplines.

This cross-cutting quality provides an additional regulatory challenge, because lawyers and judges often tend to be uncomfortable with more holistic, interdisciplinary thinking, especially when it involves technical information or scientific data. In Chapter IV, I highlighted this discomfort in some of the interchanges during the Supreme Court oral argument in *Massachusetts v. EPA*.⁴⁰² For instance, Justice Antonin Scalia's comment—likely in jest—that he does not want to deal with the problem because he is

PEEL & HARI M. OSOFSKY, *TRANSITION TO A CLEAN ENERGY FUTURE: THE ROLE OF CLIMATE CHANGE LITIGATION IN SHAPING OUR REGULATORY PATH* (forthcoming 2014, Cambridge University Press) (supported by \$250,000 grant from Australian Research Council).

⁴⁰² See *supra* Chapter IV.

not a scientist merely exemplifies a dominant undercurrent.⁴⁰³ Similar themes of scientific uncertainty emerge in cases examined in this part, as well as throughout climate litigation.⁴⁰⁴

Any effort to take formal diagonal regulation seriously in this context must deal with the complex interaction of scale, science, and law that the work of Sayre and Doremus helps to elucidate. The problem of greater uncertainty at smaller spatial and temporal scales⁴⁰⁵ will continue to play a dominant role in conversations about what type of regulation is appropriate at smaller regulatory levels. As the legal community increasingly engages emissions and their impacts, my hope is that we can move past the “too big” arguments and unhelpful dichotomies and recognize climate change as a multiscale problem that needs multiscale regulatory approaches. Although both the problem and its regulatory implications pose overwhelming conceptual and practical difficulties, we need to approach these issues creatively and explore how we can structure law and policy across scales most effectively. Thinking diagonally should form a part of that ongoing conversation. The next two case studies explore how regulatory efforts could do so more effectively at federal and local scales in the United States.

⁴⁰³ Transcript of Oral Argument at 22–23, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120), 2006 WL 3431932; Chapter IV *supra*.

⁴⁰⁴ *See supra* Chapter IV–VI. These problems of scale and science emerge in a wide range of environmental regulatory problems. *See, e.g.*, Craig Anthony Arnold, *Clean-Water Land Use: Connecting Scale and Function*, 23 PACE ENVTL. L. REV. 291 (2006) (providing an interesting analysis of these issues in a watershed context).

⁴⁰⁵ *See supra* note 43 and accompanying text.

CHAPTER VIII

COMPLEXITIES OF OBAMA ADMINISTRATION CLIMATE CHANGE

POLICY

This chapter contains edited portions of Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 ALABAMA L. REV. 237 (2011).

But for the sake of our children and our future, we must do more to combat climate change. Now, it's true that no single event makes a trend. But the fact is the 12 hottest years on record have all come in the last 15. Heat waves, droughts, wildfires, floods -- all are now more frequent and more intense. We can choose to believe that Superstorm Sandy, and the most severe drought in decades, and the worst wildfires some states have ever seen were all just a freak coincidence. Or we can choose to believe in the overwhelming judgment of science -- and act before it's too late.

Now, the good news is we can make meaningful progress on this issue while driving strong economic growth. I urge this Congress to get together, pursue a bipartisan, market-based solution to climate change, like the one John McCain and Joe Lieberman worked on together a few years ago. But if Congress won't act soon to protect future generations, I will. I will direct my Cabinet to come up with executive actions we can take, now and in the future, to reduce pollution, prepare our communities for the consequences of climate change, and speed the transition to more sustainable sources of energy.⁴⁰⁶

This excerpt from President Obama's 2013 State of the Union Address highlights both his commitment to progress on climate change and the complexity of his administration achieving its goals. In its second term, the Obama Administration continues to face daunting obstacles to its efforts to address climate change. At an international level, as discussed in Chapters I and III, major uncertainty exists about whether a significant agreement including major emitters can emerge from the United

⁴⁰⁶ White House, The 2013 State of the Union, Feb. 12, 2013, <http://www.whitehouse.gov/state-of-the-union-2013>.

Nations Framework Convention on Climate Change (UNFCCC) process.⁴⁰⁷ Cap-and-trade legislation was declared dead even before the 2010 mid-term elections, leaving the U.S. Environmental Protection Agency (EPA) during President Obama's first term in the unenviable position of deciding how comprehensively to regulate greenhouse gases under the Clean Air Act (CAA) through its endangerment finding while its actions are challenged in both the courts and Congress.⁴⁰⁸ Even when climate change legislation looked more likely in the initial months of the Obama Administration, polls underscored a lack of public support to make major emissions reductions in the current economic climate.⁴⁰⁹ In the face of the dim prospects for achieving the reductions needed in time to prevent the worst predicted impacts, increasingly serious conversations regarding the use

⁴⁰⁷ See Copenhagen Accord of Dec. 18, 2009, Decision -/CP.15, available at http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf (last visited Jan. 10, 2011); Guarav Singh, *China, India, Brazil Commit to Make Copenhagen Accord Deadline*, BLOOMBERG, (Jan. 24, 2010), <http://www.bloomberg.com/apps/news?pid=20601090&sid=aIXpNdEdnAV4>; *India, China Won't Sign Copenhagen Accord*, THE HINDU, (Jan., 23, 2010), available at <http://beta.thehindu.com/news/national/article93870.ece?homepage=true>; Arthur Max, *Obama Brokers Climate Deal, But Cannot Satisfy All*, USA TODAY, (Dec. 19, 2009), http://www.usatoday.com/weather/climate/globalwarming/2009-12-18-climate-conference-friday_N.htm; Andrew C. Revkin & John M. Broder, *A Grudging Accord in Climate Talks*, N.Y. TIMES, Dec. 20, 2009, at A1, available at http://www.nytimes.com/2009/12/20/science/earth/20accord.html?_r=1&emc=eta1; Cesare Romano & Elizabeth Burleson, *The Cancún Climate Conference*, 15 ASIL INSIGHT 1, Jan. 21, 2011.

⁴⁰⁸ See Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66495 (Dec. 15, 2009) (to be codified at 40 C.F.R. ch. 1); John M. Broder, *Greenhouse Gases Imperil Health, EPA Announces*, N.Y. TIMES, Dec. 8, 2009, at A18, available at http://www.nytimes.com/2009/12/08/science/earth/08epa.html?_r=1&emc=eta1.

⁴⁰⁹ See Gerald F. Seib, *WSJ/NBC Poll: Divided on Warming Threat, Clear on Man's Role*, WALL ST. J. (Dec. 18, 2009, 7:59 AM), <http://blogs.wsj.com/capitaljournal/2009/12/18/wsjnbc-poll-divided-on-warming-threat-clear-on-mans-role/tab/article/> ("A slight majority of Americans—54%—says global warming exists and some action should be taken. That compares [sic] with 41% who say that more needs to be learned before acting, or that worries are unwarranted. At the beginning of 2007, by contrast, 64% thought warming existed and warranted action, while 33% said more needed to be known before acting."); Andrew C. Revkin, *Global Warming*, N.Y. TIMES (Dec. 8, 2009) <http://topics.nytimes.com/top/news/science/topics/globalwarming/index.html?scp=1&sq=public%20polls%20for%20emissions%20reductions&st=cse> ("Passionate activists at both ends of the discourse are pushing ever harder for or against rapid action, while polls show the public locked durably in three camps—with roughly a fifth of American voters eager for action, a similar proportion aggressively rejecting projections of catastrophe and most people tuned out or confused."); accord Ben Geman, *Polls clash over public support for making emissions reductions*, THE HILL (Dec. 23, 2009, 1:30 PM), <http://thehill.com/blogs/e2-wire/677-e2-wire/73473-polls-clash-over-support-for-emissions-limits>.

of geoengineering to reverse climate change are taking place—conversations which raise major concerns about humanity’s ability to intervene in the global ecosystem without terrible unintended consequences.⁴¹⁰

Amid those much-publicized challenges, there lurks a structural issue that is arguably as fundamental to effective climate change policy as progress on the treaty regime or national-level legislation. Namely, the Obama Administration’s federal efforts to address climate change interact with decisions made at multiple jurisdictional levels by a wide variety of governmental and nongovernmental actors. As Chapter III and the first case study explore, emissions, impacts, and adaptation pose regulatory problems that intersect with every level of government, from the most local to the most global.⁴¹¹ To be most effective, federal policy should thoughtfully engage the complex scalar geography of this problem and regulatory efforts to address it.

This part builds on the previous one by proposing that the Obama Administration can address this structural challenge better in its domestic climate change and clean energy initiatives if it takes the “diagonal” quality of its regulatory interactions into

⁴¹⁰ See, e.g., JASON J. BLACKSTOCK ET AL., NOVIM, CLIMATE ENGINEERING RESPONSES TO CLIMATE EMERGENCIES V (2009), available at <http://arxiv.org/pdf/0907.5140>; THE ROYAL SOCIETY, GEOENGINEERING THE CLIMATE: SCIENCE, GOVERNANCE AND UNCERTAINTY (2009); BJØRNAR EGEDENISSEN & HENRY DAVID VENEMA, DESPERATE TIMES, DESPERATE MEASURES: ADVANCING THE GEOENGINEERING DEBATE AT THE ARCTIC COUNCIL (2009); NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES, GEOLOGICAL AND GEOTECHNICAL ENGINEERING IN THE NEW MILLENNIUM: OPPORTUNITIES FOR RESEARCH AND TECHNOLOGICAL INNOVATION (2006); Albert C. Lin, *Geoengineering Governance*, 8 ISSUES IN LEGAL SCHOLARSHIP Art. 2 (2009); David W. Schnare, Climate Change and the Uncomfortable Middle Ground: The Geoengineering and “No Regrets” Policy Alternative (2008), available at http://www.thomasjeffersoninst.org/pdf/articles/Schnare_speech.pdf; 2009 ESI/MITEI/CGCS Symposium: *Engineering a Cooler Earth: Can We Do It? Should We Try?*, <http://web.mit.edu/esi/symposia/symposium-2009/symposium2009.html> (last visited Jan. 10, 2011); American Enterprise Institute for Public Policy Research, *Geoengineering: A Revolutionary Approach to Climate Change* (June 3, 2008), <http://www.aei.org/video/100925> (follow link for “Play Full Video”) (last visited Jan. 10, 2011).

⁴¹¹ See *supra* Chapter III.

account. Diagonal approaches, as introduced in Chapter VII, bring together the insights of geographer Kevin Cox with those of legal scholar Harold Koh by intertwining a network approach to scale that recognizes each scale as built from a mix of multiscale interactions with an understanding of the process of transnational norm development. These strategies incorporate key public and private actors at different levels of government (the vertical piece) and within each level of government (the horizontal piece) simultaneously in order to create needed crosscutting interactions.

This part takes this conceptual approach forward in the context of U.S. federal-level approaches by bringing Cox's network-based conception of scale together with the legal diagonal federalism literature discussed in Chapter II; it interweaves conceptual approaches from geography and legal theory to propose a taxonomy for operationalizing diagonal regulation in a U.S. federal context and to suggest how it might be applied to the Obama Administration's climate change policy. The part provides an in-depth examination of the Obama Administration's approach to the reduction of motor vehicle greenhouse gas emissions to analyze the nuances of current crosscutting initiatives and to provide a model for rethinking their appropriateness and effectiveness. It argues that the structural differences between strategies aimed at what cars we drive and those aimed at how we drive those cars, in addition to ongoing litigation, provide opportunities for further policy innovation.

This part focuses on combining Cox's conception of scale with legal approaches to federalism because within the United States, the federalist structure of the government provides for interaction across governmental levels. As a result, the challenge facing the Obama Administration is how to approach these international-federal-state-local

interactions in a fashion that leads to the most effective climate policy. Even a single climate change policy area—such as the example of reducing greenhouse gas emissions from passenger cars on which the part focuses—contains complex interactions among governmental and nongovernmental entities. In the more traditional state-federal context, for instance, as discussed in Chapter V, conflicts have arisen over who should set tailpipe emissions standards, with auto companies pushing for a uniform national standard and some states, led by California, asserting their right under the CAA to exceed national standards. The Obama Administration attempted to resolve this conflict by granting California’s waiver request and by harmonizing state and federal standards so that they converge by 2012.⁴¹² However, the relevant governmental action on this issue ranges from local and even sublocal land use planning decisions⁴¹³ to U.S. partnerships with

⁴¹² For the U.S. EPA’s denial of California’s waiver request under the Bush administration, see Letter from Stephen L. Johnson, Adm’r, U.S. Env’tl. Prot. Agency, to Arnold Schwarzenegger, Governor of Cal. (Dec. 19, 2007), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epa-letter.pdf [hereinafter “Waiver Denial Letter”]. For California’s Petition for Review to the Court of Appeals for the Ninth Circuit following the denial, see Petition for Review of Decision of the United States Environmental Protection Agency, California v. EPA, No. 08-70011 (9th Cir. Jan. 2, 2008), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epapetition-1.pdf [hereinafter “Petition for Review”]. For the Obama Administration’s granting of the waiver request, see Press Release, U.S. Env’tl. Prot. Agency, EPA Grants California GHG Waiver (June 30, 2009), *available at* <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/5e448236de5fb369852575e500568e1b!OpenDocument>. For the Obama Administration’s fuel economy standards, see Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards, 74 Fed. Reg. 24,007 (May 22, 2009); *see also* President Barack Obama, Remarks on National Fuel Efficiency Standards in the Rose Garden (May 19, 2009), *available at* http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-national-fuel-efficiency-standards/.

⁴¹³ For an exploration of how local land-use planning impacts vehicular mass transit, see Antonio M. Bento et al., *The Impact of Urban Spatial Structure on Travel Demand in the United States*, World Bank Policy Research Working Paper, WPS 3007 (Mar. 2003), *available at* http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2003/04/23/000094946_03040404262857/Rendered/PDF/multi0page.pdf (last visited Jan. 10, 2011). For a report proposing a new model of transportation finance, which takes into account changing approaches to climate change, see NATIONAL SURFACE TRANSPORTATION INFRASTRUCTURE FINANCING COMMISSION, PAYING OUR WAY: A NEW FRAMEWORK FOR TRANSPORTATION FINANCE (Feb. 26, 2009), *available at* http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Mar09FNL.pdf (last visited Jan. 10, 2011). For a discussion of the role that the sublocal and individual plays, see *infra* note 564 and accompanying text.

individual countries and groups of countries on clean transportation.⁴¹⁴ This part argues that understanding these diverse interactions through the lens of diagonal federalism—that is, an approach to federalism that builds from Chapter VII’s interweaving of geographic network-based conceptions of scale and transnational legal process—provides insight into how they might be structured more effectively.

This opening chapter of the part provides the context for the part’s conceptual approach by providing an assessment of the Obama Administration’s approach to climate change and energy law and policy thus far in light of its precommitments and ongoing partisan political battles. Chapter IX then builds upon this assessment by engaging the difficulty of crafting needed crosscutting policy approaches. That chapter draws from Cox’s and diagonal federalism scholarship to introduce a four-part taxonomy to assist scholars and policymakers with developing and assessing these approaches. It then applies the taxonomy to the Obama Administration’s approach to the regulation of motor vehicle greenhouse gas emissions regulation, with an emphasis on the differences between policy approaches to what cars we drive and to how we drive them. These differences raise questions, which Chapter X addresses, about how the Obama Administration can be most effective in crafting future diagonal approaches to the reduction of motor vehicle greenhouse gas emissions. That chapter explores possibilities for the Obama Administration both to pair large-scale, vertical, top-down approaches with ones that have opposite tendencies along those dimensions and to use litigation to foster multidimensional interactions. The part concludes by considering the broader

⁴¹⁴ See, e.g., Int’l Council on Clean Transp., *Athens Resolution* (Jan. 22, 2010), available at http://www.theicct.org/pubs/Athens_resolution.pdf; Joint Statement by the United States and the Republic of China on Clean Energy, 2009 DAILY COMP. PRES. DOC. 927 (Nov. 17, 2009).

implications of this taxonomy. It argues that the taxonomy can serve as a tool not only for practical policy analysis, but also for reconceptualizing scholarly approaches.

1. The Obama Administration's Climate Change Commitments

Since his first campaign, President Obama articulated an ambitious agenda for climate change and energy issues, and his Administration has made substantial progress in realizing those commitments.⁴¹⁵ However, as discussed in the sections that follow, the Obama Administration's accomplishments are largely concentrated in the actions of multiple federal administrative agencies due to the obstacles it has faced with respect to both legislation and international negotiations. The major exceptions to this rule are the energy and green growth measures in the American Recovery and Reinvestment Act of 2009 (ARRA), which have been a major component of the Obama Administration's accomplishments on these issues to date.⁴¹⁶ Moreover, although the Administration has worked closely with key states and localities in many instances, a number of its crucial policies take the form of a fairly traditional, top-down mandate or incentive structure.

The Obama Administration's core commitments with respect to climate change and energy have, from the start, focused on supporting a transformation to a greener economy grounded in formal legal measures. For example, President Obama's State of the Union addresses have consistently touted clean energy initiatives as vehicles for innovation, economic growth, and job creation.⁴¹⁷ His 2013 one was no exception, with

⁴¹⁵ See *infra* notes 35–36.

⁴¹⁶ See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 134 (2009).

⁴¹⁷ Barack Obama, President of the United States, Address Before a Joint Session of Congress on the State of the Union (Jan. 27, 2010) in DAILY COMP. PRES. DOC. 55 at 5. [hereinafter 2010 State of the Union]; The White House, Office of the Press Secretary, Remarks by the President in State of Union Address, United

extensive discussion of energy transition after his call for action on climate change.⁴¹⁸ Substantively, that transformation primarily focuses on changing motor vehicle technology and usage patterns, energy sources and efficiency, and the types of jobs which drive the economy. In moving towards its substantive goals through legal action, the Obama Administration's work has included extensive agency action under the ARRA, CAA, and Energy Independence and Security Act of 2007 (EISA); failed efforts to pass a cap-and-trade bill in Congress; and active participation and leadership in international climate negotiations that have yet to lead to adequate commitments.⁴¹⁹

The Obama Administration has made substantial progress on all of these objectives, although formal legal change outside of its control has been more elusive. EPA Administrator Lisa Jackson's January 12, 2010, memorandum on her first year reflected this progress and the Administration's continuing commitment to these issues. It also foreshadowed ongoing challenges with which that agency continues to grapple. In including "[t]aking action on climate change" among her seven key themes to focus the EPA's work, she stated:

Last year saw historic progress in the fight against climate change, with a range of greenhouse gas reduction initiatives. We must continue this critical effort and ensure compliance with the law. We will continue to support the President and Congress in enacting clean energy and climate legislation. Using the Clean Air Act, we will finalize our mobile source rules and provide a framework for continued improvements in that sector. We will build on the success of ENERGY STAR to expand cost-saving energy conservation and efficiency programs. And we will continue to develop common-sense

States Capitol, Washington, D.C., Jan. 25, 2011 [hereinafter 2011 State of the Union], *available at* <http://www.whitehouse.gov/the-press-office/2011/01/25/remarks-president-state-union-address>.

⁴¹⁸ White House, The 2013 State of the Union, Feb. 12, 2013, <http://www.whitehouse.gov/state-of-the-union-2013>.

⁴¹⁹ See *Energy & Environment*, THE WHITE HOUSE, <http://www.whitehouse.gov/issues/energy-and-environment> (last visited Jan. 10, 2011).

solutions for reducing GHG emissions from large stationary sources like power plants. In all of this, we must also recognize that climate change will affect other parts of our core mission, such as protecting air and water quality, and we must include those considerations in our future plans.⁴²⁰

Administrator Jackson's six other key themes, many of which have significant overlap with the EPA's efforts on climate change, included improving air quality; insuring the safety of chemicals; cleaning up our communities; protecting America's waters; expanding the conversation on environmentalism and working for environmental justice; and building strong state and tribal partnerships.⁴²¹

This chapter builds from Administrator Jackson's summary of her agency's efforts to provide a more in-depth review of the primary elements of the Obama Administration's efforts on its core climate change and energy commitments and their evolution over time. It does not attempt to list comprehensively every single administration initiative, but rather to give a sense of its major commitments, accomplishments, and challenges. Although the push for cap-and-trade legislation failed, the other aspects of the Obama Administration's climate change policy that Administrator Jackson highlighted have continued to move forward.

The remainder of this chapter explores these complexities. It first situates the Obama Administration's work amid efforts to address climate change that predate his administration. It then turns to the Obama Administration's domestic commitments and efforts in substantive areas detailed above. The chapter concludes with a discussion of

⁴²⁰ See Memorandum from Lisa P. Jackson, Adm'r, EPA to all EPA Employees (Jan. 12, 2010), available at <http://blog.epa.gov/administrator/2010/01/12/seven-priorities-for-epas-future/>.

⁴²¹ See *id.*

legal progress and obstacles, including an assessment of its international and subnational efforts and the resulting challenges of the legal scale that the Obama Administration faces.

2. Historical Context for the Obama Administration's Climate Change and Energy Initiatives

U.S. efforts at clean air regulation began in 1955 with the Air Pollution Control Act,⁴²² which was the precursor to the CAA of 1963 and its subsequent variations.⁴²³ The CAA, together with the Energy Policy Conservation Act of 1975 (EPCA)⁴²⁴ and other clean air legislation,⁴²⁵ has provided the statutory framework for agency action on many key greenhouse gas emissions issues, particularly transportation and energy. Although prior to the *Massachusetts v. EPA* case discussed in Chapter IV,⁴²⁶ greenhouse gases were not explicitly included in the regulations promulgated under these laws,⁴²⁷ many of these regulations impacted such emissions. For example, the corporate average fuel

⁴²² See Air Pollution Control Act of 1955, Pub. L. No. 84-159, 69 Stat. 322 (codified as amended at 42 U.S.C. §§ 7401–7671q (2006)).

⁴²³ See Clean Air Act of 1963, Pub. L. No. 88-206, 77 Stat. 392 (codified as amended at 42 U.S.C. §§ 7401–7671q (2006)).

⁴²⁴ See Energy Policy and Conservation Act of 1975, Pub. L. No. 94-163, §§ 501–512, 89 Stat. 871, 901–16 (codified as amended at 42 U.S.C. § 6201 (2006)).

⁴²⁵ See, e.g., Motor Vehicle Air Pollution Control Act of 1965, Pub. L. No. 89-272, §§ 201–09, 79 Stat. 992, 992–96 (codified as amended at 42 U.S.C. §§ 7521-7590 (2006)); Air Quality Act of 1967, Pub. L. No. 90-148, 81 Stat. 485 (codified as amended at 42 U.S.C. §§ 7401–7671q (2006)).

⁴²⁶ 549 U.S. 497 (2007).

⁴²⁷ See Press Release, U.S. Env'tl. Prot. Agency, EPA Denies Petition to Regulate Greenhouse Gas Emissions from Motor Vehicles (Aug. 28, 2003), available at <http://yosemite.epa.gov/opa/admpress.nsf/fb36d84bf0a1390c8525701c005e4918/694c8f3b7c16ff6085256d900065fdad!OpenDocument>.

economy (CAFE) standards mandated fuel economy in vehicles and, as a result, influenced the extent of their emissions.⁴²⁸

In addition to these air pollution control efforts relevant to climate change, the United States has had a statutory regime explicitly focused on climate change since 1978. That year, the National Climate Program Act mandated that the President establish a program to “assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications.”⁴²⁹ Pursuant to that law, President Carter commissioned a National Research Council report, which concluded that “[i]f carbon dioxide continues to increase, the study group finds no reason to doubt that climate changes will result and no reason to believe that these changes will be negligible. . . . A wait-and-see policy may mean waiting until it is too late.”⁴³⁰

In 1987, the Global Climate Protection Act attempted to translate this effort into “coordinated national policy” and U.S. leadership in international efforts to address climate change.⁴³¹ However, the Act’s goals have yet to be achieved. Numerous bills to address climate change nationally, including the most recent cap-and-trade ones, have stalled in the U.S. Senate, and the country’s pre-Obama leadership on climate change was limited by both the Legislative and Executive branches at critical junctures.⁴³² Although

⁴²⁸ For a discussion of this overlap, see Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards, 74 Fed. Reg. 24,007 (May 22, 2009).

⁴²⁹ National Climate Program Act, Pub. L. No. 95-367, 92 Stat. 601, 601 (codified as amended at 15 U.S.C. §§ 2901–2908 (2006)).

⁴³⁰ CLIMATE RESEARCH BOARD, CARBON DIOXIDE AND CLIMATE: A SCIENTIFIC ASSESSMENT, at viii (National Academy Press 1979), available at http://www.nap.edu/catalog.php?record_id=12181.

⁴³¹ Global Climate Protection Act, Pub. L. No. 100-204, §§ 1101–06, 101 Stat. 1331, 1408 (codified as amended at 15 U.S.C. § 2901 (2006)).

⁴³² The one relatively comprehensive climate change cap-and-trade bill to pass in the House, the American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009), has not yet had an analogue

the United States is party to the United Nations Framework Convention on Climate Change (UNFCCC) and President Clinton's Administration participated actively in the Kyoto Protocol negotiations, the Senate unanimously passed a resolution indicating its sense that the United States should not enter into the Kyoto Protocol because it did not apply to developing major emitters such as China and India.⁴³³ As a result, President Clinton did not submit the protocol to the Senate for ratification.⁴³⁴

Under President George W. Bush's leadership, the nation backtracked on the issue both domestically and internationally. His Administration repeatedly refused to regulate greenhouse gas emissions under existing environmental laws and prevented leader states from moving ahead with their own regulation of greenhouse gas motor vehicles emissions.⁴³⁵ The 2007 EISA, with its many provisions related to climate change,

passed in the Senate. The Lieberman-Warner Climate Security Act of 2008, S. 3036, 110th Cong. (2008), which was a substitute amendment to America's Climate Security Act of 2007, S. 2191, 110th Cong. (2007), fell 12 votes short of the 60 votes needed to continue debate. America's Climate Security Act of 2007, S. 2191, 110th Cong. (2007), made it out of committee and was placed on the calendar in the Senate but never reached a vote. For examples of proposed legislation that died in committee in the Senate or House, see Climate Stewardship Act of 2003, S. 139, 108th Cong. (2003); Climate Stewardship Act of 2004, H.R. 4067, 108th Cong. (2004); Climate Stewardship Act of 2005, H.R. 759, 109th Cong. (2005); Climate Stewardship Act of 2005, S. 342, 109th Cong. (2005); Climate Stewardship and Innovation Act of 2005, S. 1151, 109th Cong. (2005); New Apollo Energy Act of 2005, H.R. 2828, 109th Cong. (2005); Keep America Competitive Global Warming Policy Act of 2006, H.R. 5049, 109th Cong. (2006); Clean Air Planning Act of 2006, S. 2724, 109th Cong. (2006); Safe Climate Act of 2006, H.R. 5642, 109th Cong. (2006); Global Warming Reduction Act of 2006, S. 4039, 109th Cong. (2006); Climate Stewardship and Innovation Act of 2007, S. 280, 110th Cong. (2007); Global Warming Pollution Reduction Act, S. 309, 110th Cong. (2007); Electric Utility Cap and Trade Act of 2007, S. 317, 110th Cong. (2007); Climate Stewardship Act of 2007, H.R. 620, 110th Cong. (2007); Global Warming Reduction Act of 2007, S. 485, 110th Cong. (2007); Safe Climate Act of 2007, H.R. 1590, 110th Cong. (2007); Clean Air Planning Act of 2007, S. 1177, 110th Cong. (2007); Low Carbon Economy Act of 2007, S. 1766, 110th Cong. (2007); Climate Stewardship and Economic Security Act of 2007, H.R. 4226, 110th Cong. (2007); Climate MATTERS (Market, Auction, Trust & Trade Emissions Reduction System) Act of 2008, H.R. 6316, 110th Cong. (2008); Carbon Leakage Prevention Act, H.R. 7146, 110th Cong. (2008).

⁴³³ S. Res. 98, 105th Cong. (1997).

⁴³⁴ See SUSAN R. FLETCHER, CONG. RESEARCH SERV., RL 30692, GLOBAL CLIMATE CHANGE: THE KYOTO PROTOCOL 2 (2005), available at <http://fpc.state.gov/documents/organization/43196.pdf>.

⁴³⁵ Editorial, *Arrogance and Warming*, N.Y. TIMES, Dec. 21, 2007, at A38; John M. Broder & Felicity Barringer, *E.P.A. Says 17 States Can't Set Greenhouse Gas Rules for Cars*, N.Y. TIMES, Dec. 20, 2007, at

such as stricter CAFE standards that will require automakers to bring fleet-wide gas mileage to thirty-five miles per gallon (mpg) by 2020, constitutes the most significant step taken under the Bush Administration to move federal climate change regulation forward.⁴³⁶ Internationally, in 2002, President Bush announced the United States' decision not to ratify the Kyoto Protocol and made limited additional commitments on climate change.⁴³⁷ As detailed in the subsequent sections, the Obama Administration's campaign pledges on climate change and energy and its steps thus far on this issue constitute an effort to reverse those policies and to move the United States towards comprehensive domestic action and international leadership.

3. Motor Vehicles Design and Use

President Obama's commitments regarding motor vehicles consistently have focused on what cars we drive and the fuels that they use, as well as broader efforts at transportation policy and its impact on how we drive those cars. With respect to what cars we drive, he pledged in his first campaign to raise fuel economy standards by four percent each year and to double the current fuel economy standards within eighteen years.⁴³⁸ He planned to work with Congress to ensure that all new vehicles will have flex-fuel capability by the end of his first term and to invest in advanced vehicle technology

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⁴³⁶ See Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492, 1499 (2007).

⁴³⁷ For President Bush's announcement of the United States decision not to ratify Kyoto, see President George W. Bush, Speech Discussing Global Climate Change (June 11, 2001), available at <http://www.guardian.co.uk/environment/2002/feb/14/usnews.globalwarming>.

⁴³⁸ See *Blueprint For Change*, OBAMA FOR AMERICA, <http://www.barackobama.com/pdf/ObamaBlueprintForChange.pdf>; *Barack Obama's Plan to Make America a Global Energy Leader*, OBAMA FOR AMERICA, http://obama.3cdn.net/4465b108758abf7a42_a3jmvfyfa5.pdf.

that uses lightweight materials and new engines.⁴³⁹ He also proposed to increase the number of hybrids on the road to one million by 2015 and to require that future federal government vehicles be hybrids.⁴⁴⁰ To support this transition, he stated that he would provide \$4 billion in retooling tax credits and loan guarantees for domestic automakers and that he would lift the cap of \$60,000 per manufacturer on buyer tax credits for ultra-efficient vehicles.⁴⁴¹ With respect to fuels, President Obama said that he would require the development of sixty billion gallons of advanced biofuels by 2030 and establish a National Low Carbon Fuel Standard (LCFS) to help with the introduction of nonpetroleum fuels.⁴⁴² Finally, he promised to revise the transportation funding process both to encourage states and localities to consider smart growth and energy conservation and to recommit federal resources to public mass transportation projects.⁴⁴³

President Obama began to make good on those campaign promises in his first week in office with memoranda to federal agencies on fuel efficiency standards and on California's request for a CAA waiver, which the U.S. EPA ultimately granted.⁴⁴⁴ The

⁴³⁹ See *Barack Obama and Joe Biden: New Energy for America*, OBAMA FOR AMERICA, http://www.barackobama.com/pdf/factsheet_energy_speech_080308.pdf [hereinafter "*New Energy for America*"].

⁴⁴⁰ See *id.*

⁴⁴¹ See *Barack Obama's Plan to Make America a Global Energy Leader*, *supra* note 35; *New Energy for America*, *supra* note 36.

⁴⁴² See *Barack Obama's Plan to Make America a Global Energy Leader*, *supra* note 35; *New Energy for America*, *supra* note 36.

⁴⁴³ See *New Energy for America*, *supra* note 36; *Promoting a Healthy Environment*, OBAMA FOR AMERICA, <http://www.barackobama.com/pdf/issues/EnvironmentFactSheet.pdf>.

⁴⁴⁴ See Memorandum from President Barack Obama to the Secretary of Transportation and the Administrator of the National Highway Traffic Safety Administration, (Jan. 26, 2009), *available at* http://www.whitehouse.gov/the_press_office/Presidential_Memorandum_fuel_economy/; Memorandum from President Barack Obama to the Administrator of the EPA (Jan. 26, 2009), *available at* http://www.whitehouse.gov/the_press_office/Presidential_Memorandum_EPA_Waiver/; Press Release, U.S. Env'tl. Prot. Agency, EPA Grants California GHG Waiver (June 30, 2009), *available at*

U.S. EPA has since issued an endangerment finding and promulgated significant greenhouse gas motor vehicles regulation under that finding in response to the Supreme Court's opinion in *Massachusetts v. EPA* and its judicial resolution of the scalar battles described in Chapter IV.⁴⁴⁵ The Administration's most significant accomplishment with respect to motor vehicles and climate change thus far is its National Program for emissions and fuel economy standards for new vehicles, under which the EPA and Department of Transportation promulgated a series joint rules on fuel economy and tailpipe greenhouse gas emissions that cover both light and heavy vehicles, with more stringent standards over time.⁴⁴⁶

Under this plan, which emerged from the Administration's efforts to forge a compromise between automakers⁴⁴⁷ and California,⁴⁴⁸ manufacturers over time will be

<http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/5e448236de5fb369852575e500568e1b!OpenDocument>.

⁴⁴⁵ See Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009).

⁴⁴⁶ See Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, 75 Fed. Reg. 25,324 (May 7, 2010) [hereinafter "Final Rule"]; Obama, Remarks on National Fuel Efficiency Standards, *supra* note 8.

⁴⁴⁷ For the reaction of automakers, see Letter from Frederick A. Henderson, CEO of General Motors Corporation, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/gm.pdf>; Letter from Stefan Jacoby, President and CEO of Volkswagen Group of America, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/vw.pdf>; Letter from James E. Lentz, President of Toyota Motor Sales, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/toyota.pdf>; Letter from Dave McCurdy, President and CEO of the Alliance of Automobile Manufacturers, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/alliance-of-automobile.pdf>; Letter from John Mendel, Executive Vice President of Automobile Sales for American Honda Motor Company, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/honda.pdf>; Letter from Alan R. Mulally, President and CEO of Ford, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/ford.pdf>; Letter from Robert L. Nardelli, Chairman and CEO of Chrysler LLC, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA

allowed “to build a single light-duty national fleet that would satisfy all requirements under both programs and would provide significant reductions in both greenhouse gas emissions and oil consumption.”⁴⁴⁹ The EPA regulations still focus on tailpipe emissions pursuant to the CAA, and the National Highway Traffic Safety Administration (NHTSA) regulations take the form of CAFE standards under the EISA and EPCA. But they are coordinated for the first time out of an understanding that “[t]he close relationship between emissions of CO₂—the most prevalent greenhouse gas emitted by motor vehicles—and fuel consumption, means that the technologies to control CO₂ emissions and to improve fuel economy overlap to a great degree.”⁴⁵⁰ Both agencies will measure compliance based on fleet average performance calculated at the end of each model

Administrator, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/chrysler.pdf>; Letter from James J. O’Sullivan, President and CEO of Mazda North American Operations, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/mazda.pdf>; Letter from Norbert Reithofer, Chairman of the Board of Management of The BMW Group, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/bmw.pdf>; Letter from Dieter Zetsche, Chairman of the Board of Management of Daimler AG and Head of Mercedes-Benz Cars, and Thomas Weber, Member of the Board of Management, Group Research, and Mercedes-Benz Cars Development, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/daimler.pdf>.

⁴⁴⁸ For California’s pledge to adopt the less stringent federal standards for Model Years (MY) 2012 to 2016, see Letter from Edmund G. Brown, Jr., Attorney General of California, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/calif-atty-general.pdf>; Letter from Mary D. Nichols, Chairman of the California Air Resources Board, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/air-resources-board.pdf>; Letter from Arnold Schwarzenegger, Governor of California, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/calif-gov.pdf>.

⁴⁴⁹ Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards, 74 Fed. Reg. 24,007, 24,007 (May 22, 2009).

⁴⁵⁰ *Id.* at 24,009 n.7.

year.⁴⁵¹ The government will then issue credits to manufacturers which exceed the fleet average CO₂ or CAFE standard and debits to those which fail to meet the standard.⁴⁵² Manufacturers will be able to use those credits to offset past or future debits, to transfer those credits among the vehicles in its fleet, or to trade/sell them to other companies.⁴⁵³

The Obama Administration has built upon his initial May 2010 rulemaking with frequent new rulemaking efforts to address post-2017 model years of light vehicles and emissions from medium and heavy vehicles. For example, in September 2010, the EPA and NHTSA issued a Notice of Intent to begin establishing standards for fuel economy and greenhouse gas emissions for 2017–25 model year light vehicles, which it updated through a supplemental notice in December 2010.⁴⁵⁴ In January 2011, the EPA announced, together with the U.S. Department of Transportation and California, further unification of national and California approaches through a single timeframe for proposing those 2017–25 standards.⁴⁵⁵ The two agencies complemented this progress on cars and light trucks with a final rule announced in October 2010 and corrected in December 2010 for medium and heavy duty vehicles. Its Heavy Duty National Program establishes fuel economy and greenhouse emissions standards that it claims have the

⁴⁵¹ *See id.* at 24,010.

⁴⁵² *See id.*

⁴⁵³ *See id.*

⁴⁵⁴ Notice of Intent, 75 Fed. Reg. 62,739 (Oct. 13, 2010).

⁴⁵⁵ Press Release, EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars, Jan. 24, 2011, *available at* <http://yosemite.epa.gov/opa/admpress.nsf/1e5ab1124055f3b28525781f0042ed40/6f34c8d6f2b11e5885257822006f60c0!OpenDocument>.

potential to reduce greenhouse gas emissions by nearly 250 million metric tons over the life of vehicles sold from 2014 to 2018.⁴⁵⁶

The Obama Administration has supplemented this mandate program with a variety of financial incentives administered through multiple administrative agencies. Under the ARRA, he established the Clean Cities Alternative Fuel and Advanced Technology Vehicles Pilot Program, which invests \$300 million dollars in state and local government efforts to expand their fleets of fuel-efficient vehicles.⁴⁵⁷ The Act also funded a \$2 billion grant program to encourage individuals to build batteries for plug-in hybrids,⁴⁵⁸ and \$187 million (with an additional private cost share of 50%) towards nine projects aimed at improving fuel efficiency in heavy duty trucks and passenger vehicles which estimate that they will create over 500 jobs initially and over 6,000 jobs by 2015.⁴⁵⁹ In addition, the DOE is providing up to \$5.5 million in ARRA funding to

⁴⁵⁶ Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, 75 Fed. Reg. 74152 (Nov. 30, 2010). For correction to proposed rules, see Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, 75 Fed. Reg. 81952 (Dec. 29, 2010).

⁴⁵⁷ For vehicles incentives, see Advanced Technology Vehicles Manufacturing Incentive Program, 73 Fed. Reg. 66,721 (Nov. 12, 2008) (codified at 10 C.F.R. pt. 611 (2009)); see also *Obama Administration Awards First Three Auto Loans for Advanced Technologies to Ford Motor Company, Nissan Motors, and Tesla Motors*, DEPARTMENT OF ENERGY (June 23, 2009), <http://www.energy.gov/news/7544.htm>; *On Earth Day Vice President Biden Announces \$300 Million in Recovery Act Funds for Clean Cities Program*, THE WHITE HOUSE, OFFICE OF THE VICE PRESIDENT (Apr. 22, 2009), available at http://www.whitehouse.gov/the_press_office/On-Earth-Day-Vice-President-Biden-Announces-300-Million-in-Recovery-Act-Funds-for-Clean-Cities-Program/.

⁴⁵⁸ See President Barack Obama, Remarks on Clean Energy at Trinity Structural Towers Manufacturing Plant in Newton, Iowa (Apr. 22, 2009), available at http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-in-Newton-IA/ [hereinafter “Newton Remarks”]; President Barack Obama, Remarks at The Edison Electric Vehicle Technical Center in Pomona, California (Mar. 19, 2009), available at <http://www.whitehouse.gov/the-press-office/remarks-president-edison-electric-vehicle-technical-center> [hereinafter “Edison Remarks”].

⁴⁵⁹ See Press Release, Dep’t of Energy, Secretary Chu Announces \$187 Million to Improve Vehicle Efficiency for Heavy-Duty Trucks and Passenger Vehicles (Jan. 11, 2010), available at <http://www.energy.gov/news/8506.htm>.

support the X PRIZE Foundation's competition in which teams design energy efficiency vehicles.⁴⁶⁰

The Obama Administration plans to continue to build on these investments and move towards its goal of having one million electric vehicles on the road by 2015. On January 26, 2011, the day after President Obama's recommitment to his clean energy goals in the State of the Union address, Vice President Biden announced a new, three-part technology vehicle plan that will include support for U.S. electric vehicle manufacturing and adoption. The plan includes replacing the existing tax credit with a point-of-sale consumer rebate, more investments in research and development, and a competitive grant program to encourage communities to establish the infrastructure needed to support electric vehicles.⁴⁶¹ With respect to fuels, the EPA issued regulations that strengthened the renewable fuel standard originally enacted in 2007. These regulations increase the volume of renewable fuels required to be blended into the nation's gas supply, include diesel fuels, and establish greenhouse gas thresholds for renewable fuel sources to be included.⁴⁶² President Obama also established a Biofuels Interagency Working Group to develop and implement new biofuels technologies⁴⁶³ and set aside \$786 million in

⁴⁶⁰ See Press Release, Dep't of Energy, DOE Awards up to \$5.5 Million for X PRIZE to Promote Clean, Energy Efficient Vehicles (Nov. 2, 2009), available at <http://www.energy.gov/news/8240.htm>.

⁴⁶¹ See Press Release, The White House, Vice President Biden Announces Plan to Put One Million Advanced Technology Vehicles on the Road by 2015 (January 26, 2011), <http://www.whitehouse.gov/the-press-office/2011/01/26/vice-president-biden-announces-plan-put-one-million-advanced-technology>. Some have questioned whether adequate demand exists for the Obama administration to reach its goals. Peter Whoriskey, *U.S. Unlikely to Reach Goal of 1 Million Electrics on the Road by 2015, Report Says*, WASH. POST., Feb. 1, 2011, available at <http://www.washingtonpost.com/wp-dyn/content/article/2011/02/01/AR2011020106455.html?sid=ST2011020106520>.

⁴⁶² Regulation of Fuels and Fuel Additives: Changes to the Renewable Fuel Standard Program, 75 Fed. Reg. 14670 (Mar. 26, 2010).

⁴⁶³ See Memorandum on Biofuels and Rural Economic Development, 74 Fed. Reg. 21,531, 21,531 (May 7, 2009).

Recovery funds for biofuels research and development.⁴⁶⁴ The Administration has begun dispersing those funds, such as to two biofuels consortia in January 2010 to support their work on algae-based and other advanced biofuels.⁴⁶⁵

Regarding transportation policy more broadly, the Obama Administration awarded \$8.78 billion in ARRA funds to transit improvements.⁴⁶⁶ It provided \$100 million of those funds to forty-three subnational transit agencies to support use of cutting-edge environmental technologies.⁴⁶⁷ The projects funded include Alabama's replacement of gasoline and diesel buses with electric hybrids, Massachusetts' construction of wind energy turbines, and Vancouver, Washington's installation of solar panels at transit facilities.⁴⁶⁸ The Administration committed another \$8 billion in funds under ARRA and an additional \$1 billion per year for five years to create high-speed rail lines interconnecting U.S. cities.⁴⁶⁹ To ensure that this rail project results in jobs, the Administration obtained commitments from more than thirty domestic and foreign rail manufacturers and suppliers that they will establish or expand operations in the United

⁴⁶⁴ *See id.*

⁴⁶⁵ *See* Press Release, Dep't of Energy, Secretary Chu Announces Nearly \$80 Million Investment for Advanced Biofuels Research and Fueling Infrastructure (January 13, 2010), *available at* <http://www.energy.gov/news/8519.htm>.

⁴⁶⁶ Press Release, Federal Transit Administration, U.S. Transportation Secretary LaHood Announces Final Recovery Act Transit Grant (Sep. 29, 2010), *available at* http://www.fta.dot.gov/news/news_events_12039.html.

⁴⁶⁷ *See* Press Release, Dep't of Transp., \$100 Million in Obama Administration Economic Recovery Act Funds Charts New Course for Green Transportation (Sept. 21, 2009), *available at* <http://www.dot.gov/affairs/2009/fta2209.htm>.

⁴⁶⁸ *See id.*

⁴⁶⁹ *See* Press Release, The White House, President Obama, Vice President Biden to Announce \$8 Billion for High-Speed Rail Projects Across the Country (Jan. 28, 2010), *available at* <http://www.whitehouse.gov/the-press-office/president-obama-vice-president-biden-announce-8-billion-high-speed-rail-projects-ac>.

States if they are chosen by states or groups to construct these rail lines.⁴⁷⁰ The Administration also established a Livability Initiative, which is administered jointly by the Department of Transportation (DOT), the Department of Housing and Urban Development (HUD), and the EPA.⁴⁷¹ In its first round of financial incentives under this initiative in December 2009, the Administration announced the availability of \$280 million to support urban circulator projects such as buses, bus facilities, and streetcars.⁴⁷²

4. Energy Production and Consumption

President Obama's work with respect to energy production and consumption have focused since the start on a two-pronged strategy: (1) improvements in efficiency and infrastructure coupled with (2) development of cleaner energy technologies. Regarding his first goal, he pledged during his first campaign to reduce electricity demand 15% by 2020 through improving the efficiency of new buildings by 50% and of existing buildings by 25% (with even more ambitious targets for federal buildings).⁴⁷³ He stated a longer-term goal of all new buildings being carbon neutral by 2030.⁴⁷⁴ To help states and localities achieve greater building efficiency, he proposed establishing a competitive grant and federal match program to create incentives for building codes with greater

⁴⁷⁰ See Press Release, Dep't of Transp., U.S. Transportation Secretary LaHood Leads Conference on Domestic High-Speed Rail Manufacturing: *More Than 30 Companies Commit To Establish or Expand Manufacturing Operations in the United States (Dec. 4, 2009)*, available at <http://www.dot.gov/affairs/2009/fra0909.htm>.

⁴⁷¹ See Press Release, Dep't of Transp., U.S. Transportation Secretary Announces \$280 Million for Streetcars: First Funds for Administration's Livability Initiative Will Create Jobs (Dec. 1, 2009) available at <http://www.dot.gov/affairs/2009/dot18509.htm>.

⁴⁷² See *id.*

⁴⁷³ See *New Energy for America*, *supra* note 36.

⁴⁷⁴ See *Promoting a Healthy Environment*, *supra* note 40; *New Energy for America*, *supra* note 36.

efficiency requirements and increasing federal funds to support the weatherization of at least one million low-income households per year. In addition to these building improvements, President Obama also committed to overhauling appliance efficiency standards.⁴⁷⁵

With respect to infrastructure, President Obama promised to pursue a transformation of the national utility grid in partnership with states and utilities “to enable a tremendous increase in renewable generation and accommodate 21st century energy requirements, such as reliability, smart metering and distributed storage,” with a particular focus on “the most vulnerable and congested urban and rural areas where significant renewable energy sources are located.”⁴⁷⁶ He proposed to accomplish this in part by flipping the incentives for utilities from increasing total energy consumption to improving energy efficiency. In addition, he announced plans to establish a Grid Modernization Commission to facilitate adoption of Smart Grid practices across the country, supported through a DOE Smart Grid Investment Matching Grant Program that would reimburse one-fourth of qualifying Smart Grid investments, conduct deployment programs, and create demonstration projects.⁴⁷⁷

The Obama Administration has made significant progress on these efficiency goals. The ARRA provided \$5 billion for low-income weatherization programs (including \$1,500 tax breaks), \$4.5 billion to green federal buildings, and \$6.3 billion for state and local renewable energy and energy efficiency efforts, which included the \$3.2

⁴⁷⁵ See *Promoting a Healthy Environment*, *supra* note 40; *New Energy for America*, *supra* note 36.

⁴⁷⁶ *Promoting a Healthy Environment*, *supra* note 40.

⁴⁷⁷ See *New Energy for America*, *supra* note 36.

billion Energy Efficiency and Conservation Block Grant (EECBG) Program.⁴⁷⁸ The Department of Energy announced in January 2011 that states were at the half-way point of meeting the Obama Administration's goals for weatherizing low-income homes, with over 300,000 of these homes weatherized thus far. These households are reducing their energy consumption by 35% and saving \$400/year on their heading bills. The Obama Administration claimed that the weatherization of 300,000 homes will save \$161 million in energy costs during the first year. The Act also included an \$11 billion investment to update the energy grid.⁴⁷⁹

On the administrative front, the DOE has issued final rules to increase efficiency standards for more than twenty household and commercial products, including kitchen and laundry appliances, water heaters, and light bulbs, and has proposed rules on residential refrigerators and freezers.⁴⁸⁰ The Government Services Administration (GSA) has also established the GreenGov Supply Chain Partnership, in which participating suppliers pledge to report greenhouse gas emissions with the goal of reducing waste and pollution in the federal supply chain.⁴⁸¹

⁴⁷⁸ See Newton Remarks, *supra* note 458; Energy & Environment, *supra* note 16; Energy Efficiency and Conservation Block Grant Program, U.S. DEP'T OF ENERGY, <http://www.eecbg.energy.gov/about/default.html> (last visited Jan. 10, 2011) [hereinafter DOE Block Grant Program].

⁴⁷⁹ Edison Remarks, *supra* note 458; Newton Remarks, *supra* note 458; President Barack Obama, Remarks on Energy (June 29, 2009), available at http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-Energy/ [hereinafter Energy Remarks].

⁴⁸⁰ See Energy Conservation Program: Energy Conservation Standards for Residential Refrigerators, Refrigerator-Freezers, and Freezers, 75 Fed. Reg. 59470-01 (Sep. 27, 2010); Press Release, Dep't of Energy, Secretary Chu Announces More Stringent Appliance Standards for Home Water Heaters and Other Heating Products (Apr. 1, 2010), available at <http://www.energy.gov/news/8816.htm>.

⁴⁸¹ See Obama Administration Officials Unveil GreenGov Supply Chain Partnership with Industry (Nov. 16, 2010) available at <http://www.gsa.gov/portal/content/203421>.

With respect to the second goal of developing cleaner technologies, President Obama pledged during his first campaign to invest \$150 billion over ten years to support advanced energy technologies and to double federal science and research funding for clean energy projects.⁴⁸² He also proposed the establishment of a Clean Technologies Venture Capital Fund that would partner with existing investment funds and the National Laboratories to help move promising technologies from the lab to commercial production. In addition, his plan included establishing a federal grant program that would allocate \$1 billion in federal money per year to the states to support local manufacturers' efforts to modernize and produce new advanced clean technology.⁴⁸³

President Obama's campaign commitments in this area emphasized renewable energy in particular. He committed to establishing a renewable portfolio standard that would require 10% of U.S. electricity consumption to be derived from renewable sources—such as solar, wind, and geothermal—by 2012, increasing to 25% by 2025, which he planned to achieve in part by extending the federal Production Tax Credit for five years.⁴⁸⁴ He also pledged that at least 30% of the federal government's electricity will come from renewable sources by 2020.⁴⁸⁵ In addition, he committed to incentivizing private sector investment in zero-carbon coal facilities through proposed DOE public-

⁴⁸² Some of this investment focuses on motor vehicles and fuels, but it also includes a significant focus on energy production and consumption involving power plants. *See New Energy for America, supra* note 36; *Promoting a Healthy Environment, supra* note 443.

⁴⁸³ *See New Energy for America, supra* note 36.

⁴⁸⁴ *See id.*

⁴⁸⁵ *See Promoting a Healthy Environment, supra* note 40.

private partnerships to develop five commercial scale coal plants using carbon capture and sequestration technology.⁴⁸⁶

The Obama Administration has made significant progress on cleaner technology development, primarily through the ARRA paired with DOE efforts, and President Obama recommitted to these goals in his 2011 State of the Union address's proposal that 80% of the nation's energy come from clean sources by 2035.⁴⁸⁷ The ARRA includes a ten-year, \$75 billion commitment to make the Research and Experimentation Tax Credit permanent, and an approximately \$75 billion investment in renewables through allowing wind producers to access the investment tax credit.⁴⁸⁸ The Act also provides for \$39 billion in energy investments at the DOE and \$20 billion in tax incentives for clean energy. These investments include (1) the establishment of an advanced research agency for energy, which will be modeled after the Defense Advanced Research Projects Agency which developed the Internet; (2) support for Energy Frontier Research Centers, which are working to develop improved energy storage, super-efficient engines, and cheaper solar cells; (3) funds for the above-discussed support for battery development; and (4) provision of \$1.2 billion towards research infrastructure in the DOE's national labs.⁴⁸⁹

⁴⁸⁶ See *id.*; *New Energy for America*, *supra* note 36.

⁴⁸⁷ 2011 State of the Union, *supra* note 417.

⁴⁸⁸ See President Barack Obama, Remarks on Investments in Clean Energy and New Technology (Mar. 23, 2009), available at http://www.whitehouse.gov/the_press_office/Remarks-by-The-President-on-Investments-in-Clean-Energy-and-New-Technologies-3-23-09/; Newton Remarks, *supra* note 458; Press Release, The White House, Remarks by the Vice President at an Event Highlighting Off Shore Wind Power and the Administration's Commitment to Building a Clean, Domestic Energy Policy for the 21st Century at The University of Delaware in Newark, Delaware (May 4, 2009), http://www.whitehouse.gov/the_press_office/Remarks-by-the-Vice-President-at-the-University-of-Delaware-Highlighting-Offshore-Wind-Power/.

⁴⁸⁹ See Press Release, The White House, Fact Sheet: Investing in Our Clean Energy Future (Mar. 23, 2009), available at http://www.whitehouse.gov/the_press_office/Fact-Sheet-Investing-in-Our-Clean-Energy-Future/.

In addition, the Department of Agriculture is working with dairy farmers on a manure-to-energy initiative.⁴⁹⁰ President Obama's proposed 2012 budget aims to build on these efforts, with its commitment to over \$8 billion clean energy research and development.⁴⁹¹

The DOI and DOE are working collaboratively to create an offshore wind industry capable of producing 20% of the nation's energy and to support the growth of other renewable energy production. The Department of Interior (DOI) is engaging in a major initiative on the production, development, and delivery of renewable energy pursuant to a Secretarial order. This initiative includes the establishment of an energy and climate change task force which is working through each of the bureaus to identify specific zones on public lands appropriate for large-scale production of solar, wind, geothermal, and biomass energy and the expediting of renewable energy project permitting.⁴⁹² The DOI is also focused on expanding renewable energy development on the U.S. Outer Continental Shelf in partnership with relevant states, localities, and tribal governments, exploring carbon storage and sequestration possibilities, and crafting a coordinated strategy to address climate change impacts on land, water, wildlife, cultural

⁴⁹⁰ See Press Release, U.S. Dep't of Agric., Agriculture Secretary Vilsack, Dairy Producers Sign Historic Agreement to Cut Greenhouse Gas Emissions by 25% by 2020: Memorandum of Understanding Will Promote Innovative Steps to Turn Dairy Waste into Electricity and Reduce Greenhouse Gas Emissions (Dec. 15, 2009), *available at* <http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=2009/12/0613.xml>.

⁴⁹¹ See Heather Zichal, *Keeping America Competitive: Innovation and Clean Energy*, THE WHITE HOUSE BLOG (Jan 31, 2011, 4:01 PM), <http://www.whitehouse.gov/blog/2011/01/31/keeping-america-competitive-innovation-and-clean-energy>.

⁴⁹² See Press Release, Dep't of Interior, Secretary Salazar Issues Order to Spur Renewable Energy Development on U.S. Public Lands: Energy Zones a Key to New Initiative (Mar. 11, 2009), *available at* http://www.doi.gov/news/pressreleases/2009_03_11_releaseB.cfm; Press Release, Dep't of Interior, Salazar Announces \$305 Million Economic Stimulus Investment through the Bureau of Land Management to Restore Landscapes, Develop Renewable Energy, and Create Jobs (May 2, 2009), *available at* http://www.doi.gov/news/press_releases/2009_05_02_release.cfm; Press Release, Dep't of Interior, Secretary Salazar Pledges to Open Four Renewable Energy Permitting Offices, Create Renewable Energy Teams (May 5, 2009), *available at* http://www.doi.gov/news/press_releases/2009_05_05_release.cfm.

heritage, and tribal resources.⁴⁹³ The DOI has approved the controversial offshore wind farm off the coast of Cape Cod, nine commercial-scale solar energy projects on solar lands, and other wind and geothermal projects. The DOE and DOE are also in the process of identifying public land suited for large-scale solar energy production, and establishing right-of-way authorization for private developers to allow solar projects to proceed on them.⁴⁹⁴

The Obama Administration is pairing these efforts to foster efficiency and renewable energy development with CAA mandates that push major industrial emitters to reduce their greenhouse gas emissions. His 2013 State of the Union Address reinforced this emphasis:

I'm also issuing a new goal for America: Let's cut in half the energy wasted by our homes and businesses over the next 20 years. We'll work with the states to do it. Those states with the best ideas to create jobs and lower energy bills by constructing more efficient buildings will receive federal support to help make that happen.⁴⁹⁵

⁴⁹³ See Press Release, Dep't of Interior, President Obama, Secretary Salazar Announce Framework for Renewable Energy Development on the U.S. Outer Continental Shelf (April 22, 2009), *available at* http://www.doi.gov/news/pressreleases/2009_04_22_releaseB.cfm; Press Release, Dep't of Interior, Secretary Salazar: U.S. Offshore Wind Resources Could Lead America's Clean-Energy Revolution (April 2, 2009), *available at* http://www.doi.gov/news/press_releases/2009_04_02_release.cfm; Press Release, Dep't of Interior, New Science Gauges Potential to Store CO₂: Injecting Carbon Dioxide in Rocks Could Mitigate Climate Change Effects (March 16, 2009), *available at* <http://www.usgs.gov/newsroom/article.asp?ID=2163>; U.S. DEP'T OF INTERIOR, *Climate Change*, <http://www.doi.gov/whatwedo/climate/> (last visited Jan. 10, 2011).

⁴⁹⁴ See Press Release, Dep't of Interior, Salazar, Chu Announce Next Step in Nation's March toward Renewable Energy (Dec. 16, 2010) *available at* <http://www.doi.gov/news/pressreleases/Salazar-Chu-Announce-Next-Step-in-Nations-March-toward-Renewable-Energy-Future.cfm>; Notice of Availability of the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States and Notice of Public Meetings, 75 Fed. Reg. 78980-02 (Dec. 17, 2010); Press Release, Dep't of Interior, Secretary Salazar Approves Ninth Commercial-Scale Solar Energy Project on Western Public Lands (Dec. 20, 2010); Press Release, Dep't of Interior, Interior and Energy Sign MOU to Spur Offshore Renewable Energy Projects (Jun. 29, 2010); Dep't of Energy, Offshore Wind Strategy Rollout: FAQs (2010), http://www.windpoweringamerica.gov/pdfs/offshore/offshore_wind_strategy_faq.pdf; Press Release, Dep't of the Interior, Secretary Salazar Announces Approval of Cape Wind Energy Project on Outer Continental Shelf off Massachusetts (Apr. 28, 2010).

⁴⁹⁵ White House, The 2013 State of the Union, Feb. 12, 2013, <http://www.whitehouse.gov/state-of-the-union-2013>.

The multi-scalar quality of this goal is striking and reinforces the relevance of geographic conceptions of scale in this context. Although it is a federal-level goal from the president for the country, it focuses on state implementation and individual-level action.

President Obama's efforts to reach these goals, even administratively, at times have faced political hurdles. For example, in February 2010, in response to political pressure regarding the economic impact of planned mandates, the EPA modified its plans to slow down this process, but maintained a clear commitment to moving ahead. Administrator Jackson indicated that while no stationary source would be required to get a CAA permit for its greenhouse gas emissions in 2010, the EPA would begin to phase in this permitting for large stationary sources in 2011 and for the smallest sources after 2016.⁴⁹⁶ In May 2010, the EPA began this process by issuing a final rule that establishes threshold greenhouse gas permit requirements for new and existing power plants, refineries, and other major industrial emitters under the New Source Review Prevention of Significant Deterioration and Title V. These thresholds help to ensure that only the most significant emitters, which produce 70% of stationary source greenhouse gas emissions, are covered under the rule; they tailor the permitting process to make it appropriate for greenhouse gases and to prevent overburdening smaller emitters and state regulator.⁴⁹⁷ The EPA engaged in additional rulemaking in December 2010 to refine these requirements further and account for the varying regulatory conditions in different

⁴⁹⁶ See Letter from Lisa P. Jackson, EPA Administrator, to Hon. Jay D. Rockefeller, IV, U.S. Senator (Feb. 22, 2010), *available at* <http://media.washingtonpost.com/wp-srv/special/climate-change/documents/post-carbon/022210adm-letter.pdf>.

⁴⁹⁷ Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514 (June 3, 2010), *available at* <http://www.gpo.gov/fdsys/pkg/FR-2010-06-03/pdf/2010-11974.pdf#page=1>.

states.⁴⁹⁸ It also announced a settlement of two additional climate change lawsuits that is resulting in the EPA's schedule for promulgating National Source Performance Standards for greenhouse gas emissions by power plants and refineries.⁴⁹⁹

5. Green Jobs

Beyond proposing investments in green industry that aim to add jobs to the economy, President Obama's campaign made specific pledges regarding training and transition programs aimed at green jobs.⁵⁰⁰ He promised to incorporate green technologies training, including advanced manufacturing and weatherization training, into federal workforce training programs. He also proposed green jobs programs focused on disconnected and disadvantaged youth and on Veterans.⁵⁰¹ The Green Job Corps would provide participating youth with service projects focused on improving the energy conservation of homes and other buildings in their communities, involve private sector employers and unions in establishing apprenticeship opportunities, and work with the proposed Energy Corps to help participants find post-program jobs.⁵⁰² The Green Vet Initiative would provide counseling and job placement, as well as work with industry partners to create career opportunities and educational programs in this area.⁵⁰³

⁴⁹⁸ U.S. EPA, Clean Air Act Permitting for Greenhouse Gas Emissions—Final Rules, Fact Sheet, Dec. 23, 2010, available at http://www.epa.gov/NSR/ghgdocs/20101223_factsheet.pdf.

⁴⁹⁹ See Press Release, EPA to Set Modest Pace for Greenhouse Gas Standards (Dec. 23, 2010), available at <http://yosemite.epa.gov/opa/admpress.nsf/6424ac1caa800aab85257359003f5337/d2f038e9daed78de8525780200568bec!OpenDocument>.

⁵⁰⁰ See *New Energy for America*, *supra* note 36; *Promoting a Healthy Environment*, *supra* note 40.

⁵⁰¹ See *New Energy for America*, *supra* note 36; *Promoting a Healthy Environment*, *supra* note 40.

⁵⁰² See *Promoting a Healthy Environment*, *supra* note 40.

⁵⁰³ See *New Energy for America*, *supra* note 365.

President Obama continues to promote job creation through clean energy, including in his State of the Union addresses, and has worked to operationalize that commitment.⁵⁰⁴ The White House announced in January 2010, for instance, that ARRA's clean energy provisions have already saved or created 63,000 jobs.⁵⁰⁵ Much debate (often partisan) is taking place about how successful job creation has been and the limits on the Obama Administration's capacity to create clean energy jobs without greater Congressional support. However, a February 2011 report that breaks down and totals "green job" creation by sector estimates that 997,000 total jobs had been created by these ARRA initiatives by the end of 2010.⁵⁰⁶

Under ARRA, the Obama Administration has invested \$600 million in these green job training programs,⁵⁰⁷ including Department of Labor grants of \$150 million through a Pathways Out of Poverty effort targeting disadvantaged populations, of which nearly \$55 million specifically targeted underserved communities and \$28 million

⁵⁰⁴ See 2011 State of the Union, *supra* note 15; Jesse Lee, *Winning the Future Through Innovation and "Better Buildings"*, THE WHITE HOUSE BLOG (Feb. 3, 2011, 5:47 PM), <http://www.whitehouse.gov/blog/2011/02/03/winning-future-through-innovation-and-better-buildings>.

⁵⁰⁵ See Heather Zichel, *Progress on Green Jobs from the Recovery Act*, WHITE HOUSE BLOG (Jan. 14, 2010, 3:31 PM), <http://www.whitehouse.gov/blog/2010/01/14/progress-green-jobs-recovery-act>.

⁵⁰⁶ For that report, see Jason Walsh, Josh Bivens and Ethan Pollack, *Rebuilding Green The American Recovery and Reinvestment Act and the Green Economy 19*, Feb. 2011 (report by BlueGreen Alliance and Economic Policy Institute), *available at* <http://www.bluegreenalliance.org/admin/publications/files/BGA-EPI-Report-vFINAL-MEDIA.pdf>. For media commentary on the debates over green job creation, see, for example, Cynthia Gordy, *The Root: Trying To Find Those Rumored Green Jobs*, NPR, Feb. 4, 2011, *available at* <http://www.npr.org/2011/02/04/133491234/the-root-trying-to-find-the-rumored-green-jobs> (exploring how executive-legislative dynamics impact green job creation); Patrice Hill, *"Green" Jobs No Longer Golden in Stimulus*, WASH. TIMES, Sept. 9, 2010, <http://www.washingtontimes.com/news/2010/sep/9/green-jobs-no-longer-golden-in-stimulus/?page=1> (arguing (before the most recent Obama initiatives on green jobs) that the green jobs programs have not been successful and are no longer a priority).

⁵⁰⁷ See *Energy & Environment*, *supra* note 16.

focused on communities impacted by auto industry restructuring.⁵⁰⁸ These jobs provide opportunities for skilled laborers to install efficient heating and cooling systems and windows, to retrofit homes to make them more energy efficient, and to build and install solar panels, wind turbines, and other clean energy technology.⁵⁰⁹ The weatherization programs in particular are employing 15,000 workers nation-wide.⁵¹⁰

In addition, on January 8, 2010, President Obama announced a clean manufacturing initiative, which awards \$2.3 billion in tax credits to U.S. manufacturers of clean energy technologies such as wind turbines, solar panels, and innovative batteries. He predicted that this initiative would generate 17,000 jobs directly, and tens of thousands additional jobs through the roughly \$5 billion more that the Administration plans to leverage in the private sector investments.⁵¹¹

Finally, a number of federal agencies have been directly involved in the creation of jobs connected to the Obama Administration's climate change initiatives. For example, the GSA sustainability initiative hired 500 business and created jobs in all 50 states.⁵¹²

⁵⁰⁸ See Secretary Hilda Solis, *Green Jobs Grants, Seizing the Opportunity of a Clean Energy Economy*, WHITE HOUSE BLOG (Nov. 18, 2009, 5:24 PM), <http://www.whitehouse.gov/blog/2009/11/18/green-jobs-grants>; Press Release, U.S. Dep't of Labor, U.S. Department of Labor announces \$150 million in "Pathways Out of Poverty" training grants for green jobs (January 13, 2010), *available at* <http://www.dol.gov/opa/media/press/eta/eta20100039.htm>; Press Release, U.S. Dep't of Labor, U.S. Department of Labor announces \$100 million in green jobs training grants through Recovery Act (Jan. 6, 2010), *available at* <http://www.dol.gov/opa/media/press/eta/eta20091526.htm>; Press Release, U.S. Dep't of Labor, U.S. Department of Labor announces nearly \$55 million in green jobs training grants through Recovery Act (Nov. 18, 2009), *available at* <http://www.dol.gov/opa/media/press/eta/eta20091439.htm>.

⁵⁰⁹ *See id.*

⁵¹⁰ See Major New Recovery Act Milestone: 300,000 Homes Weatherized (Jan. 18, 2011) *available at* http://apps1.eere.energy.gov/news/daily.cfm/hp_news_id=282.

⁵¹¹ See President Barack Obama, Remarks on Jobs and Clean Energy Investments (Jan. 8, 2010), *available at* <http://www.whitehouse.gov/the-press-office/remarks-president-jobs-and-clean-energy-investments>.

⁵¹² See Leading By Example: the Federal Government's Sustainable Future (Jan. 20, 2011) *available at* <http://www.whitehouse.gov/blog/2011/01/20/leading-example-federal-governments-sustainable-future>.

The Department of Commerce aims to create jobs in clean energy and technology by eliminating export barriers, accelerating patent applications, and providing grants to support renewable energy, energy efficiency, and environmentally sound building projects.⁵¹³

6. Legal Progress through and Limitations of Current Approaches

As the above sections make clear, President Obama has accomplished a great deal in his first term on climate change and energy through a combination of ARRA funding measures and administrative action. In addition to the agency efforts described above, the Securities and Exchange Commission, which is an agency structured to be bipartisan and independent but which is often influenced by the Administration appointing its commissioners, voted in January 2010 to provide public companies with interpretive guidance on disclosing the business and legal impact of climate change as part of their mandatory disclosures.⁵¹⁴

However, the Obama Administration's progress has been limited significantly by his inability to achieve two major legislative and treaty goals. On the legislative front, President Obama pledged during his first campaign to support an economy-wide cap-and-

⁵¹³ See Secretary Gary Locke, *Empowering American Clean Energy and Efficiency Businesses*, White House Blog (Jan. 28, 2010, 3:30 PM), <http://www.whitehouse.gov/blog/2011/01/28/empowering-american-clean-energy-and-efficiency-businesses>.

⁵¹⁴ See Press Release, Sec. & Exch. Comm'n, SEC Issues Interpretive Guidance on Disclosure Related to Business or Legal Developments Regarding Climate Change, (Jan. 27, 2010), *available at* <http://www.sec.gov/news/press/2010/2010-15.htm>; *see also* LOUIS LOSS & JOEL SELIGMAN, *FUNDAMENTALS OF SECURITIES REGULATION* 68 (5th ed. 2004) (“In the nature of the American political system, the Commission is perhaps more independent of both branches when the Administration party does not control Congress.”).

trade system to reduce carbon emissions by 80% by 2050.⁵¹⁵ Although his Administration has made many efforts to get this legislation through since taking office, the failure to achieve that goal shifted the focus largely to executive branch administrative action paired with less controversial broader energy legislation.⁵¹⁶

Regarding international efforts, President Obama's first campaign promised to reverse the Bush Administration's approach, and specifically to reengage with the U.N. Framework Convention on Climate Change efforts and to invigorate the Major Economies effort. He also proposed the creation of a Global Energy Forum comprised of the world's most significant developed and developing energy consuming nations, following the G8+5 model, to complement the UNFCCC process.⁵¹⁷ He further proposed domestic efforts to assist with global emissions reduction, such as the establishment of a DOE Technology Transfer Program focused on exporting energy efficient technologies to developing countries and greater emphasis on sustainable forest management.⁵¹⁸

The Obama Administration thus far has constructively engaged with the UNFCCC process, as promised, but unfortunately, its leadership has not resulted in significant progress in the negotiations. While President Obama's efforts at the Copenhagen meeting helped lead to the Copenhagen Accord, which averted major failure, the state parties only took note of the accord, rather than adopting it, and the agreement's

⁵¹⁵ See Promoting a Healthy Environment, *supra* note 443; New Energy for America, *supra* note 35.

⁵¹⁶ For examples of these budget dialogues, see President Obama's proposed 2011 budget, OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2011 (2010), and the negotiation between rival bills that took place in House and Senate, See Carl Hulse, Rival Bills to Keep the Government Running Fail in the Senate, NY TIMES, Mar. 19, 2011, http://www.nytimes.com/2011/03/10/us/politics/10congress.html?_r=1&ref=politics.

⁵¹⁷ See Promoting a Healthy Environment, *supra* note 40.

⁵¹⁸ See *id.*; New Energy for America, *supra* note 36.

voluntary commitments represent a quite limited step forward.⁵¹⁹ Those limitations have been highlighted by commitments under the Accord which are generally contingent on action by other nations, and in the case of the United States, also contingent on federal legislation passing.⁵²⁰ Moreover, when Yvo de Boer resigned in February 2010 as Executive Secretary of the UNFCCC following the Copenhagen negotiations, a move that reportedly arose from his frustrations with the slow pace and difficulties of nation-state negotiations, he highlighted his belief that “while governments provide the necessary policy framework, the real solutions must come from business.”⁵²¹ The United States also participated constructively in the Cancun, Durban, and Doha negotiations, where many fewer heads of state were present, but those negotiations—as discussed in Chapter III—have not yet resulted in binding commitments to adequate mitigation.⁵²²

The Obama Administration has made additional progress, however, through other international efforts. In July 2009, President Obama convened the Major Economies Forum on Energy and Climate, as promised, which resulted in a declaration of shared values and goals.⁵²³ President Obama also met with the G-8 in July 2009 to address the

⁵¹⁹ See *supra* note 407 and accompanying text.

⁵²⁰ See United Nations Framework Convention on Climate Change, Information provided by Annex I Parties relating to Appendix I of the Copenhagen Accord, <http://unfccc.int/home/items/5262.php> (last visited Jan. 10, 2011).

⁵²¹ Press Release, UNFCCC, Executive Secretary Leaves United Nations Framework Convention on Climate Change Secretariat (Feb. 18, 2010), available at http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/pr_20100218_ydboer.pdf. For an example of media reactions, see, e.g., Editorial, *Climate Change*, N.Y. TIMES, FEB. 22, 2010, at A18, available at <http://www.nytimes.com/2010/02/22/opinion/22mon1.html>.

⁵²² See Romano & Burlison, *supra* note 1.

⁵²³ See Press Release, White House Office of the Press Secretary, Declaration of the Leaders: The Major Economies Forum on Energy and Climate (July 9, 2009), available at http://www.whitehouse.gov/the_press_office/Declaration-of-the-Leaders-the-Major-Economies-Forum-on-Energy-and-Climate/; Press Release, White House Office of the Press Secretary, Meeting the International Clean Energy and Climate Change Challenges (July 9, 2009), available at <http://www.whitehouse.gov/the>

“interlinked challenges of the economic crisis, trade, climate change, and development.”⁵²⁴ In addition, the United States spearheaded a September 2009 agreement among the G-20 countries to phase out fossil fuel subsidies, which the partially overlapping Asian-Pacific Economic Cooperation (APEC) countries also agreed to in November 2009.⁵²⁵ In November 2010, the G-20 countries recommitted to that phase out, which some of them have already begun taking steps to achieve.⁵²⁶

The Obama Administration also has been involved in numerous multilateral efforts on more specific issues, such as the greening of motor vehicles on which this Article focuses. These targeted efforts, many of which predate the Obama Administration, function separately from, but in tandem with, the international climate regime and other international agreements on climate change. For example, the United States has long engaged in information exchange through a number of multilateral initiatives under the International Energy Agency, an international organization that serves as an energy advisor to twenty-eight member countries, and has implemented agreements on advanced fuel cells, advanced materials for transportation, advanced motor fuels, and hybrid and electric vehicles.⁵²⁷ Similarly, the United States participates in the International Council

[press_office/Fact-Sheet-Meeting-the-International-Clean-Energy-and-Climate-Change-Challenges/](http://www.whitehouse.gov/the_press_office/Fact-Sheet-Meeting-the-International-Clean-Energy-and-Climate-Change-Challenges/).

⁵²⁴ Press Release, White House Office of the Press Secretary, Fact Sheet: On G-8 Global Issues (July 8, 2009), available at http://www.whitehouse.gov/the_press_office/FACT-SHEET-ON-G-8-Global-Issues/.

⁵²⁵ See COUNCIL OF ECON. ADVISERS, EXEC. OFFICE OF THE PRESIDENT, 2010 ECON. REPORT OF THE PRESIDENT 257 (2010), available at <http://www.whitehouse.gov/sites/default/files/microsites/economic-report-president.pdf>.

⁵²⁶ See Press Release, The White House Office of the Press Secretary, G-20: Fact Sheet on Energy Issues, Nov. 12, 2010, available at <http://www.whitehouse.gov/the-press-office/2010/11/12/g-20-fact-sheet-energy-issues>.

⁵²⁷ See *About the IEA*, INTERNATIONAL ENERGY AGENCY, <http://www.iea.org/about/index.asp> (last visited Jan. 10, 2011); *Advanced Fuel Cells*, INTERNATIONAL ENERGY AGENCY, http://www.iea.org/techno/iaresearch.asp?id_ia=1 (last visited Jan. 10, 2011); *Advanced Materials for*

on Clean Transportation (ICCT), which was formed in 2010 and includes thirty regulators and policymakers from the ten largest motor vehicle markets, together representing 85% of the world's total new car and truck sales. In January 2010, the ICCT passed the Athens Resolution, a document that focused not only on motor vehicle technology, but also on changing the ways in which vehicles are used, with a specific focus on land use planning.⁵²⁸ In March 2011, the United States joined the International Renewable Energy Agency, which works to promote increased adoption and development of renewable energy technologies.⁵²⁹

This North-American region also made new agreements on climate change during President Obama's first term. In April 2009, the Fifth Summit of the Americas established the Energy and Climate Partnership of the Americas, which encourages multi-country initiatives on these issues. The United States has contributed over \$60 million to this partnership thus far.⁵³⁰ The United States, Canada, and Mexico then issued the North American Leaders' Declaration on Climate Change and Clean Energy in August 2009. This tri-lateral agreement includes exchanging information on mitigation and adaptation,

Transportation, INTERNATIONAL ENERGY AGENCY, http://www.iea.org/techno/iareports.asp?id_ia=2 (last visited Jan. 10, 2011); *Advanced Motor Fuels*, INTERNATIONAL ENERGY AGENCY, http://www.iea.org/techno/iareports.asp?id_ia=3 (last visited Jan. 10, 2011); *Implementing Agreement on Hybrid and Electric Vehicles*, INTERNATIONAL ENERGY AGENCY, <http://www.ieahev.org/about.html> (last visited Jan. 10, 2011).

⁵²⁸ See *Athens Resolution*, *supra* note 414.

⁵²⁹ See Press Release, Dept. of State office of the Spokesman, The United States Joins the International Renewable Energy Agency (IRENA) (Mar. 4, 2011), available at <http://www.state.gov/r/pa/prs/ps/2011/03/157728.htm>; *Vision and Mission of the IRENA*, International Renewable Energy Agency, available at http://www.irena.org/DocumentDownloads/aboutIrena/IRENA_VisionandMission_Ansichtsexemplar.pdf (last visited Mar. 10, 2011).

⁵³⁰ See *ECPA Status Report*, U.S. DEPT. OF ENERGY, U.S. DEPT. OF STATE, 2 (Feb. 2011), available at http://www.ecpamericas.org/files/news/ECPA_Status_Report_20110201_eng.pdf.

creating common goals, and collaborating in the development of low-carbon energy infrastructure and multi-level adaptation planning.⁵³¹

The Obama Administration has supplemented these multilateral regional agreements with bilateral agreements with Mexico and Canada. In April 2009, President Obama agreed upon a Bilateral Framework on Clean Energy and Climate Change with Mexico which focuses upon “renewable energy, energy efficiency, adaptation, market mechanisms, forestry and land use, green jobs, low carbon energy technology development and capacity building.”⁵³² The framework also builds upon cooperation in the border region by promoting efforts to reduce greenhouse gas emissions and to adapt to the impact of climate change locally.⁵³³ In addition, it works to “strengthen the reliability and flow of cross border electricity grids and [to facilitate] the ability of neighboring border states to work together to strengthen energy trade.”⁵³⁴ The United States and Canada established the U.S.-Canada Clean Energy Dialogue in February 2009, which focuses on developing more efficient cross-border energy networks, expanding clean energy research and development, and developing and deploying carbon capture and storage technology.⁵³⁵

⁵³¹ See Press Release, White House Office of the Press Secretary, North American Leaders’ Declaration on Climate Change and Clean Energy (Aug. 10, 2009), available at http://www.whitehouse.gov/the_press_office/North-American-Leaders-Declaration-on-Climate-Change-and-Clean-Energy/.

⁵³² Press Release, White House Office of the Press Secretary, U.S.-Mexico Announce Bilateral Framework on Clean Energy and Climate Change, Apr. 16, 2009, available at http://www.whitehouse.gov/the_press_office/US-Mexico-Announce-Bilateral-Framework-on-Clean-Energy-and-Climate-Change/.

⁵³³ See *id.*

⁵³⁴ *Id.*

⁵³⁵ See Steven Chu, U.S. Secretary of Energy & Peter Kent, Canada Minister of the Environment, *U.S. – Canada Clean Energy Dialogue Second Report to the President of the United States of American and the Prime Minister of Canada* (2011), available at http://www.pi.energy.gov/documents/CED_Report_to_Leaders.pdf.

The United States has entered additional bilateral climate change and clean energy agreements under President Obama with developing country major emitters. For example, in November 2009, the United States and China launched a U.S.-China Electric Vehicles Initiative, which includes demonstration projects in more than twelve cities. In January 2011, Presidents Obama and Hu Jintao announced plans for a \$150 million joint research center on clean energy.⁵³⁶ The United States and India established a Green Partnership in November 2009, which provides for greater bilateral cooperation on clean energy, climate change, and food security. The partnership also strengthens and expands the country's preexisting U.S.-India Partnership to Advance Clean Energy, which among other initiatives, includes a public-private effort between U.S. and Indian companies to improve commercial building efficiency.⁵³⁷ In November 2010, the United States and Indonesia expanded their partnership to address climate change and energy issues, with commitments to collaborating on renewable energy development, climate change monitoring, adaptation, and mitigation. As part of these commitments, the United States committed \$136 million to reducing deforestation threats and promoting marine ecosystem adaptation.⁵³⁸ In addition to making progress with these developing country

⁵³⁶ See Press Release, White House Office of the Press Secretary, U.S.-China Clean Energy Announcements (Nov. 17, 2009), *available at* <http://www.whitehouse.gov/the-press-office/us-china-clean-energy-announcements>; US-China Clean Energy Cooperation: From Laboratory to Livable Cities, Jan. 18, 2011, *available at* <http://blog.energy.gov/blog/2011/01/18/us-china-energy-cooperation-laboratory-livable-cities>; U.S. Dept. of Energy, U.S.-China Clean Energy Cooperation: A Progress Report by the U.S. Department of Energy, Jan. 2011, *available at* <http://www.pi.energy.gov/documents/USChinaCleanEnergy.PDF>.

⁵³⁷ See Press Release, The White House Office of the Press Secretary, Fact Sheet: U.S.-India Green Partnership to Address Energy Security, Climate Change, and Food Security, Nov. 24, 2009, *available at* <http://www.asiapacificpartnership.org/english/faq.aspx>; Fact Sheet on U.S.-India Partnership on Clean Energy, Energy Security, and Climate Change, [http://www.whitehouse.gov/sites/default/files/india-factsheets/Fact Sheet on U.S.-India Partnership on Clean Energy Energy Security.pdf](http://www.whitehouse.gov/sites/default/files/india-factsheets/Fact%20Sheet%20on%20U.S.-India%20Partnership%20on%20Clean%20Energy%20Energy%20Security.pdf) (last visited Mar. 10, 2011).

⁵³⁸ See Press Release, The White House Office of the Press Secretary, U.S.-Indonesia Partnership on

major emitters, the United States signed a March 2011 memorandum of understanding with Poland regarding collaboration on clean energy technology.⁵³⁹

Although the Obama Administration's relationships with smaller-scale entities, like cities, states, regions, and tribes, have gone more smoothly than its legislative and UNFCCC treaty efforts, they also pose significant challenges for comprehensive climate change policy. The Obama Administration has established innovative cooperative interactions with states and cities, as well as key corporate actors, to make policy progress. The process it used to craft the National Program on motor vehicles greenhouse gas emissions is emblematic of this approach; the Administration engaged both subnational actors and relevant corporations in its decision-making process and, through that inclusion, reached a compromise standard.⁵⁴⁰ The EPA likewise has created a clean energy leadership group, which includes key state regulators and corporate executives, to develop a National Action Plan for Energy Efficiency. That group is identifying barriers to energy efficiency and working to remove them, with the goal of cost-effective energy efficiency by 2025.⁵⁴¹ President Obama's 2013 State of the Union Address only reinforces the role of subnational actors in his approach to efficiency.⁵⁴²

Climate Change and Clean Energy (Nov. 9, 2010), *available at* <http://www.america.gov/st/texttrans-english/2010/November/20101109180315su0.9502614.html>.

⁵³⁹ See Press Release, Dep't of State Office of the Spokesman, United States–Poland Memorandum of Understanding on Cooperation in Clean and Efficient Energy (Mar. 3, 2011), *available at* <http://www.state.gov/r/pa/prs/ps/2011/03/157600.htm>.

⁵⁴⁰ See Waiver Denial Letter, *supra* note 412 and accompanying text.

⁵⁴¹ See *National Action Plan for Energy Efficiency*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/cleanenergy/energy-programs/suca/resources.html> (last visited Jan. 10, 2011).

⁵⁴² White House, The 2013 State of the Union, Feb. 12, 2013, <http://www.whitehouse.gov/state-of-the-union-2013>.

Although these efforts represent an important inclusion of key public and private actors, their results often take the form of traditional, top-down mandates with greater buy-in. For example, in the motor vehicles context, the National Program, while developed in an innovative fashion, contains mandates that these actors have to follow.⁵⁴³ Similarly, cities, states, and tribes have participated in the Obama Administration's dynamic green growth incentive programs largely through trying to get their proposals accepted so that the money flows to them.⁵⁴⁴ Moreover, the extensive efforts by national and international coalitions of localities, states, and provinces are often not integrated into those of the nation-states. As noted above, for example, subnational governments, including many in the United States, met at Copenhagen, but separately from the main meetings that President Obama and his federal representatives attended, forming agreements that were not coordinated with the Copenhagen Accord.⁵⁴⁵ Within the United States, smaller-scale coalitions abound, particularly with respect to land use planning aimed at reducing emissions from motor vehicles and from energy production and consumption, but their efforts often remain separate from the Obama Administration's national-level initiatives described above.⁵⁴⁶

⁵⁴³ See *supra* note 412 and accompanying text.

⁵⁴⁴ For information on block grants to smaller-scale governments, see U.S. Dep't of Energy, *Energy Efficiency and Conservation Block Grant Program*, U.S. DEP'T OF ENERGY, <http://www.eecbg.energy.gov/> (last visited Jan. 10, 2011); see also Evan Lehmann, *Cities Rush to Turn "Green" with 3.2 Billion of Federal Green*, N.Y. TIMES, June 2, 2009, available at <http://www.nytimes.com/cwire/2009/06/02/02climatewire-cities-rush-to-turn-green-with-32-billion-of-84057.html> (last visited Jan. 10, 2011).

⁵⁴⁵ See *supra* Chapter I. Chapter XIII discusses these networks in more depth.

⁵⁴⁶ For examples of the many municipal initiatives taking place, see the compilation provided by Columbia Law School, *Municipal Climate Change Laws Resource Center*, CENTER FOR CLIMATE CHANGE LAW, <http://www.law.columbia.edu/centers/climatechange/resources/municipal>.

The complex interactions between and among governments around the world at an international level, other branches of government at a national level, and multiple governmental entities at subnational levels—all of which also interact with nongovernmental organizations, corporations, international organizations, and private individuals—pose an ongoing governance challenge for the Obama Administration.⁵⁴⁷ It has effectively used the entities under its control, as well as the recovery-focused legislation that made it through Congress early in its administration, but its overall progress on the problem depends on its ongoing strategies for dealing with these many interested actors. Although some of these strategies will simply involve navigating difficult politics, as evidenced in his first term, the Administration also needs a more effective ongoing approach for addressing these complexities of multiscalar governance. Chapters IX and X build upon the conceptual ideas introduced in Chapter VII to explore these issues in depth.

⁵⁴⁷ I traced these dilemmas of scale in Chapters I to III. For a thoughtful legal scholarly exploration of complex scale issues that arise with respect to international and transnational environmental problems more broadly, which includes analysis of climate change as a global-global problem, see Bradley Karkkainen, *Marine Ecosystem Management & a "Post-Sovereign" Transboundary Governance*, 6 SAN DIEGO INT'L L.J. 113 (2004).

CHAPTER IX

A TAXONOMY OF MULTI-DIMENSIONAL DYNAMICS IN FEDERAL

CLIMATE CHANGE APPROACHES

This chapter contains edited portions of Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 ALABAMA L. REV. 237 (2011).

This chapter proposes a taxonomy for operationalizing the diagonal conceptual approach introduced in Chapter VII in the U.S. federal context that pairs geographer Kevin Cox’s network approach to scale with the diagonal federalism scholarship introduced in Chapter II.⁵⁴⁸ This taxonomy serves as a mechanism for understanding and crafting diagonal regulatory approaches as strategies to engage the multiscalar nature of the federal climate change law and policy described in Chapter VIII.⁵⁴⁹ These crosscutting strategies take a wide variety of forms, and this taxonomy provides a lens through which this variation among approaches over time can be better understood. Specifically, the chapter draws from these conceptual approaches⁵⁵⁰ to consider four dimensions in which diagonal regulation can vary, the first two of which are spatial and second two of which are cross-cutting: (1) vertical (interactions across levels of governance); (2) horizontal (interactions within levels of governance); (3) direction of hierarchy (top-down v. bottom-up); and (4) cooperativeness (cooperation v. conflict). It looks at the nature, as well as advantages and disadvantages, of approaches that are skewed with respect to one or more of these dimensions.

⁵⁴⁸ See *supra* Chapters II & VII.

⁵⁴⁹ See *supra* Chapter VIII.

⁵⁵⁰ See *supra* Chapter II.

The chapter focuses on these particular dimensions as core ways in which diagonal approaches converge and diverge. Each of these dimensions contains elements of Cox's network conception of scale, but also can be tied to streams of diagonal federalism theory. The first dimension captures the way in which climate change law spans interacting levels of government, and provides an opportunity for considering the varying roles that entities at different levels play in Cox's model. The second dimension focuses on interactions within a jurisdictional level—in this case the federal one—in order to provide a more complete understanding of the spatial dynamics. As analyzed in the discussion of the second dimension, these first two dimensions together frame the spatial aspects of diagonal interactions; mapping them reveals how horizontal interactions within and among spaces of dependence and/or vertical interactions within and among spaces of engagement predominate many regulatory schemes.

The second two dimensions build upon this spatial framework to consider two critical cross-cutting aspects of the diagonal dynamics. The third dimension, direction of hierarchy, considers the extent to which the smaller-scale or larger-scale actors drive the dynamics among spaces of dependence and spaces of engagement. Finally, the fourth dimension, cooperativeness, analyzes the mix of cooperative and conflictual behavior taking place within existing diagonal regulatory schemes as they navigate scalar networks.⁵⁵¹

In highlighting these four dimensions of diagonal regulatory approaches, the taxonomy contributes to a law and geography understanding of climate change regulation; specifically, it serves as a tool for mapping changing multi-scalar dynamics over time.

⁵⁵¹ See Kevin R. Cox, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, or: Looking for Local Politics*, 17 *POL. GEOGRAPHY* 1 (1998).

Such a map is first and foremost quite literal. One can spatialize diagonal dynamics by plotting the interactions and their evolution on a four-dimensional grid which includes the above elements. But the taxonomy also provides a more conceptual map of crosscutting regulation by identifying overlapping but distinct categories that interact to create diagonal strategies. This framing moves beyond simply acknowledging simultaneous vertical and horizontal dynamics to treating those dynamics as multidimensional.⁵⁵²

In so doing, the taxonomy builds upon the previous chapters of the dissertation.⁵⁵³ Those chapters argue for climate change as a multiscale regulatory problem and analyze climate change litigation as debating the appropriate scale for regulation. Based on the consistent dynamics in that litigation, Chapter VII draws from transnational legal process⁵⁵⁴ and geographic network theory,⁵⁵⁵ with additional grounding in dynamic federalism⁵⁵⁶ and new governance theory,⁵⁵⁷ to begin to sketch a vision for diagonal

⁵⁵² I have explored the complexities of what “space” means in previous work, but an in-depth analysis of space beyond the scalar context is beyond the scope of this dissertation. See, e.g., Hari M. Osofsky, *The Geography of Justice Wormholes: Dilemmas from Property and Criminal Law*, 53 VILL. L. REV. 117 (2008). For examples of the geography literature analyzing the concept of “space,” see DOREEN B. MASSEY, FOR SPACE 62–104 (2005); YI-FU TUAN, SPACE AND PLACE: THE PERSPECTIVE OF EXPERIENCE 6 (1977); Helen Couclelis, *Location, Place, Region, and Space*, in GEOGRAPHY’S INNER WORLDS: PERVASIVE THEMES IN CONTEMPORARY AMERICAN GEOGRAPHY 215, 215 (Ronald F. Abler et al. eds., 1992); Michael R. Curry, *On Space and Spatial Practice in Contemporary Geography*, in CONCEPTS IN HUMAN GEOGRAPHY 3, 3–32 (Carville Earle et al. eds., 1996).

⁵⁵³ See Osofsky, “*Is Climate Change International?*”, *supra* note 5.

⁵⁵⁴ See Harold Hongju Koh, *Why Transnational Law Matters*, 24 PENN ST. INT’L L. REV. 745 (2006); Harold Hongju Koh, *Jefferson Memorial Lecture: Transnational Legal Process After September 11th*, 22 BERKELEY J. INT’L L. 337, 339 (2004); Harold Hongju Koh, *Why Do Nations Obey International Law?*, 106 YALE L.J. 2599 (1997); Harold Hongju Koh, *Transnational Legal Process*, 75 NEB. L. REV. 181 (1996).

⁵⁵⁵ See Kevin R. Cox, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, or: Looking for Local Politics*, 17 POL. GEOGRAPHY 1 (1998). For analyses of Cox’s approach, see Katherine T. Jones, *Scale as Epistemology*, 17 POL. GEOGRAPHY 25 (1998); Dennis R. Judd, *The Case of the Missing Scales: A Commentary on Cox*, 17 POL. GEOGRAPHY 29 (1998); Michael Peter Smith, *Looking for the Global Spaces in Local Politics*, 17 POL. GEOGRAPHY 35 (1998); Kevin R. Cox, *Representation and Power in the Politics of Scale*, 17 POL. GEOGRAPHY 41 (1998); Lynn A. Staeheli, *Globalization and the Scales of Citizenship*, 19 GEOGRAPHY RES. F. 60 (1999).

⁵⁵⁶ For further discussion of dynamic federalism, see *infra* notes 153–59, 172–73, 197–201, 222–282 &

regulatory thinking which integrates the complex set of scales and actors that effective climate regulation demands.⁵⁵⁸

This chapter builds upon that analysis by exploring what it would take to operationalize diagonal approaches in the U.S. federal context. In particular, this chapter grounds Chapter VII's conceptualization of diagonal regulation in the U.S. dynamic federalism literature more deeply because that scholarship is a primary site for U.S. legal scholars and policymakers to debate issues of scalar matching and multi-level governance. The chapter's multidimensional approach provides a fuller framework and practical application, which together have the potential to help scholars and policymakers think through these problems better. The taxonomy provides a mechanism for rethinking current approaches and assessing whether they are structured in an appropriate fashion.

The taxonomy also has broader conceptual value in helping to reframe the environmental federalism literature, a topic which is beyond the primary scope of this dissertation. Namely, as discussed in the Chapter X, the four dimensions of the taxonomy

268–69.

⁵⁵⁷J.B. Ruhl and James Salzman are integrating new governance with dynamic federalism and transgovernmental network theory in an environmental context. See J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CAL. L. REV. 59 (2010). For broader new governance analyses, see LAW AND NEW GOVERNANCE IN THE EU AND US (Gráinne de Búrca & Joanne Scott eds., Hart Publ'g 2006); Bradley C. Karkkainen, "New Governance" in *Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471 (2004); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004); Orly Lobel, *Setting the Agenda for New Governance Research*, 89 MINN. L. REV. 498 (2004).

⁵⁵⁸The discourse over how the European Union does and should apply principles of subsidiarity to climate change regulation contains significant parallels to discussion over environmental federalism in the United States. A full exposition of subsidiarity and climate change is beyond the scope of this paper. For a comparative analysis of U.S. and E.U. approaches to climate change, see Jutta Brunée, *Europe, the United States, and the Global Climate Regime: All Together Now?*, 24 J. LAND USE & ENVTL. L. 1 (2008); cf. Michael G. Faure & Jason Scott Johnston, *The Law and Economics of Environmental Federalism: Europe and the United States Compared*, 27 VA. ENVTL. L.J. 205 (2009); Alfred R. Light, *Environmental Federalism in the United States and the European Union: A Harmonic Convergence?*, 15 ST. THOMAS L. REV. 321 (2002).

also represent four areas of debate within the federalism literature. Breaking down the scholarly debates in this way provides a means for assessing them and reconstituting them.⁵⁵⁹ I have applied this approach in other substantive contexts, such as in the aftermath of the BP Deepwater Horizon oil spill, to unpack the complexities of multi-level governance and propose ways forward.⁵⁶⁰

For the purposes of this part, I argue that the taxonomy can serve as a tool for the Obama Administration to rethink its multiscale regulatory approaches to climate change and energy. To that end, this chapter and the one that follows use the example of motor vehicle greenhouse gas emissions regulation to demonstrate how the taxonomy can assist in breaking down regulatory interactions in order to map possibilities for future policy steps. This chapter, in particular, builds upon Chapter VIII's overview of the Obama Administration's approach to climate change and energy policy by focusing on one of that policy's three prongs—motor vehicle greenhouse gas emissions reduction—and situating the Administration's initiatives in the broader context of smaller-scale and nongovernmental efforts. This chapter argues that current approaches to what cars we drive align differently within the four dimensions than do current approaches to how we drive those cars. These differences provide opportunities to evaluate the appropriateness of current and potential diagonal approaches, an evaluation that is the focus of Chapter X.

⁵⁵⁹ See *infra* Chapter X.

⁵⁶⁰ Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 FLORIDA L. REV 1077 (2011).

1. Vertical

Existing diagonal approaches to motor vehicle emissions regulation tend to skew towards larger or smaller jurisdictional levels and actors. International- or national-level interactions dominate some regulatory arrangements, while others include more subnational actors. The Obama Administration's efforts to improve upon motor vehicle technology and fuels (what cars we drive) tend to involve predominantly larger jurisdictional levels. For example, the Obama Administration's National Program to address greenhouse gas emissions and fuel economy in new vehicles through joint agency rulemaking is predominantly larger level (federal), although it exists in coordination with state motor vehicle emissions regulations, specifically aiming to harmonize over time with California's more stringent approach.⁵⁶¹ In contrast, although its broader transportation policy is also generated at the federal level, the Obama Administration's initiatives form a much smaller portion of efforts to address the way in which cars are driven. State and local land use planning dominate those efforts. Specifically, coalitions of states and cities focused on reducing vehicle miles traveled through local land use planning work primarily at smaller jurisdictional levels, but are in dialogue with federal vehicle miles traveled reduction efforts, especially through lobbying the federal government and responding to its financial incentive programs.⁵⁶²

⁵⁶¹ See Letter from Mary D. Nichols, Chairman of the Cal. Air Resources Bd., to Lisa P. Jackson, EPA Admin., and Raymond H. LaHood, Sec'y of Transp. (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/air-resources-board.pdf>; Letter from Arnold Schwarzenegger, Governor of Cal., to Lisa P. Jackson, EPA Admin., and Raymond H. LaHood, Sec'y of Transp. (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/calif-gov.pdf>; Letter from Edmund G. Brown, Jr., Att'y Gen. of Cal., to Lisa P. Jackson, EPA Admin., and Raymond H. LaHood, Sec'y of Transp. (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/calif-atty-general.pdf>. See also *supra* note 455 and accompanying text.

⁵⁶² For example, the U.S. Conference of Mayors, which is collaborating among its members on climate change and transportation, is also urging the federal government, specifically the President and Congress,

Dynamic environmental federalism scholarship analyzes a number of issues that arise in this vertical dimension. Some of this literature focuses on how to incorporate the smallest or largest levels of governance into the traditional federal-state conversation. In the climate change context, the conversation about smaller levels of governance typically focuses on how subnational entities, such as cities or states, should be integrated into national and international management of the problem. Kirsten Engel, David Hodas, Alice Kaswan, and Barry Rabe, for instance, are among the scholars who have explored questions of state and local climate change regulation as part of dynamic federalism analyses.⁵⁶³ Sarah Krakoff has looked at even smaller levels of informal governance, considering sublocal activities. Michael Vandenberg, Jack Barkenbus, and Jonathan Gilligan have had an even smaller focus, on multiscale regulatory actions directed at individuals and households.⁵⁶⁴ The conversation about larger levels of governance, on the other hand, generally analyzes how federalism schemes should take globalization into

to empower localities, presumably through legislative and administrative provisions, to help determine federal energy resource allocation. Manuel A. (Manny) Diaz, President, United States Conference of Mayors, *National Action Agenda on Environment and Energy for the Next President of the United States* (Oct. 2, 2008), available at http://www.usmayors.org/maf/documents/2009_0105-Environment.pdf [hereinafter *Open Letter*].

⁵⁶³ For some of this work in particular, see, e.g., Kirsten Engel, *State and Local Climate Change Initiatives: What is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015 (2006) [hereinafter Engel, *State and Local*]; David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 ARIZ. L. REV. 835 (2008); David R. Hodas, *State Law Responses to Global Warming: Is It Constitutional to Think Globally and Act Locally?*, 21 PACE ENVTL. L. REV. 53 (2003); Alice Kaswan, *Climate Change, Consumption, and Cities*, 36 FORDHAM URB. L.J. 253 (2009) [hereinafter Kaswan, *Climate Change, Consumption, and Cities*]; Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39 (2007); BARRY G. RABE, STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY 1–37 (2003); Barry G. Rabe, *North American Federalism and Climate Change Policy: American State and Canadian Provincial Policy Development*, 14 WIDENER L.J. 121, 128–51 (2004). For an interesting compilation of pieces on federalism and local government, see DILEMMAS OF SCALE IN AMERICA’S FEDERAL DEMOCRACY (Martha Derthick ed., 1999).

⁵⁶⁴ See Sarah Krakoff, *Environmental Law, Tragedy and Community* (draft manuscript on file with author); Michael P. Vandenberg, Jack Barkenbus, & Jonathan Gilligan, *Individual Carbon Emissions: The Low-Hanging Fruit*, 55 UCLA L. REV. 1701 (2008).

account. Tseming Yang and Robert Percival, as well as Robert Ahdieh and those in the intersystemic governance stream discussed in Chapter II, among many others, have grappled with these questions in different variations.⁵⁶⁵

Some scholars have also examined a wider range of vertical interactions. For instance, Judith Resnik's work has analyzed the way in which the local and international interact in a climate change federalism model.⁵⁶⁶ Douglas Kysar and Bernadette Meyler have used California's internationalist approach to climate change as a lens through which to examine constitutional limits on state foreign affairs activities.⁵⁶⁷ Dan Farber has argued for a bifurcated approach to the constitutional authority of states to allow for more effective multiscalar climate change regulation,⁵⁶⁸ and Richard Stewart has argued for a plural architecture for climate regulation that allows for multiple regulatory systems.⁵⁶⁹

⁵⁶⁵ See Robert B. Ahdieh, *Foreign Affairs, International Law, and the New Federalism: Lessons from Coordination*, 73 MO. L. REV. 1185 (2008); Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863 (2006); Robert B. Ahdieh, *From Federalism to Intersystemic Governance: The Changing Nature of Modern Jurisdiction*, 57 EMORY L.J. 1 (2007); Tseming Yang & Robert V. Percival, *The Emergence of Global Environmental Law*, 36 ECOLOGY L.Q. 615 (2009); see also Joseph W. Dellapenna, *Law in a Shrinking World: The Interaction of Science and Technology with International Law*, 88 KY. L.J. 809 (2000).

⁵⁶⁶ See Judith Resnik, *Law's Migration: American Exceptionalism, Silent Dialogues, and Federalism's Multiple Ports of Entry*, 115 YALE L.J. 1564 (2006) [hereinafter Resnik, *Law's Migration*]; Judith Resnik, Joshua Civin & Joseph Frueh, *Ratifying Kyoto at the Local Level: Sovereignism, Federalism, and Translocal Organizations of Government Actors (TOGAS)*, 50 ARIZ. L. REV. 709, 727–28 (2008). The American Society of International Law also had a broader panel on this topic in 2008. See Robert B. Ahdieh et al., *When Subnational Meets International: The Politics and Place of Cities, States, and Provinces in the World*, 102 AM. SOC'Y INT'L L. PROC. 339 (2008).

⁵⁶⁷ See Douglas A. Kysar & Bernadette A. Meyler, *Like a Nation State*, 55 UCLA L. REV. 1621 (2008).

⁵⁶⁸ See Daniel A. Farber, *Climate Change, Federalism, and the Constitution*, 50 ARIZ. L. REV. 879 (2008).

⁵⁶⁹ See Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008).

When paired with Cox's approach to scale, this scholarship makes the important contribution of reinforcing the way in which an expanded scalar dialogue, which ranges from the individual to the international, enriches the federalism conversation, especially for problems like climate change that interact at every level. Cox explains that each individual scale can be understood through interactions not only within that scale but among scales. This stream of dynamic federalism scholarship helps to identify the specifics of those interactions in the legal context.

The Obama Administration's process for developing its greenhouse gas motor vehicles emissions regulation involves the broad scalar range described in this area of dynamic environmental federalism scholarship. Although the Obama Administration's efforts on motor vehicle emissions tend to be predominantly federal, the extent of the skew evolves over time through the Administration's interactions with key actors at multiple scales. For instance, although Obama's National Program is a predominantly large-scale effort to set motor vehicle tailpipe emissions, it emerged in the context of the dispute between the Bush Administration and the states wishing to follow California's heightened emissions standards. These states have been the primary regulatory drivers with respect to motor vehicle greenhouse gas emissions, and even with the harmonization under the Obama Administration's plan. California and the states following its approach will exceed federal standards for a period of time. Thus, the standards will trend toward being primarily federal as the federal government and leader states harmonize over the next few years.⁵⁷⁰

⁵⁷⁰ See *supra* note 455 and accompanying text.

Regulatory strategies focused on larger jurisdictional levels have the advantages of creating uniformity and of catering to widespread presumptions about the appropriate scale for climate regulation. As I have discussed in depth in the first case study on litigation, those seeking to block smaller-scale climate regulation often argue that climate change is a global problem requiring large-scale solutions.⁵⁷¹ Diagonal approaches dominated by nation-states and international entities would be more likely to satisfy those who view that level of regulation as more appropriate, and, as a result, may face less opposition. The automobile manufacturers' willingness to sign on to and to continue to support the further development of the Obama Administration's National Program for motor vehicles emissions exemplifies this phenomenon, as they would prefer to have a uniform, national standard for their industry rather than state-by-state variation.⁵⁷² Moreover, additional larger-level-oriented efforts would fit the scale of the Obama Administration's current and planned efforts on climate change, many of which focus federally or internationally. For instance, the Obama Administration's efforts at climate change treaty negotiations, involvement in international agreements on green motor

⁵⁷¹ See Osofsky, *Is Climate Change "International"?*, *supra* note 411; see also, e.g., Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961, 1962 (2007) (arguing that "subnational state-level action is not the best way to combat global climate change").

⁵⁷² See Press Release, Alliance of Automobile Manufacturers, *Automakers Comment on Notes of Intent to Propose 2017-2025 Fuel Economy/Greenhouse Gas Regulations* (Oct. 29, 2010), available at <http://www.autoalliance.org/index.cfm?objectid=62A583D2-E399-11DF-A62C000C296BA163>; Press Release, Alliance of Automobile Manufacturers, *Automakers and Federal Government Agree on Next Steps for Long-Term GHG/Fuel Economy Program* (May 21, 2010), available at <http://www.autoalliance.org/index.cfm?objectid=7B28B4AE-6764-11DF-A6D8000C296BA163> (explaining that long-range regulations are important to manufacturers, as automobile development requires 5-10 years of lead-time); Press Release, Association of Global Automakers, *Stanton Calls for Coordinated Regulatory Processes to Encourage Efficiencies* (Jan. 27, 2011), available at <http://www.globalautomakers.org/media/press-release/2011/01/stanton-calls-for-coordinated-regulatory-processes-to-encourage-efficien>.

vehicle technology and transportation, frequent presidential and agency actions, and support for legislation largely occur at the national or international level.⁵⁷³

At the other end of the scale spectrum, as discussed in depth in Chapter VI and in the third case study in Chapters XI through XII, a number of U.S. states and cities have been well ahead of federal regulatory efforts, particularly during the Bush Administration but continuing on under the Obama Administration as well. Coalitions and networks exist to expand predominantly small-scale diagonal regulation that includes these states and cities as leaders, especially with respect to how motor vehicles are driven. Many states and localities have been collaborating nationally and internationally, which creates opportunities for them to connect their efforts to larger-scale actors in a more diagonal structure.⁵⁷⁴ For instance, the U.S. Conference of Mayors has urged the federal

⁵⁷³ For a discussion of the scale of current Obama Administration efforts, see *supra* Chapter VIII.

⁵⁷⁴ See, e.g., ICLEI Global, About CCP, <http://www.iclei.org/index.php?id=811> (last visited Jan. 10, 2011) (describing an international collaboration of cities on climate change). For a discussion of local climate initiatives, see, e.g., Carolyn Kousky & Stephen H. Schneider, *Global Climate Policy: Will Cities Lead the Way?*, 3 CLIMATE POL'Y 1, 11 (2003); Janet Koven Levit, *Bottom-Up International Lawmaking: Reflections on the New Haven School of International Law*, 32 YALE J. INT'L L. 393, 402–04 (2007); Resnik, *Law's Migration*, *supra* note 566, at 1627–33; Resnik, Civin & Frueh, *supra* note 566. See also Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J.L. & PUB. POL'Y 369 (2006); Donald A. Brown, *Thinking Globally and Acting Locally: The Emergence of Global Environmental Problems and the Critical Need to Develop Sustainable Development Programs at State and Local Levels in the United States*, 5 DICK. J. ENVTL. L. & POL'Y 175 (1996); Ann E. Carlson, *Implementing Greenhouse Gas Emissions Caps: A Case Study of the Los Angeles Department of Water and Power*, 55 UCLA L. REV. 1479 (2008); Engel, *State and Local*, *supra* note 563; Robert B. McKinstry, Jr., *Laboratories for Local Solutions for Global Problems: State, Local and Private Leadership in Developing Strategies to Mitigate the Causes and Effects of Climate Change*, 12 PENN ST. ENVTL. L. REV. 15 (2004); Hari M. Osofsky, *Climate Change Litigation as Pluralist Legal Dialogue?*, 26A STAN. ENVTL. L.J. 181 (2007); Osofsky, *Is Climate Change "International"?*, *supra* note 411; Hari M. Osofsky, *Local Approaches to Transnational Corporate Responsibility: Mapping the Role of Subnational Climate Change Litigation*, 20 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 143 (2007); Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks?: Local Climate Change Coalitions*, 8 CHI. J. INT'L L. 409 (2008); Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008); Katherine Trisolini & Jonathan Zasloff, *Cities, Land Use, and the Global Commons: Genesis and the Urban Politics of Climate Change*, in ADJUDICATING CLIMATE CHANGE: STATE, NATIONAL, AND INTERNATIONAL APPROACHES 72 (William C.G. Burns & Hari M. Osofsky eds., 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1267314; Laura Kosloff & Mark Trexler, *State Climate Change Initiatives: Think Locally, Act Globally*, 18 NAT. RESOURCES & ENV'T 46 (2004); William Andreen et al., *Cooperative*

government to “empower local elected officials, especially in metropolitan areas, to make the decisions on how federal transportation resources are invested, a shift this [sic] is especially crucial to change energy demand and greenhouse gas emissions in this sector.”⁵⁷⁵

The existence of active governmental initiatives at smaller jurisdictional levels, however, also poses a challenge for the Obama Administration. As the Administration augments national and international efforts, questions have and will consistently arise about whether these new developments should preempt state and local law and policy.⁵⁷⁶ Although thus far the Obama Administration appears to recognize the value of limiting preemption⁵⁷⁷ and supporting ongoing smaller-scale efforts—such as in the President’s rapid steps to have the EPA reconsider and then reverse California’s CAA waiver denial while harmonizing federal and California motor vehicle greenhouse gas emissions standards⁵⁷⁸—President Obama himself has acknowledged a concern about the piecemeal nature of the smaller-scale regulation implemented prior to effective federal action in that context.⁵⁷⁹ Unless the Administration makes conscious decisions to connect collaborative

Federalism and Climate Change: Why Federal, State, and Local Governments Must Continue to Partner, CENTER FOR PROGRESSIVE REFORM (May 29, 2008), http://progressiveregulation.org/articles/Cooperative_Federalism_and_Climate_Change.pdf; Kaswan, *Climate Change, Consumption, and Cities*, *supra* note 563.

⁵⁷⁵ *Open Letter*, *supra* note 562. Such pushes have also taken place in the clean energy context. *See, e.g.*, Position Paper, Clean Energy States Alliance, Economic Stimulus and a Federal/State Clean Energy Partnership (Jan. 2009), at 1–3, http://www.cleanenergystates.org/Publications/CESA_federal_state_clean_energy_recommendation_1.08.09.pdf.

⁵⁷⁶ *See infra* note 637 and accompanying text for an analysis of preemption in the context of climate change.

⁵⁷⁷ *See infra* note 6165 and accompanying text.

⁵⁷⁸ *See supra* notes 444 & 561 and accompanying text.

⁵⁷⁹ For example, when announcing the reconsideration of the CAA waiver denial, President Obama stated:

efforts among cities, counties, and states into its larger-scale efforts through a mix of rulemaking, issuing executive orders, and supporting legislation, additional opportunities for predominantly small-scale diagonal regulation may be lost. Such a loss would prevent crosscutting regulation from gaining fully from the locally-specific knowledge and innovation being produced at smaller scales.⁵⁸⁰ Proposals in Chapter X focusing on incorporating coalitions of smaller-scale actors more deeply into the crafting of financial incentives for greener vehicle technology and use aim to address this concern.⁵⁸¹

2. *Horizontal*

This dimension of the taxonomy focuses on horizontal interactions taking place within a jurisdictional level. As Cox's model illustrates, these horizontal interactions play a critical role in comprising each scale and form part of multi-scalar interactions. However, because the focus of this chapter is on understanding diagonal interactions located at the federal level, this section does not consider the horizontal dimension in

[T]he federal government must work with, not against, states to reduce greenhouse gas emissions. California has shown bold and bipartisan leadership through its effort to forge 21st century standards, and over a dozen states have followed its lead. But instead of serving as a partner, Washington stood in their way. This refusal to lead risks the creation of a confusing and patchwork set of standards that hurts the environment and the auto industry.

The days of Washington dragging its heels are over. My administration will not deny facts, we will be guided by them. We cannot afford to pass the buck or push the burden onto the states. And that's why I'm directing the Environmental Protection Agency to immediately review the denial of the California waiver request and determine the best way forward. This will help us create incentives to develop new energy that will make us less dependent on oil that endangers our security, our economy, and our planet.

President Barack Obama, Remarks on Jobs, Energy Independence, and Climate Change in the East Room of the White House (Jan. 26, 2009), *available at* http://www.whitehouse.gov/blog_post/Fromperil_toprogress/.

⁵⁸⁰ For examples of the nuances of local efforts at climate regulation in Portland and Tulsa, *see* Osofsky & Levit, *supra* note 574.

⁵⁸¹ *See infra* Chapters XI–XIII.

isolation. Rather, it analyzes how the horizontal and vertical interact to form diagonal dynamics.

Diagonal regulatory approaches tend to diverge not only in terms of how large- or small-scale their emphasis is, but also in the extent to which they focus on interconnecting key actors at a particular regulatory level (through Cox's spaces of dependence) or on creating interactions across levels (through Cox's spaces of engagement). Predominantly horizontal regulation primarily involves collaboration within one or more levels, whereas predominantly vertical regulation focuses on interaction among levels, with minimal activity at any particular level. These categories may at times overlap with the predominantly small- or large-scale approaches discussed in the vertical dimension, as they might be either top or bottom heavy. But their focus is on which axis of the diagonal dominates rather than on which level of government dominates; for example, a predominantly horizontal coalition of entities working on climate change could be comprised of localities, states, or nations.

Dynamic federalism scholarship engages this dimension through in-depth analyses of the vertical and horizontal aspects of regulatory interactions. Since federalism concerns itself with questions of relationships among different levels of government, all federalism scholarship tends to be vertical in some sense. However, more dynamic approaches generally question traditional models of vertical relationships and argue for a more nuanced characterization of dynamics that may vary over time. J.B. Ruhl and James Salzman, for example, have developed an adaptive management model for complex environmental problems that brings dynamic federalism together with transgovernmental

network and new governance theory.⁵⁸² Horizontal federalism scholarship, which often contrasts itself with more traditional vertical federalism approaches, primarily involves analysis of the role that coalitions of subnational actors play in environmental regulation. For example, Noah Hall has explored the Great Lakes–St. Lawrence River Basin Compact among eight Great Lakes states through a horizontal federalism lens, arguing that their cooperative horizontal federalism approach allows for flexibility while avoiding a race to the bottom.⁵⁸³ Together, this stream of federalism scholarship reveals the nuances of legal interactions across Cox’s spaces of engagement and dependence, and the ways in which law helps to structure those spaces.

Motor vehicle emissions regulation reflects this range of scholarly discussion through the ways in which its horizontal and vertical configurations vary in different contexts. Predominantly horizontal efforts tend to arise out of a group of entities operating at a particular level that form a larger-scale coalition. The Obama Administration’s initiatives on motor vehicle emissions that have significant horizontal dimensions involve other nation-states and the federal and state levels of U.S. government, but in different patterns. At the federal level, the Obama Administration interacts with other nation-states in international treaty negotiations, other multilateral forums, and bilateral negotiations, as described in Chapter VIII. While few of these negotiations have motor vehicle emissions as their primary focus, those emissions are considered in these supranational negotiations as one of the main sources of the U.S.

⁵⁸² See Ruhl & Salzman, *Whittling Away*, *supra* note 557.

⁵⁸³ See Noah D. Hall, *Toward a New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 U. COLO. L. REV. 405 (2006). For a thoughtful analysis of the nuances of horizontal federalism and its interaction with vertical federalism in a broader substantive context, see Allan Erbsen, *Horizontal Federalism*, 93 MINN. L. REV. 493 (2008).

greenhouse gas emissions being discussed.⁵⁸⁴ The Administration's main horizontal interactions within the United States involve responding to judicial mandates, particularly *Massachusetts v. EPA*,⁵⁸⁵ and participating in the legislative process, including both its failed efforts to pass cap-and-trade legislation and its ongoing efforts to support clean energy.⁵⁸⁶ Its state-level efforts mix the two axes, as it works vertically to collaborate with horizontal coalitions of leader states on issues such as tailpipe emissions and miles-per-gallon standards.

However, an analysis of the horizontal axis centered on Obama Administration initiatives would be incomplete because smaller-scale entities are leading a wide range of other horizontal efforts, many of which focus on how cars are driven and involve the Obama Administration's efforts on motor vehicles less directly. Climate Communities, "a national coalition of cities and counties that is educating federal policymakers about the essential role of local governments in addressing climate change and promoting a strong local–federal partnership to reduce greenhouse gas (GHG) emissions,"⁵⁸⁷ exemplifies this phenomenon. While the national coalition is not itself a regulator, Climate Communities is comprised of numerous regulatory entities with authority at smaller jurisdictional levels. Its "Blueprint for President Obama and [the] 111th Congress," produced together with the national branch of ICLEI (an international entity also known as Local Governments for Sustainability) at the start of the Obama Administration, for instance,

⁵⁸⁴ See *supra* Chapter VIII.

⁵⁸⁵ 549 U.S. 497 (2007).

⁵⁸⁶ See *supra* Chapter VIII.

⁵⁸⁷ Press Release, Climate Communities, Climate Communities' Successes and Upcoming Activities, available at http://climatecommunities.us/documents/successes_upcoming_activities.pdf (last visited Jan. 10, 2011).

envisioned a transformation of the U.S. national transportation strategy through both increasing federal resources and supporting local initiatives, including vehicle miles traveled reduction efforts.⁵⁸⁸ Although the creation of this national-level entity and its efforts to influence policy at that level gives the collaboration a vertical dimension, it is dominated by interactions among the local governments.⁵⁸⁹

The Transportation and Climate Initiative, launched in October 2010 by eleven Northeastern and Mid-Atlantic states and the District of Columbia and facilitated by the Georgetown Climate Center, a non-partisan center based at Georgetown Law, represents another variation of small-scale-driven horizontal collaboration. This initiative involves collaboration among state-level agency heads “to improve the efficiency of the transportation system, reduce roadway congestion, update public transport, address the challenges of vehicles miles traveled, reduce air pollution and energy use, and ensure that long-term development is sustainable and enhances quality of life in communities within their jurisdiction.”⁵⁹⁰ The initiative’s strategic work plan explains that it will innovate through its comprehensive examination of energy use across all segments of the transportation sector in order to “develop a comprehensive agenda for cost effectively reducing energy use to deliver greenhouse gas emissions reductions as well as economic

⁵⁸⁸ Climate Communities & ICLEI USA, Empowering Local Government Climate Action: Blueprint for President Obama and the 111th Congress, <http://climatecommunities.us/documents/blueprint.pdf> (last visited Jan. 10, 2011).

⁵⁸⁹ See Climate Communities Brochure, <http://climatecommunities.us/documents/brochure.pdf> (last visited Jan. 10, 2011); see also Osofsky, *Is Climate Change “International”?*, *supra* note 411.

⁵⁹⁰ See The Transportation & Climate Initiative of the Northeast and Mid-Atlantic States, Strategic Workplan for the Transportation and Climate Initiative (TCI): An Agenda for Action, Oct. 2010, available at <http://www.georgetownclimate.org/transportation/files/TCI-workplan.PDF> [hereinafter TCI Strategic Workplan].

benefits within the region.”⁵⁹¹ The group aims to make progress within each state, across the region, and through partnerships with relevant federal agencies. The Initiative thus grows out of horizontal relationships among state agency leaders, but aims to interact with and help to shape policy at multiple levels.

The efforts of Climate Communities and of the Transportation and Climate Initiative are predominantly horizontal and involve predominantly small-scale actors in their multi-level advocacy, but larger-scale, predominantly horizontal efforts on climate change beyond those of the federal government also exist. The local, state, and provincial efforts announced at the Copenhagen meeting, and addressed in depth in Chapter XIII, are international-level horizontal agreements among subnational entities at different levels of government.⁵⁹² Larger-scale variations upon this model beyond traditional treaty negotiations include nation-states collaborating with corporations at an international level, such as through the ongoing U.S. involvement in the Asia-Pacific Partnership on Clean Development and Climate.⁵⁹³

The primary advantage of predominantly horizontal regulatory strategies is that they build upon commonalities in governance at particular levels of government. They can use existing coalitions of entities at one governmental level, and then add a vertical dimension into those collaborations. The above-described Climate Communities and Transportation and Climate Initiative represent possible small-scale variations upon this model; Climate Communities uses a coalition of localities to create a national entity and

⁵⁹¹ *See id.*

⁵⁹² *See infra* Chapter XIII.

⁵⁹³ *See* ASIA-PACIFIC PARTNERSHIP ON CLEAN DEVELOPMENT AND CLIMATE, <http://www.asiapacificpartnership.org/english/default.aspx> (last visited Jan. 10, 2011).

the Transportation and Climate Initiative includes state-agency heads from eleven Northeastern and mid-Atlantic states and the District of Columbia in coordinated state and region-level planning.⁵⁹⁴

However, this ease of creation is offset by the limited vertical interaction that predominantly horizontal approaches involve. Because their vertical dimensions primarily arise from horizontal relationships, these diagonal regulatory efforts may not create the level of multiscale interaction needed to help entities at different levels of government collaborate. For example, Climate Communities operates through high-level interaction among cities and counties, but it primarily engages other levels of government in its advocacy initiatives;⁵⁹⁵ its efforts would need to be paired with other predominantly horizontal or vertical approaches to create a scheme with more overall integration that would have the capacity to address climate change more completely. Similarly, the Transportation and Climate Initiative acknowledges in its strategic plan the need to collaborate with federal agencies and stay abreast of federal legislative developments.⁵⁹⁶

Predominantly vertical regulatory strategies can also arise out of already existing regulatory arrangements. For example, in the United States, the federalist system creates vertical arrangements among federal, state, and local governments. These arrangements—which, as discussed in the following section, can include a mix of top-down and bottom-up interactions—often become implicated in the climate change context. Under the Clinton Administration, for instance, the EPA created a program to

⁵⁹⁴ See *supra* notes 177–81 and accompanying text.

⁵⁹⁵ See *supra* notes 177–79 and accompanying text.

⁵⁹⁶ See TCI Strategic Workplan, *supra* note 180.

fund states developing climate regulation plans.⁵⁹⁷ Under the Bush Administration, California requested a CAA waiver—the denial of which became symbolic of an approach to climate policy that the Obama Administration swiftly repudiated by granting the waiver—to pursue more stringent state-level regulation of motor vehicle greenhouse gas emissions.⁵⁹⁸ The current Obama Administration approaches to motor vehicle greenhouse gas emissions regulation generally have vertical dimensions, and range from regulations that are predominantly vertical to those that are more mixed vertical-horizontal. The Administration’s DOE block grant program for states, territories, tribes, and localities exemplifies the largely vertical approach because it gives financial incentives to smaller-scale governmental entities, whereas its National Program, as described above, includes a significant horizontal dimension through the involvement of coalitions of states.⁵⁹⁹

Like the predominantly horizontal strategies, predominantly vertical ones are easy to create, but risk insufficient interaction on the other—in this case, horizontal—axis. For example, the DOE block grant program promotes smaller-scale action, but does so in collaboration with specific participating governments rather than with the broader, existing state and local coalitions.⁶⁰⁰ In order to be fully crosscutting, regulatory approaches should both build upon and foster interconnections within levels of

⁵⁹⁷ See *Adaptation Planning—What U.S. States and Localities are Doing*, PEW CENTER ON GLOBAL CLIMATE CHANGE, http://www.pewclimate.org/docUploads/State_Adaptation_Planning_02_11_08.pdf (last visited Jan. 10, 2011).

⁵⁹⁸ See, e.g., Clean Air Act § 209(b), 42 U.S.C. § 7543(b) (2008); EPA Notice of Opportunity for Public Hearing and Comment, 72 Fed. Reg. 21260 (Apr. 30, 2007); Waiver Denial Letter, *supra* note 412; Petition for Review, *supra* note 412; Press Release, *EPA Grants California GHG Waiver*, *supra* note 444.

⁵⁹⁹ DOE Block Grant Program, *supra* note 478.

⁶⁰⁰ See *id.*

government. For the Obama Administration to maximize interaction among key climate actors—which, this Article contends, makes overall climate regulation more cohesive and effective—it should formalize efforts to incorporate the other axis, either directly or through pairing predominantly horizontal with predominantly vertical programs. As described in more depth in Chapter X, for example, the Obama Administration has many opportunities in the context of motor vehicle greenhouse gas emissions regulation to involve smaller-scale government actors in deciding how to frame and distribute financial incentives.⁶⁰¹ Such involvement ensures that those receiving funding to innovate also help to shape and coordinate those efforts to support the innovation, which creates a greater alignment between the federal and smaller-scale programs that has the potential to augment efficiency and effectiveness.

Moreover, the role and scale of horizontal interactions varies depending on whether one focuses on what cars we drive or how we drive them. Although horizontal coalitions of smaller-scale entities push for progress on both fronts, and have had a significant policy impact, the smaller-scale entities have more control over the second category because of the way in which regulatory authority is divided. The federal government is charged with implementation of the federal statutes that provide the basis for much of the technology-oriented motor vehicles emissions regulation, while state and local governments play a primary role in the land-use planning decisions that shape how people use their vehicles. For example, after participating in the process of crafting the National Program, the smaller-scale entities will ultimately be bound by its federal-level

⁶⁰¹ See *infra* Chapters XI–XIII.

standards, which apply vertically.⁶⁰² In contrast, even when in dialogue with or incentivized by the Obama Administration, states and localities still largely control the smaller-scale land-use planning and transportation initiatives which influence the way in which people use their cars.⁶⁰³ As discussed in depth in Chapter X, these skews impact where the opportunities exist for the Obama Administration to pursue additional diagonal initiatives.

3. Direction of Hierarchy

Because any diagonal scheme includes different levels of government, questions of hierarchy arise. The key focus for this dimension of diagonal regulation is the direction (from up-to-down or down-to-up) of the vertical component of the regulatory approach. Predominantly top-down approaches involve dictates from larger-scale entities to smaller-scale entities, whereas predominantly bottom-up approaches are driven by the subnational dictates. As with the first two categories, approaches to what vehicles we drive skew differently in this dimension than approaches to how we drive them—namely, the former tend to be much more top-down and the latter tend to be much more bottom-up, although both have top-down and bottom-up elements in the Obama Administration approach and other approaches. For example, mandates from the EPA⁶⁰⁴ or block grants from the DOE⁶⁰⁵ would typically be predominantly top-down, vertical, and large-scale in

⁶⁰² See *supra* notes 41–50 and accompanying text.

⁶⁰³ See *supra* notes 164, 169–70 & 177–81 and accompanying text and *infra* notes 207–18 and accompanying text.

⁶⁰⁴ See *supra* note 597 and accompanying text.

⁶⁰⁵ See *supra* notes 75 & 599 and accompanying text.

whichever administration implements them, whereas Climate Communities' efforts⁶⁰⁶ are predominantly bottom-up, horizontal, and small-scale.

In grappling with this third dimension of hierarchy, dynamic federalism scholarship analyzes the need for both top-down and bottom-up dynamics in evolving, complex environmental regulatory contexts, which pairs well with Cox's model of intra- and inter-scalar interaction. For instance, Daniel Esty and William Buzbee, among others, have both argued for nuanced models of federal-state interaction that allow for policy approaches to vary based on contextual needs.⁶⁰⁷ Ann Carlson's work on iterative federalism has looked at the interplay between state and federal actors in a series of relationships and argued that in the context of Clean Air Act waivers, the vertical regulatory direction varies over time in an iterative fashion.⁶⁰⁸ Tony Arnold has explored the complex top-down and bottom-up dynamics that frame land-use planning in the United States.⁶⁰⁹ In another variation outside of the environmental context, Robert Schapiro uses the metaphor of polyphony from music to argue that an interactive model of federalism, with ever shifting state-federal dynamics, should supplant the traditional dualist model.⁶¹⁰

⁶⁰⁶ See *supra* notes 587–589 and accompanying text.

⁶⁰⁷ See William W. Buzbee, *Contextual Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 108 (2005); William W. Buzbee, *Recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1, 49–56 (2003) [hereinafter Buzbee, *Regulatory Commons*]; Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996).

⁶⁰⁸ See Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097 (2009).

⁶⁰⁹ See Craig Anthony Arnold, *The Structure of the Land Use Regulatory System in the United States*, 22 J. LAND USE & ENVTL. L. 441 (2007).

⁶¹⁰ See ROBERT A. SCHAPIRO, *POLYPHONIC FEDERALISM: TOWARD THE PROTECTION OF FUNDAMENTAL RIGHTS* 92–120 (2009).

Scholars have also highlighted the opposite advantages and disadvantages of top-down and bottom-up regulatory strategies. Top-down approaches, such as setting a national-level motor vehicle emissions standard, have the benefit of avoiding divergence at smaller-scales, a much-discussed concern with bottom-up approaches.⁶¹¹ Specifically, they prevent piecemeal strategies that can cause leakage—movement from jurisdictions with more stringent regulations to jurisdictions with more lax regulations—and set clear expectations for corporations and others that have interests which crosscut jurisdictions.⁶¹² Also, as with the large-scale efforts, top-down approaches comport with traditional expectations about how a complex problem like climate change should be regulated.⁶¹³ Beyond their immediate benefits, these advantages together help make such approaches more politically viable.

Conversely, top-down approaches, unless carefully structured, risk stifling the innovation and local knowledge that localities and states can provide. Even as the federal government moves swiftly under the Obama Administration to address climate change, its size prevents direct integration of the nuances and competencies of subnational regulations. Bottom-up efforts capture more easily the many divergences that are needed for smaller-scale actors to respond to local conditions without the rigidity and constraint that often accompany top-down mandates.⁶¹⁴

⁶¹¹ See Wiener, *supra* note 571.

⁶¹² See *id.*

⁶¹³ See *supra* note 571 and accompanying text.

⁶¹⁴ See Osofsky, *Is Climate Change “International”?*, *supra* note 411; Hari M. Osofsky, *Climate Change Legislation in Context*, 102 NW. U. L. REV. COLLOQUY 245 (2008).

One of the primary ways in which the federal government addresses issues of hierarchy is through its approach to preemption. President Obama's May 2009 memorandum to heads of executive departments and agencies reinforced that his Administration is departing significantly from the Bush Administration regarding preemption.⁶¹⁵ The memorandum established that preemption had to be justified and that preambles to regulation should not attempt to establish preemption without accompanying regulatory language.⁶¹⁶ This general approach to preemption creates more room for and protection of bottom-up regulatory efforts.

However, even with its policy on preemption, the Obama Administration still faces questions about when preemption is appropriate and when to delegate more of its authority. For example, a number of current motor vehicle emissions reduction initiatives by smaller-scale governments, especially coalitions of localities, push the federal government to delegate more authority to cities and counties and to provide additional funding for locally-driven efforts.⁶¹⁷ Moreover, these initiatives take place in the broader context of the iterative process that has led to the converging California and federal standards for tailpipe emissions and fuel efficiency.⁶¹⁸ While the Obama Administration

⁶¹⁵ See Memorandum for the Heads of Executive Departments and Agencies, 74 Fed. Reg. 24693 (May, 20, 2009).

⁶¹⁶ See *id.*

⁶¹⁷ For the example of the U.S. Conference of Mayors, see *supra* notes 562 and 575. For the example of Climate Communities, see *supra* notes 587–589. Both the National League of Cities and the Association of Metropolitan Planning Organizations have made similar statements. For the former, see *The Future of Our Hometowns and the Nation: At Issue: Infrastructure*, available at <http://www.nlc.org/ASSETS/54FECF4146254696AA20BB36C3C660F0/Infrastructure%20Policy%20Brief%20-%20Updated%202909.pdf> (last visited Jan. 10, 2011); for the latter, see Summary Report, MPO Peer Workshop on Planning for Climate Change, Mar. 6–7, 2008, available at http://www.ampo.org/assets/library/171_workshopclimatechgseattle.pdf (last visited Jan. 10, 2011).

⁶¹⁸ See Carlson, *Iterative Federalism*, *supra* note 608. See also *supra* notes 444–456 and accompanying text.

has been responsive to the need for local development of transportation solutions through its ARRA financial incentives programs, the federal government still controls that allocation of funds, rather than making the distribution in collaboration with coalitions of localities working on these issues.⁶¹⁹

Either top-down or bottom-up efforts, if carefully structured, can avoid the above pitfalls. Some top-down mandates include adequate flexibility to allow for smaller-scale innovation and tailoring, and some bottom-up efforts are sufficiently coordinated to address many of the critiques. For example, tandem top-down and bottom-up approaches, such as the Obama Administration's simultaneous efforts on fuel standards and the CAA waiver, can incorporate both types of benefits. The key, either way, is an awareness of these benefits and limitations so that they can be addressed in an overall regulatory scheme. As discussed in more depth in Chapter X, the Obama Administration should consider additional opportunities for building more movement in this dimension into its traditionally structured top-down programs by bringing smaller-scale governmental coalitions into more of its transportation decision-making.

4. Cooperativeness

Finally, diagonal regulatory strategies are not necessarily cooperative. Chapters IV through 7 of this dissertation trace the way in which lawsuits over climate regulation, for instance, serve as forces of diagonal integration.⁶²⁰ Chapter VI's example of the dispute over San Bernardino County's approach to climate change and developments

⁶¹⁹ See *supra* notes 64–65 and accompanying text.

⁶²⁰ See Osofsky, *Is Climate Change "International"?*, *supra* note 411.

since that settlement demonstrate particularly the mix of cooperation and conflict that encourages the land-use planning decisions needed to bring down greenhouse gas emissions, including those from motor vehicles.⁶²¹ As discussed in that chapter, California and several nongovernmental organizations used California Environmental Quality Act claims to force San Bernardino County to regulate greenhouse gas emissions more explicitly.⁶²² As the County settled the case in August 2007 in an agreement that included developing an emissions reduction plan,⁶²³ it launched “Green County San Bernardino,” a multiscalar environmental effort involving of individuals, companies, cities, other local government entities, and a neighboring county.⁶²⁴ “Green Valley Cities” is a cooperative venture with Riverside County to reduce greenhouse gas emissions through flexible local implementation; participating entities include not only cities, but also water districts and the Joint Powers Authority of a realigned Riverside County Air Force base.⁶²⁵

⁶²¹ *See id.*

⁶²² *See* Petition for Writ of Mandate at 12, *Ctr. for Biological Diversity v. County of San Bernardino*, (Super. Ct. San Bernadino County 2007) (No. 07 Civ. 293), *available at* [http://www.communityrights.org/PDFs/Petition_\(00011023\).PDF](http://www.communityrights.org/PDFs/Petition_(00011023).PDF); Petition for Writ of Mandate at ¶ 5, *People v. County of San Bernardino*, (Super. Ct. San Bernadino County 2007) (No. 07 Civ. 329), *available at* http://ag.ca.gov/global_warming/pdf/San_Bernardino_complaint.pdf.

⁶²³ *See* Confidential Settlement Agreement, *People v. County of San Bernardino* (Super. Ct. San Bernadino County 2007) (No. 07 Civ. 329), *available at* http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf; Imran Ghorri, *Lawsuit Against San Bernardino County General Plan Dropped*, THE PRESS ENTERPRISE, Dec. 17, 2007, *available at* http://www.pe.com/localnews/inland/stories/PE_News_Local_H_settle18.31d902e.html; Email from Jonathan Evans, Staff Attorney, Center for Biological Diversity, to Hari M. Osofsky, Associate Professor, Washington and Lee University School of Law (Dec. 15, 2008, 16:43:00 EST) (on file with author).

⁶²⁴ *See* Press Release, Biane Unveils “Green County San Bernardino” Programs (Aug. 27, 2007) *available at* http://www.sbcounty.gov/greencountysb/content/press_releases/20070827_bosd2_green_county.pdf; Green County San Bernardino, http://www.sbcounty.gov/greencountysb/about_gc.aspx (last visited Jan. 10, 2011).

⁶²⁵ *See* GREEN VALLEY INITIATIVE JURISDICTION, http://www.sbcounty.gov/greencountysb/content/green_valley_initiative_cities/gvi_jurisdiction.pdf (last

These collaborations include initiatives to promote green transportation in San Bernardino County. The County's website advertises some preexisting initiatives, such as a two-decades-old commuter services program which rewards county employees for coordinating alternative commuting arrangements and a fleet management program focused on transitioning the county to alternative-fuel vehicles.⁶²⁶ But the website also focuses on efforts by car companies to install solar panels on their warehouses and provides resources to companies on telecommuting and to residents on alternative commuting, bicycle paths, and clean cars.⁶²⁷ The County supports these alternatives tangibly through collaboration with other Southern California counties in programs such as CommuteSmart.info, which helps to connect commuters to ride-sharing options, provides free rides home for stuck ride-sharers, and advertises rebates and incentives for those who share rides.⁶²⁸ Thus, over time, a conflictual relationship between the county and the state has helped to produce a number of cooperative relationships among the county and other local governmental entities which include greening transportation further.

visited Jan. 10, 2011); GREEN VALLEY INITIATIVE RESOLUTION, http://www.sbcounty.gov/greencountysb/content/green_valley_initiative_cities/gvi_resolution.pdf (last visited Jan. 10, 2011); GREEN VALLEY INITIATIVE CITIES, http://www.sbcounty.gov/greencountysb/green_valley_initiative_cities.aspx (last visited Jan. 10, 2011). I have analyzed the implications of these developments for our conceptions of "local" in Hari M. Osofsky, *Scaling "Local": The Implications of Greenhouse Gas Regulation in San Bernardino County*, 30 MICH. J. INT'L L. 689 (2009).

⁶²⁶ See GREEN COUNTY SAN BERNARDINO, COMMUTER SERVICES, http://www.sbcounty.gov/greencountysb/county_projects/commuter_services.aspx (last visited Jan. 10, 2011); GREEN COUNTY SAN BERNARDINO, GREEN FLEET, http://www.sbcounty.gov/greencountysb/county_projects/transportation_accomplishments.aspx (last visited Jan. 10, 2011).

⁶²⁷ For these links, see GREEN COUNTY SAN BERNARDINO, <http://www.sbcounty.gov/greencountysb/default.aspx> (last visited Jan. 10, 2011).

⁶²⁸ See COMMUTESMART.INFO, <http://www.commutesmart.info/> (last visited Jan. 10, 2011).

Cooperativeness, like the other dimensions, serves as just one factor in a regulatory scheme, and may vary at different stages as actors interact through multiple spaces of dependence and engagement and reshape those spaces over time. As I have described in depth in Chapter V, California’s waiver request and the EPA’s denial have formed a part of conflicts over the appropriate role of states in motor vehicle emissions regulation.⁶²⁹ However, the Obama Administration EPA’s reconsideration of both the granting of the waiver and the results thereof, in tandem with harmonization efforts with respect to fuel economy standards, have created a cooperative diagonal scheme.⁶³⁰ Recent federalism scholarship explores the complex mix of cooperation and conflict that arises in a variety of contexts, including with respect to climate change.⁶³¹

Cooperative federalism’s greatest advantage as a basis for climate change regulation is its ability to create coordinated multiscalar action in which each actor provides its unique contribution. A number of scholars and policymakers have taken and continue to take significant steps to sketch a framework for cooperative action. They are exploring the nuances of how collaboration might work among specific entities in particular policy areas. This analysis makes clear that cooperative approaches, if crafted well, incentivize action while making room for innovation. For instance, a Center for Progressive Reform study by William Andreen and others shows how localities, states, and the federal government can work together on this problem.⁶³² Alice Kaswan has also

⁶²⁹ See Osofsky, *Is Climate Change “International”?*, *supra* note 411. See also *supra* notes 444–456 and accompanying text.

⁶³⁰ See *supra* note 412 and accompanying text.

⁶³¹ See *infra* notes 632–637.

⁶³² See Andreen, et. al., *supra* note 574.

published an interesting cooperative federalism proposal bringing together these three levels of government, and Holly Doremus and W. Michael Hanemann have argued that the Clean Air Act provides a cooperative federalism model that could be used in crafting effective climate change legislation.⁶³³ Some dynamic environmental approaches combine cooperative federalism with other theories. For example, Brad Karkkainen’s analysis of information-forcing environmental regulation brings together cooperative federalism and new governance approaches to consider how “[p]roperly structured, penalty default rules might be used to induce meaningful participation in locally devolved, place-based, collaborative, public-private hybrid, new governance institutions, aimed at integrated, adaptive, experimentalist management of watersheds and other institutions.”⁶³⁴ This particular combination of cooperative federalism and new governance approaches allows for innovative structures that encompass the multidimensionality of these problems.

However, other dynamic federalism scholars have questioned the extent to which cooperative models can capture the disagreement over climate change policy choices, and as a result, a stream of scholarship focusing on uncooperative federalism has emerged. This scholarship includes those directly terming their model “uncooperative,” such as Karen Bridges, Kirk Junker, and Jessica Bulman-Pozen and Heather Gerken.⁶³⁵ But the

⁶³³ See Alice Kaswan, *A Cooperative Federalism Proposal for Climate Legislation: The Value of State Autonomy in a Federal System*, 85 DENV. U. L. REV. 791 (2008); Holly Doremus & W. Michael Hanemann, *Of Babies and Bathwater: Why the Clean Air Act’s Cooperative Federalism Framework is Useful for Addressing Global Warming*, 50 ARIZ. L. REV. 799 (2008).

⁶³⁴ Bradley C. Karkkainen, *Information-Forcing Environmental Regulation*, 33 FLA. ST. U. L. REV. 861, 888 (2006).

⁶³⁵ See Kirk W. Junker, *Conventional Wisdom, De-emption and Uncooperative Federalism in International Environmental Agreements*, 2 LOY. U. CHI. INT’L L. REV. 93 (2004–05); Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256 (2009); Karen Bridges, Note, *Uncooperative*

literature also contains work like that of Ann Carlson and Robert Schapiro, which incorporates conflict in the dynamics they highlight.⁶³⁶ In addition, some scholars, such as William Buzbee, Ann Carlson, Robert Glicksman and Richard Levy, Alexandra Klass, and Benjamin Sovacool have looked at these questions of cooperation and conflict in a preemption context, arguing for the important complementary role that state and local efforts and state court common law litigation play in the broader environmental regulatory picture.⁶³⁷ Overall, this scholarship dealing with the limits of cooperative models explores the way in which disagreement over time should be brought into a federalist regulatory scheme.

This scholarship on conflict within federalism highlights two potential difficulties facing cooperative schemes. First, conflict exists and often plays out across Cox's multiscalar networks. As Robert Schapiro has noted, cooperative schemes may struggle at times to address differences adequately and to include all relevant actors.⁶³⁸ Certainly,

Federalism: The Struggle over Subsistence and Sovereignty in Alaska Continues, 19 PUB. LAND & RESOURCES L. REV. 131 (1998).

⁶³⁶ See SCHAPIRO, POLYPHONIC FEDERALISM, *supra* note 610; Carlson, *Iterative Federalism and Climate Change*, *supra* note 608.

⁶³⁷ See William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547 (2007) [hereinafter Buzbee, *Asymmetrical Regulation*]; Buzbee, *Regulatory Commons*, *supra* note 607; Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281, 290–92 (2003); Robert L. Glicksman & Richard E. Levy, *A Collection Action Perspective on Ceiling Preemption by Federal Regulation: The Case of Global Climate Change*, 102 NW. U. L. REV. 579 (2008); Alexandra B. Klass, *State Innovation and Preemption: Lessons from State Climate Change Efforts*, 41 LOY. L.A. L. REV. 1653 (2008); BENJAMIN K. SOVACOO, *THE BEST OF BOTH WORLDS: ENVIRONMENTAL FEDERALISM AND THE NEED FOR FEDERAL ACTION ON RENEWABLE ENERGY AND CLIMATE CHANGE*, 27 STAN. ENVTL. L.J. 397 (2008). For further exploration of climate federalism issues, see *Arizona Law Review's* 2008 symposium issue on the topic, described in Carol M. Rose, *Federalism and Climate Change: The Role of States in a Future Federal Regime—An Introduction*, 50 ARIZ. L. REV. 673 (2008).

⁶³⁸ See Robert A. Schapiro, *Toward a Theory of Interactive Federalism*, 91 IOWA L. REV. 243, 283–85 (2005) [hereinafter Schapiro, *Interactive Federalism*].

in the U.S. climate change context, states vary greatly in how they want to approach the problem, as represented by the states on both sides of *Massachusetts v. EPA*.⁶³⁹

Second, and at least as importantly, conflict has value in reordering spaces of dependence and engagement and, in the process, reshaping scalar arrangements in needed ways. Regulatory schemes that include opportunities for dissent, such as through citizen suit provisions, can potentially incorporate divergent views more effectively, as well as make sure that pressure remains on policymakers to think through tough issues.⁶⁴⁰ In two high-profile examples of conflict over motor vehicle emissions regulation discussed in Chapters IV and V—*Massachusetts v. EPA* and the California CAA waiver dispute—the change in presidential administration during their ultimate resolution helped to shape more rigorous national approaches. These approaches will continue to evolve as the Obama Administration develops its regulatory scheme more fully over time in collaboration with California and automobile companies and attempts to navigate the intense partisan politics of climate change.⁶⁴¹ However, as these examples illustrate, the Obama Administration will often need a mix of cooperation and conflict over time to achieve effective multiscalar climate regulation; the conflict helps to air differences and to create pressure for action, while the cooperation allows for coordination and collaboration.

⁶³⁹ 549 U.S. 497 (2007). I discuss the dynamics among actors in the suit in more depth in Chapter IV.

⁶⁴⁰ See Osofsky, *Is Climate Change “International”?*, *supra* note 411; Hari M. Osofsky, *Conclusion: Adjudicating Climate Change across Scales*, in *ADJUDICATING CLIMATE CHANGE: STATE, NATIONAL, AND INTERNATIONAL APPROACHES* 375 (William C.G. Burns & Hari M. Osofsky eds., 2009); Schapiro, *Interactive Federalism*, *supra* note 638, at 283–85.

⁶⁴¹ See *supra* note 412 and accompanying text.

In sum, an effective diagonal strategy could be developed further through a combination of approaches that vary across the four dimensions. The key to creating the needed cross-cutting interactions is to ensure that incentives for that variety exist in a situationally appropriate fashion which effectively use and refashion available spaces of dependence and engagement. Chapter X examines what those incentives might be in the context of the Obama Administration's approach to motor vehicles regulation. It builds upon this chapter's assessment of dynamics in each of these dimensions to examine future possibilities for diagonal strategies in this area.

CHAPTER X
POSSIBILITIES FOR RESCALING OBAMA ADMINISTRATION
TRANSPORTATION POLICY

This chapter contains edited portions of Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 ALABAMA L. REV. 237 (2011), and Hari M. Osofsky, *Litigation's Role in the Path of U.S. Federal Climate Change Regulation: Implications of AEP v. Connecticut*, 46 VALPARAISO U. L. REV. 447 (2012).

This chapter analyzes the implications of the taxonomy's application to motor vehicle greenhouse gas emissions regulation for the Obama Administration's future policy choices and proposes areas for rescaling. As noted previously, motor vehicle emissions regulation has two core pieces: what we drive and how we drive. Existing diagonal regulatory approaches focusing on what we drive tend to be more large-scale, vertical, and top-down with a mixture of cooperation and conflict, whereas those focusing on how we drive tend to be the opposite: more small-scale, horizontal, and bottom-up.

This difference likely reflects a divergence in how we envision these two regulatory projects, mainly because of the balance of corporate versus individual involvement needed for their implementation and because of the grounding of the latter one in smaller-scale land-use planning. Many of the regulations that impact what cars we drive directly affect the auto industry, and so the industry pushes for the larger-scale uniformity which it finds economically advantageous and efficient. Many of the regulations that impact consumer choices directly, but the auto industry more indirectly—such as the way city streets are organized or carpool incentives—tend to rely more on smaller-scale decision-making and local specifics. While the bifurcation is not complete because top-down programs rely upon diverse smaller-scale implementation and smaller-

scale government has helped drive federal-level mandates, the existing motor vehicle regulation tends to have this divergence when viewed through the lens of the taxonomy. These tendencies point the way for future diagonal strategies, which this chapter explores by analyzing approaches to what cars we drive, how we drive them, and motor vehicle greenhouse gas emissions litigation.

1. Technology-Driven Standards and Incentives (Or, What Cars We Drive)

With regard to what we drive, the Obama Administration's approach primarily takes the form of top-down, national-level mandates and top-down, multiscalar financial incentives programs paired with international cooperation. Its National Program forces companies to invest in greener cars by setting combined emissions and efficiency standards that ramp up over time but is endorsed by these companies out of their desire for national uniformity.⁶⁴² The various financial incentives programs, which have been significantly funded through ARRA, help foster corporate and smaller-scale governmental development of the technology needed to meet those standards in ways that fit specific contexts.⁶⁴³

However, as discussed in depth in Chapters VIII and IX, these overall tendencies contain nuance. Neither its mandates nor its financial incentives are fully top-down because they involve opportunities for bottom-up input and involvement. For example, the Clean Air Act waiver system has allowed both coalitions of states to help drive more stringent federal standards and individual companies, cities, states, and tribes to develop

⁶⁴² See *supra* notes 44 & 162.

⁶⁴³ See *supra* Chapter VIII.

the specific programs which the federal government funds.⁶⁴⁴ In addition, the larger international context in which the mandates and incentives take place helps to shape them, which results in another large-scale, horizontal component of the dynamics. As the United States collaborates with other key countries on motor vehicles, fuel technology, and transportation strategy, its national policies are influenced by the approaches and commitments of its nation-state collaborators.⁶⁴⁵ For example, the collaboration between the United States and China on electric vehicles is spurring demonstration projects in a number of cities.⁶⁴⁶

Given this complex, but clearly skewed, backdrop that the taxonomy illuminates, this chapter queries whether this imbalance is appropriate. These skews have their advantages, as the prior chapter's analysis illuminates. Large-scale, vertical, top-down approaches comport with many people's understanding of climate change as a large-scale problem, help to create certainty for corporations that allows for planning and efficient business choices, and prevent leakage among jurisdictions. Appropriate technology for vehicles and fuels should arguably be relatively uniform across jurisdictions, given the national and international markets for these products.⁶⁴⁷

With full recognition of those advantages of current skews, this chapter argues for the value of achieving more balance by involving smaller-scale actors in federal decision-making processes. It proposes methods for involvement which would achieve the benefits of locally specific knowledge and innovation without undermining the advantages of the

⁶⁴⁴ See *supra* notes 41–50 and accompanying text.

⁶⁴⁵ See *supra* Chapter VIII.

⁶⁴⁶ See *supra* note 132 and accompanying text.

⁶⁴⁷ See *supra* Chapter VIII.

current skews. Even in the technology context, locally specific resources, needs, and politics make some approaches more viable than others. For example, solar only works well in places which have enough sun, and wind power only works well in places which have enough wind. An electric car is most viable in states willing to invest in enough charging stations, and biofuels will be available without the monetary and emissions costs of transporting them in places where they are grown. Moreover, the specific people with the knowledge and skills to develop particular innovations, whether scientifically or in practical implementation, will vary from place to place.⁶⁴⁸ If there are ways to create large-scale certainty and consistency, but take the smaller-scale variation into account, our policies can gain fuller advantages in each dimension.

First and foremost, a major part of achieving this balance in the future is maintaining balancing efforts which already exist. To that end, the Obama Administration will need to decide how committed it is to preserving existing diagonals in the face of increasing preemption pressure. The Obama Administration has already constrained preemption in the Executive Branch through the President's May 2009 memorandum.⁶⁴⁹ As the National Program continues to develop, the Obama Administration has managed to maintain a cooperative rather than preemptive approach to obtaining uniformity. However, before climate change legislation failed, pressure existed, particularly from affected companies, to make comprehensive federal climate

⁶⁴⁸ For a discussion of potential alternative vehicle technologies and their benefits and limitations, see Joshua P. Fershee, *Struggling Past Oil: The Infrastructure Impediments to Adopting Next-Generation Transportation Fuel Sources*, 40 CUMB. L. REV. 87 (2009); Pamela Cohn, Comment, *Automobile Pollution: Japan and the United States—Cooperation or Competition?*, 9 EMORY INT'L L. REV. 179, 183–86 (1995).

⁶⁴⁹ See *supra* note 205 and accompanying text.

change legislation highly preemptive.⁶⁵⁰ To the extent that some form of climate change or, more likely, clean energy legislation becomes politically viable, hard choices will again emerge about how preemptive those statutes should be. Advocates of significant preemption not only cite the need for corporate certainty and efficiency, but also argue that under an emerging cooperative comprehensive regime, significant opportunities for divergence are no longer needed.⁶⁵¹

Those favoring more limited preemption, on the other hand, typically focus on the historically and currently important role that provisions like the CAA waiver play in helping to drive stronger federal regulatory efforts.⁶⁵² Analyzing these efforts through the lens of the taxonomy reinforces the argument against preemption by demonstrating the ways in which these provisions allow for shifting skews in each dimension over time. Specifically, the shifts in skews over time create the iterative process that Ann Carlson has described in this context, which has helped to drive stronger federal regulation.⁶⁵³ This diagonal-enhancing quality of these provisions helps to make the overall regulatory approach more crosscutting and flexible, and the Obama Administration should not give in to pressure to make a comprehensive national program rigidly top-down.

Second, and in more of a shift from the status quo, the Obama Administration should explore options for greater involvement by smaller-scale government coalitions in

⁶⁵⁰ See, e.g., *Voinovich Throws Curveball at Senators' Plan to Limit GHG Regs in Climate Bill*, ENV'T & ENERGY DAILY (Apr. 22, 2010), <http://www.nytimes.com/cwire/2010/04/22/22climatewire-sen-voinovich-throws-curveball-at-senators-p-32487.html>.

⁶⁵¹ Jonathan Wiener, for example, argues more broadly for the need for larger-scale policy solutions. See Wiener, *supra* note 571.

⁶⁵² See sources cited *infra* note 686 and *supra* note 637.

⁶⁵³ See Carlson, *Iterative Federalism and Climate Change*, *supra* note 608.

the development of its financial incentives programs. While the current programs allow each individual, smaller-scale government to develop a locally specific, innovative plan, they often do not provide sufficient opportunity for smaller-scale, horizontal collaboration and conflict to shape the overall contours of what it approves and how these projects develop over time. The Obama Administration's current traditional structure in most of its decisions regarding green motor vehicles technology—namely, the federal government assessing smaller-scale applications and approving some of them—only allows for those collaborative moments informally, or through specific efforts to connect related programs.⁶⁵⁴

Accordingly, the Obama Administration should expand upon its current models to build more programs that involve innovative collaboration. For example, its approaches to crafting national programs in the motor vehicle and clean energy contexts—in which it brought together key subnational and corporate actors—might also work well with respect to financial incentives. The Administration might also expand upon these models by better including national organizations of smaller-scale governments in the decisionmaking process. These entities—which have collective interests and so are unlikely to lobby for particular local projects—could be more involved in shaping the contours of financial incentives programs and the funding decisions that those programs entail.⁶⁵⁵ The Administration has created the beginnings of such an approach in the DOE's Clean Cities program, where the federal government is working with smaller-scale coalitions around the country, but even this project does not seem to integrate those

⁶⁵⁴ See *supra* Chapter VIII.

⁶⁵⁵ Climate Communities are an example of such an entity. See *supra* notes 587–589.

coalitions into national-level decision-making.⁶⁵⁶ This integration would not only make efforts to address what cars we drive less skewed within the taxonomy's dimensions, but also create a funding and policymaking scheme that more effectively incorporates smaller-scale perspectives. Such perspectives are particularly useful in assessing the on-the-ground viability of specific technology and the types of consumer incentives which would be most effective in particular locales—assessments that should be incorporated into what the Obama Administration chooses to incentivize.

These suggestions regarding preemption and inclusiveness demonstrate the role that the taxonomy can play in shaping future policy regarding technology-driven approaches. While the taxonomy does not dictate any particular policy strategy, it does indicate where diagonal approaches skew. Although the Obama Administration may decide at times that such skews are appropriate, an awareness of them can help to motivate a more balanced approach overall. Specifically, since approaches to what cars we drive tend to be skewed so heavily, particularly with respect to the first three dimensions—they are largely large-scale, vertical, and top-down—the Obama Administration should be particularly alert to the repercussions of policy changes on those skews. It should give careful scrutiny to proposed preemption of current opportunities for smaller-scale divergence and seek ways of better involving smaller-

⁶⁵⁶ See *Clean Cities, About the Program*, U.S. Department of Energy, <http://www1.eere.energy.gov/cleancities/about.html> (last visited Feb. 23, 2011). The Department of Transportation highlights partnerships with smaller-scale governments, but none of them seem to be integrative in the way that this article proposes. U.S. Department of Transportation, DOT Activities and Partnerships: State, Local, and Private Sector, *available at* <http://climate.dot.gov/policies-legislation-programs/dot-partnerships/state-local-private.html>. The EPA's current state and local climate change and energy program, which replaced the EPA's 2005-09 Clean Energy-Environment state partnership, *Partner Network*, ENVIRONMENTAL PROTECTION AGENCY, *available at* <http://www.epa.gov/statelocalclimate/state/partner/index.html> (last visited Feb. 23, 2011), also appears to be largely top-down in its approach. See *State and Local Climate and Energy Program*, ENVIRONMENTAL PROTECTION AGENCY, *available at* <http://www.epa.gov/statelocalclimate/index.html> (last visited Feb. 23, 2011).

scale coalitions' perspectives in its financial incentives for alternative vehicles technology.

2. Land-Use and Transportation Planning (Or, How We Drive Our Cars)

With respect to how we drive, policy efforts have opposite skews from the ones in the context of what we drive. Specifically, although the Obama Administration, by virtue of its positionality, still primarily uses top-down mandates and financial incentives, the bulk of legal efforts regarding how we drive are generated and controlled by smaller-scale government due to the structure of land-use planning law in the United States. In practical terms, this structure means that many of the most important diagonal regulatory efforts regarding how we drive in our communities are not those connected with the Obama Administration's federal programs, but rather small-scale, bottom-up, horizontal initiatives among state and local governments.⁶⁵⁷

As with the previous regulatory category, these trends contain nuance because efforts to influence how we drive have different emphases at larger and smaller jurisdiction levels. The Obama Administration's large-scale, vertical, top-down efforts, as described above in Chapter VIII, focus primarily on reworking national transportation policy and infrastructure and on incentivizing innovative state and local programs. For example, the Obama Administration is aiming to link more cities through high speed rail, is funding state and local transit agency's efforts to use alternative energy technology, and is supporting urban circulator projects.⁶⁵⁸ In contrast, state and local governmental

⁶⁵⁷ See *supra* Chapter IX.

⁶⁵⁸ See *supra* notes 63–69 and accompanying text.

efforts generally focus on planning issues and changing cultural expectations. For instance, governments at these smaller jurisdictional levels often work to make urban growth plans more sustainable and to promote and fund creative ride-sharing programs.⁶⁵⁹ The primary manner in which these sets of policies come together is through efforts to implement federal transportation policy at state and local levels, which, under the Obama Administration, comes substantially through ARRA funded programs.⁶⁶⁰

The overall skews in this policy area toward the smaller-scale, horizontal, and bottom-up have their advantages. They ensure that the levels of government with the greatest competence to address the policies that most affect how people use their cars—often, land use and planning issues—are able to make the individualized choices which will work in their respective jurisdictions. As Janet Levit and I have explored, Portland and Tulsa both are making strides on reducing emissions, but how that translates in their local contexts differs greatly.⁶⁶¹ The dissertation’s third case study on suburban climate change efforts also reflects the need to acknowledge local variation.⁶⁶²

However, as in the technology context, this chapter argues for the value of greater balance and integration. Large-scale efforts, like the ones in which the Obama Administration is engaged, help to address the national-level infrastructure concerns and create coordination among local efforts. Moreover, the federal funds are an important part

⁶⁵⁹ See, e.g., *supra* notes 626–628.

⁶⁶⁰ See *supra* Chapter VIII.

⁶⁶¹ See Osofsky & Levit, *supra* note 574.

⁶⁶² See *infra* Chapters XI–XIII.

of what allows localities to innovate.⁶⁶³ Further development along both of these lines would help to advance efforts to change the ways in which people use their cars.

More so than in the technology context, the federal government shares the national and international stage with horizontal coalitions of subnational governments. Those entities also work to coordinate efforts among localities and states, as evidenced by agreements among cities, states, and provinces around the world at UNFCCC negotiations and those among localities and states in the United States.⁶⁶⁴ These dual large-scale efforts suggest possibilities for the Obama Administration's future diagonal strategies, which the coalitions themselves have been requesting: collaborate with them more closely, so that there is better integration between the Administration's federal efforts and the coalitions' smaller-scale efforts.⁶⁶⁵

This integration may take a variety of forms. Specifically, in expanding such partnerships, the Obama Administration will have options in how much it wants to defer to smaller-scale governmental authorities and coalitions. The Administration may decide that in some instances, more deference is warranted and that in others, it prefers the status quo power balance. However, even if it does not change the balance of power at all through greater delegation, the Obama Administration has an opportunity to create policy integration with respect to how we drive that does not currently exist. As a practical matter, this greater integration would not be difficult to achieve. The Obama Administration has already been giving funds to localities that on many fronts line up

⁶⁶³ See *supra* Chapter VIII.

⁶⁶⁴ See *infra* Chapter XIII.

⁶⁶⁵ See *Open Letter*, *supra* note 562.

with requests of coalitions like Climate Communities, although the greater financial pressure it continues to face has translated into a failure to include requests in the 2011 or 2012 budgets for DOE's Energy Efficiency and Conservation Block Grants or the EPA's Climate Showcase Communities program, both of which include green transportation funding.⁶⁶⁶ Federal agencies also already work with states, cities, and tribes on these initiatives and consult informally with them a great deal. The Obama Administration could build on all of these existing efforts by creating more opportunities to bring together relevant agencies and subnational coalitions both to help frame how funds are structured and distributed and to plan next steps.

Such vertical integration among key governmental entities at different levels—even if it only involved more informal consultation—would mirror the kind of horizontal integration that the Obama Administration has done by creating the National Program and merging EPA and DOT efforts.⁶⁶⁷ Namely, it would bring together entities with overlapping policy projects into more collaborative relationships than currently exist. In creating such integration, the Administration would shift the land-use planning and cultural aspects of motor vehicle greenhouse gas regulation from one in which bifurcated skews exist—with the Administration's efforts skewing one way and smaller-scale efforts skewing the other—to one with more balance within each dimension. As discussed above,

⁶⁶⁶ See OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2012 APPENDIX (2011); CLIMATE COMMUNITIES, <http://climatecommunities.us/> (last visited Jan. 10, 2011); *Climate Showcase Communities Grants*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY STATE AND LOCAL CLIMATE AND ENERGY PROGRAM, <http://www.epa.gov/statelocalclimate/local/showcase/> (last visited Jan. 10, 2011); DOE Block Grant Program, *supra* note 478.

⁶⁶⁷ See *supra* Chapter IX.

this balance will help make the federal government a more supportive and integrated partner in local land-use planning efforts intended to reduce vehicle miles traveled.

As with technology-driven standards, the taxonomy can be used in this context as a tool to suggest many different policy approaches. The key contribution it makes is in organizing that conversation. By demonstrating the ways in which current approaches skew within the four dimensions, it can increase the Obama Administration's sensitivity to how it might create greater overall integration and be more responsive to coalitions of leader states and localities.

3. The Ongoing Role of Litigation

Finally, with respect to both types of regulation, the Obama Administration will continue to confront the question of when lawsuits should be allowed. Climate change litigation targets both government regulations and corporate emissions, and as discussed in Chapter VII, serves as a mechanism for greater diagonal interaction. Litigation can serve as a game-changer by shifting the skews within each of the dimensions. In my view, this diagonal quality of litigation means that it is a valuable tool to aid in the Obama Administration's efforts to reduce motor vehicle greenhouse gas emissions; litigation needs to be built into regulatory schemes the Obama Administration is creating to allow for different perspectives to be brought into the regulatory process.⁶⁶⁸

The Obama Administration currently interacts with the regulatory role of litigation in two main contexts. First, and especially because Congress has failed to pass major climate change legislation, more general environmental statutes have become a

⁶⁶⁸ See *supra* Chapter VII.

major locus in the policy dialogue over climate change policy. In the motor vehicle emissions context, the litigation over motor vehicles greenhouse gas emissions discussed in Chapter IV and V has played and continues to play a critical role in helping to frame approaches; it has provided leader states and cities with a mechanism for pushing for more stringent regulatory standards and more skeptical ones with a mechanism for pushing against those standards. The CAA petition and waiver processes specifically have resulted in an EPA endangerment finding and have helped to provide the basis for the National Program.⁶⁶⁹ In contrast, lawsuits filed against the EPA's endangerment finding served to express concerns about regulating climate change through that mechanism.⁶⁷⁰

Even if comprehensive climate change legislation or significant clean energy legislation were to pass, the CAA will likely remain a critical mechanism for motor vehicle greenhouse gas emissions regulation (assuming that legislative and judicial efforts to block that regulation continue to fail). The processes established by the CAA that provide the basis for litigation serve as an important way in which smaller-scale, horizontal coalitions can provide bottom-up input. The Supreme Court even acknowledged this type of administrative, statutorily-based litigation as an appropriate path for challenging the EPA's approach in its 2011 decision in *American Electric Power*

⁶⁶⁹ See *id.* at 616–30.

⁶⁷⁰ See, e.g., Petition to Review of the Commonwealth of Virginia, Virginia *ex rel* Cuccinelli v. EPA (D.C. Cir. 2010), *available* at http://www.oag.state.va.us/LEGAL_LEGIS/CourtFilings/Comm%20v%20EPA%20-%20Pet%20to%20Review%202_16_10.pdf; see also Holly Doremus, *Lining up for Endangerment Litigation*, LEGAL PLANET: THE ENVIRONMENTAL LAW AND POLICY BLOG (Feb. 20, 2010), <http://legalplanet.wordpress.com/2010/02/20/lining-up-for-endangerment-litigation/>; *supra* Chapters IV–VII.

Co. v. Connecticut [AEP].⁶⁷¹ Litigation has played an important role both in giving the Obama Administration the needed regulatory authority to address motor vehicle greenhouse gas emissions through the CAA and in illuminating the various views which public and private entities have on what course such regulation should take.

Second, with respect to the comprehensive climate change and energy regulation that failed to pass in Congress, heated debates focused on the extent to which this legislation should both contain mechanisms for litigation and preempt other litigation. The CAA provides a model for why this legislation, if it ever becomes more politically viable, needs to contain some mechanisms for interested smaller-scale governments, nongovernmental organizations, and individuals to challenge policy choices.⁶⁷² Such mechanisms make the statute more balanced within the four dimensions by providing a way for smaller-scale entities to work together horizontally and provide a bottom-up challenge to largely federal-level, vertical, top-down decisions. As the CAA context illustrates, these challenges may not always push in the direction of more stringent regulation of motor vehicle greenhouse gas emissions. However, this input from both directions can help the Obama Administration to craft more broadly acceptable policy that moves the dialogue forward.

These mechanisms in both existing and potential statutes are particularly important due to the Supreme Court's decision in *American Electric Power v. Connecticut*. As noted above, in June 2011, the U.S. Supreme Court decided its second case involving

⁶⁷¹ 131 S. Ct. 2527, 2539 (2011).

⁶⁷² For examples of other scholarship arguing that the CAA provides a model for shaping climate change legislation, see Doremus & Hanemann, *supra* note 633; William W. Buzbee, *Clean Air Act Dynamism and Disappointments: Lessons for Climate Legislation to Prompt Innovation and Discourage Inertia*, 32 WASH. U. J.L. & POL'Y 33 (2010).

climate change and, in the process, reinforced the country's current regulatory path. The core of the *AEP* decision focuses on the relationship between federal regulatory authority under the Clean Air Act and common law public nuisance. The U.S. Supreme Court holds that “the Clean Air Act and the EPA actions it authorizes displace any federal common law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired power plants.”⁶⁷³ *AEP* bases its unanimous displacement decision on *Massachusetts's* finding that carbon dioxide emissions qualify as air pollution under the Clean Air Act.⁶⁷⁴ *AEP* interprets that finding as establishing Congress's delegation to the EPA of “whether and how to regulate carbon-dioxide emissions from power plants; the delegation is what displaces federal common law.”⁶⁷⁵

In the process of explaining its displacement holding, the Court in *AEP* makes two interrelated points that will shape the path of efforts to address climate change at a federal level in the United States. It precludes federal common law nuisance actions as a mechanism for challenging EPA's approach to climate change regulation—even if EPA declines to regulate—so long as EPA has regulatory authority.⁶⁷⁶ At the same time, the Court reinforces the appropriateness of regulatory suits challenging the EPA: “If the plaintiffs in this case are dissatisfied with the outcome of the EPA's forthcoming rulemaking, their resource under federal law is to seek Court of Appeals review, and ultimately, to petition for certiorari in the Court.”⁶⁷⁷ This combination suggests that the

⁶⁷³ No. 10–174, 564 U.S. ___, slip opinion at 10 (June 20, 2011).

⁶⁷⁴ See Jonathan H. Adler, *A Tale of Two Climate Cases*, YALE L.J. ONLINE (forthcoming 2011).

⁶⁷⁵ 564 U.S. ___, slip opinion at 12.

⁶⁷⁶ *Id.*

⁶⁷⁷ *Id.*, slip opinion at 13.

Court remains open to climate change litigation’s continuing role in determining the course of federal regulation so long as that litigation has a statutory focus.

In addition to reinforcing the appropriateness of litigation over federal regulatory approaches, *AEP* puts pressure on Congress to leave the current regime under the Clean Air Act in place. The opinion explicitly does not reach whether a federal common law nuisance action would be allowed if Congress decided that EPA could no longer regulate greenhouse gas emissions. The opinion thus limits federal common law as a “parallel track” for challenging EPA’s regulatory decisions but leaves that track potentially open if Congress passes legislation that overrides *Massachusetts*.⁶⁷⁸

The Court’s view of climate change litigation in *AEP* ensures that courts will remain an important regulatory battleground in the United States for the Obama Administration. The Court not only endorses the appropriateness of suits over the EPA’s approach to regulating greenhouse gases under the Clean Air Act, but also allows this exploding area of litigation to continue—for the most part—along its current trajectory. The increasing investment by law firms, governmental entities, and nongovernmental organizations in climate change litigation practice likely will proceed apace after *AEP*. This aspect of the outcome is good news from the perspective of encouraging diagonal interaction; as displayed in *Massachusetts*, *AEP*, and the myriad of cases before lower courts, litigation provides a way for key stakeholders to address conflicts over the way forward.⁶⁷⁹

⁶⁷⁸ *Id.*, slip opinion at 9, 15–16.

⁶⁷⁹ *See supra* Chapter IV–VII.

However, some of the unanswered questions and closed pathways after *AEP* raise questions about the extent to which citizens will be able to use litigation to challenge corporate decisionmaking and to achieve redress for those harmed by climate change. Maxine Burkett argues that the Court's decision to narrow possibilities for federal common law nuisance actions raises serious justice concerns because it eliminates an option for those injured by climate change to obtain corrective justice from major emitters.⁶⁸⁰ While regulatory suits, if they result in greater restrictions on greenhouse gas emissions, help to limit the impacts of climate change, they provide limited opportunities for victims to obtain redress. Notwithstanding the many procedural and substantive concerns raised by climate change nuisance suits that Michael Gerrard has highlighted—issues that have not yet been addressed for the most part because of the barriers these cases have faced at early stages—these suits do focus on the connection between emitters and victims in a way that regulatory suits generally do not.⁶⁸¹

The decision by the Court to constrain this avenue for potential justice has implications for the U.S. federal regulatory approach. Namely, unless the Court's decision in *AEP* is accompanied by greater assistance for climate change victims in the regulatory framework, its emphasis on the agency pathway risks exacerbating the climate justice problem by providing fewer ways for victims to obtain redress. But addressing climate justice within a federal regulatory framework, even assuming there is adequate political support for such an approach, raises a host of complex concerns. To the extent

⁶⁸⁰ See Maxine Burkett, *Climate Justice and the Elusive Climate Tort*, 121 Yale L.J. Online 115 (2011), <http://yalelawjournal.org/2011/09/13/burkett.html>.

⁶⁸¹ See Michael B. Gerrard, *What Litigation of a Climate Nuisance Suit Might Look Like*, 121 YALE L.J. ONLINE 135 (2011), <http://yalelawjournal.org/2011/09/13/gerrard.html>.

that climate justice involves helping people with few resources adapt to climate change, the federal adaptation program in collaboration with smaller scale adaptation efforts provide relatively uncontroversial mechanisms for addressing inequality.⁶⁸²

However, if a vision of climate justice also includes compensation for harm that goes beyond adaptation assistance (e.g., the Inuit being unable to use their ancestral lands in line with their traditional practices),⁶⁸³ integrating such compensation into a regulatory scheme, particularly if it includes a corrective justice component of funding or other assistance from major emitters,⁶⁸⁴ will likely be far more complex and politically contentious. As litigation continues to shape the federal regulatory path in the various ways that Chapters IV through VII describe, important questions remain for the Obama

⁶⁸² For the current U.S. federal approach to adaptation, see the White House, Council on Environmental Quality, Climate Change Adaptation Task Force, <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>. For U.S. state and local approaches, see *Adaptation Planning—What U.S. States and Localities are Doing*, PEW CENTER ON GLOBAL CLIMATE CHANGE, http://www.pewclimate.org/docUploads/State_Adaptation_Planning_02_11_08.pdf (last visited Jan. 10, 2011). For an analysis of federalism dilemmas in U.S. adaptation planning, see Robert L. Glicksman, *Climate Change Adaptation: A Collective Action Perspective on Federalism Considerations*, 40 ENVTL. L. 1159 (2010).

⁶⁸³ U.S. and Canadian Inuit filed a petition with the Inter-American Commission, which was rejected, claiming that U.S. climate change policy violated their rights. See *Letter from the Organization of American States to Sheila Watt-Cloutier, et al. regarding Petition No. P-1413-05*, 1 February 2007 (on file with the author); *Letter from Sheila Watt-Cloutier, Martin Wagner, and Daniel Magraw to Santiago Cantón, Executive Secretary, Inter-American Commission on Human Rights*, 15 January 2007 (on file with the author); *Letter from the Organization of American States to Sheila Watt-Cloutier, et al. regarding Petition No. P-1413-05*, 16 November 2006 (on file with the author); see also Jane George, *ICC Climate Change Petition Rejected*, Nunatsiaq News, 15 December 2006, available at www.nunatsiaq.com/news/nunavut/61215_02.html; Jonathan Spicer, *Hearing to Probe Climate Change and Inuit Rights*, Reuters UK, 21 February 2007, available at <http://uk.reuters.com/article/idUKN204267120070221>; *Presentation by Sheila Watt-Cloutier, Chair, Inuit Circumpolar Conference Eleventh Conference of Parties to the UN Framework Convention on Climate Change Montreal*, 7 December 2005, www.inuitcircumpolar.com/index.php?ID=318&Lang=En; see also Hari M. Osofsky, *The Inuit Petition as a Bridge? Beyond Dialectics of Climate Change and Indigenous Peoples' Rights*, 31 AM. INDIAN L. REV. 675 (2007). In the U.S. Ninth Circuit Court of Appeals, a pending climate change federal common law nuisance case involving indigenous peoples rights is on appeal after the district court dismissed the case on justiciability grounds. See *Native Vill. of Kivalina v. ExxonMobil Corp.*, 663 F. Supp. 2d 863, 873–76 (N.D. Cal. 2009). This appeal is impacted by the *AEP* decision.

⁶⁸⁴ See Burkett, *supra* note 680.

Administration about how to help those most vulnerable to climate change through domestic law and what role litigation should play in resolving those questions. Major emitters' choices are intertwined with those of climate change victims, but these linkages are hard to address directly through either mitigation or adaptation programs. As courts continue to interact with legislatively created statutes to create the basis for key aspects of the Obama Administration's regulatory approach climate change, the United States needs to find better ways to address these fundamental fairness concerns.

Overall, then, in the context of motor vehicle greenhouse gas emissions regulation, thinking in diagonal federalist terms and applying Chapter IX's law and geography taxonomy helps to provide a basis for rethinking regulatory approaches and considering how strategies can be more crosscutting. The taxonomy can be used as a relatively politically neutral tool for getting at the scale problem that bedevils efforts to get at climate change in general, and motor vehicle greenhouse gas emissions in particular. While this approach will not solve all of the Obama Administration's challenges, and others might choose to apply it differently than this part does, it provides an organized framework for identifying gaps and possibilities.

4. Concluding Reflections on the Value of Multidimensional Approaches in the U.S. Federal Context

Even with an Administration committed to progress on this issue, the crosscutting regulatory problem posed by climate change is daunting. This dissertation argues that a diagonal federalism approach can help make the Obama Administration's ongoing efforts to address climate change more effective, even if it cannot make the problem itself less complex. As the example of motor vehicle emissions regulation demonstrates, the

structure of regulatory approaches even within a relatively narrow subject area varies significantly across subissues. An application of the taxonomy across other components of the Obama Administration's climate change policy, such as clean energy and green jobs, can both reveal where skews within dimensions are located and help to frame conversations about future directions for policy.

At times, the Administration may deem skews appropriate, particularly in areas where it thinks that federal-level, top-down mandate approaches are preferable. However, even in those areas, as revealed in the motor vehicles example, opportunities abound for creating more interconnection and adding approaches that skew the other way within each dimension. Regardless, conducting such an analysis allows for more informed decision-making as the Obama Administration navigates complexities of scale.

Beyond its practical value in the climate change law and policy context, this multidimensional approach also has the potential to assist in a needed reframing of the environmental federalism literature. Robert Percival explains that environmental federalism debates have traditionally centered on how federal versus state authority should be allocated.⁶⁸⁵ In recent years, however, numerous scholars have attempted to

⁶⁸⁵ See Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141 (1995). For example, an extensive environmental federalism dialogue in the mid-1990s focused on whether federal or state environmental regulation was more likely to lead to a race to the bottom. Compare Kirsten H. Engel, *State Environmental Standard-Setting: Is There a "Race" and Is It "To the Bottom"?*, 48 HASTINGS L.J. 271 (1997) (arguing for federal environmental regulation as valuable), Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996) (same), Joshua D. Sarnoff, *The Continuing Imperative (but Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVTL. L. & POL'Y F. 225 (1997) (same), and Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 YALE L. & POL'Y REV. 67 (1996) (same), with Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 YALE L. & POL'Y REV. 23 (1996) (presenting the downside of extensive federal environmental regulation), Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992) (same), Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535 (1997) (same), and Richard B. Stewart, *Environmental Regulation and International*

move beyond this model towards more dynamic ones introduced in Chapter II. Kirsten Engel describes this evolution in *Harnessing the Benefits of Dynamic Federalism in Environmental Law*. Engel explains that such models view the federal government and states as alternative sources of regulatory authority that interact over time, and argues that these approaches address environmental problems more effectively and are truer to the process of policymaking contemplated by our constitutional structure.⁶⁸⁶

While all of these dynamic approaches to environmental federalism engage core issues raised by a wide range of key actors interacting at multiple levels of government, alternate streams in this literature focus on different aspects of what these interactions entail. As the analysis in Chapter VIII reinforces, the taxonomy highlights major dimensions in which these scholarly discussions take place. Although some articles engage more than one of the dimensions, the taxonomy's framework provides a helpful way of organizing these crosscutting ideas.⁶⁸⁷

This capacity of the taxonomy to organize environmental federalism debates raises conceptual issues, which my future scholarship will engage in depth. First and

Competitiveness, 102 YALE L.J. 2039 (1993) (same).

⁶⁸⁶ See Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 176 (2006). For an earlier exploration of dynamic federalism in a corporate law context, see Renee M. Jones, *Dynamic Federalism: Competition, Cooperation and Securities Enforcement*, 11 CONN. INS. L.J. 107 (2004). See also SCHAPIRO, POLYPHONIC FEDERALISM, *supra* note 610; Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863, 879–83 (2006); Buzbee, *Asymmetrical Regulation*, *supra* note 637, at 1549–50; Buzbee, *Regulatory Commons*, *supra* note 607, at 49–51; Erwin Chemerinsky, *Empowering States When It Matters: A Different Approach to Preemption*, 69 BROOK. L. REV. 1313, 1328–32 (2004); Resnik, *Law's Migration*, *supra* note 574; Resnik, Civin & Frueh, *supra* note 566. See generally Schapiro, *Toward a Theory of Interactive Federalism*, *supra* note 638. The *Emory Law Journal* has published two symposia exploring these federalism models, the first of which included the Engel article on dynamic federalism. See Symposium, *Interactive Federalism: Filling the Gaps?*, 56 EMORY L.J. 1 (2006); Symposium, *The New Federalism: Plural Governance in a Decentered World*, 57 EMORY L.J. 1 (2007).

⁶⁸⁷ For examples of the ways in which environmental federalism debates take place in each dimension, see *supra* notes 153–59, 172–73, 197–201 & 222–27.

most fundamentally, this multidimensional analysis reveals that the environmental federalism literature itself has a particular geography that influences which issues are covered and how they are discussed. Most environmental federalism scholarship, even in the more dynamic approaches, presumes the ability to treat each level of government as a clearly delineated space is generally limited. As a result, analyses focus on each level's appropriate domain and interaction with other levels in each of the four dimensions.⁶⁸⁸

While such an approach might be appropriate, the geography and ecology literatures contain multiple possibilities for understanding these scales and their interaction with one another. As noted in Chapter II, Neil Brenner has summarized a number of the definitions of scale which geographers use⁶⁸⁹ and Nathan Sayre has highlighted additional concepts which ecologists bring to an understanding of scale.⁶⁹⁰ Current environmental federalism analyses generally focus on Brenner's first definition; the scholarship maps the levels interacting as enclosed spaces and describes and prescribes their dynamic interactions.⁶⁹¹ The existence of these many alternative possibilities to the understanding of scale in the environmental federalism literature opens interesting research questions about how different definitions might change the current scholarly debates.

⁶⁸⁸ The environmental federalism approaches described in Chapter IX reflect this conception of scale. *See supra* notes 153–59, 172–73, 197–201 & 222–27.

⁶⁸⁹ NEIL BRENNER, *NEW STATES SPACES: URBAN GOVERNANCE AND THE RESCALING OF STATEHOOD* 9 (2004) (internal quotations omitted).

⁶⁹⁰ Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 (3) *PROGRESS HUM. GEOGRAPHY* 276, 281 (2005).

⁶⁹¹ For examples, *see supra* notes 153–59, 172–73, 197–201 & 222–27.

Second, within the confines of the map provided by the taxonomy and its four dimensions, analyses provide different perspectives on what skews are appropriate when. Scholars debate the comparative value of large- and small-scale climate change regulation; focus on vertical or horizontal dimensions of interactions; propose top-down, bottom-up, or mixed hierarchical schemes; and emphasize conflict or cooperation in the regulatory interactions.⁶⁹² Just as these skews provide opportunities for reflection in the policy context, they also assist a rethinking of the scholarly literature. My future work will consider how to evaluate the debates over the appropriateness of skews and ask when different approaches might be balanced or combined.

Specifically, as this chapter highlighted, certain contexts, such as motor vehicles' technological development versus usage, lend themselves more towards particular skews in the dimensions. Even if adding balance is often desirable, as analyzed in this chapter, those skews often are grounded in real differences between those contexts.⁶⁹³ Thinking multidimensionally about the environmental federalism debates similarly allows for a comparison of the contexts upon which scholarship focuses and enables an assessment of where true compatibilities and incompatibilities lie.

Finally, both of these inquiries lead to a third inquiry, which brings together policy with conceptual analysis. Specifically, both the practical and conceptual applications of the taxonomy reopen questions about the value and limitations of such typologies and the best ways of constructing and assessing them. Thinking multidimensionally provides possibilities for deconstruction and reconstruction, but

⁶⁹² See *supra* notes 153–59, 172–73, 197–201 & 222–27.

⁶⁹³ See *supra* Chapter IX.

requires continuous reassessment to make sure that such typologies are using the most effective and appropriate dimensions and applying them appropriately.

This part focuses on vertical and horizontal dimensions of regulatory dynamics, as well as direction of hierarchy and cooperativeness, because these factors represent the primary ways in which multidimensional regulation in this context varies over time. While other dimensions are relevant to the analysis, the ones which I considered adding do not have this quality. For example, change over time is a defining feature of these regulatory dynamics and I considered adding time as a dimension.⁶⁹⁴ However, motor vehicle greenhouse gas emissions regulation does not skew towards short- versus long-term or fast versus slow in the same way that it does in the four dimensions that I used.

It is possible that in additional contexts, other dimensions might function more effectively as organizing principles. Even if that is the case, the value of thinking multidimensionally remains similar. By breaking down regulatory and conceptual choices into their elements and considering the benefits and limitations of skews, multidimensional federalism approaches improve the understanding of complex problems and dynamics. Such an enhanced understanding provides the basis for more effective policy and conceptual choices.

⁶⁹⁴ Discussions with J.B. Ruhl provided helpful insights into how time might enter my analysis.

CHAPTER XI

CONCEPTUALIZING SUBURBAN ACTION ON CLIMATE CHANGE

This chapter contains edited portions of Hari M. Osofsky, *Suburban Climate Change Efforts: Possibilities for Small and Nimble Cities Participating in State, Regional, National, and International Networks*, 22 Cornell J. L. & Pub. Pol’y 35 (2012).

[S]o far, climate action has extended slowly to suburbia. Central cities in smart growth states have taken on climate change, but vast swaths of metropolitan suburbia continue to reproduce a political geography of local free-riding.⁶⁹⁵

The suburbs contain more than half of the U.S. population, an even higher percentage of voters, and an overwhelming majority of elites. The perceived power of the supposed suburban monolith shapes American domestic policy and politics but, in truth, this power is fragmented Many suburbs and older satellite cities are beginning to experience rapid social changes, particularly in their school systems, but they lack the local resources to deal with those changes. Some places are more troubled than the central cities they surround. Another large and important group of fast-growing communities lacks adequate local resources for schools and infrastructure. Finally, a smaller, more affluent group of cities enjoys all the benefits of a regional economy without having to pay the costs.⁶⁹⁶

As international negotiations and U.S. federal efforts continue to fail to produce an adequate response to climate change,⁶⁹⁷ a growing number of cities—including many small suburban cities—are playing critical roles in multi-level efforts to address climate change. U.S. Environmental Protection Agency (EPA) Administrator Lisa Jackson noted in a January 2012 presentation that “those local efforts are where the action is right

⁶⁹⁵ Yonn Dierwechter, *Metropolitan Geographies of US Climate Action: Cities, Suburbs, and the Local Divide in Global Responsibilities*, 12 J. ENVTL. POL’Y & PLAN. 59, 79 (2010).

⁶⁹⁶ MYRON ORFIELD, *AMERICAN METROPOLITICS: THE NEW SUBURBAN REALITY* 28–29 (Brookings Institution Press 2002).

⁶⁹⁷ For an assessment of the emissions gap published at the time of the 2011 Durban COP, see U.N. ENV’T PROGRAMME, *BRIDGING THE EMISSIONS GAP: A UNEP SYNTHESIS REPORT* (Joseph Alcamo, et al. eds., 2011), available at http://www.unep.org/pdf/UNEP_bridging_gap.pdf.

now.”⁶⁹⁸ Especially as global and national trends towards urbanization continue,⁶⁹⁹ cities are becoming increasingly important sites for mitigation and adaptation. Their local land use planning helps to determine per capita emissions and preparedness for changes in the physical environment.⁷⁰⁰ Moreover, leader cities are often ahead of their national governments. These cities form ever-stronger intersecting, multi-level networks in which they make voluntary pledges to reduce emissions and through which they pressure national governments.⁷⁰¹

However, as discussed in at several points in previous chapters, the piecemeal nature of these urban efforts to address climate change constrains their overall impact. In the United States, for example, 1,054 mayors, representing a total population of over 88,920,962 citizens, have joined the U.S. Mayors Climate Protection Agreement (Mayors Agreement) in which they pledge to meet what the U.S. commitments under the Kyoto Protocol would have been: reducing emissions to seven percent below 1990 levels by 2012.⁷⁰² While this number is impressive against the current political backdrop in which

⁶⁹⁸ Lisa P. Jackson, Adm’r, U.S. Env’tl. Prot. Agency, Presentation at the University of Minnesota, Jan. 17, 2012, available at <http://mediamill.cla.umn.edu/mediamill/display/144205> (notes from talk on file with author).

⁶⁹⁹ For analyses of the complexities of urbanization and environmental management, see Robert H. Freilich & S. Mark White, *Transportation Congestion and Growth Management: Comprehensive Approaches to Resolving America’s Major Quality of Life Crisis*, 24 LOY. L.A. L. REV. 915 (1990–1991); G.S. Kleppel, *Urbanization and Environmental Quality: Implications of Alternative Development Scenarios*, 8 ALB. L. ENVTL. OUTLOOK J. 37 (2002); Edward H. Ziegler, *China’s Cities, Globalization, and Sustainable Development: Comparative Thoughts on Urban Planning, Energy, and Environmental Policy*, 5 WASH. U. GLOBAL STUD. L. REV. 295, 302 (2006).

⁷⁰⁰ See *infra* Chapter XI, Section 1.

⁷⁰¹ See *infra* Chapter XIII.

⁷⁰² *List of Participating Mayors*, MAYORS CLIMATE PROT. CTR., <http://www.usmayors.org/climateprotection/list.asp> (last visited Jan. 10, 2012); *About the Mayors Climate Protection Center*, MAYORS CLIMATE PROT. CTR., <http://www.usmayors.org/climateprotection/about.htm> (last visited Jan. 10, 2012).

the U.S. political leaders cannot agree on a coherent pathway forward, these mayors represent only about 5% of U.S. cities and 28% of the total U.S. population.⁷⁰³ The vast majority of cities and people are not participating in the Mayors Agreement. Even if a number of cities have not joined the Agreement for political reasons but are still taking significant mitigation reduction steps, a problematic gap in the Mayors Agreement's coverage remains.

Suburbs play a critical role in the U.S. capacity to address this gap. They contain the majority of population and emissions in metropolitan areas and most of them have not joined the Mayors Agreement.⁷⁰⁴ As discussed in Section 1, a rich scholarly literature across many disciplines documents that, in comparison to their central cities, suburbs are aggregate free loaders, which serve as a barrier to urban efforts to address climate change.⁷⁰⁵ Suburbs as a whole sprawl more, have a higher per capita carbon footprint, and are less likely to take action on climate change, a trio of concerns that are intertwined with inequality and segregation.⁷⁰⁶ These problems have led many to call for larger scale governmental mandates—especially state and metropolitan regional ones at times in

⁷⁰³ The U.S. Census Bureau estimated that as of September 16, 2012, the United States had a total population of 312,562,990 people. U.S. CENSUS BUREAU, <http://www.census.gov/> (last visited Sept. 16, 2012). In 2008, these people lived in roughly 35,350 places (aggregating many different types of local government). *County Subdivision Types and Numbers for States, the District of Columbia, Puerto Rico, and the Island Areas: 2008*, U.S. CENSUS BUREAU, <http://www.census.gov/geo/www/geoareas/cousubtable.html> (last visited Nov. 6, 2011). For analysis of the percentage of the population living in municipal and urban areas, see *Local Governments by Type and State: 2012* (preliminary), U.S. CENSUS BUREAU, Aug. 30, 2012, available at http://www2.census.gov/govs/cog/2012/formatted_prelim_counts_23jul2012_2.pdf, (noting that municipalities account for 19,522 of the 35,886 sub-county units); *2010 Census Urban Areas FAQs*, U.S. CENSUS BUREAU, June 21, 2012, <http://www.census.gov/geo/www/ua/uafaq.html> (noting that “urban areas,” which are defined as an area containing more than 2,500 residents, represent over 249 million people in the U.S., 80.7% of the population).

⁷⁰⁴ See *List of Participating Mayors*, *supra* note 702.

⁷⁰⁵ See *infra* Chapter XI, Section 1.

⁷⁰⁶ See *id.*

conjunction with national level action—to force suburbs to reduce their emissions and to address the difficulties of metropolitan regions more broadly.⁷⁰⁷

These analyses, while validly characterizing suburbs in the aggregate and often proposing laudatory policies, have two significant limitations. First, they do not engage fully the diversity of the cities within suburbs. Geographers such as Peter Muller have long-documented the complex spatiality of the urban form within Automobile Era metropolitan regions; U.S. cities have evolved over the course of the twentieth and beginning of the twenty-first century from a monocentric form to a polycentric one, with suburbs that contain mature urban centers that participate in global economic markets and networks.⁷⁰⁸ Moreover, as discussed in depth in Chapter XII, first ring stressed cities have different needs and mitigation pathways than do the first and second ring developed job centers or the faster-growing developing job centers and bedroom communities in the second and third ring and beyond. While mandates could force action by all cities, understanding how an individual suburban city's positionality affects appropriate action could help guide models targeted to different types of suburbs.

Second, the U.S. Congress and many state legislatures are not likely to pass legislation mandating local emissions reductions or even more comprehensive land use planning in the near term. Although making a case for this legislation is important to envisioning functional multi-level approaches, we also need strategies for making progress on suburban emissions in the absence of top-down, forcing action.

⁷⁰⁷ *Id.*

⁷⁰⁸ PETER O. MULLER, CONTEMPORARY SUBURBAN AMERICA 6-8 (1981); Peter O. Muller, *Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis* in THE GEOGRAPHY OF URBAN TRANSPORTATION 59, 80–83 (Susan Hanson & Genevieve Giuliano, eds) (2004); Peter O. Muller, *The Suburban Transformation of the Globalizing American City*, 551 ANNALS AM. ACADEMY POLITICAL & SOC. SCI. 44, 57 (1997).

This third case study, comprised of Chapters XI through XIII, responds to these concerns by taking a new approach to thinking about suburbs and climate change mitigation to provide a “local-level” example of operationalizing polycentric climate change governance. This final case study is polycentric in its approach at multiple scales; it shows how ostensibly local action is intertwined with multi-level networks and how the polycentricity of localities themselves requires new strategies. In contrast to the conventional critique of suburbs, it considers how individual suburbs working within their local government powers can and do play a constructive role in climate change mitigation. While acknowledging the need for more action on climate change at international, national, and state levels, and regional ones in between, this case study explores how different types of suburbs, as they participate in multi-level networks, can provide models for suburban action and serve as part of efforts to address climate change which complement the treaty regime. Using a diverse group of suburbs in the Twin Cities metropolitan region making innovative climate change and sustainability efforts as a case example, it analyzes pathways for small, nimble governments to: (1) learn from other localities and find cost-effective approaches to reducing emissions, and (2) serve as a constructive influence on national and international efforts to address climate change.

This chapter develops the conceptual approach of this case study by interweaving the geographic conceptions of scale and polycentric governance theories articulated in Chapter II that frame the overall dissertation with urban geography and urban studies scholarship that has particular application in this context. It focuses in particular four streams of scholarship, which, when combined in novel ways, provide a basis for understanding suburban action on climate change, both within each individual city and in

interaction with multi-level networks.

First, an ever-growing scholarly and policy literature explores the role that cities can and should play in responding to the problem of climate change. Some of this literature addresses suburbs, but mostly in the aggregate, as a part of the metro that has a greater carbon footprint, sprawls, and engages less with multi-level networks.⁷⁰⁹

Second, a rich and rapidly developing literature in geography, urban studies, and law dissects the way in which suburbs are changing and the differences among individual suburbs. While this literature has addressed sustainability to some extent, it has not considered how different types of suburbs might respond to climate change.⁷¹⁰

Third, scholars in geography—including both urban geographers and scale theorists—and other disciplines have explored the way in which cities form and interact with networks. Some of this scholarship has focused on climate change networks among localities in particular and their interaction with U.S. federalism, including potential domestic mechanisms, but it has not separated out suburbs.⁷¹¹

Fourth, a broader stream of scholarship referenced in Chapter II, which is not focused on cities in particular, has called for pluralist or polycentric approaches to climate change governance. This literature, however, has not yet provided in-depth analysis of mechanisms for integrating multi-level efforts by cities or smaller city suburbs into a governance scheme.⁷¹²

This chapter intertwines these streams of scholarship to frame this case study's

⁷⁰⁹ For a discussion of this literature, see *infra* Chapter XI, Section 1.

⁷¹⁰ For a discussion of this literature, see *id.*

⁷¹¹ For a discussion of this literature, see *infra* Chapter XI, Section 2.

⁷¹² For a discussion of this literature, see *infra* Chapter XI, Section 2.

conceptual approach. Section 1 provides an overview of the current scholarly discourse on cities, suburbs, and climate change, and explains how the geography and interdisciplinary literature on the complex evolution and demography of suburbs could complement it to frame Chapter XII's analysis of exemplar Twin Cities suburbs. Section 2 brings together scholarship on networks and multi-level governance with the literature on pluralist, polycentric climate change governance to ground Chapter XIII's examination of the current and potential role of climate change networks in the suburban context. Section 3 concludes by introducing the Twin Cities case study—including the broader context of the Twin Cities' spatial evolution that urban geographers and legal scholars have analyzed—that forms the focus of the two chapters that follow.

1. Local Climate Change Action and Suburban Demographics

As localities increasingly take actions within their power to mitigate (and also adapt), academics and policymaking institutes have considered the appropriate role of local action in addressing climate change. For example, *Growing Cooler: Evidence on Urban Development and Climate Change*, a 2008 book by Reid Ewing, Keith Bartholomew, Steve Winkelman, Jerry Walters, and Don Chen, provides a comprehensive analysis of how to bring down vehicle miles traveled in urban areas.⁷¹³ Alice Kaswan's 2009 article, *Climate Change, Consumption, and Cities*, analyzes the mitigation role of local action on land use, transportation, buildings, and energy consumption and the ways in which federal

⁷¹³ See REID EWING ET AL., *GROWING COOLER: THE EVIDENCE ON URBAN DEVELOPMENT AND CLIMATE CHANGE* 27–31, 35–36 (Urban Land Institute eds. 2008).

legislation could support that local role.⁷¹⁴ Katherine Trisolini's 2010 article, *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*, details a wide range of local powers relevant to mitigation including buildings and energy efficiency, zoning and land use power, waste and garbage, and local proprietary functions and proposes a bi-directional coordination model.⁷¹⁵ Kirsten Engel has written several pieces which complement these analyses of what cities can and should do to address climate change by exploring what motivates them to act.⁷¹⁶ Michael Burger, in his article *Empowering Local Autonomy and Encouraging Experimentation in Climate Change Governance: The Case for a Layered Regime*, has considered how Charles Tiebout's arguments for the value of inter-local competition interact with local decisionmaking to take action on climate change.⁷¹⁷

This literature provides an important context for understanding how actions by small suburban cities compare to what is possible under their authority. However, to the extent that leader cities' actions are analyzed in depth in this literature, case examples tend to center on large localities with minimal focus on the variety of little cities that comprise their suburbs and the actions that these cities are taking. For example, Heike Schroeder and Harriet Bulkeley produced an interesting comparison of actions by London and Los

⁷¹⁴ See Alice Kaswan, *Climate Change, Consumption, and Cities*, 36 FORDHAM URB. L.J. 253, 280–83, 296 (2009).

⁷¹⁵ See Katherine A. Trisolini, *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*, 62 STAN. L. REV. 669, 735, 743–45 (2010).

⁷¹⁶ See, e.g., Kirsten Engel, *State and Local Climate Change Initiatives: What is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015, 1023–25 (2006).

⁷¹⁷ Michael Burger, *Empowering Local Autonomy and Encouraging Experimentation in Climate Change Governance: The Case for a Layered Regime*, 39 ENVTL. L. REP. NEWS & ANALYSIS 11161, 11164–65 (2009).

Angeles.⁷¹⁸ Melissa Powers produced a thoughtful study that compares the efforts of several major U.S. municipalities.⁷¹⁹ I have had a similar focus in my own scholarship, such as when Janet Levit and I compared actions by Portland and Tulsa and when I analyzed the role of a lawsuit by California in shaping the efforts of the physically massive San Bernardino County.⁷²⁰

While some of this scholarship considers how suburbs fit into metropolitan efforts to reduce emissions, it tends to treat the suburbs as an undifferentiated mass to be contrasted with the center city.⁷²¹ This literature critiques their unsustainable land-use patterns, which result in their comparatively large carbon footprints⁷²² and perpetuate racial

⁷¹⁸ See Heike Schroeder & Harriet Bulkeley, *Global Cities and the Governance of Climate Change: What is the Role of Law in Cities*, 36 *FORDHAM URB. L.J.* 313, 351–59 (2009); see also David Dodman, *Blaming Cities for Climate Change? An Analysis of Urban Greenhouse Gas Emissions Inventories*, 21 *ENV'T & URBANIZATION* 185, 189, Table 2 (2009) (comparing greenhouse gas emissions of 11 cities in Europe, North America, South America, and Asia).

⁷¹⁹ See Melissa Powers, *U.S. Municipal Climate Plans: What Role Will Cities Play in Climate Change Mitigation?*, in *LOCAL CLIMATE CHANGE LAW: ENVIRONMENTAL REGULATION IN CITIES AND OTHER LOCALITIES* 69 (Benjamin J. Richardson, ed. 2012).

⁷²⁰ See Hari M. Osofsky, *Is Climate Change “International”?: Litigation’s Diagonal Regulatory Role*, 49 *Va. J. Int’l L.* 585, 610–15 (2008–2009) [hereinafter Osofsky, *Climate Change*]; Hari M. Osofsky, *Scaling “Local”?: The Implications of Greenhouse Gas Regulation in San Bernardino County*, 30 *Mich. J. Int’l L.* 689 (2009) [hereinafter Osofsky, *Scaling “Local”*]; Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks: Local Climate Change Coalitions*, 8 *Chi. J. Int’l L.* 409, 414–15 (2007–2008).

⁷²¹ See, e.g., EWING ET AL., *supra* note 713, at 67–73 (exploring ways in which compact development can reduce vehicle miles traveled, with specific examples of suburban efforts included); Edna Sussman et al., *Climate Change Adaptation: Fostering Progress through Law and Regulation*, 18 *N.Y.U. ENVTL. L.J.* 55, 109–10 (2010) (discussing efforts by New York suburbs on smart growth, California regional planning, and their implications for adaptation); Dan Tarlock, *Fat and Fried: Linking Land Use Law, the Risks of Obesity, and Climate Change*, 3 *PITT. J. ENVTL. PUB. HEALTH L.* 31 (2009) (examining how land use strategies could work in both cities and suburbs); Trisolini, *supra* note 715, at 716 (noting that many of the cities adopting Smart Code were suburbs and exurbs in the South). Although there have long been more nuanced analyses of suburbs, see, e.g., Darcy Seaver, *Conference Explores Older Suburbs as Regional Pivot Points*, THE FREE LIBRARY, <http://www.thefreelibrary.com/Conference+Explores+Older+Suburbs+as+Regional+Pivot+Points.-a054032273> (last visited Nov. 5, 2011) (a 1999 conference at the University of Minnesota on first ring suburbs), these are rarely incorporated into the legal literature on suburbs and climate change.

⁷²² For examples of the literature on cities, suburbs and sustainable land use, see John R. Nolon, *The Land Use Stabilization Wedge Strategy: Shifting Ground to Mitigate Climate Change*, 34 *WM. & MARY ENVTL. L. & POL’Y REV.* 1, 3 & n.16, 8–9 (2009) (citing EWING ET AL., *supra* note 20) (relying on Ewing’s article’s

segregation.⁷²³ These analyses are dominated by discussion of controversies over how to address sprawl or approach smart growth.⁷²⁴

An emerging interdisciplinary literature on metropolitan emission patterns and

claim that Chicago citizens drive less than 21,000 miles, compared with nearly 30,000 in suburban Chicago County, and emit 80% fewer tons of carbon dioxide per household than suburbanites in the surrounding county, and further exploring strategies urban areas can use to reduce their carbon footprint); J.B. Ruhl, *Taming the Suburban Amoeba in the Ecosystem Age: Some Do's and Don'ts*, 3 WIDENER L. SYMP. J. 61, 75, 78–86 (1998) (using contested suburban development in Austin, Texas as a starting point for proposing ten principles for law's role in sustainable suburban development); Patricia E. Salkin, *Sustainability and Land Use Planning: Greening State and Local Land Use Plans and Regulations to Address Climate Change Challenges and Preserve Resources for Future Generations*, 34 WM. & MARY ENVTL. L. & POL'Y REV. 121, 124–25 (2009) (exploring a variety of approaches that state and local governments can take to increase sustainability and mitigate climate change).

⁷²³ For examples of articles looking at the nexus of suburbs, racial segregation, and climate change, see Alice Kaswan, *Climate Change, Consumption, and Cities*, 36 FORDHAM URB. L.J. 253 (2009) (exploring the land use measures that might address city-suburb divide and reduce vehicle miles traveled, barriers to doing so, the role for federal measures, and the need to integrate the socio-economic and environmental concerns in local land use planning); James A. Kushner, *Affordable Housing as Infrastructure in the Time of Global Warming*, 42/43 URB. LAW. 179, 182, 197–200 (2011) (presenting a vision of smart growth that would address climate change and segregation simultaneously); Bekah Mandell, *Racial Reification and Global Warming: A Truly Inconvenient Truth*, 28 B.C. THIRD WORLD L.J. 289, 304–05, 335–43 (2008) (exploring the way in which city-suburb segregation contributes to climate change); Florence Wagman Roisman, *Sustainable Development in the Suburbs and Their Cities: The Environmental and Financial Imperatives of Racial, Ethnic, and Economic Inclusion*, 3 WIDENER L. SYMP. J. 87 (1998) (exploring the role of racial and ethnic segregation in undermining sustainability).

⁷²⁴ For a few interesting examples from the voluminous literature on sprawl, see William W. Buzbee, *Urban Sprawl, Federalism, and the Problem of Institutional Complexity*, 68 FORDHAM L. REV. 57 (1999) (exploring the multi-level governance challenges of addressing sprawl and the potential role for conditional federal funding in ameliorating it); Reid Ewing & Fang Rong, *The Impact of Urban Form on U.S. Residential Energy Use*, 19 HOUSING POL'Y DEBATE 1 (2008) (analyzing the way in which urban form impacts residential energy use); Christine A. Klein, *The New Nuisance: An Antidote to Wetland Loss, Sprawl, and Global Warming*, 48 B.C. L. REV. 1155 (2007); Christian Iaione, *The Tragedy of Urban Roads: Saving Cities from Choking, Calling on Citizens to Combat Climate Change*, 37 FORDHAM URB. L.J. 889 (2010); Nicole Stelle Garnett, *Save the Cities, Stop the Suburbs?*, 116 YALE L.J. 589 (2007) (reviewing recent books about debates over urban growth restrictions); Alexandra Lampert, *California's Fight Against Global Warming: Finally Getting Smart about Sprawl?*, 20 STAN. L. & POL'Y REV. 193 (2009) (describing California's Senate Bill 375 as a small step forward); Mary D. Nichols, *Sustainable Communities for a Sustainable State: California's Efforts to Curb Sprawl and Cut Global Warming Emissions*, 12 VT. J. ENVTL. L. 185 (2010) (discussing California's Senate Bill 375 as an example of metro-regional land use planning approaches); J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CAL. L. REV. 59 (2010) (discussing complexity of understanding and addressing sprawl). See also Mary D. Nichols, *Sustainable Communities for a Sustainable State: California's Efforts to Curb Sprawl and Cut Global Warming Emissions*, 12 VT. J. ENVTL. L. 185 (2010) (discussing California's Senate Bill 375 as an example of metro-regional land use planning approaches); Alexandra Lampert, *California's Fight Against Global Warming: Finally Getting Smart about Sprawl?*, 20 STAN. L. & POL'Y REV. 193 (2009) (describing California's Senate Bill 375 as a small step forward).

reduction strategies takes a similar approach; often with great spatial sophistication, it maps broad emissions patterns in the suburbs that generally do not differentiate among the varying types of little cities that comprise them.⁷²⁵ One of the more nuanced of such analyses by Yonn Dierwechter, for example, engages in sophisticated mapping of local climate change action in six major metropolitan regions to explore the patterns of climate change action and what motivates behavior.⁷²⁶ Using participation in the Mayors Agreement as a proxy and situating itself in the broader context that only about 5% of cities nationwide participate in this agreement, it finds that substantial climate change action in the central cities did not spread adequately into the suburbs, and argues for larger scale mandates to address “a massive implementation gap.”⁷²⁷ However, its analysis considers neither the characteristics of the suburbs taking action nor how climate change action varied across the different types of cities that make up a metropolitan region.⁷²⁸ Similarly, a policy brief by Edward Glaeser and Matthew Kahn compares emissions

⁷²⁵ For examples of metropolitan-focused analyses in climate change mitigation, see Marilyn A. Brown et al., *Shrinking the Carbon Footprint of Metropolitan America*, in BLUEPRINT FOR AM. PROSPERITY 6–11 (Brookings Inst. Metro. Policy Program, D.C. May 2008) (arguing that federal policy leadership is needed to complement state and local efforts on metropolitan emissions); PATRICK M. CONDON ET AL., URBAN PLANNING TOOLS FOR CLIMATE CHANGE MITIGATION: POL’Y FOCUS REP. 20–42 (Lincoln Inst. of Land Policy, Cambridge, Mass 2009) (exploring, illustrated through case studies, the ways various modeling tools can help in the planning process to reduce carbon footprints of new development); Dierwechter, *supra* note 695 (considering city-suburb dynamics of six U.S. metropolitan regions, but without detailed comparison of the individual suburban cities); Edward L. Glaeser & Matthew Kahn, *The Greenness of Cities*, in POL’Y BRIEFS (Rappaport Inst. & Taubman Ctr., Cambridge Mass. Mar. 2008) (exploring variations in metropolitan emissions patterns across metropolitan areas and the differences between city-suburb dynamics). For an example of a study focusing purely on suburban action, see Sarah E. Knuth, *Addressing Place in Climate Change Mitigation: Reducing Emissions in a Suburban Landscape*, 30 APPLIED GEOGRAPHY 518, 520 (2010) (providing a case study of efforts to develop a climate change mitigation plan in a wealthy suburban county).

⁷²⁶ Dierwechter, *supra* note 695, at 66–67.

⁷²⁷ *Id.* at 60, 80.

⁷²⁸ *See id.*

patterns across metropolitan areas.⁷²⁹ The brief explores the differences between city-suburb emission dynamics in older East Coast cities like Boston (suburban emissions higher than in central cities but leveling off after 10 miles) and the West Coast city of Los Angeles (suburban emissions lower than in the central city).⁷³⁰ But their interesting mapping did not differentiate among the suburban cities by urban type.⁷³¹

The basis for a more detailed look inside suburbs engaging in climate change action exists, however, because of the urban geography and interdisciplinary literature exploring the nuances of the cities that make up suburbs and their relationship to metropolitan regions. Urban geographer Peter Muller, for example, has written for decades about the polycentricity of metropolitan regions and the evolving spatial form of the suburbs that comprise them. He has described the ways in which suburban development roughly tracks transportation technology development from the Walking-Horsecar Era through the 1880s, to the Electric Streetcar Era through 1920, to the Recreational Automobile Era through 1945, to the modern Freeway Era.⁷³² He further explains that the Freeway Era has resulted in five growth stages of the suburbs: (1) bedroom community; (2) independence; (3) catalytic growth; (4) high rise/technology; and (5) mature urban centers.⁷³³ Moreover, within that complex spatiality, the demography of suburbs has been evolving. Audrey Singer, Susan Hardwick, and Caroline Brettell, for example, have analyzed evolving

⁷²⁹ See Glaeser & Kahn, *supra* note 725, at 1–3, 7–8.

⁷³⁰ See *id.*

⁷³¹ See *id.*

⁷³² See MULLER, *supra* note 708, at 26–49.

⁷³³ See Muller, *Transportation and the Urban Form*, *supra* note 708, at 80–81.

patterns of immigrant incorporation in U.S. suburbs.⁷³⁴

Most significant for this case study, Myron Orfield, sometimes in collaboration with Thomas Luce, has been an important pioneer in spatial-legal analysis of the components of the diverse suburban landscape that Muller describes. Using GIS technology together with demographic data, Orfield has produced detailed maps that provide a clearer understanding of the very different types of suburbs that make up major U.S. cities.⁷³⁵ Based on this data, Orfield has classified the different types of suburbs that surround center cities into several categories: stressed, developed job centers, affluent residential, developing job centers, and bedroom developing.⁷³⁶ Chapter XII's analysis in the context of the Twin Cities metropolitan region models how this data can be brought together with an examination of climate change efforts within particular suburban cities to provide a more nuanced analysis of where possibilities for suburban action lie.⁷³⁷

2. Locating Suburbs in Multi-Level Networks and Pluralist/Polycentric Governance Approaches

An analysis on suburban climate action focused simply on the actions of particular leader suburbs and their demography would be incomplete, however, without an exploration of their interaction with multi-level networks and legal action. Local action in climate change takes place in a broader context of debates over international, national, and state action. An extensive scholarly literature across geography, law, and other disciplines

⁷³⁴ TWENTY-FIRST CENTURY GATEWAYS: IMMIGRANT INCORPORATION IN SUBURBAN AMERICA (Audrey Singer et al. eds., 2008).

⁷³⁵ See, e.g., ORFIELD, *supra* note 696, maps 1-1, 2-1.

⁷³⁶ See *id.* at 46–48.

⁷³⁷ See *infra* Chapter XII.

explores the role of networks in governance. Much of this discourse occurs in relatively isolated streams. A stream at the intersection of urban studies and geography examines transnational interactions among world cities and their implications, at times in interaction with the geography scale literature introduced in Chapter II. Saskia Sassen, for example, has explored the ways in which economic globalization and the emergence of new information and communication technologies have made world cities key nodes for cross-border networks and resource concentration.⁷³⁸ Muller's above-described work on the evolving spatiality of urban regions draws heavily from Sassen's work in part of his analysis of how suburbs participate in urban globalization.⁷³⁹ Related scholarship by Kevin Cox in the geography scale literature—which undergirds the conceptual approach of the prior two case studies in Chapters IV through X—considers whether different governmental levels are themselves networks, with Cox arguing that local spaces are comprised both of core local interactions and multi-level ones.⁷⁴⁰

⁷³⁸ See Saskia Sassen, *Locating Cities on Global Circuits*, in GLOBAL NETWORKS, LINKED CITIES 1, 28–31 (Saskia Sassen ed., 2002). For additional analyses of the role of cities in a globalizing world, see NEIL BRENNER, *NEW STATE SPACES: URBAN GOVERNANCE AND THE RESCALING OF STATEHOOD* (Oxford University Press eds. 2004); NAT'L RESEARCH COUNCIL, *CITIES TRANSFORMED: DEMOGRAPHIC CHANGE AND ITS IMPLICATIONS IN THE DEVELOPING WORLD* (Mark R. Montgomery et al. eds., 2003); GLOBALIZING CITIES: A NEW SPATIAL ORDER? (Peter Marcuse & Ronald van Kempen eds., 2000); HEIDI H. HOBBS, *CITY HALL GOES ABROAD: THE FOREIGN POLICY OF LOCAL POLITICS* (1994); SASKIA SASSEN, *THE GLOBAL CITY: NEW YORK, LONDON, TOKYO* (2d ed. 2001); H. V. SAVITCH & PAUL KANTOR, *CITIES IN THE INTERNATIONAL MARKETPLACE: THE POLITICAL ECONOMY OF URBAN DEVELOPMENT IN NORTH AMERICA AND WESTERN EUROPE* (2002); RICHARD SENNETT, *THE CONSCIENCE OF THE EYE: THE DESIGN AND SOCIAL LIFE OF CITIES* (1990); SPACES OF GLOBALIZATION: REASSERTING THE POWER OF THE LOCAL (Kevin R. Cox ed., 1997); WORLD CITIES IN A WORLD-SYSTEM (Paul L. Knox & Peter J. Taylor eds., 1995); Gerald E. Frug & David J. Barron, *International Local Government Law*, 38 URB. LAW. 1 (2006).

⁷³⁹ Muller, *Transportation and the Urban Form*, *supra* note 708.

⁷⁴⁰ See Kevin R. Cox, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, or: Looking for Local Politics*, 17 POL. GEOGRAPHY 1, 2 (1998). For other scholarship interacting with Cox's approach, see Katherine T. Jones, *Scale as Epistemology*, 17 POL. GEOGRAPHY 25 (1998); Dennis R. Judd, *The Case of the Missing Scales: A Commentary on Cox*, 17 POL. GEOGRAPHY 29 (1998); Michael Peter Smith, *Looking for the Global Spaces in Local Politics*, 17 POL. GEOGRAPHY 35 (1998); Lynn A. Staeheli, *Globalization and the Scales of Citizenship*, 19 GEOGRAPHY RES. F. 60 (1999). For Cox's response to

In the legal literature, scholarship at the intersection of international law, international relations, and transgovernmentalism, examines relationships among a range of governmental and nongovernmental entities and the ways in which they shape international governance. Anne-Marie Slaughter's *A New World Order*, for instance, provides a vision of an international and transnational system, comprised of vertical and horizontal networks of governmental officials interacting with each other and with disaggregated international organizations.⁷⁴¹ At the law and anthropology intersection, Annelise Riles has examined the operation of multi-level networks in the context of Fijian activists and bureaucrats preparing for and then participating in the United Nations Fourth World Conference on Women.⁷⁴² While each of these accounts is distinct in its focus and orientation, a common thread running through these literatures is their analysis of the way in which interactions at multiple levels outside of the formal strictures of law formation help to constitute governance, whether we call it law or not, and the ever-more-important role of cities in those dynamics.

Of most relevance to the current topic, legal scholarship has explored the potential governance role of multi-level subnational climate change networks. Judith Resnik, Joshua Civin, and Joseph Frueh have examined the wide range of subnational networks working on climate change and argued that these networks could play a constructive role

some of that scholarship, see Kevin R. Cox, *Representation and Power in the Politics of Scale*, 17 POL. GEOGRAPHY 41 (1998).

⁷⁴¹ ANNE-MARIE SLAUGHTER, *A NEW WORLD ORDER* 18–23 (Princeton University Press eds. 2005).

⁷⁴² See ANNELISE RILES, *THE NETWORK INSIDE OUT* (2000) (providing an anthropological account of networks which includes in depth engagement of sociolegal spaces at multiple levels).

in shaping federal policy.⁷⁴³ Janet Levit and I have considered the way in which bottom-up networking among cities could contribute to international efforts to address climate change.⁷⁴⁴ I also have explored the role of transnational networks of cities, states, and provinces at the Copenhagen negotiations and queried how these networks could be integrated into the treaty process.⁷⁴⁵ These analyses provide pathways for thinking about the current and potential international and national legal significance of networks among cities working for climate change, either through formal legal reform or through expanded recognition of networks' capacity to influence those formal processes.

Another largely separate stream of scholarship about pluralist or polycentric climate change governance described in Chapter II complements this discourse about subnational climate change networks. Although a rich scholarly literature has existed for a number of years on various aspects of multi-level climate change governance, Elinor Ostrom's 2009 World Bank Research Working Paper—quoted in the introductory chapter arguing for polycentric approaches to climate change—has helped spur greater interest in developing governance models that recognize the relevance of a wide range of formal and informal action beyond the confines of the United Nations Framework Convention on Climate Change.⁷⁴⁶ Ostrom's analysis helps pave a way for better conceptualization of the role of

⁷⁴³ See Judith Resnik et al., *Ratifying Kyoto at the Local Level: Sovereignism, Federalism, and Translocal Organizations of Government Actors (TOGAS)*, 50 ARIZ. L. REV. 709, 726–33, 764 (2008).

⁷⁴⁴ Osofsky & Levit, *supra* note 720, at 412–14.

⁷⁴⁵ See Hari M. Osofsky, *Multiscalar Governance and Climate Change: Reflections on the Role of States and Cities at Copenhagen*, 25 MD. J. INT'L L. 64, 67 (2010) [hereinafter Osofsky, *Multiscalar Governance*]; cf. Hari M. Osofsky, *The Geography of Climate Change Litigation: Implications for Transnational Regulatory Governance*, 83 WASH. U. L.Q. 1789, 1814–15 (2005) [hereinafter Osofsky, *Transnational Regulatory Governance*] (exploring climate change as a multi-scalar regulatory problem).

⁷⁴⁶ See Elinor Ostrom, *A Polycentric Approach for Coping with Climate Change* (World Bank, Policy Research Working Paper No. 5095, 2009), available at <http://wdronline.worldbank.org/worldbank/a/nonwdrdetail/162>. For an example of scholarship building on

cities, even very small ones, in multi-level climate change governance because it treats the international treaty negotiations as just one piece of a complex puzzle.⁷⁴⁷ In particular, it focuses on the ways in which small-scale governments can help build the trust and commitment needed to overcome collective action failures, a function that arguably can be performed more effectively in the small cities of the suburbs than in the larger center cities where there are many more constituencies by virtue of their greater size.⁷⁴⁸

As discussed in Chapter II, Ostrom's polycentric model has much in common with pluralist approaches,⁷⁴⁹ which in turn have commonalities with the New Haven School,⁷⁵⁰ in that they all treat a diverse set of activity as relevant to lawmaking. Under such models, activities by multi-level networks of cities, some of which are suburbs, to spur more local, state, national, and international mitigation efforts can be considered as part of a

this approach, see Daniel H. Cole, *From Global to Polycentric Climate Governance*, (European Univ. Inst. Robert Schuman Ctr. for Advanced Studies, Working Paper No. 2011/30, 2011), *available at* <http://cadmus.eui.eu/handle/1814/17757>.

⁷⁴⁷ See *id.* at 35.

⁷⁴⁸ See *id.* at 33–35.

⁷⁴⁹ Global legal pluralism examines the multiple normative, and sometimes legal, communities operating in shared social space and the implications of having simultaneous valid orders. For examples of this approach in a variety of substantive contexts, see Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863 (2006); Diane Marie Amann, *Abu Ghraib*, 153 U. PA. L. REV. 2085 (2005); Diane Marie Amann, *Calling Children to Account: The Proposal for a Juvenile Chamber in the Special Court for Sierra Leone*, 29 PEPP. L. REV. 167 (2001); Elena A. Baylis, *Parallel Courts in Post-Conflict Kosovo*, 32 YALE J. INT'L L. 1 (2007); Paul Schiff Berman, *Global Legal Pluralism*, 80 S. CAL. L. REV. 1155 (2007); William W. Burke-White, *International Legal Pluralism*, 25 MICH. J. INT'L L. 963 (2004); Janet Koven Levit, *A Bottom-Up Approach to International Lawmaking: The Tale of Three Trade Finance Instruments*, 30 YALE J. INT'L L. 125 (2005); Ralf Michaels, *The Re-statement of Non-State Law: The State, Choice of Law, and the Challenge from Global Legal Pluralism*, 51 WAYNE L. REV. 1209 (2005). I have examined pluralism in the context of climate change litigation in Hari M. Osofsky, *Climate Change Litigation as Pluralist Legal Dialogue?*, 26 STAN. ENVTL. L.J. 181 (2007).

⁷⁵⁰ The New Haven School treats law as “a process of authoritative decision by which the members of a community clarify and secure their common interests.” 1 HAROLD D. LASSWELL & MYRES S. MCDUGAL, *JURISPRUDENCE FOR A FREE SOCIETY: STUDIES IN LAW, SCIENCE AND POLICY*, at xxi (1992); accord Myres S. McDougal et al., *The World Community: A Planetary Social Process*, 21 U.C. DAVIS L. REV. 807, 810–11 (1988). For a discussion of the New Haven School's goals, see LASSWELL & MCDUGAL, *supra*, at xxix.

lawmaking process that also includes the formal treaty processes and accompanying national legislation and regulation.⁷⁵¹ Other streams of scholarship discussed in that chapter, like new governance,⁷⁵² regulatory institutions theory,⁷⁵³ and adaptive management⁷⁵⁴ explore mechanisms for creating more inclusive, responsive, decentralized governance. In the U.S. domestic law context, an extensive and rapidly growing dynamic federalism literature complements this scholarship through its analysis of how to structure appropriate and effective multi-level governance structures.⁷⁵⁵ This cluster of theories

⁷⁵¹ See *supra* Chapter II.

⁷⁵² For examples of new governance scholarship, see, LAW AND NEW GOVERNANCE IN THE EU AND US (Gráinne de Búrca & Joanne Scott eds., 2006); Bradley C. Karkkainen, Reply, “New Governance” in *Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471, 471–80 (2004); Orly Lobel, Surreply, *Setting the Agenda for New Governance Research*, 89 MINN. L. REV. 498, 498–99 (2004); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 371–76 (2004); J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CALIF. L. REV. 59, 106–07, 109–13 (2010).

⁷⁵³ For examples of scholarship from the Regulatory Institutions Network at Australia National University, see Valerie Braithwaite, *Ten Things You Need to Know About Regulation and Never Wanted to Ask*, Regulatory Inst. Network, Occasional Paper No. 10, Austl., Dec. 2006, available at <http://pandora.nla.gov.au/pan/67415/20080123-0746/ctsi.anu.edu.au/publications/10thingswhole.pdf>; Charlotte Wood et al., *Applications of Responsive Regulatory Theory in Australia and Overseas*, Regulatory Inst. Network, Occasional Paper No. 15, Austl., June 2010, available at http://pandora.nla.gov.au/pan/67415/20110121-0705/ctsi.anu.edu.au/publications/OccasionalPaper_15.pdf.

⁷⁵⁴ Adaptive management, at times drawing from concepts of panarchy, see C.S. Holling et al., *In Quest of a Theory of Adaptive Change*, in PANARCHY: UNDERSTANDING TRANSFORMATIONS IN HUMAN AND NATURAL SYSTEMS 3, 5 (Lance H. Gunderson & C.S. Holling eds., 2002), explores how law and can be structured to allow for regulatory evolution in response to change. See Alejandro E. Camacho, *Assisted Migration: Redefining Nature and Natural Resource Law Under Climate Change*, 27 YALE J. ON REG. 171, 171–72 (2010); Robin Kundis Craig, “Stationarity is Dead”—*Long Live Transformation: Five Principles for Climate Change Adaptation Law*, 34 HARV. ENVTL. L. REV. 9, 17–18 (2010); Michael Ilg, *Complexity, Environment, and Equitable Competition: A Theory of Adaptive Rule Design*, 41 GEO. J. INT’L L. 647, 650–51 (2010); Bradley C. Karkkainen, *Information-Forcing Environmental Regulation*, 33 FLA. ST. U. L. REV. 861, 884–88 (2006); J.B. Ruhl & Robert L. Fischman, *Adaptive Management in the Courts*, 95 MINN. L. REV. 424, 436–40 (2010); J.B. Ruhl, *Law’s Complexity: A Primer*, 24 GA. ST. U. L. REV. 885, 890–901 (2008); Sandra Zellmer, Essay, *A Tale of Two Imperiled Rivers: Reflections from a Post-Katrina World*, 59 FLA. L. REV. 599, 627–30 (2007).

⁷⁵⁵ I have provided an extensive summary and synthesis of this literature in the context of climate change in Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 ALA. L. REV. 237 (2011); see also Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 160 (2006).

forms the basis for the dissertation's overall approach of hybridity, multi-scalar inclusion, and regulatory responsiveness, but specifically in this context help with an understanding of how this suburban action should fit into an overall climate change governance model.

Together, these approaches provide fruitful ground for conceptualizing practical ways to leverage multi-level networks of cities—and leader suburbs participation in them—to make important incremental progress in mitigating climate change. Building on my prior work on multi-level climate change and environmental governance, which draws from these diverse streams of theory introduced in Chapter II, and on the Twin Cities case study, Chapter XIII considers how the participation of small, suburban cities in multi-level networks can be used as a mechanism for spurring needed action on climate change, especially at a time when critical larger-scale processes remain stalled. It analyzes the potential dual roles of these networks in fostering greater suburban participation and in influencing larger scale formal processes.

3. Twin Cities Suburban Action as a Case Study

The Twin Cities metropolitan region provides an interesting case study for considering suburban action on climate change because its central cities, Minneapolis and Saint Paul, have leading mitigation efforts and, at the state level, Minnesota has established a structured program to support urban sustainability efforts.⁷⁵⁶ Moreover, as discussed in more depth in the individual case examples, some of its suburbs—including ones that lean Republican—have been particularly innovative in their efforts to achieve rapid progress in greenhouse gas emissions reductions, at times even receiving national

⁷⁵⁶ See MINN. GREENSTEP CITIES, <http://greenstep.pca.state.mn.us/index.cfm> (last visited Sept. 13, 2012).

recognition. Together with the metropolitan region's combination of fragmentation and significant regional governance, these climate change and sustainability efforts provide a rich context in which to analyze pathways for suburban emissions reduction.⁷⁵⁷

As geographer John Borchert has explored in depth, the Twin Cities followed an urbanization pattern much like many of the other major metropolitan regions in the United States. His *Atlas of Minnesota Resources and Settlement*, prepared for the Minnesota State Planning Agency with Donald Yaeger in 1968 explains that St. Paul, St. Anthony, and Minneapolis emerged due to their strategic locations for pioneer steamboat navigation and hydropower. Prior to the post World War II Freeway Era described by Muller, the Twin Cities urban area expanded along rail and streetcar transportation routes.⁷⁵⁸ The widespread use of the automobile allowed for low-density settlement via paved roads to the countryside “over the high-amenity, rolling wooded, lake and moraine lands,” physical attributes that also limited population density.⁷⁵⁹ As the broader region transitioned from a natural resources based economy to one more oriented towards manufacturing and nationally-oriented services, the Twin Cities became “a ‘hinge’ area which combines access to the human resources of the region with access to the mid-western and national

⁷⁵⁷ This dissertation acknowledges, however, that these very characteristics that make the example interesting may also constrain its broader applicability and replicability. For example, the dissertation does not attempt to tackle how these patterns compare to those of other regions in the United States that have less well-developed regional governments, cover larger physical areas, or contain central cities engaged in aggressive annexation. These issues are all important ones that future research should explore. A full national study is beyond the scope of this dissertation, but this initial look at one particularly innovative metropolitan region and the efforts of some of its suburbs helps to frame questions and potential strategies for a broader study. I plan to conduct such a study as the 2013-14 Fesler-Lampert Chair in Urban and Regional Affairs at the University of Minnesota.

⁷⁵⁸ JOHN R. BORCHERT & DONALD P. YAEGER, *ATLAS OF MINNESOTA RESOURCES AND SETTLEMENT* 187–88 (1968) (prepared for Minnesota State Planning Agency).

⁷⁵⁹ *Id.* at 188.

markets”;⁷⁶⁰ the Twin Cities experienced a significant population concentration in their metropolitan region—containing nearly half of Minnesota’s population and one quarter of the Upper Midwest’s population by a 1963 report—even as the population within that region decentralized.⁷⁶¹ Borchert noted that in the forty year period preceding the 1980s, for example, the urban field—its urban circulation system defined by level of accessibility—of the Twin Cities increased from less than one thousand square miles to over fifteen thousand square miles. This “expansion of the metropolitan circulation systems, with weak accompanying decentralization, has weakened the historic regional center—the monumental downtown of the central city.”⁷⁶²

The present day Twin Cities show a maturation of these patterns. Myron Orfield and Thomas Luce have documented in their in-depth study of the Twin Cities that the region contains 172 cities and 97 townships and ranks as the fifth most fragmented among the United States’ fifty largest metropolitan areas.⁷⁶³ Like most major metropolitan areas, jobs and population have decentralized significantly over the last thirty years, with current growth concentrated in the outer suburbs; from 1990 to 2004, Minneapolis grew at 1.3% and St. Paul grew at 3.0%, as compared to the region’s overall growth rate of 22.5%.⁷⁶⁴ As this growth has occurred, suburban differentiation has taken place, with some suburbs, especially inner ones, increasingly reflecting the fiscal stresses and racial and poverty

⁷⁶⁰ John R. Borchert & Russell B. Adams, *Projected Urban Growth in the Upper Midwest: 1960-1975*, URBAN REPORT NO. 8, at 24, Sept. 1964.

⁷⁶¹ *Id.* at 2; John R. Borchert, *The Urbanization of the Upper Midwest: 1930-1960*, URBAN REPORT NO. 2, at iii, 36–37, Feb. 1963.

⁷⁶² John R. Borchert, *America’s Changing Metropolitan Regions*, 62 ANNALS ASSOC. AM GEOG. 352, 368 (1985).

⁷⁶³ MYRON ORFIELD & THOMAS F. LUCE JR., REGION: PLANNING THE FUTURE OF THE TWIN CITIES 2 (2010).

⁷⁶⁴ *Id.* at 14.

concentrations of the central cities, and other suburbs, especially outer ones, facing the complexities of rapid growth with inadequate infrastructure.⁷⁶⁵ Only a small percentage of the region's suburban cities fit the traditional model of wealthy residents who commute into the central city.⁷⁶⁶

Map 3 of the Twin Cities Metropolitan Region by city category illustrates these complex spatialization patterns. The distribution of the Twin Cities' approximately 3.1 million residents, as depicted in the map is: 24% in the two central cities, 23% in the 53 stressed suburbs, 25% in the 58 developing job centers, 8% in the 112 bedroom developing communities, 19% in the 32 developed job centers, and 1% in the 12 affluent residential communities.⁷⁶⁷ These demographic patterns highlight the importance of the smaller cities that comprise the suburbs taking action on climate change to the success of metro-regional emissions reduction initiatives. The two center cities, Minneapolis and St. Paul, have been national and international leaders on climate change since the early 1990s, joining International Council for Local Environmental Initiatives (ICLEI) in 1992 and co-founding its Cities for Climate Protection Campaign in 1993.⁷⁶⁸ Since pioneering one of the first local greenhouse gas emissions reduction plans in the country, they have consistently had aggressive reduction goals and received national recognition for their

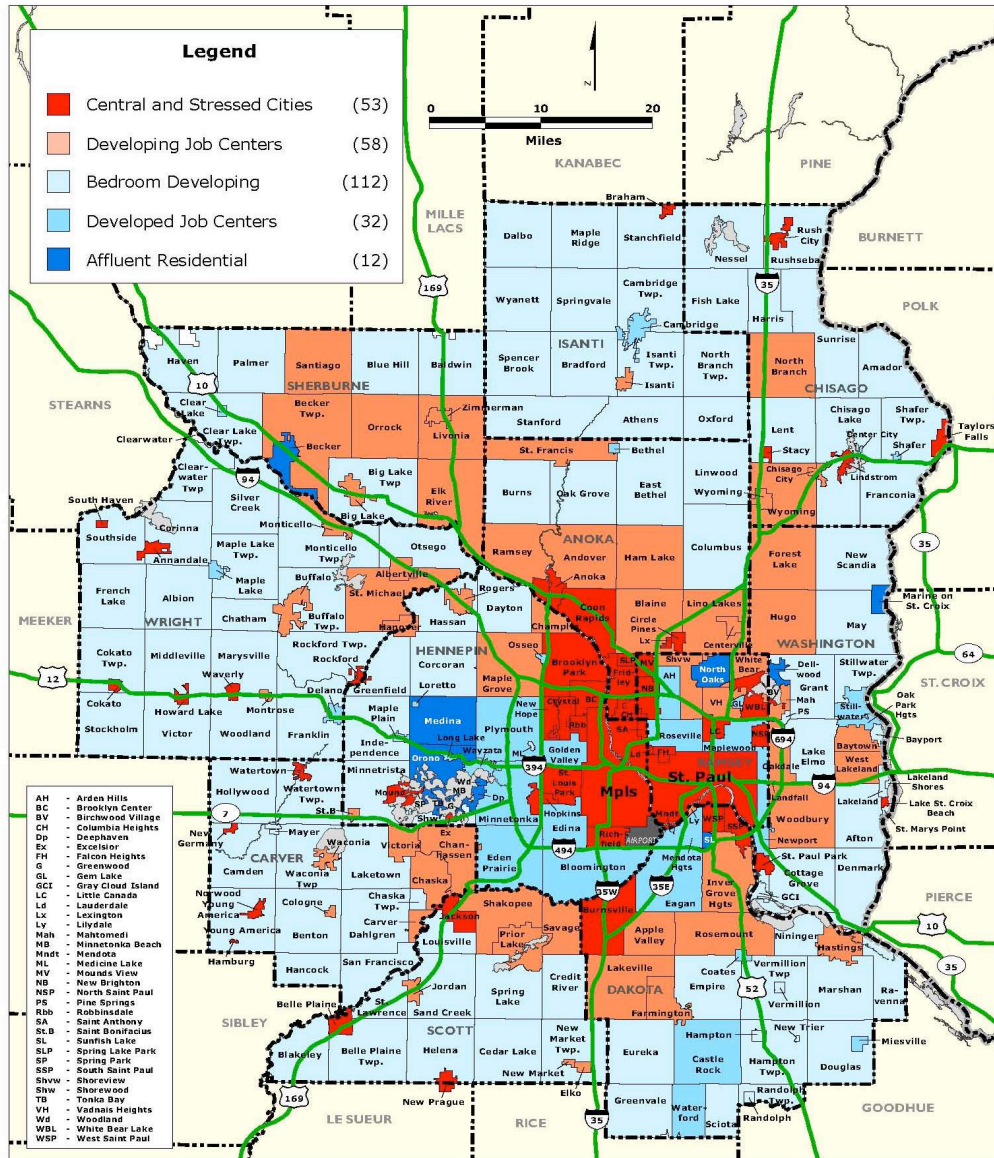
⁷⁶⁵ *Id.* at 43–49.

⁷⁶⁶ *Id.* at 46.

⁷⁶⁷ *See id.* at 2–3, 45.

⁷⁶⁸ *International Council for Local Environmental Initiatives*, SAINT PAUL, MINNESOTA, <http://www.stpaul.gov/index.aspx?NID=464> (last visited Feb. 12, 2012); *Climate Change Solutions: Twin Cities Trim Climate Change*, U.S. ENVTL. PROT. AGENCY, <http://nepis.epa.gov/Adobe/PDF/40000PQ6.pdf> (last visited Feb. 12, 2012).

innovative efforts on climate change.⁷⁶⁹ However, these significant initiatives by Minneapolis and St. Paul—even taking into account the suburban residents who work in those central cities—only address a small fraction of the metropolitan region’s emissions.



Map 3. Cities in the Twin Cities Metropolitan Region by Category⁷⁷⁰

⁷⁶⁹ See MINNEAPOLIS–SAINT PAUL URBAN CO₂ PROJECT PLAN: A FRAMEWORK FOR DEVELOPING STRATEGIES TO REDUCE CO₂ EMISSIONS, SAVE TAXES, AND SAVE RESOURCES (Dec. 1993), available at http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/convert_284899.pdf; International Council for Local Environmental Initiatives, *supra* note 768; Minneapolis Climate Action Plan, CITY OF MINNEAPOLIS, <http://www.minneapolismn.gov/sustainability/climate/index.htm> (last visited Sept. 24, 2012).

⁷⁷⁰ ORFIELD & LUCE JR., *supra* note 763, at 44 (reproduced with the permission of Myron Orfield).

The Twin Cities' suburbs also serve as an interesting example for examining possibilities for climate change mitigation because of the Twin Cities' unusually well-developed regional governance structures.⁷⁷¹ Minnesota's experiment in metropolitan regional governance in its most significant urban area began in 1967, when its legislature established the Met Council to meet new federal requirements for regional governance.⁷⁷² The Met Council was intended to build upon decades of ad hoc collaboration among the cities and to address concerns over land use planning, wastewater coordination, and transit funding.⁷⁷³ Even before the Met Council's formal creation, the regional planning efforts in the Twin Cities formed important part of state-wide land use planning approaches; for example, Borchert used regional governance in the Twin Cities as an example of why more regional planning was needed in Minnesota in his 1963 report.⁷⁷⁴ As of January 2012, the Met Council listed 183 communities in its seven-county metro area.⁷⁷⁵

The state legislature gradually expanded the Met Council's powers over time, and the council has played and continues to play a significant role in regional planning, including growth management.⁷⁷⁶ Orfield and Luce argue that while the appointed Met Council has accomplished less than Portland's elected regional governing body, in part due to

⁷⁷¹ See ORFIELD & LUCE JR., *supra* note 763, at 52–53. For another example of a well-developed metropolitan regional government, see GREATER NASHVILLE REGIONAL COUNCIL, <https://www.gnrc.org/>; METRO, <http://www.oregonmetro.gov/> (Portland).

⁷⁷² See ORFIELD & LUCE JR., *supra* note 763, at 52–53.

⁷⁷³ See ORFIELD & LUCE JR., *supra* note 763, at 52–80.

⁷⁷⁴ Borchert, *supra* note 761, at 43.

⁷⁷⁵ *List of Community Profiles*, METROPOLITAN COUNCIL, <http://stats.metc.state.mn.us/profile/list.aspx> (last visited Jan. 28, 2012).

⁷⁷⁶ See *id.*

Oregon's more-developed statewide comprehensive land use planning system, both Portland and the Twin Cities show less sprawl than would be expected at their level of fragmentation.⁷⁷⁷ These regional-level accomplishments, even if they could be augmented significantly following Portland's model, provide a context in which appropriately focused, locally based initiatives on climate change could supplement regional mitigation efforts.

Over the course of the last several years, a number of the Twin Cities suburbs have begun to join their center cities in local action on climate change. This case study focuses on a subset of those suburbs that were the first twelve to join the Minnesota GreenStep Cities program in the Twin Cities metropolitan region. Although this program focuses more broadly on sustainability, many of its earliest suburban participants are taking steps on climate change. Examining these participants allows (1) identification of suburbs that have been willing to commit publicly to sustainability goals, which are often less politically controversial than climate change mitigation goals,⁷⁷⁸ and (2) consideration of what actions they are taking—whether as part of their Minnesota GreenStep Cities participation or separate from it—to reduce their greenhouse gas emissions.⁷⁷⁹

Minnesota Greenstep Cities emerged from the fall 2007 Minnesota Clean Energy

⁷⁷⁷ *See id.*

⁷⁷⁸ This ability to focus on less divisive framing is a potentially important concern in a political climate in which the Minnesota State Republicans ousted Public Utility Commission Chair Ellen Anderson in January 2012 in part based on her past leadership as a Democratic state senator on renewable energy legislation. *See* Jim Ragsdale, *Senate Republicans Oust Ellen Anderson as PUC Chair*, STAR TRIBUNE, <http://www.startribune.com/politics/blogs/138357554.html> (last updated Jan. 30, 2012); Although the November 2012 election brought the Minnesota legislature back under Democratic control, Frederick Melo & Mary Jo Webster, *Election 2012: Minnesota, by the Numbers, Was Nearly True Blue*, PIONEER PRESS, Nov. 11, 2012, http://www.twincities.com/ci_21978013/election-2012-minnesota-by-numbers-was-nearly-true (last visited Nov. 28, 2012), deep divisions remain in viewpoints about climate change.

⁷⁷⁹ MINN. GREENSTEP CITIES, <http://greenstep.pca.state.mn.us/aboutProgram.cfm> (last visited Oct. 21, 2011).

Resource Teams' (CERTS) regional listening sessions around the state regarding community-based energy opportunities and the Next Generation Energy Act of 2007.⁷⁸⁰ The legislature in 2008 directed the Minnesota Pollution Control Agency (MPCA), Department of Energy Resources, and CERTS to recommend voluntary actions which cities could take as part of a voluntary program to recognize “green star” sustainable cities.⁷⁸¹ The resulting program, Minnesota GreenStep Cities, which launched in June 2010, focuses on twenty-eight best practices and has three “steps” depending on how many best practices the participating city has taken;⁷⁸² a guide explains how to get started and how to achieve each step.⁷⁸³ The Steering Committee—consisting of representatives from the MPCA, Great Plains Institute, CERTS, Urban Land Institute Minnesota, League of Minnesota Cities, Izaak-Walton League-Minnesota Division, and the Minnesota Department of Commerce-Division of Energy Resources—reviews the program annually.⁷⁸⁴ Businesses and other organizations can sponsor GreenStep Cities Awards and receive public recognition for their role in the program.⁷⁸⁵ The program is growing rapidly, with new cities continuing to join.⁷⁸⁶

The twelve GreenStep Cities' participants that are the focus of this case study

⁷⁸⁰ *Id.*

⁷⁸¹ *Id.*

⁷⁸² *Id.*

⁷⁸³ *Id.*

⁷⁸⁴ *Id.*

⁷⁸⁵ *Id.*

⁷⁸⁶ *Greenstep Cities List*, MINN. GREENSTEP CITIES, <http://greenstep.pca.state.mn.us/allCities.cfm> (last visited Nov. 12, 2012).

represent a diverse cross-section of Twin Cities suburbs, as summarized in Table 1.⁷⁸⁷

Table 1. Characteristics of Twin Cities Metropolitan Region Greenstep Cities

| | Pop. ⁷⁸⁸ | Pop. Change (1990-2004) ⁷⁸⁹ | Suburb Location ⁷⁹⁰ | Community Type ⁷⁹¹ | Household Tax Capacity (2004) ⁷⁹² | Party Preference (by State Senate Dist.) (2006) ⁷⁹³ |
|-----------------------|---------------------|--|--------------------------------|-------------------------------|--|--|
| Apple Valley | 49,084 | +41.3–75.6% | 3rd Ring (S) | Developing Job Center | \$2,261–\$2,950 | Leaning R Volatile |
| Cottage Grove | 34,502 | +22.5–40.2% | 2nd Ring (SE) | Bedroom Developing | \$2,007–\$2,254 | Leaning D Volatile |
| Eagan | 65,800 | +22.5–40.2% | 2nd Ring (S) | Developed Job Center | \$2,261–\$2,950 | Leaning D Volatile |
| Eden Prairie | 60,797 | +41.3–75.6% | 2nd Ring (SW) | Developed Job Center | \$3,006–\$3,992 | Leaning R Volatile |
| Edina | 47,941 | +0.0–11.5% | 1st Ring (SW) | Developed Job Center | \$3,006–\$3,992 | Leaning R Volatile |
| Falcon Heights | 5,300 | +0.0–11.5% | 1st Ring (N) | Stressed City | \$1,580–\$1,986 | Safe D |
| Farmington | 21,086 | +78.6% or more | 3rd Ring (S) | Developing Job Center | \$2,007–\$2,254 | Leaning R Volatile |
| Hopkins | 17,481 | +0.0–11.5% | 1st Ring (W) | Stressed City | \$1,580–\$1,986 | Safe D |
| Mahtomedi | 7,563 | +41.3–75.6% | 2nd Ring (NE) | Developing Job Center | \$2,261–\$2,950 | Leaning R Party Line |
| Maplewood | 38,018 | +13.1–22.3% | 1st Ring (NE) | Developed Job Center | \$2,261–\$2,950 | Safe D |
| Oakdale | 27,378 | +41.3–75.6% | 2nd Ring (E) | Developing Job Center | \$1,580–\$1,986 | Safe D |
| St. Anthony | 8,226 | -34.5–0.2% | 1st Ring (N) | Stressed City | \$794–\$1,506 | Leaning D Party Line |

While their self-selection into a voluntary program suggests that these cities are likely mitigating more actively than many other small cities in the region, and thus probably unrepresentative of suburban efforts more broadly, they have a wide range of population, recent growth, location, community type, household tax capacity, and party preference.

⁷⁸⁷ *See id.*

⁷⁸⁸ *See id.* (Click on each city for population count).

⁷⁸⁹ ORFIELD & LUCE JR., *supra* note 763, at 15 map 1.2.

⁷⁹⁰ These are rough classifications from a map of the Twin Cities Metropolitan Region. *See id.*

⁷⁹¹ *Id.* at 44, map 1.17.

⁷⁹² *Id.* at 37, map 1.14. The regional average tax capacity was \$2,261. *See id.*

⁷⁹³ *Id.* at 277, map 7.2.

That diversity, paired with the similarities among the measures these cities are taking to address climate change and achieve sustainability, suggests that they may provide a helpful example of how leader, small city-suburbs can contribute to broader multi-level climate change efforts; the ways in which these local initiatives cross-cut party lines is particularly hopeful sign at this time of deep division in the United States. Focusing on a statewide sustainability program, even though some leader cities—including the center cities—may not participate in the program because they are too far ahead,⁷⁹⁴ also provides a way to capture efforts by cities that may not opt in to the Mayors Agreement but are taking mitigation efforts under the rubric of sustainability.

These twelve suburbs' greenhouse gas mitigation efforts focus on steps entirely within their local control. Although many of the measures that they are taking potentially pair constructively with regional-level policies to address sprawl and consequently reduce metropolitan vehicle miles traveled, these local initiatives do not center on the regional level or above. Participating suburbs generally began their efforts on climate change and energy, often because of the persuasive efforts of one or a small group of politically active individuals who have the capacity to make a significant difference at that scale, well before the GreenStep Cities program commenced. By the time these cities joined Greenstep Cities, many of them were already members of a number of other networks of cities operating at different scales.⁷⁹⁵ Chapters XII and XIII describe these suburban cities' mitigation steps and participation in multi-level networks as the basis for analyzing how these networks might foster increased suburban action on climate change.

⁷⁹⁴ Confidential interviews with people involved in cities active in other multi-level climate change and sustainability networks but not participating in GreenStep Cities (Fall 2011).

⁷⁹⁵ See *infra* Chapter XIII.

CHAPTER XII

MITIGATION STEPS BY LEADER TWIN CITIES SUBURBS

This chapter contains edited portions of Hari M. Osofsky, *Suburban Climate Change Efforts: Possibilities for Small and Nimble Cities Participating in State, Regional, National, and International Networks*, 22 Cornell J. L. & Pub. Pol’y 35 (2012).

This chapter uses the Twin Cities metropolitan region as a laboratory for considering how suburban positionality influences cities’ approaches to climate change. Its approach to analyzing this question pairs two streams of scholarship described in Chapter XI, (1) the interdisciplinary literature on climate change and cities and (2) the urban geography and interdisciplinary literature on suburbs. This chapter groups the twelve leader cities introduced at the end of Chapter XI by the type of suburb that they are—stressed city, developed job center, or developing job center/bedroom community—to examine the extent to which cities’ demographic characteristics shape the types of mitigation initiatives that they choose to pursue.

The chapter concludes with some reflections, based on that grouping, of how differentiating among categories of suburbs might help to shape efforts to encourage mitigation in them. While these suburban cities are all taking measures that comport with the types of appropriate local steps outlined in the scholarly literature on cities and climate change, the emphasis and form of these measures varies among the different kinds of cities. This variation suggests strategies for framing the benefits of mitigation approaches in ways tailored to diverse local needs.

1. *Stressed Inner Suburbs*

Stressed inner suburbs, also referred to as “at-risk communities,” face many of the

difficulties of their center cities—poverty and social instability that put great pressure on limited resources—but often without center city resources. These cities include “older suburbs, satellite cities, and newer, lower density communities with relatively high poverty rates.”⁷⁹⁶ They often become poor faster than their center cities because they lack business districts as well as urban resources such as public infrastructure, cultural attractions, parks, and other amenities.⁷⁹⁷

The Twin Cities’ stressed inner suburbs, including the three cities described below—Falcon Heights, Hopkins, and St. Anthony—follow this pattern. They all have below average household tax capacity and growth compared to the other suburbs, with St. Anthony poorer and growing more slowly than the other two. Politically, they are the most liberal group of cities in this sample; like their center cities, they all lean or are solidly Democratic in their voting patterns. As demonstrated in the details of their planning relevant to climate change mitigation, these suburbs’ greater economic stresses influence their approach to climate change and sustainability. Their efforts have to be particularly sensitive to economics and up-front costs and often include an urban redevelopment component.

a. Falcon Heights

Falcon Heights, a city of just 5,578 people that votes Democratic, is a first ring suburb just north of Saint Paul which has been categorized as a stressed city.⁷⁹⁸ This city

⁷⁹⁶ MYRON ORFIELD, AMERICAN METROPOLITICS: THE NEW SUBURBAN REALITY 36 (2002).

⁷⁹⁷ *Id.* at 33–36.

⁷⁹⁸ *See supra* Chapter XI, Table 1.

is unusual because it houses both the Minnesota State Fair and the University of Minnesota St. Paul campus in its 2.28 square miles.⁷⁹⁹ It is by far the smallest of the suburban cities that this case study discusses and particularly exemplifies how, at such a scale, even in a comparatively under-resourced suburb, the leadership of the mayor and key city council members can enable rapid, nimble efforts to take advantage of available state and federal funds and innovate.⁸⁰⁰ Over the course of just a few years, the city has made and met major commitments, often at very low cost or free through creative use of university and other local resources.

In 2008, at the urging of the Mayor Peter Lindstrom and several city council members in support of initiatives by the city's Environmental Commission, the Falcon Heights city council unanimously supported joining the Mayors' Agreement, as well as having the Climate Change Corp—using retired engineers through the Minnesota Pollution Control Agency—provide a free inventory of its carbon footprint.⁸⁰¹ The city changed several of its zoning ordinances to allow for high density and mixed mixed-use zoning along its transportation corridors, implemented programs to promote walking, and increased the number of bike parking stations throughout the city.⁸⁰² It also established a building

⁷⁹⁹ FALCON HEIGHTS, <http://www.ci.falcon-heights.mn.us/> (last visited May 18, 2011).

⁸⁰⁰ Beth Mercer-Taylor, Member, Falcon Heights City Council, Presentation to Renewable Energy Class at the University of Minnesota (Feb. 7, 2011).

⁸⁰¹ *Falcon Heights City Council Minutes 5/28/08*, FALCON HEIGHTS, available at http://www.ci.falcon-heights.mn.us/index.asp?Type=B_BASIC&SEC={1F53A76A-3B66-4BE5-AF98-19906858FCE2}&DE={5F9CE4F7-AABC-4865-A7E2-FBDA27F097B1} (last visited May 17, 2011).

⁸⁰² CITY OF FALCON HEIGHTS, COMPREHENSIVE PLAN 71–86 (2009), available at http://archive.ci.falcon-heights.mn.us/compplan2008/FalconHeights2030_CPUcorrected.pdf; CITY OF FALCON HEIGHTS NEW HIGH DENSITY MULTI-FAMILY/MIXED USE ZONING (2010), available at <http://greenstep.pca.state.mn.us/viewFile.cfm?id=194> (depicting proposed zoning changes in the Comprehensive Plan); *City of Falcon Heights Planning Commission Minutes* (Aug. 24, 2010) (on file with author) (explaining the zoning changes).

permit fee rebate for energy star improvements.⁸⁰³

In fall 2009, the University of Minnesota Sustainable Communities course prepared suggestions on developing a city sustainability program.⁸⁰⁴ In summer 2010, Falcon Heights implemented a streetscape project on the major thoroughfare Larpenteur Avenue that includes planting and landscaping, which highlights pedestrian and cyclist street uses.⁸⁰⁵ In October 2010, it completed a City Hall energy audit and efficiency upgrades, with the upfront capital costs to be paid back in under two years.⁸⁰⁶

In February 2011, Falcon Heights implemented an Environmentally Preferable Purchasing Policy that complies with the EPA Comprehensive Procurement Guidelines.⁸⁰⁷ In August 2011, based on data it had been collecting since 2007, Falcon Heights performed energy audits on two park shelters and installed motion-activated interior lights in response to the audit.⁸⁰⁸ Finally, Falcon Heights city council approved a 40kw solar array for the rooftop of its City Hall, which is currently being built with the support of the

⁸⁰³ *Falcon Heights Energy Rebate Program*, FALCON HEIGHTS, http://www.ci.falcon-heights.mn.us/index.asp?Type=B_BASIC&SEC={569404F2-FC29-4662-A633-19F52012CC3E}&DE={5FB80221-04AF-44BE-A8D2-350AC478DECC} (last visited Sept. 28, 2011).

⁸⁰⁴ *See Student Work*, UNIVERSITY OF MINNESOTA SUSTAINABILITY STUDIES, <http://sustainabilitystudies.umn.edu/SustainabilityStudiesMinor/StudentsWork/index.htm> (last modified June 30, 2011); Bridget Rathsack et al., *Falcon Heights Sustainability* (unpublished student report), available at <http://www.susteducation.umn.edu/wp-content/uploads/2012/02/Falcon-Heights-Sustainability.pdf>.

⁸⁰⁵ *See Larpenteur Streetscape Project Begins*, FALCON HEIGHTS (July 6, 2010), http://www.ci.falcon-heights.mn.us/index.asp?Type=B_PR&SEC=%7B78A505D2-DD94-41B6-88D7-E6CD41853F1C%7D&DE=%7BDFD769E6-4023-4B2E-90A9-81CB002596F1%7D.

⁸⁰⁶ *See City of Falcon Heights*, MINN. GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2394738 (last visited Sept. 28, 2011).

⁸⁰⁷ *City of Falcon Heights Environmentally Preferable Purchasing Policy* (Feb. 23, 2011), available at http://www.falconheights.info/02-23-2011_fhcc_packet.pdf.

⁸⁰⁸ *City of Falcon Heights*, *supra* note 806.

“Minnesota Made” program and other federal and state subsidies for renewable energy.⁸⁰⁹

The city passed a January 2011 resolution joining the GreenStep Cities program, in which it is taking steps to achieve best practices with respect to public buildings, private buildings, comprehensive planning, higher density, complete green streets, mobility options, environmental purchasing, urban forests, green infrastructure, local air quality, benchmarks and community engagement, green business development, and local food. It also is pursuing putting solar panels on its city hall through federal income tax credits, Xcel Energy rebates, private financing, and city lease payments.⁸¹⁰ Falcon Heights reached Step 3 on June 10, 2012.⁸¹¹

b. Hopkins

Hopkins is a somewhat larger first ring suburb of 17,481 just west of Minneapolis that also has been categorized as a stressed city and consistently votes Democratic.⁸¹² It was recognized for its sustainability efforts as early as 2005; the Sierra Club designated the Excelsior Tech Center and Regency redevelopment project—which transformed an old torpedo factory into a mixed use community which incorporates residential, business, and

⁸⁰⁹ See E-mail from Beth Mercer-Taylor, Member, Falcon Heights City Council, to Hari M. Osofsky, Assoc. Professor of Law, Univ. of Minn. Law Sch. (Mar. 1, 2012) (on file with author).

⁸¹⁰ See FALCON HEIGHTS, MINN., Resolution 11-01 (2011), available at <http://www.ci.falconheights.mn.us/vertical/Sites/%7BA88B3088-FA03-4D5D-9D04-CCC9EF496399%7D/uploads/%7B4399331C-0D81-4A42-9934-EA324FCF40B8%7D.PDF> (last visited May 17, 2011); Falcon Heights City Council Workshop, Mar. 2, 2011, available at <http://www.falconheights.org/vertical/Sites/%7BA88B3088-FA03-4D5D-9D04-CCC9EF496399%7D/uploads/%7B57FA6563-4C34-42B0-85A6-6B72250887FE%7D.PDF>. For additional steps Falcon Heights is taking, see *Region 5 Climate Change: Municipalities*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/r5climatechange/municipalities.html> (listing Falcon Heights as a new Community Climate Change Initiative Partner) (last updated Nov. 23, 2011).

⁸¹¹ *City of Falcon Heights*, *supra* note 806.

⁸¹² See *supra* Chapter XI, Table 1.

industrial development—as one of “America’s Best New Development Projects.”⁸¹³ The city also installed solar-powered trail crossing signs in two locations in 2008.⁸¹⁴

In 2009, Hopkins’ efforts accelerated. It formed a Green Team of city staff and began entering data into the B3 benchmarking database.⁸¹⁵ The Green Team has used this data to guide projects which include: installing motion sensor lights at city facilities and efficient boilers in City Hall, setting thermostats at city facilities lower when not in use, and expanding public outreach on environment and energy issues.⁸¹⁶ For example, the city upgraded its boilers because its City Hall was in the bottom third of the B3 energy performance rankings;⁸¹⁷ the city expects to see a 25% reduction in heating costs because of the new boilers.⁸¹⁸

In 2010, Hopkins used state-level opportunities to advance its efforts. The Minnesota Department of Natural Resources awarded the Depot Coffee House, a partially city-managed coffee house and youth community engagement project which is located at the confluence of three bike trails, a \$37,500 Solar Energy Legacy Grant to install solar panels

⁸¹³SIERRA CLUB, BUILDING BETTER: A GUIDE TO AMERICA’S BEST NEW DEVELOPMENT PROJECTS 2, 18 (2005), available at <http://www.sierraclub.org/sprawl/report05/buildingbetter.pdf>.

⁸¹⁴ See *City of Hopkins*, MINN. GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2394417 (last visited Sept. 25, 2011).

⁸¹⁵ See *id.*

⁸¹⁶ *The Green Team*, CITY OF HOPKINS, <http://www.hopkinsmn.com/green/index.php> (last visited Oct. 27, 2011); see also CITY OF HOPKINS, HOPKINS IS GOING GREEN, available at <http://www.hopkinsmn.com/council/pdf/going-green.pdf> (describing Hopkins as “mindful of the environment”).

⁸¹⁷ See *City of Hopkins*, *supra* note 814.

⁸¹⁸ *Hopkins Goes Green: City Hall Boiler Replacement*, CITY OF HOPKINS, <http://www.hopkinsmn.com/green/boiler-replacement.php> (last visited Oct. 26, 2011).

which will also be used as a public outreach tool.⁸¹⁹ Hopkins registered for GreenStep Cities on November 18, 2010 and reached Step 2 status by June 13, 2011.⁸²⁰ Hopkins also installed Dark-Sky compliant lighting in Cottageville Park in 2010.⁸²¹

Hopkins currently has several mixed-use redevelopment projects near its historic pedestrian-oriented downtown area, and plans to encourage more such redevelopment in conjunction with an adjacent proposed light rail station.⁸²² In July 2011, the city adopted a mixed-use zoning ordinance that establishes three mixed-use areas coinciding with proposed light rail stops and development standards for them.⁸²³

Hopkins also has a number of initiatives to reduce motor vehicle emissions. Many of the city's traffic signals are on fully actualized systems triggered by cameras or sensors to minimize idling whenever possible.⁸²⁴ The city is also converting traffic signals to LED

⁸¹⁹ THE DEPOT COFFEE HOUSE, DEPOT PARTNERS ANNUAL REPORT 2010 3 (2010), *available at* <http://www.thedepotcoffeehouse.com/pdf/depot-annual-report-2010.pdf>; *Directions to the Depot*, THE DEPOT COFFEE HOUSE, <http://www.thedepotcoffeehouse.com/about/directions.html> (last visited Oct. 26, 2011); *Frequently Asked Questions*, THE DEPOT COFFEE HOUSE, <http://www.thedepotcoffeehouse.com/about/faq.html> (follow “How is the Depot Funded? (The Short Version)” hyperlink) (last visited Oct. 26, 2011); Minn. Dep’t of Natural Res., Solar Energy Legacy Grants FY2010 Funded Grants, http://files.dnr.state.mn.us/assistance/grants/recreation/pt_legacy/fy10solar_grants.pdf (revised Feb. 17, 2010).

⁸²⁰ *City of Hopkins*, *supra* note 814.

⁸²¹ *Id.*

⁸²² *See Current Development*, CITY OF HOPKINS, <http://www.hopkinsmn.com/development/current/index.php> (noting redevelopment of Fifth Avenue Flats and Marketplace & Main projects as mixed-use); *Downtown Overlay District*, CITY OF HOPKINS, <http://www.hopkinsmn.com/development/downtown.php> (last visited Oct. 27, 2011); SOUTHWEST TRANSITWAY, DOWNTOWN HOPKINS 8-13 (2009), *available at* <http://www.hopkinsmn.com/transportation/pdf/lrt-downtown.pdf>.

⁸²³ HOPKINS, MINN., Ordinance No. 2011-1031 (2011), *available at* <http://www.hopkinsmn.com/WebLink8/DocView.aspx?id=75283&dbid=1>.

⁸²⁴ *City of Hopkins*, *supra* note 814.

and hopes to have that process 90% complete by 2012.⁸²⁵ Its downtown Municipal Parking Ramp has two designated electric car stalls available for rent.⁸²⁶ With respect to the city vehicles, Hopkins monitors fleet fuel usage and cost and keeps a monthly maintenance schedule on each vehicle.⁸²⁷ The city has bicycle-based police patrols and building inspectors.⁸²⁸

c. St. Anthony

St. Anthony is a small first ring suburb—population of 8,226—located just north of Minneapolis that faces significant economic stresses.⁸²⁹ It has the lowest tax capacity and population growth rate of all the suburbs studied.⁸³⁰ It leans Democratic, but less strongly than the other two stressed suburbs described in this section.⁸³¹ Like Hopkins, some of its earlier sustainability efforts involved mixed-use redevelopment. In 2005, St. Anthony redeveloped the site of the blighted Apache Plaza Mall into a mixed-use area named Silver Lake Village that includes retail, restaurants, parks, sidewalks, and several types of housing.⁸³² It also created an additional mixed-use area in the Kenzie Terrace area of the

⁸²⁵ *Id.*

⁸²⁶ *Downtown Public Parking*, CITY OF HOPKINS, <http://www.hopkinsmn.com/transportation/parking.php> (last visited Oct. 27, 2011).

⁸²⁷ *City of Hopkins*, *supra* note 814.

⁸²⁸ *Id.*

⁸²⁹ *See supra* Chapter XI, Table 1.

⁸³⁰ *Id.*

⁸³¹ *See id.*

⁸³² *City of Saint Anthony*, MINN. GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2396471 (last visited Oct. 28, 2011); Tom Moran, *Silver Lake Village Achieving a Collective Subconscious*, LASERFICHE WEBLINK (Apr. 4, 2008), <http://web1-elkr.ci.elk-river.mn.us/weblink8/1/doc/84882/Page1.aspx> (describing the history of the

city.⁸³³

Like Falcon Heights, St. Anthony relied upon outside expertise in shaping its approach to clean energy. In 2008, the consulting firm Sebasta Blomberg prepared a facility assessment report on energy use in all city buildings, which the city is using to guide energy efficiency improvements.⁸³⁴ St. Anthony also receives rebates from Xcel Energy for running its city wells off of a generator during peak electricity usage times.⁸³⁵ The city has plans to work with Xcel to convert streetlights to LED when economically feasible, which the city anticipates will occur within two years.⁸³⁶ In addition, the city enters energy use data into the Minnesota B3 Benchmarking database.⁸³⁷

St. Anthony has numerous initiatives to reduce vehicle emissions. As part of its efforts to be a walkable, bikeable community, the city provides a bike trail map and recently received a grant to install bike racks at all city buildings.⁸³⁸ The city coordinates

development); Edward Tombari, *From Obsolete to Vibrant: Partnerships Help Create Vital Urban Living in Minnesota Suburb*, LAND DEVELOPMENT (Nat'l Assoc. Home Builders, D.C.), Winter 2010, at 22.

⁸³³ See *Zoning & Street Address Map*, CITY OF SAINT ANTHONY (2010), <http://www.ci.saint-anthony.mn.us/vertical/Sites/%7B5ED4AFB9-D450-4F68-BA29-2600D3C2A620%7D/uploads/%7B72C78191-F238-42E0-B4AF-BBD31E6E6579%7D.PDF>.

⁸³⁴ CITY OF SAINT ANTHONY, CITY COUNCIL REGULAR MEETING MINUTES 3 (June 24, 2008), <http://www.ci.saint-anthony.mn.us/vertical/Sites/%7B5ED4AFB9-D450-4F68-BA29-2600D3C2A620%7D/uploads/%7B59D6125F-60FC-484E-99B0-3223E0E1B68E%7D.PDF>.

⁸³⁵ *City of Saint Anthony*, *supra* note 832.

⁸³⁶ *Id.*

⁸³⁷ *Id.*

⁸³⁸ CITY OF SAINT ANTHONY, CITY COUNCIL REGULAR MEETING MINUTES 3 (May 24, 2011), <http://www.ci.saint-anthony.mn.us/vertical/Sites/%7B5ED4AFB9-D450-4F68-BA29-2600D3C2A620%7D/uploads/MinutesCC052411.pdf>; *City of Saint Anthony*, *supra* note 832; SAINT ANTHONY VILLAGE, <http://www.ci.saint-anthony.mn.us/> (last visited Nov. 3, 2011) (“Our mission statement is to be a progressive and livable community, a walkable village, which is sustainable, safe and secure.”); *Saint Anthony Village Bike Route*, SAINT ANTHONY VILLAGE, <http://www.ci.saint-anthony.mn.us/vertical/Sites/%7B5ED4AFB9-D450-4F68-BA29-2600D3C2A620%7D/uploads/%7B8DEE93AE-024A-4ED1-94E6-C52DF829A630%7D.PDF> (last visited Nov. 3, 2011).

with Metro Transit to improve transit options in the city and includes transit access as a major element of its Silver Lake Village development.⁸³⁹ St. Anthony has converted all of its traffic signals to LED bulbs and synchronized the signals on Silver Lake Road to reduce idling.⁸⁴⁰ The city uses solar powered LED technology for warning lights at school bus and fire truck approach sites.⁸⁴¹ With respect to its own fleet, St. Anthony monitors fuel usage in vehicles, trains staff on efficient driving, uses bicycle police patrols in high-density areas, and relies upon video conferencing to minimize vehicle trips.⁸⁴² St. Anthony registered for GreenStep Cities on February 22, 2011 and reached Step 3 by June 10, 2012.⁸⁴³

2. *Developed Job Centers*

Developed job centers are not simply relatively affluent bedroom communities within commuting distance of central cities, but rather have become important players in their regional economies.⁸⁴⁴ They have comparatively large tax bases but support less of the social costs of poverty than their central cities. As a result, they suffer fewer of the stresses of the central cities and inner suburbs described above.⁸⁴⁵

The four developed job centers participating in Greenstep Cities—Eagan, Eden

⁸³⁹ *City of Saint Anthony, supra* note 832.

⁸⁴⁰ *Id.*

⁸⁴¹ *Id.*

⁸⁴² *Id.*

⁸⁴³ *Id.*

⁸⁴⁴ *See* ORFIELD & LUCE JR., *supra* note 763, at 46.

⁸⁴⁵ *See id.*; *see also* ORFIELD, *supra* note 696, at 44–46.

Prairie, Edina, and Maplewood—fit this profile. They all have an above average tax base, with Eden Prairie and Edina having the highest tax base of the sample. They vary in their growth rate, however, with the first-ring developed job centers growing more slowly than their second ring counterparts. They are much more politically diverse and volatile than the inner stressed suburbs studied, with two tending Democratic and two tending Republican. This diversity suggests some hope for the bipartisan character of potential mitigation measures in this critical group of established and affluent suburbs despite the general political divisiveness in the United States and Minnesota currently.⁸⁴⁶

As detailed in depth below, these cities collectively have the most extensive programs in the sample. Each of these developed job centers has made significant steps in the major areas in which cities can take action. They all participate in the Mayors Agreement and have made commitments in the Copenhagen City Climate Catalogue. Eden Prairie has even received national recognition from the Mayor’s Agreement in the small city category.⁸⁴⁷ In their assessment and implementation, these cities have been skillful at taking advantage of university and governmental resources, but also have the fiscal capacity to make up-front investments that will pay off over time.

a. Eagan

Eagan, with a population of 65,800, is the largest suburb in this study (only Eden Prairie, discussed next, is of similar size).⁸⁴⁸ It is a second-ring suburb south of the Twin

⁸⁴⁶ See *supra* Table 1.

⁸⁴⁷ See MAYORS CLIMATE PROT. CTR., TAKING LOCAL ACTION: MAYORS AND CLIMATE PROTECTION BEST PRACTICES 13 (2011), available at <http://usmayors.org/79thAnnualMeeting/documents/BestPractices2011ClimateAwardWinners.pdf>.

⁸⁴⁸ See *supra* Table 1.

Cities that leans slightly Democratic and that has above average growth and tax capacity, but is not at the high end of either.⁸⁴⁹ Despite its very different size and positionality, it shares with Falcon Heights a story in which a few motivated individuals were able to catalyze rapid action.⁸⁵⁰ This description illustrates that phenomenon by focusing on the period from the Eagan City Council's February 2010 creation of the Energy and Environment Commission to the present. That Commission, which consists of seven residents that the City Council appoints, makes recommendations on energy sustainability and conservation strategies.⁸⁵¹ The Commission has played an important role in fostering Eagan's mitigation efforts, including its GreenStep accomplishments; Eagan registered as a GreenStep city on November 10, 2010, and reached Step Three on June 10, 2012.⁸⁵²

Like Falcon Heights, Eagan took advantage of the local major university and its often-free resources, as well as governmental funding opportunities, to reduce the costs of its mitigation efforts. The city had students in the University of Minnesota Sustainable Communities course compile an inventory of the city's GreenStep Cities Best Practices.⁸⁵³ In addition, Eagan used federal funding in the form of a DOE grant to install a geothermal heating system at the Eagan Ice Arena, which is projected during its first year to save the city \$135,000 in energy and operational costs and reduce emissions equivalent to 124

⁸⁴⁹ *See id.*

⁸⁵⁰ *See* Amir Nadav, Member, Eagan Energy and Env't Comm'n, Presentation at the University of Minnesota Climate Change and Clean Energy Capstone (Sept. 20, 2011) (notes on file with author).

⁸⁵¹ *Advisory Energy & Environment Commission*, CITY OF EAGAN, <http://www.cityofeagan.com/live/article.aspx?id=41643> (last visited Oct. 5, 2011).

⁸⁵² *City of Eagan*, MINN. GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2394586 (last visited Sept. 25, 2012).

⁸⁵³ Mary Jo Koplos, *Eagan Achieves GreenStep City Status*, EAGANPATCH (June 2, 2011), <http://eagan.patch.com/articles/eagan-achieves-greenstep-city-status>.

passenger cars.⁸⁵⁴ Eagan also received \$657,000 in funds from the Energy Efficiency and Conservation Block Grant program (EECBG) (which it supplemented with other leveraged funds and utility rebates totaling \$1.2 million) to perform energy audits and upgrade several city buildings to increase energy efficiency.⁸⁵⁵

Soon after creating the Commission, Eagan used its planning authority to reduce emissions. In April 2010, Eagan adopted a Comprehensive Plan, which includes a revised Special Area Plan for the redevelopment of the area surrounding Cedar Avenue and Highway 13 to reflect the city’s goal to create a “viable mixed-use area that utilizes its highway visibility and accessibility, while maintaining compatible land use relationships with surrounding uses.”⁸⁵⁶ By January 2011, Eagan had complemented this effort with a traffic signal synchronization program on major roads; it installed two roundabouts and two flashing yellow left turn arrows to decrease idling time.⁸⁵⁷ All of the traffic signals in the city use LED lights.⁸⁵⁸ In January 2011, the city adopted a Trail Connection Policy through which private commercial property owners create trail linkages from city trails and sidewalks to commercial facilities in order to encourage non-vehicular travel.⁸⁵⁹

⁸⁵⁴ *December 11 Eagan Civic Arena Grand Re-Opening*, CITY OF EAGAN, <http://www.cityofeagan.com/live/news.aspx?cid=38588&id=41514> (last visited Sept. 25, 2012).

⁸⁵⁵ *City of Eagan*, *supra* note 852.

⁸⁵⁶ *Cedar Grove Special Area Plan*, CITY OF EAGAN, <http://www.cityofeagan.com/live/article.aspx?id=40846> (last visited Sept. 27, 2011); *Comprehensive Plan: Land Use Plan*, CITY OF EAGAN, http://www.cityofeagan.com/upload/images/CommunityDevelopment/Planning/CompPlan2030/3%20-%20Land%20Use_low.pdf (last visited Sept. 25, 2011); *Comprehensive Plan Update 2030*, CITY OF EAGAN, <http://www.cityofeagan.com/live/article.aspx?id=41050> (last visited Sept 25, 2012).

⁸⁵⁷ *City of Eagan*, *supra* note 852.

⁸⁵⁸ *Id.*

⁸⁵⁹ *See City of Eagan Community Trail System Connections to Commercial Areas Policy* (Jan. 18, 2011), <http://greenstep.pca.state.mn.us/viewFile.cfm?id=248>.

These efforts continued throughout 2011. In February, the city council adopted 2011-12 goals, which include “[m]aintain[ing] a broad-based and comprehensive commitment to energy efficiency and environmental sustainability by adopting conservation and alternative energy strategies pursuing the use of local, non-polluting, renewable, and recycled resources, while encouraging residents and businesses to do likewise.”⁸⁶⁰ In May, Eagan began entering information into the Minnesota B3 database to track energy usage.⁸⁶¹ In September, Eagan enacted “Environmentally Preferable Purchasing Guidelines” to conserve natural resources and energy and lower overall costs to the city.⁸⁶² The City Council also passed a resolution committing to support Complete Streets principles of providing multi-modal transportation options in future transportation projects.⁸⁶³ It also approved the Energy and Environment Advisory Committee’s 2011–2012 goals, which included achieving Step 3 in the Greenstep Cities program and more outreach and education to the residential and business communities.⁸⁶⁴

Eagan took numerous steps in 2011 to update its facilities and fleet. It replaced lighting fixtures, upgraded HVAC, and installed low-flow plumbing fixtures to improve

⁸⁶⁰ *City Council Goals 2011–2012*, CITY OF EAGAN (Feb. 15, 2011), <http://www.cityofeagan.com/live/article.aspx?id=47164>.

⁸⁶¹ *City of Eagan*, *supra* note 852.

⁸⁶² *City of Eagan Environmentally Preferable Purchasing Guidelines*, CITY OF EAGAN (Sept. 6, 2011), available at <http://greenstep.pca.state.mn.us/viewFile.cfm?id=618>; *Eagan Praised for Energy Best Practices*, CITY OF EAGAN, <http://www.cityofeagan.com/live/%28S%28iyll42jqefqoc55rbuvqm45%29%29/news.aspx?cid=38588&id=51458&AspxAutoDetectCookieSupport=1> (last visited Sept. 25, 2012).

⁸⁶³ EAGAN, MINN., Resolution No. 2011-11-43 (2011), available at <http://www.mncompletestreets.org/gfx/Eagan%20Complete%20Streets%20Resolution.pdf>.

⁸⁶⁴ *Council Action Report 9-6-11*, CITY OF EAGAN (Sept. 6, 2011), <http://www.cityofeagan.com/live/event.aspx?id=47136>; Mary Jo Koplos, *Eagan Energy and Environment Commission Sets Goals for 2012*, EAGANPATCH (Sept. 25, 2011), <http://eagan.patch.com/articles/eagan-energy-and-environment-commission-sets-goals-for-2012>.

energy efficiency.⁸⁶⁵ In April 2011, Eagan opened the nation’s first Green Globe-certified fire station, which includes geothermal heating, natural and LED lighting, a solar-reflective roof, several storm water runoff management features, and ash-wood planking that was removed from the site.⁸⁶⁶ Eagan’s South Water Treatment Facility’s \$4.5 million renovation included the installation of more energy efficient water treatment technology.⁸⁶⁷ The city also replaced several fleet vehicles with more efficient models, tracks fuel usage, imposes a “no idling policy,” and uses bicycles for seasonal boulevard maintenance.⁸⁶⁸ In addition, Eagan documented five LEED Certified non-city-owned buildings: Eagan Place Professional Building, Lebanon Hills Visitor Center, Lockheed Martin, the Allan L. Schuman Corporation Ecolab Campus, and the United States Postal Service Bulk Mail Facility.⁸⁶⁹

b. Eden Prairie

Eden Prairie, a developed job center in the Twin Cities’ Western second ring which has grown rapidly over the last twenty years to a population of just over 60,000, has among the highest tax capacity in the sample and leans Republican.⁸⁷⁰ It also has received

⁸⁶⁵ CITY OF EAGAN, CITY OF EAGAN 2010 ANNUAL REPORT 2, *available at* <http://www.cityofeagan.com/upload/images/Newsletters/ExperienceEagan/ExperienceEaganmarchapril2011fnl+%202010annual%20Rpt.pdf> [hereinafter CITY OF EAGAN 2010 ANNUAL REPORT].

⁸⁶⁶ *Id.*; *see also* “Code Green” Event Celebrates Progress Toward Green Globes-Certified Fire Station, CITY OF EAGAN, <http://www.cityofeagan.com/live/news.aspx?cid=38588&id=41492> (last visited Sept. 27, 2011) (outlining the features of the fire station).

⁸⁶⁷ CITY OF EAGAN 2010 ANNUAL REPORT, *supra* note 865, at 2.

⁸⁶⁸ *City of Eagan*, *supra* note 852.

⁸⁶⁹ *Id.*

⁸⁷⁰ *See supra* Chapter XI, Table 1.

national recognition for its efforts on climate change. Mayor Nancy Tyra-Lukens was awarded an honorable mention at the 2011 U.S. Mayors Climate Protection Awards in the “small city” category for the city’s work on the 20-40-15 initiative.⁸⁷¹ Eden Prairie’s successes exemplify what a more conservative, affluent suburb can achieve through commitment and concentrated efforts.

The 20-40-15 initiative, which Eden Prairie began in 2006, calls for a 20% increase in city facility energy efficiency and a 40% increase in city vehicle fleet fuel efficiency by the year 2015.⁸⁷² To meet the first goal, the city’s efforts include installing motion sensor lighting, indoor and outdoor LED lighting (most outdoor lights have been upgraded), LED stoplights (one-third of them have been upgraded thus far), and a City Center energy management system.⁸⁷³ To meet the second goal, the city’s actions have included adding several fuel-efficient vehicles to its fleet.⁸⁷⁴ The city also participates in programs by which it receives rebates from Centerpoint and Xcel Energy.⁸⁷⁵ Eden Prairie has made significant strides in its first five years of 20-40-15, reporting in June 2011 that it had reduced city facility energy consumption by over 8% and increased city fleet fuel

⁸⁷¹ MAYORS CLIMATE PROT. CTR., *supra* note 847; *see also* 20-40-15 Initiative, EDEN PRAIRIE, <http://www.edenprairie.org/index.aspx?page=334> (last visited Oct. 6, 2011) (discussing implementation of the plan).

⁸⁷² 20-40-15 Initiative, *supra* note 169.

⁸⁷³ City of Eden Prairie, MINN. GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2394614 (last visited Oct. 6, 2011).

⁸⁷⁴ *See id.*; *Life in the Prairie*, CITY OF EDEN PRAIRIE (July 2010), <http://www.edenprairie.org/modules/showdocument.aspx?documentid=816>.

⁸⁷⁵ *City of Eden Prairie*, *supra* note 873.

efficiency by 10%.⁸⁷⁶

Eden Prairie joined GreenStep Cities on June 17, 2011⁸⁷⁷ after the city's Conservation Commission recommended participation. It uses its 20-40-15 program to achieve progress on those goals and reached Step 2 on June 10, 2012.⁸⁷⁸ In addition, Eden Prairie worked with SRF Consulting Group to create a 2007 *Active Community Planning: Site Planning Guide*, which assists its local government, property owners and developers with preparing development plans that incorporate density, walking/biking, quality physical design, and air and water quality concerns.⁸⁷⁹

c. Edina

Edina is a first ring Western suburb of 47,941 that has among the highest tax capacity in the sample and leans Republican.⁸⁸⁰ Like the other first ring suburbs, it has been growing much more slowly than the second and third ring suburbs in the sample.⁸⁸¹ However, its socioeconomic status places it in this developed job center group.⁸⁸² Edina's mitigation efforts also began in 2007, before the launch of Greenstep Cities, when it

⁸⁷⁶ Press Release, Eden Prairie, Minn., Mayor Receives Honorable Mention for Eden Prairie Climate Protection Efforts (June 17, 2011), <http://www.edenprairie.org/modules/showdocument.aspx?documentid=1022>.

⁸⁷⁷ *City of Eden Prairie*, *supra* note 873.

⁸⁷⁸ See Rick Getschow, *GreenStep Cities*, CITY OF EDEN PRAIRIE BLOGS (June 21, 2011, 12:12 PM), <http://edenprairieweblogs.org/rickgetschow/posts/152/>.

⁸⁷⁹ See *City of Eden Prairie*, DESIGN FOR HEALTH, <http://designforhealth.net/cases/eden-prairie/>; Email from Philipp Muesig, Minn. GreenStep Cities Coordinator, to Hari Osofsky, Assoc. Professor of Law, Univ. of Minn. Law School (Feb. 28, 2012) (on file with author).

⁸⁸⁰ See *supra* Chapter XI, Table 1.

⁸⁸¹ See *id.*

⁸⁸² *Id.*

established an Energy and Environment Commission and became one of only two cities in the sample to join ICLEI, an international association of local governments working on sustainability.⁸⁸³ Edina's Commission focuses on energy, recycling, solid waste, and air and water quality issues, and works in partnership with Xcel and CenterPoint Energy to promote residential energy efficiency programs.⁸⁸⁴ Edina registered for GreenStep Cities on March 1, 2011 and achieved Step Three status on June 10, 2012.⁸⁸⁵

Edina has been a leader among the cities in this sample in data collection, beginning its compilation of benchmark data in 2007 with the ICLEI CACP software.⁸⁸⁶ It also was one of eighteen cities to join the Carbon Disclosure Project in 2008, which is a global platform for cities to disclose and compare GHG emissions data established in collaboration with ICLEI.⁸⁸⁷ In 2011, Edina followed Falcon Heights in partnering with the Urban Land Institute's Regional Indicator Project to create benchmarking data for energy consumption in the city.⁸⁸⁸ Edina also has entered energy benchmark data into the

⁸⁸³ *Current Press Releases: City of Edina Joins ICLEI*, CITY OF EDINA (Nov. 9, 2007), legacy.ci.edina.mn.us/PressReleases/L6-42_PressRelease_200711_6.htm.

⁸⁸⁴ *Energy & Environment Commission*, CITY OF EDINA, <http://legacy.ci.edina.mn.us/citycouncil/EnergyEnvironmentCommission.htm> (last visited Oct. 11, 2011).

⁸⁸⁵ *City of Edina*, MINN. GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2394621 (last visited Oct. 12, 2011).

⁸⁸⁶ *Id.*

⁸⁸⁷ See CARBON DISCLOSURE PROJECT, CDP CITIES 2011: REPORT ON C40 CITIES (2011), available at <https://www.cdproject.net/Documents/CDP-Cities-2011-Report.pdf>; see also *CDP Cities*, CARBON DISCLOSURE PROJECT, <https://www.cdproject.net/cities> (last visited Oct. 12, 2011) (discussing the objectives of the program); CARBON SENSE, CARBON DISCLOSURE PROJECT: CITIES PILOT PROJECT 2008 (2008), available at https://www.cdproject.net/CDPResults/65_329_216_CDP-CitiesReport.pdf.

⁸⁸⁸ SCOTT HEAL, OFFICE OF THE CITY MANAGER: FRIDAY REPORT (2011), available at http://legacy.ci.edina.mn.us/PDFs/Friday_Report/2011/April%2022.pdf; see also *Council Minutes*, CITY OF FALCON HEIGHTS (Apr. 28, 2010), http://www.falconheights.org/index.asp?Type=B_BASIC&SEC={BD4063DB-2F67-4C85-A936-EE69AF241ADC}&DE={C97D7810-8AB5-4C85-B778-CBBBC4170A71}) (approving Carbon Footprint Baseline Analysis Phase II).

B3 database and is having city buildings audited for energy use.⁸⁸⁹

In addition, Edina has been a leader in helping create incentives for private buildings to invest in renewable energy and energy efficiency upgrades. After the state passed enabling legislation in 2010, Edina became the first city in Minnesota to create a Property Assessed Clean Energy (PACE) program, which helps provide financing for these upgrades.⁸⁹⁰ Through collaboration with the national PACE program, the city's Energy Commission, the Minnesota Pollution Control Agency, the Minnesota Solar Energy Industries Association, and the Minnesota Department of Commerce, Edina created its Emerald Energy Program at an implementation cost of only \$11,400, which today can fund any qualifying commercial or industrial property in the City.⁸⁹¹ On August 21, 2012, its City Council approved the state's first energy efficiency PACE project, which supports a restaurant's LED lighting replacement and exhaust control installations.⁸⁹²

Edina, like many of the other cities, has focused on shifting people away from car use. Edina's transportation committee passed a resolution recommending that the city create a "Living Streets" plan based on complete streets concepts that would, among other aims, calm traffic and improve bicycle and pedestrian connectivity.⁸⁹³ The city's Comprehensive Bicycle Transportation Plan includes a goal of making bicycling a "useful

⁸⁸⁹ *City of Edina*, *supra* note 885.

⁸⁹⁰ *Commercial Pace in Edina Minnesota*, PACENOW, <http://pacenow.org/about-pace/feature-c-pace-in-edina/>.

⁸⁹¹ *See id*; *About Pace*, PACENOW, <http://pacenow.org/about-pace/>.

⁸⁹² *See* Email from Philipp Muesig, Minn. GreenStep Cities Coordinator, to Hari Osofsky, Assoc. Professor of Law, Univ. of Minn. Law School (Aug 21, 2012) (on file with author).

⁸⁹³ *See Minutes of the Edina Transportation Commission*, CITY OF EDINA (Apr. 21, 2011), <http://legacy.ci.edina.mn.us/Pages/TransportationCommissionMeetingMinutes/20110421.htm>; *City of Edina*, *supra* note 885.

transportation option in Edina.”⁸⁹⁴

Edina has engaged in substantial community education and outreach. In Fall 2011, Edina Community Education Services began holding classes on energy efficiency for residents taught by staff from the Center for Energy and the Environment; participants receive a discount on a Home Energy Squad visit.⁸⁹⁵ Edina also has created a marketing campaign to promote residential energy efficiency programs in conjunction with Xcel and CenterPoint Energy.⁸⁹⁶

d. Maplewood

Maplewood, a first ring suburb just to the North and East of Saint Paul with a population of 38,018, has slightly above average tax capacity, average growth, and votes Democratic.⁸⁹⁷ It is the earliest of this group to implement significant measures relevant to climate change mitigation, taking steps in 1994 to build the Maplewood Community Center in an energy efficient fashion.⁸⁹⁸ The city also made several energy efficiency upgrades to its facilities between 1998 and 2007.⁸⁹⁹ Like many of the other cities in the

⁸⁹⁴ CITY OF EDINA, COMPREHENSIVE BICYCLE TRANSPORTATION PLAN 9 (2007), available at <http://www.edinamn.gov/PlanningBikePlanReport.pdf>.

⁸⁹⁵ *Archived Press Releases: Home Energy Awareness Class Offered Through Edina Community Education Services*, CITY OF EDINA (Sept. 14, 2011), http://legacy.ci.edina.mn.us/PressReleases/L6-42_PressRelease_20110914.htm.

⁸⁹⁶ *City of Edina*, *supra* note 885.

⁸⁹⁷ *See supra* Chapter XI, Table 1.

⁸⁹⁸ *See Energy*, CITY OF MAPLEWOOD, <http://www.ci.maplewood.mn.us/index.aspx?nid=819> (last visited Oct. 28, 2011).

⁸⁹⁹ *See* CITY OF MAPLEWOOD, MAPLEWOOD ENERGY EFFICIENCY AND CONSERVATION STRATEGY PLAN (2009), available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=1411> (listing energy efficiency upgrades) [hereinafter MAPLEWOOD ENERGY STRATEGY].

sample, Maplewood has established an institutional framework to support its efforts. Maplewood's Environmental and Natural Resources Commission establishes environmental priorities for the city and advises the City Council and other commissions on environmental issues.⁹⁰⁰ Maplewood also has a Natural Resources Department with both an Environmental Planner and a Natural Resources Coordinator on staff, which also publishes a newsletter on sustainability.⁹⁰¹ In 2008, the city established a Green Team of employees, focused on sustainability projects, to help it meet its Mayors Agreement commitments.⁹⁰² In 2009, Maplewood adopted an Energy Efficiency and Conservation Strategy that lays out goals and policies to decrease energy use within the city.⁹⁰³ Maplewood registered for the GreenStep Cities program on January 24, 2011 and reached Step Two by June 13, 2011.⁹⁰⁴

Like other leader suburbs, Maplewood has accessed university and government resources to forward its goals. In 2008, students at the University of Minnesota prepared a series of reports for the city addressing sustainability issues, which included analysis of energy use in city facilities and a recommendation that Maplewood join the Minnesota

⁹⁰⁰ *Environmental & Natural Resource Commission*, CITY OF MAPLEWOOD, <http://www.ci.maplewood.mn.us/index.aspx?nid=256> (last visited Oct. 28, 2011).

⁹⁰¹ *See Community Development*, CITY OF MAPLEWOOD, <http://www.ci.maplewood.mn.us/Directory.aspx?did=32> (last visited Oct. 28, 2011); *Engaging Attitudes*, MAPLEWOOD SEASONS (Maplewood Minn.), Summer 2008, at 1, 1, *available at* <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=1645>.

⁹⁰² Shann Finwall, *Take the Energy Challenge*, MAPLEWOOD SEASONS (City of Maplewood Minn.), Fall 2009, at 1, 3, *available at* <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=1257>.

⁹⁰³ MAPLEWOOD ENERGY STRATEGY, *supra* note 899.

⁹⁰⁴ *City of Maplewood*, MINN. GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2395846 (last visited Oct. 28, 2011).

GreenStar Cities Initiative, a precursor to the GreenStep program.⁹⁰⁵ In 2009, Maplewood used EECBG funding to replace boilers and upgrade HVAC at City Hall, install energy efficient lighting at the Community Center and Goodrich Park, and contribute to lighting upgrades at Maplewood Mall.⁹⁰⁶ In 2011, the city installed a 2,150 kWh solar panel system at the Maplewood Nature Center that was partially funded by a Solar Energy Legacy Grant from the Minnesota Department of Natural Resources.⁹⁰⁷

A number of Maplewood's efforts, such as some of those described above, have centered around reducing energy use in buildings, including the adoption of a model sustainable building renovation policy based on the International Green Construction Code.⁹⁰⁸ In 2007, Maplewood began entering energy use data into the Minnesota B3 database and in 2008 completed energy audits of city buildings.⁹⁰⁹ To advance energy efficiency in private buildings, Maplewood collaborated with Xcel Energy on Community Energy Efficiency Sweep, which promotes energy-efficiency programs available to city residents and businesses.⁹¹⁰ The city also encourages residents to participate in the Minnesota Energy Challenge and provides energy saving tips for residents in the

⁹⁰⁵ DARIAN MOTAMED ET AL., SUSTAINABLE MAPLEWOOD 2050: GREEN WORKPLACE: ENERGY 22 (2008), available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=911>; *City of Maplewood*, *supra* note 904.

⁹⁰⁶ MAPLEWOOD ENERGY STRATEGY, *supra* note 899, at 15.

⁹⁰⁷ Ann Hutchinson, *Nature Center Solar Photovoltaic Project*, MAPLEWOOD SEASONS (City of Maplewood Minn.), Fall 2011, at 3, available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=2079>.

⁹⁰⁸ *City of Maplewood*, *supra* note 904.

⁹⁰⁹ *Id.*; MAPLEWOOD ENERGY STRATEGY, *supra* note 899.

⁹¹⁰ Yvonne Pfeifer, *Energy Sweep*, MAPLEWOOD SEASONS (City of Maplewood Minn.), Winter 2010/2011, at 1, available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=1795>.

Maplewood Seasons newsletter.⁹¹¹

As part of its efforts to reduce energy use, Maplewood has actively promoted renewables. In October 2011, Maplewood's City Council adopted the Renewable Energy Ordinance, which creates permitting, installation, and operation standards for solar, wind, and geothermal energy installations in the city.⁹¹² The city has also extended its efforts on energy efficiency and renewables to purchasing. In April 2011, Maplewood adopted an environmentally-friendly purchasing policy that addresses energy efficiency in new equipment purchases⁹¹³ and states that "[w]hen energy is purchased, renewable or green sources are preferred. These include solar power or photovoltaic, wind power, geothermal, and hydroelectric energy sources and do not include fossil fuels (coal, oil or natural gas)."⁹¹⁴

Finally, Maplewood has made numerous efforts to reduce vehicle emissions. The city synchronized traffic signals to minimize idling along White Bear Avenue in the Maplewood Mall area.⁹¹⁵ It has begun to develop a Living Streets policy to calm traffic, make streets more pedestrian and bicycle-friendly, and control runoff.⁹¹⁶ It has worked with MetroTransit to expand the Maplewood Mall park-and-ride lot to expand transit

⁹¹¹ See, e.g., Finwall, *supra* note 902; Dave Fischer, *Easy Tips For Saving Energy in Your Home*, MAPLEWOOD SEASONS (Maplewood, Minn.), Fall 2009, at 3, available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=1257>.

⁹¹² MAPLEWOOD, MINN., *Ordinance No. 914* (2011), available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=2219>.

⁹¹³ *Environmental Purchasing Policy*, CITY OF MAPLEWOOD, § 4.4 (April 20, 2011), available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=2192>.

⁹¹⁴ *Id.* at § 4.4.3.

⁹¹⁵ *City of Maplewood*, *supra* note 904.

⁹¹⁶ Michael Thompson, *Living Streets—A Vision for the Future*, MAPLEWOOD SEASONS (City of Maplewood, Minn.) Spring 2011, at 2, available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=1886>.

use.⁹¹⁷ Maplewood also has taken several steps to make its own vehicle fleet more efficient. It performed an audit on the fleet to discern where efficiency improvements could be made, implemented a vehicle sharing policy, downsized the city fleet, and established bicycle police patrols.⁹¹⁸ The city has monitored and continues to monitor fuel usage, has instituted a no-idling policy, and has transitioned from bio-diesel B2 to B5.⁹¹⁹

3. Developing Job Centers and Bedroom Developing Communities

Developing job centers and bedroom developing communities are rapidly growing cities toward the edge of the metropolitan region that have roughly average tax capacity.⁹²⁰ The main difference between these two groups is that bedroom developing communities lack the job concentrations of developing job centers and are farther from the center cities.⁹²¹ In both groups, tax capacity does not easily match the new costs resulting from high growth rates.⁹²² From a climate change perspective, their growth rates present both a challenge and an opportunity. They are evolving more rapidly than other categories of suburban cities and are consequently making choices that impact their carbon footprint. As a result, their land use and emissions patterns are often more malleable than those of more developed suburbs closer to the center cities.⁹²³ However, these edge cities also tend

⁹¹⁷ *City of Maplewood*, *supra* note 904.

⁹¹⁸ Scott Schultz, *Sustainable Fleet Operations*, MAPLEWOOD SEASONS (City of Maplewood, Minn.) Spring 2011, at 3, available at <http://www.ci.maplewood.mn.us/DocumentView.aspx?DID=1886>.

⁹¹⁹ *Id.*; *City of Maplewood*, *supra* note 904.

⁹²⁰ *See supra* Chapter XI, Table 1.

⁹²¹ *See* ORFIELD & LUCE JR., *supra* note 763, at 45–49.

⁹²² *See id.*

⁹²³ *See id.*

to sprawl and have limited resources to address these patterns.⁹²⁴

The five Twin Cities metropolitan region developing job center and bedroom developing communities participating in Greenstep Cities—Apple Valley, Cottage Grove, Farmington, Mahtomedi, and Oakdale—fit this profile. These cities’ populations all grew by over 40% between 1990 and 2004.⁹²⁵ With the exception of Oakdale, which has a lower tax capacity more similar to the stressed inner suburbs, they all have close to average tax capacity for the metropolitan region.⁹²⁶ Like the developed job center group, they are politically diverse and contested; three of the five lean Republican, one leans Democratic, and one is safely Democratic.⁹²⁷

The extent of their mitigation efforts varies dramatically. Some of the cities in this grouping located closer to the region’s core were comparatively early adopters of mitigating activities identified in the cities and climate change literature even, in the case of Oakdale, with comparatively limited resources. However, one of the outer group, Farmington, has included efforts at land use concentration among its initiatives, a constructive way of addressing sprawl within a city that could be compatible with regional sprawl control efforts. Although in some cases these cities accessed university and governmental resources to support their efforts, they did so less than cities in the other two categories discussed, despite the fact that these cities need such economic support more than the developed job centers. This gap indicates a possible avenue for encouraging more action in these communities.

⁹²⁴ *See id.*

⁹²⁵ *See supra* Chapter XI, Table 1.

⁹²⁶ *Id.*

⁹²⁷ *Id.*

a. Apple Valley

Apple Valley is a third-ring, southern suburb that has been growing rapidly, has above average tax capacity, and leans Republican.⁹²⁸ Like many of the other cities, it began addressing energy and sustainability issues relevant to mitigation well before joining the Greenstep Cities program and accesses federal government funding programs to help support its work. The city's "Better Energy and Sustainability Program" assists local homeowners and businesses in reducing energy use.⁹²⁹ In 2007, the city began collaborating with Dakota Electric and Center Point Energy to help businesses reduce energy use.⁹³⁰ Apple Valley also established a revolving loan fund, supported in part by the EECBG program, to help residents in decrease their energy use, and works on energy efficiency initiatives.⁹³¹

Apple Valley joined GreenStep Cities on June 10, 2011 and achieved Step 2 on June 10, 2012.⁹³² By August 5, 2011, the city had completed energy efficiency audits and improvements on several city buildings with the support of EECBG funding.⁹³³ The city also reported that Liquor Store #3 and the Hayes Community Center are Green Globes

⁹²⁸ *Id.*

⁹²⁹ See *Better Energy and Sustainability*, CITY OF APPLE VALLEY, <http://www.ci.apple-valley.mn.us/index.aspx?NID=335> (last visited Sept. 8, 2012).

⁹³⁰ *Better Energy for Business*, CITY OF APPLE VALLEY, <http://www.ci.apple-valley.mn.us/index.aspx?NID=339> (last visited Sept. 8, 2012).

⁹³¹ *Better Energy Grant Projects*, CITY OF APPLE VALLEY, <http://www.ci.apple-valley.mn.us/index.aspx?NID=340> (last visited Sept. 8, 2012).

⁹³² *City of Apple Valley*, MINN. GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2393967 (last visited Sept. 8, 2012).

⁹³³ *Id.*

certified and started entering energy usage of city buildings in the Minnesota B3 database.⁹³⁴

b. Cottage Grove

Cottage Grove is a second-ring, southeastern suburb of 34,502 that has average household tax capacity, above-average growth, and leans Democratic.⁹³⁵ Cottage Grove registered for GreenStep Cities on March 1, 2011, and achieved Step 1 on June 13, 2012, but does not participate in any of the other multi-level climate-change networks studied.⁹³⁶ Its initiatives relevant to mitigation are among the least extensive in the sample group, mostly centering around its new city hall building which will also house its public safety department. In April 2011, Xcel Energy's Energy Design Assistance Program provided the city with an energy assessment for this building which outlines several options for energy efficiency measures.⁹³⁷ The City Council approved a package of \$99,000 in energy efficiency improvements and expects them to save the city up to \$35,000 annually in energy costs.⁹³⁸

⁹³⁴ *Id.*

⁹³⁵ *See supra* Chapter XI, Table 1.

⁹³⁶ *City of Cottage Grove, MINN. GREENSTEP CITIES*, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2393644 (last visited Sept. 8, 2012).

⁹³⁷ THE WEIDT GROUP, ENERGY ANALYSIS FOR THE COTTAGE GROVE PUBLIC SAFETY/CITY HALL (2011), available at <http://docs.cottage-grove.org/WebLink8/DocView.aspx?id=179955&dbid=0>.

⁹³⁸ Jon Avise, 'Green' Elements in Cottage Grove City Hall Project Could Trim Energy Costs, S. WASH. CNTY. BULL. (May 11, 2011), <http://www.swcbulletin.com/event/article/id/18207>.

c. Farmington

Farmington is a third-ring, southern suburb that has had the most rapid growth rate of the suburbs studied and that leans Republican. It began its climate change efforts in 2006.⁹³⁹ Farmington registered as a GreenStep City on May 23, 2011 and reached Step 2 status by June 10, 2012.⁹⁴⁰ Its six years of efforts illustrate some of the possibilities for progress by cities at the rapidly growing edge of metropolitan regions.

In 2006, Farmington established a “Green Team” of city employees tasked with implementing practices and programs that conserve energy and reduce waste.⁹⁴¹ The team’s recent projects include adding recycling bins at city facilities and conducting outreach on CFL and LED light bulb use and disposal.⁹⁴² The city also promotes the Minnesota Energy Challenge as an energy efficiency resource for its residents⁹⁴³ and has fuel monitoring and maintenance programs to optimize the city vehicle fleet’s fuel efficiency.⁹⁴⁴ In addition to its efforts on energy, Farmington has taken steps to encourage efficient city growth and infill development in its downtown area. It located its city hall downtown, a location that provides walking and biking access to the facility for many

⁹³⁹ See *supra* Chapter XI, Table 1.

⁹⁴⁰ *City of Farmington, MINN. GREENSTEP CITIES*, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2394747 (last visited Sept. 8, 2012).

⁹⁴¹ See *The Green Team, CITY OF FARMINGTON*, <http://www.ci.farmington.mn.us/AboutFarmington/Green/GreenTeam.html> (follow “How the Green Team Began” hyperlink) (last visited Sept. 8, 2012).

⁹⁴² See *id.*

⁹⁴³ See *Save Money, Stay Comfortable This Winter*, THE BRIDGE (City of Farmington, Minn.), Jan./Feb. 2011, at 8, available at <http://www.ci.farmington.mn.us/Communications/TheBridge/The%20BridgeJanFeb2011.pdf>.

⁹⁴⁴ *City of Farmington, supra* note 940.

residents, and implemented bike police patrols in the downtown area.⁹⁴⁵

d. Mahtomedi

Mahtomedi is a small, rapidly growing, second-ring, northeastern suburb, that has an above average tax capacity, a population of 7,563 residents, and leans Republican.⁹⁴⁶ Like those of a number of the other suburbs, Mahtomedi's efforts have been supported by an environmental commission and outside support from the university.⁹⁴⁷ Mahtomedi created the Environmental Commission in 2008, which with its focus on sustainability, waste, energy, and natural resource issues in the city has helped to guide many of its actions relevant to climate change mitigation.⁹⁴⁸ For example, the Commission successfully recommended that the City Council pass a Wind Energy Ordinance, advised the city on its recently constructed public-works building's inclusion of energy efficiency mechanisms, and publishes a "Green Talk" newsletter which discusses community environmental issues and gives energy saving tips.⁹⁴⁹ Complementing the Commission's efforts, the Mahtomedi Area Green Initiative—a community organization that promotes renewable energy, energy efficiency, and sustainability—installed a wind turbine at the Mahtomedi

⁹⁴⁵ *See id.*

⁹⁴⁶ *See supra* Chapter XI, Table 1.

⁹⁴⁷ *City of Mahtomedi, MINN. GREENSTEP CITIES*, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2395818 (last visited Sept. 8, 2012).

⁹⁴⁸ *Mahtomedi Environmental Commission, MAHTOMEDI*, http://mahtomedi.govoffice.com/index.asp?Type=B_BASIC&SEC={6B53F51C-C6B3-45DB-85B4-7B0AFC91C072} (last visited Nov. 27, 2011); *What is the Environmental Commission and What Do They Do?*, GREEN TALK (Mahtomedi, Minn.), Spring 2011, at 1, available at <http://mahtomedi.govoffice.com/vertical/Sites/%7BB983F313-8CF2-4BB7-8CFD-8AC05AAF37F6%7D/uploads/%7B7E4E9BC1-0DED-446A-AC94-AC208EACABE6%7D.PDF>.

⁹⁴⁹ Marnie McInnis, City of Mahtomedi Sustainability Plan 7–8 (2011) (on file with author).

Athletic Fields, which helps the Mahtomedi Public Schools' energy profile.⁹⁵⁰ Mahtomedi registered as a GreenStep City on November 16, 2010 and was awarded Step 1 recognition on June 13, 2011.⁹⁵¹

Benchmarking and assessment, often with outside help, play an important role in Mahtomedi's efforts. In 2009, the city had an energy audit performed on the city hall and fire station buildings.⁹⁵² It also monitors those two buildings and its public works building by entering benchmarking data into the Minnesota B3 database.⁹⁵³ Like several of the other cities in the sample, Mahtomedi received assistance from University of Minnesota students in 2010 in developing its Sustainability Plan based on the GreenStep Cities model.⁹⁵⁴ Between September 2010 and August 2011, the city received additional cost-effective assistance by hosting a Minnesota GreenCorps member who helped the city with its GreenStep Cities program, a spring environmental fair, implementation of energy saving measures in response to a May 2009 ICLEI carbon footprint analysis,⁹⁵⁵ and the

⁹⁵⁰ *About*, MAHTOMEDI AREA GREEN INITIATIVE, http://mahtomedigreen.org/?page_id=33 (last visited Sept. 1, 2012); *The Zephyr Wind Turbine*, GREEN TALK (City of Mahtomedi, Minn.), Fall 2011, at 1, available at http://mahtomedi.govoffice.com/vertical/Sites/%7BB983F313-8CF2-4BB7-8CFD-8AC05AAF37F6%7D/uploads/Green_Talk_Fall_2011.pdf.

⁹⁵¹ *City of Mahtomedi*, *supra* note 947.

⁹⁵² XCEL ENERGY, MAHTOMEDI ENERGY ASSESSMENT 1 (2009), available at <http://greenstep.pca.state.mn.us/viewFile.cfm?id=32>.

⁹⁵³ *McInnis*, *supra* note 949, at 7.

⁹⁵⁴ *Sustainability Plan*, GREEN TALK (City of Mahtomedi, Minn.), Spring 2010, at 1, available at <http://mahtomedi.govoffice.com/vertical/Sites/%7BB983F313-8CF2-4BB7-8CFD-8AC05AAF37F6%7D/uploads/%7B1D7957F3-AA7F-469F-A6EC-D14E7FDDC964%7D.PDF>; JOE BARTEN ET AL., CITY OF MAHTOMEDI SUSTAINABILITY PLAN, available at <http://www.susteducation.umn.edu/wp-content/uploads/2012/02/Mahtomedi-Sustainability.pdf>.

⁹⁵⁵ MINN. POLLUTION CONTROL AGENCY, MINNESOTA GREENCORPS PROJECT SUMMARIES: PROGRAM YEAR 2010–2011, at 15 (2011), available at <http://www.pca.state.mn.us/index.php/download-document.html?gid=17595>; *City of Mahtomedi Host Site for Greencorps Member*, GREEN TALK (City of Mahtomedi, Minn.), Winter 2011, at 1, available at <http://mahtomedi.govoffice.com/vertical/Sites/%7BB983F313-8CF2-4BB7-8CFD->

drafting (with the city's Environmental Commission) of the city's Sustainability Plan.⁹⁵⁶ The city has a goal of reducing its carbon emissions 10% by 2012 and 20% by 2020 from 2001 levels.⁹⁵⁷ Mahtomedi also adopted an environmentally friendly purchasing policy.⁹⁵⁸

e. Oakdale

Oakdale is a rapidly growing second ring, eastern suburb of 27,378, that has below average tax capacity (similar to the much slower-growing stressed suburbs), and votes Democratic.⁹⁵⁹ Although it has limited resources, Oakdale was one of the earliest cities in the sample to take significant steps relevant to climate change mitigation and one of two cities in the sample to join ICLEI. In 2001, Oakdale launched the Generation Green project, which began its energy efficiency and environmental efforts with a voluntary Commercial Building Program and has since expanded to support all of the city's sustainability initiatives.⁹⁶⁰ The program has made substantial steps on its initial mission of reducing building energy consumption. The city provides a 15% reduction in building permit costs to new or renovated building projects that exceed the Minnesota Energy Code by 20%, participate in Xcel Energy's Energy Design Assistance program, and utilize other

[8AC05AAF37F6%7D/uploads/%7B9FCF599E-813A-4135-9AAC-91B21BBF384C%7D.PDF](http://www.ci.oakdale.mn.us/vertical/Sites/{9D2ABE6F-4847-480E-9780-B9885C59543F}/uploads/{E0DB8AA0-0066-4602-B706-D3819F62689D}.PDF); McInnis, *supra* note 949.

⁹⁵⁶ McInnis, *supra* note 949, at 8.

⁹⁵⁷ *Id.* at 12.

⁹⁵⁸ *Id.* at 7.

⁹⁵⁹ *See supra* Chapter XI, Table 1.

⁹⁶⁰ CITY OF OAKDALE, GENERATION GREEN PROGRAM, *available at* <http://www.ci.oakdale.mn.us/vertical/Sites/{9D2ABE6F-4847-480E-9780-B9885C59543F}/uploads/{E0DB8AA0-0066-4602-B706-D3819F62689D}.PDF> (last visited Nov. 12, 2012).

high performance strategies.⁹⁶¹ It also reduces permit fees by 20% to 25% for LEED certified buildings, depending on the level of certification.⁹⁶² Oakdale additionally established a Residential Home Energy Loan Program, which has evolved over time to provide increasingly beneficial terms for homeowners; its current iteration includes three-year loans of up to \$10,000 at 0% interest and an additional three years at 4.99% interest to residents for energy efficiency improvement projects.⁹⁶³

Oakdale's efforts extend to its own buildings.⁹⁶⁴ In 2008, Oakdale installed a white roof on City Hall estimated to provide \$32,000 in energy savings over the life of the roof⁹⁶⁵ and plans to install photovoltaic solar panels to provide 12% of the building's energy needs.⁹⁶⁶ It also added new energy-efficient HVAC equipment at City Hall for which it received \$13,900 in XCEL rebates.⁹⁶⁷ In 2010, Oakdale installed a heat pump system at the Public Works facility that uses water from a nearby water treatment facility

⁹⁶¹ *Generation Green Program*, (City of Oakdale, Minn.), <http://www.ci.oakdale.mn.us/vertical/Sites/%7B9D2ABE6F-4847-480E-9780-B9885C59543F%7D/uploads/%7BE0DB8AA0-0066-4602-B706-D3819F62689D%7D.PDF> (last visited Oct. 28, 2011).

⁹⁶² *Id.*

⁹⁶³ CITY OF OAKDALE, RESIDENTIAL HOME ENERGY LOAN PROGRAM, <http://www.ci.oakdale.mn.us/vertical/sites/%7B9D2ABE6F-4847-480E-9780-B9885C59543F%7D/uploads/Flyer-RHELPenergyloan.pdf> (last visited Nov. 12, 2012).

⁹⁶⁴ *See* CITY OF OAKDALE, GENERATION GREEN SUSTAINABILITY PLAN, <http://www.ci.oakdale.mn.us/vertical/Sites/%7B9D2ABE6F-4847-480E-9780-B9885C59543F%7D/uploads/Recycling-generationgreen.pdf> (last visited Nov. 12, 2012) [hereinafter OAKDALE GENERATION GREEN SUSTAINABILITY PLAN].

⁹⁶⁵ *Id.* at 6.

⁹⁶⁶ *Id.* at 7–8; Patty Busse, *Oakdale City Council Opts for Solar Panels at City Hall, but not Fire Stations*, OAKDALE PATCH, (Oct. 26, 2011), <http://oakdale.patch.com/articles/oakdale-city-council-opts-for-solar-panels-at-city-hall-but-not-fire-stations>.

⁹⁶⁷ *City of Oakdale*, MINNESOTA GREENSTEP CITIES, http://greenstep.pca.state.mn.us/cityInfo.cfm?ctu_code=2395287 (last visited Sept. 28, 2011).

for heating and cooling.⁹⁶⁸

In 2008, Oakdale joined ICLEI and committed to the ICLEI Cities for Climate protection milestones.⁹⁶⁹ Pursuant to those commitments, the city created a greenhouse gas emissions inventory and converted all nineteen streetlights to LED bulbs.⁹⁷⁰ The city's Generation Green Sustainability Plan describes the city's efforts to reduce its own greenhouse gas emissions as part of its ICLEI Cities for Climate Protection commitments.⁹⁷¹ Its efforts include a strategy to achieve emissions reductions of 15% from city buildings, 25% from the city's vehicle fleet, 2% from streetlights, and 10% from the city's water distribution and treatment system from 2007 levels by 2015.⁹⁷² Oakdale entered 2009 and 2010 energy use data into the Minnesota B3 benchmarking database.⁹⁷³ Between 2007 and 2010, Oakdale's energy use decreased by 2.11%.⁹⁷⁴ Oakdale registered for GreenStep Cities on April 6, 2011, and reached Step 1 by June 13, 2011.⁹⁷⁵

Finally, Oakdale also pursued initiatives focused on reducing vehicle emissions. In 2008, the city collaborated with Metro Transit and Guardian Angels Church to expand an existing park-and-ride lot from a 200-vehicle capacity to a 435-vehicle capacity and to add

⁹⁶⁸ Press Release, Congresswoman Betty McCollum, City Officials Tout Oakdale's Energy Efficiency Improvements (Aug. 20, 2010), <http://mccollum.house.gov/press-release/congresswoman-mccollum-city-officials-tout-oakdale%E2%80%99s-energy-efficiency-improvements>.

⁹⁶⁹ OAKDALE GENERATION GREEN SUSTAINABILITY PLAN, *supra* note 262, at 5.

⁹⁷⁰ *Id.* at 5–6, 9.

⁹⁷¹ *Id.* at 5–6.

⁹⁷² *Id.*

⁹⁷³ *Id.* at 15.

⁹⁷⁴ Patty Busse, *Oakdale Cuts Energy Bill by \$61,000*, OAKDALE PATCH (Apr. 19, 2011), <http://oakdale.patch.com/articles/oakdale-cuts-energy-bill-by-61000>.

⁹⁷⁵ *City of Oakdale*, *supra* note 967.

a crosswalk and bus shelter.⁹⁷⁶ With respect to its own fleet, the city performed a 2007 inventory of fleet emissions that resulted in its replacing the city's building inspector and code enforcement officer's existing 12 MPG vehicles with 44 MPG hybrid vehicles. Oakdale estimated these changes would save \$2,200 in fuel costs per year at 2007 dollars.⁹⁷⁷ The police department is similarly phasing in Dodge Chargers to replace Chevy Tahoes to increase efficiency.⁹⁷⁸

4. Accomplishments and Limitations of These Suburban Efforts

These twelve suburbs' efforts have a great deal in common with one another. Because they are all cities with the types of power granted to such units of government, they have similar areas in which they can impact mitigation. Almost all of the cities studied made steps with respect to energy use in buildings and vehicle emissions. The more ambitious of the group also used their zoning and land use powers, and created more comprehensive schemes for energy, environment, and sustainability. Institutional structure seemed to make a difference in this respect. Many of the cities that made the greatest strides had some sort of designated body helping to guide their efforts. Cities that made the effort to obtain university and governmental resources also tended to perform more assessments, create overarching strategies, and engage in more projects.

However, despite these commonalities, there were trends within each of the three groups that could assist targeted efforts to encourage participation by more cities and more

⁹⁷⁶ *Id.* (Scroll to "Transportation" section; then scroll to "Action 6: Add/expand transit service, or promote car/bike sharing." section; then follow "Click her for self-reported city details" hyperlink).

⁹⁷⁷ *Id.* (Scroll to "Efficient City Fleets," section; then scroll to Action 2; then follow "Click her for self-reported city details" hyperlink).

⁹⁷⁸ *Id.*

action by participating cities. The differences did not seem to follow political affiliation in this group, contrary to what the divided discourse in the United States and Minnesota might suggest. Nor did resource constraints seem to dictate what was possible; although the richest group for the most part had the most extensive plans, many of the cities with the least tax capacity had more developed programs than some of the cities with average tax capacity. Rather, to the extent that these suburbs are representative (which is difficult to know with certainty in a small sample size—I plan to complement this dissertation’s qualitative analysis of particular cities with a future broader study), their approaches suggest potential leverage points.

For each type of city, climate change mitigation efforts should be tied to other core needs whenever possible. So, for stressed inner suburbs, measures which help them address poverty, aging infrastructure, and redevelopment needs and assist their accessing university and governmental resources may be particularly appropriate and well-received. Developed job centers have the capacity to access external resources and provide up-front costs. The challenge there may be having them look to models, such as the ones described in Chapter XIII, and recognize them as in the local interest if they are not already doing so. In this group, as in the prior one, the diversity of politics among the sample cities could be helpful; in this time of political divergence, having cities that lean towards the same political party reach out to each other and share their experiences might support more extensive future mitigation efforts. Developing job centers and bedroom communities need more encouragement than the others to build upon their current efforts, use locally available free resources, and expand beyond building and vehicles initiatives to land use

and planning measures that can help shape their development in economically beneficial but less carbon intensive ways.

CHAPTER XIII

THE ROLE OF VOLUNTARY MULTI-LEVEL NETWORKS IN INCREASING SUBURBAN ACTION ON CLIMATE CHANGE

This chapter contains edited portions of Hari M. Osofsky, *Suburban Climate Change Efforts: Possibilities for Small and Nimble Cities Participating in State, Regional, National, and International Networks*, 22 Cornell J. L. & Pub. Pol’y 35 (2012).

The sample cities described in Chapter XII provide promising examples of what is possible for different types of suburbs and how differentiated analysis might help to shape strategies for including them as part of a pluralist, polycentric approach to addressing climate change. But a core challenge remains: operationalizing the suburban capacity for mitigation at a time when international and national efforts at a comprehensive solution are stymied and few state governments are requiring their cities to take steps on climate change.⁹⁷⁹

This chapter focuses on that challenge and considers the role that multi-level voluntary networks—paired with other existing regional, state, national, and international institutions—might play in broadening and deepening suburban participation and connecting suburban activity with larger-scale climate change negotiations. As described in Chapter XI, this analysis is grounded in two conceptual streams: (1) network theory from geography and other disciplines, including Kevin Cox’s network-based conceptualization of scale that has animated the scalar analysis throughout the dissertation’s case studies, and urban geography scholarship on world cities and (2) the various streams of polycentric governance theory introduced in Chapter II. Together, these theories provide a basis for thinking about the role of networks in polycentric, multi-scalar governance schemes,

⁹⁷⁹ See *supra* Chapter XI.

which this chapter argues is crucial in this suburban climate change mitigation context.

The chapter begins by examining the participation of the sample cities in state, regional, national, and international networks; the ways in which those networks are interacting; and how they might be used to encourage greater participation. It then considers the extent to which these voluntary networks are integrated with formal governance approaches and opportunities for creating additional synergies. It concludes by making proposals for next steps in both research and action.

The analytical approach adopted here highlights two important aspects of developing effective pluralist, polycentric approaches. First, simply having more efforts in different settings, especially if modeled for similarly situated suburbs, is itself a part of these strategies. The emissions reductions, to the extent that they are meaningful and not simply a shifting of emissions, help achieve mitigation.⁹⁸⁰ Second, increasing linkages between this multiplicity of efforts provides opportunities for additional mitigation gains. Not only can coordination (and perhaps even interaction) improve efficiency and eliminate redundancy, but it also provides opportunities for mutual pressure and learning.⁹⁸¹ Together, these two strategies can help create more of Cox's multi-level spaces of engagement for local-scale climate change initiatives. This chapter explores both of these aspects in the context of these suburbs' involvement in multi-level networks and bases its proposals on them.

⁹⁸⁰ See *infra* Chapter XIII, Section 2.

⁹⁸¹ See *infra* Section 3.

1. Possibilities for Encouraging Greater Suburban Participation Through Multi-Level Networks

An important part of what helps the Twin Cities suburbs learn, and makes their successes replicable, is their participation in metropolitan, state, regional, national, and transnational networks of cities. This section examines these cities' participation in each of these networks, how the networks interact, and where possibilities for further action through them may lie. In so doing, it reveals the complex spaces of dependence and engagement—to use Cox's terminology—that are creating the scale of “local” climate change action. Although each of the twelve cities, as explored in Chapter XII, is taking local governmental action under legal authority at that level, their interaction with networks at multiple scales helps to shape their action. The limited ways in which these networks interact with each other and the low participation levels of these leader suburbs in some of these networks suggest ways in which these spaces are not being fully utilized and helps to frame the strategies proposed in Section 3.

As detailed in Table 2 below, many of the studied GreenStep Cities participants have joined other state, regional, national, and international networks, with over half of them members of the Mayors Agreement. The suburbs studied which participated in the Mayor's Agreement recorded targets in the Copenhagen City Climate Reduction Catalogue of 7% below 1990 levels of carbon dioxide by 1990 in order to meet their commitment to meet or beat the reduction target that the United States would have had under the Kyoto Protocol. Three of the cities studied—Edina, Mahtomedi, and Oakdale—are also members of ICLEI, a transnational network of cities working on climate change.

Table 2. Participation in Multi-Level Networks by Twin Cities Metropolitan Region GreenStep Cities

| | Date Joined Greenstep Cities | MN Energy Challenge Team (# Team Mems.) ⁹⁸² | EPA Region 5 Community Climate Change Initiative Partner ⁹⁸³ | Mayors Agreement on Climate Change ⁹⁸⁴ | Copenhagen City Climate Catalogue (CO2 Reduction Target) | ICLEI ⁹⁸⁵ |
|----------------|------------------------------|--|---|---|--|----------------------|
| Apple Valley | 6/10/2011 | 367 | As of July 2009 | Mary Hamann-Roland | 7% by 2012 (1990 baseline) ⁹⁸⁶ | |
| Cottage Grove | 3/1/2011 | 118 | | | | |
| Eagan | 11/10/2010 | 405 | | Mike Maguire | 7% by 2012 (1990 baseline) ⁹⁸⁷ | |
| Eden Prairie | 6/17/2011 | 224 | | Nancy Tyra-Lukens | 7% by 2012 (1990 baseline) ⁹⁸⁸ | |
| Edina | 3/1/2011 | 503 | | James Hovland | 7% by 2012 (1990 baseline) ⁹⁸⁹ | 2007 |
| Falcon Heights | 1/13/2011 | 79 | As of July 2009 | Peter Lindstrom | 7% by 2012 (1990 baseline) ⁹⁹⁰ | |
| Farmington | 5/23/2011 | 125 | | | | |
| Hopkins | 11/18/2010 | 118 | | | | |
| Mahtomedi | 11/16/2010 | 58 | | Judson Marshall | 7% by 2012 (1990 baseline) ⁹⁹¹ | 2008 |
| Maplewood | 1/24/2011 | 134 | Prior to July 2009 | Diana Longrie | 7% by 2012 (1990 baseline) ⁹⁹² | |
| Oakdale | 4/6/2011 | 188 | As of July 2009 | | | 2008 |
| St. Anthony | 2/22/2011 | 27 | | | | |

⁹⁸² *City Teams*, MINN. ENERGY CHALLENGE, <http://www.mnenergychallenge.org/Teams/City-Teams.aspx> (last visited Nov. 6, 2012).

⁹⁸³ *Region 5 Climate Change: Municipalities*, supra note 810.

⁹⁸⁴ *List of Participating Mayors*, supra note 702.

⁹⁸⁵ *Member List*, ICLEI LOCAL GOVERNMENTS FOR SUSTAINABILITY USA, <http://www.icleiusa.org/about-iclei/members/member-list> (last visited Sept. 27, 2011); *List of Members (page 2 of 3)*, ICLEI LOCAL GOVERNMENTS FOR SUSTAINABILITY USA, <http://www.icleiusa.org/about-iclei/members/members-2-3> (last visited Oct. 28, 2011).

⁹⁸⁶ *Community Summaries: Apple Valley, Minnesota*, THE CITY CLIMATE CATALOGUE, http://www.climate-catalogue.org//index.php?id=6917&cmd=shortlist&org_id=2454 (last visited Oct. 20, 2011).

⁹⁸⁷ *Community Summaries: Eagan, Minnesota*, THE CITY CLIMATE CATALOGUE, http://www.climate-catalogue.org//index.php?id=6917&cmd=shortlist&org_id=2462 (last visited Oct. 20, 2011).

⁹⁸⁸ *Community Summaries: Eden Prairie, Minnesota*, THE CITY CLIMATE CATALOGUE, http://www.climate-catalogue.org//index.php?id=6917&cmd=shortlist&org_id=2463 (last visited Oct. 20, 2011).

⁹⁸⁹ *Community Summaries: Edina, Minnesota*, THE CITY CLIMATE CATALOGUE, http://www.climate-catalogue.org//index.php?id=6917&cmd=shortlist&org_id=2464 (last visited Oct. 20, 2011).

⁹⁹⁰ *Community Summaries: Falcon Heights, Minnesota*, THE CITY CLIMATE CATALOGUE, http://www.climate-catalogue.org//index.php?id=6917&cmd=shortlist&org_id=2465 (last visited Oct. 20, 2011).

⁹⁹¹ *Community Summaries: Mahtomedi, Minnesota*, THE CITY CLIMATE CATALOGUE, http://www.climate-catalogue.org//index.php?id=6917&cmd=shortlist&org_id=2472 (last visited Oct. 20, 2011).

⁹⁹² *Community Summaries: Maplewood, Minnesota*, THE CITY CLIMATE CATALOGUE, http://www.climate-catalogue.org//index.php?id=6917&cmd=shortlist&org_id=2474 (last visited Oct. 20, 2011).

Although all of these networks are voluntary, they provide these cities and others with opportunities to create community, see what is possible, and receive both support and pressure. Overall, as explored in more depth in this section and the Appendix below, the group studied had higher levels of participation in these multi-level networks than the metropolitan region overall. These patterns suggest a clustering of network participation in cities committed to taking action on sustainability or climate change and the need to explore how these networks are and could be effective vehicles for enhancing participation.

As Table 2 reflects, cities in all three categories of suburbs studied are active in statewide networks. In addition to participating in Greenstep Cities, all of them have teams in the Minnesota Energy Challenge, in which cities (and other organizations) form teams of people that track energy savings; for cities, the teams are comprised of residents.⁹⁹³ Although the cities have significant variation in the number of residents participating, in every case it is a low percentage of the overall population in that city.⁹⁹⁴ These patterns of participation are higher than those of the overall region—as detailed in the Appendix—but the region as a whole also has a pattern of greater participation in the statewide Minnesota Energy Challenge than other types of networks; 93 of the Met Council’s 183 communities have teams with at least ten members.⁹⁹⁵ In contrast, beyond the twelve cities studied in this case study, only five other cities from the metropolitan region—all suburbs—were members of Greenstep Cities as of January 2012, in part

⁹⁹³ *About the Challenge*, MINN. ENERGY CHALLENGE, <http://www.mnenergychallenge.org/About-the-Challenge.aspx> (last visited Oct. 11, 2011).

⁹⁹⁴ *See supra* Chapter XI, Table 1; *see supra* Chapter XII, Table 2.

⁹⁹⁵ *See infra* Appendix; *City Teams*, *supra* note 982.

because some leader cities, including the center cities, appear to regard the program as too basic for them.⁹⁹⁶ However, these low numbers may be deceptive, since those additional five joined over a two-month period in late 2011 and early 2012, suggesting that this newer program has substantial growth potential.⁹⁹⁷

Participation levels of these suburbs decline for the larger-scale networks that focus more explicitly on climate change. Only four of the twelve cities studied are involved in the EPA Region 5 Community Climate Change Initiative partnership programs. The EPA provides six free programs for cities involved in this initiative: Energy Star, WasteWise, Combined Heat and Power, Green Power Partnership, WaterSense, and Landfill Methane Outreach Program.⁹⁹⁸ The EPA website explains that “partnership programs help communities address climate change while protecting human health and the environment, enhancing local economies, and reducing energy costs. These programs also help meet commitments in the Mayors Agreement and other climate change programs.”⁹⁹⁹ The low participation levels across all three groups of cities suggests that even though the EPA explicitly connects these programs with accomplishing the goals of the Mayors Agreement, which many more of the cities have joined, these cities either find this program less valuable or are unaware of it. This pattern persists across the metropolitan

⁹⁹⁶ See *Greenstep Cities List*, *supra* note 786; confidential interviews with people involved in cities active in other multi-level climate change and sustainability networks but not participating in GreenStep Cities (Fall 2011).

⁹⁹⁷ See *Greenstep Cities List*, *supra* note 786; confidential interviews with people involved in cities active in other multi-level climate change and sustainability networks but not participating in GreenStep Cities (Fall 2011).

⁹⁹⁸ *Region 5 Climate Change: Municipalities*, *supra* note 810.

⁹⁹⁹ *Id.*

region, with only two cities beyond the group studied participating in this program.¹⁰⁰⁰

The biggest differentiation among the categories of suburbs studied comes with the national-level network, the Mayors Agreement. This agreement, and its accompanying U.S. Conference of Mayors Climate Protection Center, emerged from a 2005 initiative by Seattle Mayor Greg Nickels, which was unanimously supported by the U.S. Conference of Mayors.¹⁰⁰¹ Participating cities not only commit to what the U.S. Kyoto Protocol emissions reductions would have been, but also have the opportunity to learn from the best practices models and receive national recognition (as Eden Prairie has).¹⁰⁰² While over half of the studied suburbs (seven of the twelve) are members of this agreement—a much higher level of participation than in the metro as a whole, which only has twenty-one total participants including the studied suburbs—all of the developed job centers studied are members of this agreement but a much lower percentage of the other two groups are (one stressed city and two developing job centers).¹⁰⁰³

This pattern of greater developed job center participation does not carry over, however, to the other fourteen metropolitan-area cities which have joined the Mayors Agreement; two are center cities (Minneapolis and Saint Paul), four are stressed cities (Brooklyn Center, Burnsville, Crystal, White Bear Lake), four are developed job centers (Golden Valley, Minnetonka, Oak Park Heights, Roseville), one is an affluent residential community (Sunfish Lake), and three are developing job centers (Inver Grove Heights,

¹⁰⁰⁰ *See id.*

¹⁰⁰¹ *About the Mayors Climate Protection Center, supra* note 702.

¹⁰⁰² *Id.*

¹⁰⁰³ *See supra* Table 2.

Rosemount, and Woodbury).¹⁰⁰⁴ When the metropolitan region is viewed as a whole, combining the studied cities with the other cities, there are more developed job centers participating than any other group, but the difference is less marked than in the group discussed in depth in this case study.¹⁰⁰⁵ On a percentage basis, though, the differences still look significant because there are far fewer developed job centers than developing job centers in the metropolitan region; a much higher percentage of developed job centers are participating than any other type of Twin Cities suburb.¹⁰⁰⁶

The greater participation of developed job centers in the Mayors Agreement among the studied group and, to some extent, among metropolitan region suburbs as a whole indicates that outreach to cities in the other two groupings potentially would be valuable to determine if there are barriers to joining, such as political concerns about framing efforts as climate change mitigation, or if these cities could be encouraged to take the additional step. The developed job center participation might serve as a model for those cities with political concerns, as they are equally divided between leaning Democratic or Republican.¹⁰⁰⁷

Numerous international networks exist among local governments on climate change, including ICLEI-Local Governments for Sustainability (ICLEI);¹⁰⁰⁸ agreements made in conjunction with the annual UNFCCC Conference of the Parties (COP), such as pledges

¹⁰⁰⁴ See *List of Participating Mayors*, *supra* note 702; ORFIELD & LUCE JR., *supra* note 763, at 44 map 1.17.

¹⁰⁰⁵ See ORFIELD & LUCE JR., *supra* note 763, at 44 map 1.17.

¹⁰⁰⁶ See *id.*; *List of Participating Mayors*, *supra* note 702.

¹⁰⁰⁷ See *supra* Table 1.

¹⁰⁰⁸ *About ICLEI*, ICLEI GLOBAL, <http://www.iclei.org/index.php?id=about> (last visited Jan. 16, 2012).

entered in the Copenhagen City Climate Catalogue,¹⁰⁰⁹ the Mexico City Pact,¹⁰¹⁰ and the Durban Adaptation Charter for Local Government,¹⁰¹¹ the World Mayors Council on Climate Change,¹⁰¹² and the carbonn Cities Climate Registry.¹⁰¹³ However, the suburbs in this sample and the metropolitan region as a whole have only significantly participated in ICLEI and the Copenhagen City Climate Catalogue. The main exception is Burnsville, whose Mayor was President of the U.S. Conference of Mayors at the time of the Mexico City Pact, and signed on behalf of both Burnsville and the U.S. Conference of Mayors.¹⁰¹⁴

ICLEI, like Greenstep Cities, focuses on sustainability. Since its founding in 1990, the association has grown to include participation from 1220 local government members from 70 different countries representing 569,885,000 people.¹⁰¹⁵ ICLEI has several different programs to achieve its sustainability goals, one of which is addressing climate change. Its climate program has played a leading role in developing the agreements made during the COPs by fostering networks among local governments and supporting

¹⁰⁰⁹ *List of Commitments*, THE CITY CLIMATE CATALOGUE, <http://www.climate-catalogue.org/> (last visited Jan. 28, 2012).

¹⁰¹⁰ *Signatories*, THE MEXICO CITY PACT, <http://www.mexicocitypact.org/en/the-mexico-city-pact-2/list-of-cities/> (last visited Jan. 16, 2012).

¹⁰¹¹ *Durban Adaptation Charter for Local Governments*, http://www.iclei.org/fileadmin/user_upload/documents/Global/initiatives/LG_roadmap_COP_17_files/Durban_Adaptation_Charter_5Dec.pdf (last visited Jan. 15, 2012).

¹⁰¹² *Membership*, WORLD MAYORS COUNCIL ON CLIMATE CHANGE, <http://www.worldmayorscouncil.org/members/members-list.html> (last visited Jan. 16, 2012).

¹⁰¹³ *Reporting Cities*, CARBONN CITIES CLIMATE REGISTRY, <http://citiesclimateregistry.org/cities/reporting-cities/> (last visited Jan. 15, 2012).

¹⁰¹⁴ *List of Cities that have signed the Global Cities Covenant on Climate (The Mexico City Pact)*, WORLD MAYORS SUMMIT ON CLIMATE MEX. CITY, <http://www.wmsc2010.org/list-of-cities/> (last visited Jan. 30, 2012).

¹⁰¹⁵ *About ICLEI*, *supra* note 1008.

individual governments in their climate change efforts.¹⁰¹⁶ Fifteen Minnesota cities are members of ICLEI, including Minneapolis, Saint Paul, and several Twin Cities suburbs. Only one suburb from each of the three groupings studied has joined.¹⁰¹⁷ In the metropolitan region as a whole, five more cities are members: the two center cities, two developed job centers (Roseville and Golden Valley), and one developing job center (Woodbury).¹⁰¹⁸ Thus, overall, developed job centers are slightly overrepresented, but the sample size is very small.

The Copenhagen City Climate Catalogue was created in conjunction with the 2009 COP. Participating cities record their targets and actions to share information with one another and to demonstrate the importance of local governments to the negotiating nation-states. Unlike the Mexico City Pact and Durban Adaptation Charter, which require signatories to make particular commitments, the Catalogue just serves as a clearinghouse for local governments to record their voluntary activities. As Table 2 illustrates, the studied suburbs that participated in the Catalogue are Mayors Agreement signatories; their only commitments under the Catalogue are those that they are already making under the Mayors Agreement.¹⁰¹⁹ The other Twin Cities suburbs participating in the Mayors Agreement, with the exception of Crystal, follow an identical pattern.¹⁰²⁰ The Catalogue helps translate these suburbs' national-level commitments into international-level

¹⁰¹⁶ *ICLEI Climate Program*, ICLEI GLOBAL, <http://www.iclei.org/index.php?id=800> (last visited Jan. 16, 2012).

¹⁰¹⁷ *See supra* Chapter XIII, Table 2 and accompanying notes 982–90.

¹⁰¹⁸ *See Member List, supra* note 985; *supra* Chapter XIII, Table 2.

¹⁰¹⁹ *See supra* Chapter XIII, Table 2 and accompanying notes 982–90.

¹⁰²⁰ *See List of Commitments, supra* note 1009; *supra* Chapter XIII, Table 2.

commitments, but those suburbs have not made additional international-level commitments at the COPs that followed.¹⁰²¹ Interestingly, while participation in the Mayors Agreement correlates perfectly with those making Copenhagen City Climate Catalogue commitments, it varies substantially from those participating in either the regional-level EPA partnership or the international-level ICLEI network, both among the studied group and the broader metropolitan region.¹⁰²² This difference suggests that suburbs willing to make commitments on climate change (as opposed to just sustainability) are participating unevenly in the possible networks that might support them, and that an opportunity might exist to introduce suburbs actively working on climate change to additional networks.

Overall, these patterns of network participation indicate that state-level networks focused on sustainability and energy savings may serve as an important starting point for suburban mitigation and that climate change networks may not be politically unpalatable to moderately conservative suburbs. However, participation in one network does not necessarily translate into participation in other networks and networks vary in the extent to which they result in new action rather than just a re-reporting of current action. Suburbs already interested in taking action are more likely to join these networks,¹⁰²³ making it sometimes difficult to discern the extent to which network participation resulted in new or more effective activities.

Most promisingly, networks with specific action steps seem to motivate particular

¹⁰²¹ See *Signatories*, *supra* note 1010; *Durban Adaptation Charter for Local Governments*, *supra* note 1011.

¹⁰²² See *List of Participating Mayors*, *supra* note 702; *Region 5 Climate Change: Municipalities*, *supra* note 810; *List of Members (page 2 of 3)*, *supra* note 985; *List of Commitments*, *supra* note 1009.

¹⁰²³ See Confidential Presentation to Hari Osofsky's Climate Change and Clean Energy Capstone (Fall 2011) (notes on file with author).

action. For example, Falcon Heights joined numerous networks in a short period of time when it committed to sustainability and climate change goals.¹⁰²⁴ Although the networks did not cause it to commit to these goals, the frameworks provided by the networks, such as the steps of Greensteps Cities, helped organize its efforts and encouraged it to take particular actions.¹⁰²⁵ Other cities have reported similar experiences.¹⁰²⁶ The anecdotal evidence based on this small sample of cities suggests the need for further empirical work into how to motivate different types of suburbs to join additional networks and what makes networks most effective in spurring new or more effective mitigation steps in order to maximize cumulative suburban action.¹⁰²⁷ Future studies might also consider how the motivations of different types of suburbs and center cities compare as they join networks, and how these varying motivations should impact the strategies of these networks.

2. Possibilities for Integrating Multi-Level Networks with Formal Governance

Viewing suburban action as part of a polycentric, pluralist approach to multi-scalar climate change governance does not necessarily have significant implications for formal international legal efforts to address climate change through international treaties. The suburbs could simply serve as an important source of mitigation in the aggregate and through participation in networks that function wholly separately from the COP negotiations. However, in reality, cities (including suburban ones) and the networks that

¹⁰²⁴ See *infra* Chapter XII.

¹⁰²⁵ See Mercer-Taylor, *supra* note 800.

¹⁰²⁶ See Confidential Presentation *supra* note 321.

¹⁰²⁷ I plan to pursue this work in a future project. There are currently a number of efforts by researchers to assess the Greenstep Cities program and what it has achieved, but those are not focused primarily on climate change mitigation but rather on the program's sustainability goals.

they form interact with the treaty negotiations in a variety of ways. This section examines these interactions and considers how a governance model for climate change might incorporate them.

The primary ways for smaller-scale governments to have a direct voice in UNFCCC negotiations are: (1) through their nation-state, by serving on their national negotiating team and influencing its positions and (2) as one of many civil society groups that observe the meetings (when not shut out as they were in Copenhagen in 2009) and provide input into negotiating texts. Local representatives, particularly from major center cities, are at times directly involved in national negotiating teams,¹⁰²⁸ but these teams are size-limited. Small suburban cities could never be fully included on them except through designated representatives and would have to compete with larger cities for a place in that group.

However, cities have effectively had a voice in negotiations through this second avenue paired with efforts by multi-level networks—in which many of these suburbs participate—to influence national positions and international agreements through the commitments that local governments publicly make among themselves. Transnational networks of localities have been working to change the substance of the agreements among nation-states at the COPs to have them include more recognition of the local role.¹⁰²⁹ Since the 2007 COP in Bali established climate roadmap for nation-states, localities under the leadership of ICLEI and United Cities and Local Governments (UCLG) have attempted to advance a Local Government Climate Roadmap. This effort,

¹⁰²⁸ See Newsom, *supra* note 400.

¹⁰²⁹ Press Release, ICLEI, Durban Outcomes: Nations Invest in Time, World Must Invest in Cities (Dec. 12, 2011), http://www.iclei.org/fileadmin/user_upload/documents/Global/initiatives/LG_roadmap_COP_17_files/COP17_post_event_press_release_final_20111212.pdf.

which was originally designed to conclude by the Copenhagen COP, continued through the 2011 COP in Durban and beyond. It aims to have references to local governments and subnational governments more broadly included in the texts of the agreements concluded under the UNFCCC.¹⁰³⁰

The agreements made at the 2011 COP in Durban reflect how far these efforts have come. As ICLEI highlighted in its preliminary assessment, key agreements referenced local governments directly or made room for their participation as stakeholders. The Durban outcome of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention, for example, maintained the recognition of local governments that came out of Cancun COP and added several new references to them in the context of nationally appropriate mitigation actions, adaptation, and technology development and transfer.¹⁰³¹ The Durban Platform did not explicitly reference local governments, but included a mechanism for observer organizations to provide input on both options and increase the level of ambition.¹⁰³² The Green Climate Fund launch similarly made reference to stakeholders and active observers at various points, and specifically includes subnational entities as among those which can be accredited as implementing entities receiving funding.¹⁰³³ The Technology Executive Committee's modalities and procedures include

¹⁰³⁰ See *Local Government Climate Roadmap: From Copenhagen to Cancún to South Africa: COP15 - COP16 - COP17*, UNITED CITIES AND LOCAL GOV'TS (UCLG) AND ICLEI (July 2010), http://www.iclei.org/fileadmin/template/project_templates/climate-roadmap/files/Communication_Material/Towards_COP16/Concept_towards_COP16_Final_8September2010.pdf [hereinafter *Local Government Climate Roadmap*].

¹⁰³¹ See *id.*

¹⁰³² See *id.*

¹⁰³³ See *id.*

the subnational level explicitly in their reference to engaging stakeholders.¹⁰³⁴ Agreements regarding national adaptation plans and loss and damage all specifically reference multiple levels, at times using the terms “subnational” and “local.”¹⁰³⁵ Finally, the Clean Development Mechanism Executive Board made decisions that continued efforts from the 2010 Cancun COP to make it easier for city-wide programs to participate.¹⁰³⁶ While ICLEI indicates a number of places where clarification that stakeholders include localities would be helpful, the nation-state agreements increasingly recognize the plurality of relevant actors in addressing climate change within the limited participatory framework that international law treaties provide.¹⁰³⁷

While ICLEI and UCLG use their status as observers to influence the text, these efforts are augmented by the side meetings among localities (and other subnational governments) at the COPs. As described above, these meetings have resulted in parallel agreements among localities at each of the last several COPs that were intended both to promote local action on mitigation and adaptation and to pressure nation-states to take more aggressive steps. The Twin Cities suburbs participating in the Mayors Agreement and Copenhagen Catalogue exemplify this type of effort by the ways in which they publicly exceed U.S. commitments and use the Kyoto Protocol as a frame of reference in

¹⁰³⁴ *See id.*

¹⁰³⁵ *See id.*

¹⁰³⁶ *See id.*

¹⁰³⁷ *See* ICLEI-Local gov't for sustainability, *Durban must Urbanize Climate Agenda* (Dec. 12, 2011), http://www.iclei.org/fileadmin/user_upload/documents/Global/initiatives/LG_roadmap_COP_17_files/L_GMA_Durban_DailyBriefing_DurbanOutcomes_LGs-Subnationals.pdf.

doing so.¹⁰³⁸ At the Copenhagen Conference of the Parties, the Twin Cities suburbs making commitments were part of a much larger effort; mayors from around the world registered 3,251 climate targets in the Copenhagen City Climate Catalogue.¹⁰³⁹ While the Twin Cities suburbs reduction targets pale in comparison to a leader center city like Portland, Oregon—10% by 2010, 80% by 2050—they are equivalent to those of one of its local center cities, St. Paul.¹⁰⁴⁰

Moreover, when viewed in the context of the limited nation-state commitments made during the formal negotiations at Copenhagen and at the COPs since then, these suburban targets in the Copenhagen City Climate Catalogue appear much more impressive. The nation-states lacked consensus to pass an agreement at Copenhagen, but took note of the Copenhagen Accord.¹⁰⁴¹ Under that Accord, the United States set a 2020 emissions

¹⁰³⁸ See *List of Participating Mayors*, *supra* note 702; *Region 5 Climate Change: Municipalities*, *supra* note 810; *List of Members* (page 2 of 3), *supra* note 985; *List of Commitments*, *supra* note 1009.

¹⁰³⁹ See *Cities Act: Copenhagen Climate Communiqué*, (Copenhagen Climate Summit for Mayors, Copenhagen, Den.), Dec. 16, 2009, available at http://www.kk.dk/Nyheder/2009/December/~/_media/B5A397DC695C409983462723E31C995E.ashx (last visited May 18, 2011); *List of Commitments*, *supra* note 1009; Osofsky, *Multiscalar Governance*, *supra* note 745, at 65–66.

¹⁰⁴⁰ *List of Commitments*, *supra* note 1009. Minneapolis' commitments are harder to translate into 1990 equivalents; although it uses a 2006 baseline, its substantial efforts prior to 2006 and efforts to address accuracy issues in its baseline make that a very different choice than the United States' use of a 2005 baseline. *Id.*; CLIMATE CHANGE CORPS, MINNEAPOLIS CARBON FOOTPRINT PROJECT REPORT (2008), available at http://s3.amazonaws.com/zanran_storage/www.ci.minneapolis.mn.us/ContentPages/4058400.pdf; CITY OF MINNEAPOLIS, SUSTAINABILITY INITIATIVE: 2005 ANNUAL REPORT ii (2005), available at http://www.minneapolis.mn.gov/www/groups/public/@citycoordinator/documents/webcontent/convert_270_332.pdf; JOHN BAILEY, LESSONS FROM THE PIONEERS: TACKLING GLOBAL WARMING AT THE LOCAL LEVEL 7 n.5 (2007) (“Minneapolis did develop a baseline GHG inventory in 1993 for the year 1988, but a recent examination led the city to reconsider its accuracy. A new baseline analysis and current inventory are in the process of being developed.”). Minneapolis has been recognized nationally for its cross-cutting efforts on climate change and sustainability, such as in the Mayors' Climate Protection Summit's 2007 Best Practices Guide. MAYORS CLIMATE PROT. CTR., *supra* note 847.

¹⁰⁴¹ See Conference of the Parties to the United Nations Framework Convention on Climate Change, Fifteenth Sess., Dec. 7–18, 2009, Copenhagen, Den., Draft Decision -/CP 15: Proposal by the President, Copenhagen Accord, U.N. Doc. FCCC/CP/2009/L.7 (Dec. 18, 2009) [hereinafter Copenhagen Accord], available at <http://unfccc.int/resource/docs/2009/cop15/eng/107.pdf>; United Nations Framework

reductions target “[i]n the range of 17%, in conformity with anticipated U.S. energy and climate legislation,” using the less ambitious base year of 2005 (rather than the suburbs’ 1990 base year); translated into a 1990 base year, that would be less than a 4% reduction.¹⁰⁴² In addition, the United States still has not passed such legislation and none looks likely in the near term.¹⁰⁴³ Although the 2011 Durban COP resulted in an agreement to reach a universal binding agreement by 2015 paired with the creation of an ad hoc working group on the Durban Platform to develop a new protocol or other legal approach, only the Kyoto Protocol parties currently have specific, binding commitments to mitigate climate change.¹⁰⁴⁴ While some of the Kyoto Protocol parties agreed to a second commitment period at the Durban COP, the United States continues to refrain from becoming a party and making such commitments.¹⁰⁴⁵

This contrast between small suburban commitments and U.S. commitments suggests both the contributions and limitations of these treaty interventions and example-setting

Convention on Climate Change, Copenhagen Accord, http://unfccc.int/meetings/copenhagen_dec_2009/items/5262.php. See also Arthur Max, *Obama Brokers a Climate Deal, Doesn’t Satisfy All*, DAILY RECORD (Morristown, N.J.), Dec. 19, 2009, at 1, 2009 WLNR 25562965; Andrew C. Revkin & John M. Broder, *A Grudging Accord in Climate Talks*, N.Y. TIMES, Dec. 20, 2009, available at <http://www.nytimes.com/2009/12/20/science/earth/20accord.html>.

¹⁰⁴² U.N. Framework Convention on Climate Change, *Appendix I - Quantified economy-wide emissions targets for 2020, Jan. 28, 2010, available at http://unfccc.int/meetings/cop_15/copenhagen_accord/items/5264.php* (citation omitted) (last visited May 18, 2011). The U.S. commitment would constitute only about a 3.45% reduction if a 1990 baseline were used. U.S. ENVTL. PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2005, at 5 (2007), <http://www.epa.gov/climatechange/Downloads/ghgemissions/07ES.pdf>.

¹⁰⁴³ The American Clean Energy and Security Act of 2009, H.R. Res. 2454, 111th Cong. (2009), passed in the House but the Senate failed to pass equivalent legislation. No such legislation is currently pending.

¹⁰⁴⁴ See Draft Decision -/CP.17, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action (Advance unedited version), Nov./Dec. 2011, http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durbanplatform.pdf.

¹⁰⁴⁵ Draft Decision -/CMP.7, Outcome of the Work of the Ad Hoc Working Group on Further Commitments for Annex I Parties Under the Kyoto Protocol at its Sixteenth Session (Advance unedited version), Nov./Dec. 2011, http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/awgkp_outcome.pdf.

transnational local agreements in advancing climate change action. Leader cities, even ones less far along like the Twin Cities' suburbs highlighted in this Article, help their nation-states meet emissions reductions goals and pressure them to cooperate internationally while supporting each other's local goals. Perhaps in part because they are not making legally binding commitments to one another,¹⁰⁴⁶ these cities make agreements with and commitments to other cities at international, national, regional, and state scales. The increasing recognition of localities and subnational governments in treaties reinforces localities' growing role in both formal and informal visions of multi-level climate change governance.

However, these activities by a range of leader cities that include suburbs also serve to reinforce a troubling big picture. Other cities within the Twin Cities and beyond lag well behind the suburbs highlighted in this part (which vary in their level of action).¹⁰⁴⁷ The collaboration among localities has not eliminated the many barriers to nation-state agreement or to localities being given a fuller place at the negotiating table.¹⁰⁴⁸ Thus, while these suburbs' efforts play an important role in responding to climate change and in encouraging other key actors to do the same, local climate change efforts remain constrained by the small percentage of cities participating and cities' limited status under international law. This mix of achievements and barriers provides the basis for the proposals advanced in the next section.

¹⁰⁴⁶ For a discussion of nation-states as the primary subjects and objects of international law, see IAN BROWNLIE, *PRINCIPLES OF PUBLIC INTERNATIONAL LAW* 287–88 (6th ed. 2003).

¹⁰⁴⁷ For concerns about leakage due to unequal local commitments, see Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961, 1962 (2007).

¹⁰⁴⁸ For a summary of the state of international negotiations under the UNFCCC agreement after the 2010 Cancun meeting, see Cesare Romano & Elizabeth Burleson, *The Cancun Climate Conference*, 15 ASIL INSIGHT 41, (2011).

3. Proposals for Increasing the Impact of Multi-Level Networks

This section proposes two ways in which, based on this case study of these Twin Cities suburbs, multi-level networks could work more effectively with suburbs to achieve mitigation and adaptation goals. First, it recommends that networks create more differentiated strategies and outreach which take into account the ways in which types of suburbs vary. Second, it suggests that networks should encourage more cross-network participation in order to achieve their policy and governance goals.

a. Differentiating Strategies Based on Type of Suburb

As described in more depth in section 1, the networks studied provide cities with a toolkit of options for local or larger scale activities.¹⁰⁴⁹ While these toolkits vary based on the network's substantive focus (sustainability v. climate change) and on its goals, they generally do not differentiate greatly among cities. For example, GreenStep Cities lists a set of possible actions, each associated with points, and cities can choose how to accumulate points to reach a step.¹⁰⁵⁰ The Minnesota Energy Challenge gives individuals participating on teams, only some of which are locally-based (schools and neighborhoods can also provide teams), a myriad of options for making energy savings that can count towards their team's total.¹⁰⁵¹ EPA Region 5 Community Climate Change Initiative partnership programs similarly give cities a choice of six programs in which they can

¹⁰⁴⁹ See *supra* Chapter XIII, Section 1.

¹⁰⁵⁰ See MINN. GREENSTEP CITIES, *supra* note 756.

¹⁰⁵¹ See *About the Challenge*, *supra* note 993.

participate.¹⁰⁵² The Mayors Agreement, beyond its requirement of a member commitment to specific greenhouse gas reduction goals, provides recognition of best practices differentiated by city size (large versus small) to give models to its members.¹⁰⁵³ ICLEI's climate program includes steps that cities can take on mitigation, adaptation, and advocacy, with expectations that member cities are engaging in particular practices.¹⁰⁵⁴ The Copenhagen City Climate Catalogue contains many options for participating cities to take and recognizes them with green checkmarks when they do.¹⁰⁵⁵

This toolkit approach has value because almost all cities have common characteristics that shape the categories of actions that would be appropriate. By providing cities with many options in each category, models for how to make progress, and expectations that participation translates into particular steps, these networks can help a very diverse set of cities create individualized plans. The suburbs studied in this case study reflect the appropriateness of this approach as they take steps in the major areas in which cities have authority and record their progress in these various networks.¹⁰⁵⁶

However, as Chapter XII's examination of these cities based on the type of suburb indicates, small suburban cities appear to vary in their needs and possibilities for action based on the type of suburb that they are. While a broader empirical study is needed to

¹⁰⁵² *Region 5 Climate Change: Municipalities*, *supra* note 810.

¹⁰⁵³ *See* MAYORS CLIMATE PROT. CTR., *supra* note 847.

¹⁰⁵⁴ *ICLEI Climate Program*, ICLEI GLOBAL, <http://www.iclei.org/index.php?id=800> (last visited Jan. 22, 2011).

¹⁰⁵⁵ *See List of Commitments*, *supra* note 1009.

¹⁰⁵⁶ *See supra* Chapter XII; *supra* Table 2.

provide a clearer sense of these patterns,¹⁰⁵⁷ this initial qualitative examination suggests the value in differentiating further among suburbs and providing them with support and models based on their characteristics. For example, networks could emphasize the interconnection between urban redevelopment and greenhouse gas emissions reduction for stressed inner suburbs, while focusing on city layout choices for the more rapidly growing outer suburbs. They also could target suburbs that have not connected to particular types of free resources from governments and universities, which appear in this sample to vary significantly by category, and help them make those connections.¹⁰⁵⁸

This kind of differentiation would not require massive amounts of additional work for the existing networks, all of which have well-developed websites. It simply would require adding to networks' websites and brochures more differentiated models of how different types of suburbs have taken steps and locally-specific examples of resources available and ways in which other cities have used them. In the Twin Cities context, with its rich opportunities for interconnection among the metropolitan cities due to its regional governance structure and statewide programs, adding this dimension to existing efforts would be relatively straightforward and within the powers of current networks. For example, GreenStep Cities could complement its existing web resources for participants, which currently include best practices and model ordinances,¹⁰⁵⁹ case examples from its different types of participating suburbs, and lists of locally-available financial and technical (including university) assistance.

¹⁰⁵⁷ I will be conducting this broader study as the 2013-14 Fesler-Lampert Chair in Urban and Regional Affairs at the University of Minnesota.

¹⁰⁵⁸ See *supra* Chapter XII.

¹⁰⁵⁹ See MINN. GREENSTEP CITIES, *supra* note 756.

b. Greater Interconnection Among Voluntary Networks

The networks studied in this chapter vary significantly in their substantive focus and scale of operations. Some of them, like GreenStep Cities, are not even explicitly engaging climate change, but rather positively impact mitigation through their broader sustainability goals; they may be able to foster action in communities where the problem of climate change is more controversial. Despite these differences, though, these networks are often trying to encourage cities to take very similar steps. At times, the networks on climate change even explicitly interlink their activities, such as when the Mayors Agreement cities make uniform Copenhagen City Climate Catalogue Commitments or when the EPA Region 5 Community Climate Change Initiative partnership programs indicate that they will help cities meet their Mayors Agreement obligations.¹⁰⁶⁰

These twelve cities' pattern of involvement in these networks and that of cities in the metropolitan region as a whole, however, suggests missed opportunities for greater synergy. While, as in the case of the first proposal, additional empirical work would be valuable, the disconnections among the networks in this sample and the region seem to go well beyond the political volatility of climate change. For example, many of the cities that have joined the Mayors Agreement are not participating in either the EPA Region 5 initiative or ICLEI, despite their complementary resources and commitments.¹⁰⁶¹ This gap suggests an opportunity for networks to work together to encourage cities willing to take action on climate change to take full advantage of the resources available to them and

¹⁰⁶⁰ See *supra* Chapter XIII, Section 1.

¹⁰⁶¹ See *id.*

become involved in new multi-level initiatives. Like with the first suggestion, this recommendation would be relatively simple to implement: each network could advertise the other available networks to their members with explanations of the synergistic possibilities of participation in additional networks.

Creating more common participation among these networks could also advance their more effective inclusion in international and national climate change governance, in line with pluralist, polycentric models. At the international level, as ICLEI in partnership with UCLG simultaneously works to have localities and subnational governments included in treaties and make parallel commitments, it would be aided by having more small suburban members, given their critical role in addressing urban emissions. Encouragement of cross-participation by other networks could help to achieve this greater representation and more engagement of the particular issues faced by different types of suburbs. Such an approach also would comport well with the calls for greater participation by localities in UNFCCC negotiations and implementation in line with conventions like the Aarhus Convention, which some UNFCCC parties have joined.¹⁰⁶²

At the U.S. national level, various models have been proposed for involving localities more in the formulation of the U.S. negotiating position and federal climate change law and policy. For example, Resnik, Civin, and Frueh have suggested mechanisms for integrating these subnational coalitions into U.S. federal statutory law, such as advisory commissions and the input process under the Unfunded Mandates Reform Act of 1995.¹⁰⁶³

¹⁰⁶² See Svitlana Kravchenko, *Procedural Rights as a Crucial Tool to Combat Climate Change*, 38 GA. J. INT'L & COMP. L. 613, 620 (2010). I am exploring these participatory mechanisms in more depth in collaboration with Brad Karkkainen in a project on *Climate Change, Inequality and International Lawmaking: New Governance Approaches to Addressing Abundance and Security*, supported by a Univ. of Minn. Inst. for Advanced Study grant.

¹⁰⁶³ See Resnik, Civin & Frueh, *supra* note 566, at 779.

Similarly, Chapter X examines ways in which the U.S. Environmental Protection Agency might involve subnational coalitions more in its process of distributing funds related to mitigation to state and local government, an approach that could also be used by other agencies and in the context of adaptation.¹⁰⁶⁴ The citizens' councils formed in Alaska in the aftermath of the Exxon Valdez spill, which I have explored in my work on the BP *Deepwater Horizon* oil spill, also provide a potential model for bringing smaller, suburban voices into the process more fully. These councils involve a range of key stakeholders in developing recommendations that then have a formal channel into the core regulatory process, an approach which could be implemented through statute or by agencies in the climate change context.¹⁰⁶⁵ Whether any of these models is used, or some other approach, creating more cross-cutting participation in networks would both strengthen the case for greater involvement and provide more effective representation of the diverse types of cities working on climate change.

These twin strategies of differentiated outreach and network coordination also could be used to encourage participation in suburbs that have been slower to act. As non-participating suburban cities interact with one another in a variety of contexts, such as in

¹⁰⁶⁴ See *supra* Chapter X.

¹⁰⁶⁵ For a discussion of citizens' councils, see Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 FLA. L. REV. 1077 (2011); Zygmunt J.B. Plater, *Learning from Disasters: Twenty-One Years After the Exxon Valdez Oil Spill, Will Reactions to the Deepwater Horizon Blowout Finally Address the Systemic Flaws Revealed in Alaska?*, 40 ENVTL. L. REP. 11041 (2010); Zygmunt J.B. Plater, *Facing a Time of Counter-Revolution—The Kepone Incident and a Review of First Principles*, 29 U. RICH. L. REV. 657, 700–01 (1995); William H. Rodgers, Jr., *The Most Creative Moments in the History of Environmental Law: "The Whats"*, 2000 U. ILL. L. REV. 1, 22–23 (citing e-mail from Zygmunt Plater, Professor, Bos. Coll. Law Sch., to William H. Rodgers, Professor, Univ. of Wash. Sch. of Law (Feb. 2, 1998) (on file with the *University of Illinois Law Review*)); George J. Busenberg, *Regional Citizens' Advisory Councils and Collaborative Environmental Management in the Marine Oil Trade in Alaska* (unpublished manuscript), available at http://www.allacademic.com/meta/p41678_index.html (studying the two advisory council's impacts on policy change); *Introduction*, PRINCE WILLIAM SOUND REG'L CITIZENS' ADVISORY COUNCIL, <http://www.pwsrca.org/about/index.html> (last visited July 15, 2011).

the Twin Cities through its regional governance structure, they can learn about the economic and social benefits obtained by similar leader suburbs through their climate change and clean energy initiatives. When a critical mass of involved citizens in those small cities become persuaded of the benefits of transitioning lightbulbs, taking energy-efficiency measures, adding renewable energy to their portfolio (the Midwest has tremendous wind capacity and the Twin Cities are very sunny), or concentrating uses, these small cities often face fewer bureaucratic barriers to action than larger cities do and can act relatively quickly. As these cities take these individual steps, they become more likely to join networks that give them support for their activities and to transition into leaders. The Twin Cities example suggests that cities do not have to be politically liberal to make that transition because many of the initial steps they take on climate change are win-wins that do not have to be framed around the politically contentious issue of climate change. Moreover, existing networks working together can reinforce the value of the smaller-scale efforts through award programs like the one that recognized Eden Prairie.¹⁰⁶⁶

In the final analysis, neither of this chapter's proposals is adequate to address the massive barriers to climate action with which this dissertation started. Even with these strategies, it is unlikely that a sufficient number of cities, large or small, will mitigate quickly enough to prevent our crossing the 450 parts per million carbon dioxide threshold that threatens major climate change and ever-louder calls for geoengineering.¹⁰⁶⁷ These networks are voluntary and participation in them cannot force action the way top-down mandates would.

¹⁰⁶⁶ MAYORS CLIMATE PROT. CTR., *supra* note 847.

¹⁰⁶⁷ Johan Rockström et al., *A Safe Operating Space for Humanity*, 461 NATURE 472, 473 (2009).

But the example of these Twin Cities suburbs suggests that small, suburban cities should be an important area of focus in developing polycentric governance approaches. As more suburbs capture the low hanging fruit under their control, major metropolitan regions will come closer to reducing emissions at levels needed. Center leader cities simply do not represent enough emissions unless joined by their smaller suburbs, which are often nimble enough to act quickly if brought on board.

This case study also reinforces the multi-scalar quality of action at each scale along the lines of Kevin Cox's network conception of scale. Because these cities are deeply intertwined in multi-level networks, their "local" choices emerge from complex interactions across multiple scales. As a consequence, continuing to reach out through networks, whether environmental or broader ones, which include small cities not yet taking similar action, and working towards better integration of those networks with formal international and national processes, contain promise for better mitigation. They also create a framework for needed action and collaboration on adaptation that becomes more and more important as we fail to mitigate.

Sprawling U.S. metropolitan regions pose daunting mitigation challenges, but their small cities also have the potential to make incremental change. The proposed approaches, which could be implemented within existing networks and their limited resources, represent ways in which—based on the example of these Twin Cities suburbs—networks might more effectively incorporate small suburban cities. Such incorporation has the potential to create action that would not have happened otherwise, both in particular cities and in multi-level governance strategies.

CHAPTER XIV

REENVISIONING THE SCALE OF CLIMATE CHANGE GOVERNANCE

This chapter contains edited portions of Hari M. Osofsky, *The Creation of the International Law of Climate Change Complexities of Sub-State Actors*, in *NON STATE ACTORS, SOFT LAW AND PROTECTIVE REGIMES* 355 (Cecilia M. Bailliet, ed.) (2012, Cambridge University Press), and Hari M. Osofsky, *Multiscalar Governance and Climate Change: Reflections on the Role of States and Cities at Copenhagen*, 25 *MARYLAND J. INT'L L.* 64 (2010).

This dissertation began with a foundational problem. Current strategies to address climate change are failing. This reality has only been reinforced by recent news. On May 9, 2013, two independent teams recorded that the mean carbon dioxide concentrations had crossed the 400 parts per million threshold, probably the first time this has occurred since the Pliocene Era, with its higher seas and warmer temperatures.¹⁰⁶⁸ Unless one is a skeptic in the face of the consensus science of the Intergovernmental Panel on Climate Change, humanity must do better or face a stark future. My co-author Lesley McAllister and I recently chose to end our climate change casebook with two troubling scenarios for the future—major climate change and geoengineering—out of a sense that we are not currently on a path towards adequate mitigation.¹⁰⁶⁹

The core argument of this dissertation is that “doing better” requires geographically aware governance strategies. It uses its three case studies to illustrate, in particular, the complexities of the individual scales involved in climate change regulation and their multi-scalar interaction. This concluding chapter assesses the implications of

¹⁰⁶⁸ Robert Kunzig, *Climate Milestone: Earth's CO₂ Level Passes 400 PPM*, *NAT'L GEOGRAPHIC DAILY NEWS*, May 9, 2013, <http://news.nationalgeographic.com/news/energy/2013/05/130510-earth-co2-milestone-400-ppm/>.

¹⁰⁶⁹ HARI M. OSOFSKY & LESLEY K. MCALLISTER, *CLIMATE CHANGE LAW AND POLICY (Elective Series)* (2012, Aspen Publishers).

those case studies for how geographic conceptions of scale might assist in structuring more effective climate change governance. It considers how scale manifests in the case studies; the implications of this dissertation's approach for how these case studies fit together with the treaty regime; and possibilities for achieving the core principles introduced in Chapter II of hybridity, multiscalar inclusion, and regulatory responsiveness.

1. Geographic Scale and the Case Studies

The three case studies all involve activity with regulatory significance at multiple scales. Many of the key individuals and entities in each case study have multi-scalar identities or, at the very least, multi-scalar ties. However, they differ in how those multi-scalar dynamics are structured and what their regulatory implications are. Several strands of the geographic literature conceptualizing scale, introduced in Chapter II, help to illuminate these commonalities and differences and the various possibilities for how the scalar dynamics in them might be viewed.

First, each case study reinforced geographer Kevin Cox's argument that individual scales are actually constituted through multi-scalar networks.¹⁰⁷⁰ In the litigation context, although the regulation at issue often had a legally constituted level—for example, the Clean Air Act is a federal law and San Bernardino County's General Plan is a local one—their implementation was shaped through multi-level interactions both in the litigation itself and in the implementation of a decision or settlement.¹⁰⁷¹

¹⁰⁷⁰ Kevin R. Cox, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, Or: Looking for Local Politics*, 17 POL. GEOGRAPHY 1 (1998).

¹⁰⁷¹ See *supra* Chapters IV–VII.

Similarly, while the Obama Administration's regulation of transportation is ostensibly federal, the National Program was created through a series of conflictual and cooperative multi-scalar interactions and that federal policy consistently interacts with activity at other scales.¹⁰⁷² Although the decision-making in the suburbs is under local control, their decisions are being influenced by and influence multi-level networks.¹⁰⁷³

Second, a variety of rescaling processes are taking place in the case studies in ways that Nathan Sayre's work at the intersection of geography and ecology help to illuminate.¹⁰⁷⁴ The litigation context provides the most overt example of rescaling, as parties on opposing sides put forward competing scalar visions of climate change regulation.¹⁰⁷⁵ However, even in the other two contexts, rescaling takes place due to network interactions. In the federal transportation policy context, the Obama Administration is being influenced by these networks and must choose when to defer to them.¹⁰⁷⁶ Local governments attempt to influence larger scales and, in turn, the context in which they operate through their multi-level networks.¹⁰⁷⁷

Third, the science-scale-law interface, which Sayre's work paired with that of Holly Doremus helps to elucidate, influences these rescaling efforts in all three contexts. In this litigation context, like the rescaling itself, this interface is most explicitly engaged; litigants use characterizations of climate change science to make their scalar

¹⁰⁷² See *supra* Chapters VIII–X.

¹⁰⁷³ See *supra* Chapters XI–XIII.

¹⁰⁷⁴ Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 (3) PROGRESS HUM. GEOGRAPHY 276, 281 (2005).

¹⁰⁷⁵ See *supra* Chapters IV–VII.

¹⁰⁷⁶ See *supra* Chapters VIII–X.

¹⁰⁷⁷ See *supra* Chapters XI–XIII.

arguments.¹⁰⁷⁸ But as with the rescaling, views of science and technology undermine the approaches to federal policy and suburban mitigation. Both contexts are influenced by a sense of what measures are appropriate for that scale in light of climate change science and available technology.¹⁰⁷⁹

Fourth, Julie Cidell’s insights about the complex scalar role of individuals are evident throughout the case studies.¹⁰⁸⁰ Individuals bring, defend, and decide the lawsuits.¹⁰⁸¹ President Obama, other key federal decisionmakers, and the individuals driving the coalitions of smaller scale entities all influence scalar decisions and how multi-scalar interactions are structured.¹⁰⁸² In the suburban context, the role of individuals is particularly evident because within small cities, one or two committed people can and are changing that suburb’s mitigation choices.¹⁰⁸³

Finally, as explored in more depth in the next section, one’s vision of the geography of scale—taking the options presented by Neil Brenner as a starting point¹⁰⁸⁴—ends up influencing how one views the regulatory significance of the activity being described in the case studies. If one moves beyond legal analysis’s usual focus on his first definition of scale, “a nested hierarchy of bounded spaces of differing size,”¹⁰⁸⁵

¹⁰⁷⁸ See *supra* Chapters IV–VII.

¹⁰⁷⁹ See *supra* Chapters VIII–XIII.

¹⁰⁸⁰ Julie Cidell, *The Place of Individuals in the Politics of Scale*, 38 *AREA* 196, 202 (2006).

¹⁰⁸¹ See *supra* Chapters IV–VII.

¹⁰⁸² See *supra* Chapters VIII–X.

¹⁰⁸³ See *supra* Chapters XI–XIII.

¹⁰⁸⁴ NEIL BRENNER, *NEW STATES SPACES: URBAN GOVERNANCE AND THE RESCALING OF STATEHOOD* 9 (2004) (internal quotations omitted).

¹⁰⁸⁵ *Id.*

to his other definitions, a different understanding of the regulatory dynamics in these case studies emerges. For example, if scale is also “the level of geographical resolution at which a given phenomenon is thought of, acted on or studied,” one must grapple with what thought and action is taking place at each level involved in the multi-scalar dynamics in all of the scale studies. Viewing scale as “the geographical organizer and expression of collective social action” helps clarify the ways in which scales are constituting and being constituted by the dynamics of litigation, federal policymaking, and subnational interaction with multi-level networks. Brenner’s fourth definition of scale as “the geographical resolution of contradictory processes of competition and cooperation” seems particularly apt in capturing the iterative dynamics in both the litigation and policymaking that lead to the changing outcomes over time.

2. The Geography of Treaties, Smaller Scale Action, and Multi-Scalar Governance

This Section builds from the previous one’s final insight to focus back on the key question of how the activity in the case studies should be understood as part of a multi-scalar governance model. Part of what makes this question hard to address is that one’s geographic view of multi-scalar governance and of individual scales foundationally shapes how one understands the conundrum with which this dissertation began: Beyond the failures of the treaty regime, there is a lot of activity—manifest in the three case studies—that a treaty-centered governance approach struggles to capture adequately. One’s geographic view influences whether one tries to fit each of the dissertation’s case studies into a governance model framed around treaties or into the more polycentric model conceptualized in Chapter II. This section draws from the theory introduced in

Chapter II and developed throughout the dissertation to make the case for a more pluralist, polycentric vision not just of governance but also of governance theory; it interweaves theoretical approaches to international lawmaking with possible geographic conceptions of the nation-state to explore various interpretations of the regulatory significance of the case studies.

Specifically, this section asks how the multiscale dynamics and strategies for progress explored in the case studies should fit together with the international treaty regime. It draws from my previous law and geography work to argue that different approaches to international legal theory, with their varying views on nation-states, shape the possible narratives of these case studies' interaction with the formal treaty processes on climate change. It contends that an exploration of these partially conflicting theoretical perspectives assists in efforts to move forward towards more effective transnational climate governance.

In my previous work on the geography of climate change litigation and agreements among subnational entities, I argue that international legal theory could be categorized based on the extent to which it views the nation-state as impenetrable and legitimate, and that these different categories of theory would have variant narratives of the international legal significance of *Massachusetts v. EPA*.¹⁰⁸⁶ As part of that analysis, I grouped international legal theory into categories, three of which have particular salience for an understanding of these case studies: strict Westphalian, modified Westphalian, and pluralist.¹⁰⁸⁷ Strict Westphalians make the modernist territorial presumptions that

¹⁰⁸⁶ See Hari M Osofsky, *The Geography of Climate Change Litigation Part II: Narratives of Massachusetts v. EPA*, 8 CHI. J. INT'L L. 573 (2008).

¹⁰⁸⁷ *Id.* at 578–79.

Alexander Murphy illuminates in his work on scale and territory;¹⁰⁸⁸ they focus on the nation-state as the primary subject and object of international law and only consider nation-state behavior in narrating international lawmaking.¹⁰⁸⁹ Modified Westphalians maintain the centrality of the nation-state but recognize a wide range of actors as relevant to the international lawmaking process.¹⁰⁹⁰ Pluralists decenter the nation-state and argue that the international lawmaking narrative should include a broader set of activities and actors.¹⁰⁹¹ These three types of conceptual approaches cast the case studies' relevance to climate change governance in a different light; exploring each approach's potential narrative of their relevance provides a tool for understanding the significance of these agreements better.

In so doing, this section aims to contribute to the scholarly dialogue regarding both international legal theory and climate change policy by modeling how a law and

¹⁰⁸⁸ Alexander B. Murphy, *Territory's Continuing Allure*, __ ANNALS. ASSOC GEOG. 1, 2 (2012) (forthcoming).

¹⁰⁸⁹ For an exposition of that model, see Osofsky, *The Geography of Climate Change Litigation Part II*, *supra* note 1086 at 588–89. See also IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 287–88 (6th ed. 2003); Michael J. Kelly, *Pulling at the Threads of Westphalia: “Involuntary Sovereignty Waiver”—Revolutionary International Legal Theory or Return to Rule by the Great Powers?*, 10 UCLA J. INT'L L. & FOREIGN AFF. 361, 382 (2005).

¹⁰⁹⁰ See Osofsky, *supra* note 37, at 589–90. For examples of the diverse conceptual approaches that arguably fall into the category of modified Westphalian scholarship, compare JACK L. GOLDSMITH & ERIC A. POSNER, THE LIMITS OF INTERNATIONAL LAW (2005), with ANNE-MARIE SLAUGHTER, A NEW WORLD ORDER 18–23 (2004) and Harold Hongju Koh, *Jefferson Memorial Lecture: Transnational Legal Process After September 11th*, 22 BERKELEY J. INT'L L. 337, 339 (2004).

¹⁰⁹¹ See Osofsky, *supra* note 37, at 589–90. For examples of pluralist approaches to international law, see Paul Schiff Berman, *Global Legal Pluralism*, 80 S. CAL. L. REV. 1155 (2007); Janet Koven Levit, *A Bottom-Up Approach to International Law Making: The Tale of Three Trade Finance Instruments*, 30 YALE J. INT'L L. 125 (2005). For the New Haven School approach, see HAROLD D. LASSWELL & MYRES S. MCDUGAL, JURISPRUDENCE FOR A FREE SOCIETY: STUDIES IN LAW, SCIENCE AND POLICY, at xxi (1992); Richard A. Falk, *Casting the Spell: The New Haven School of International Law*, 104 YALE L.J. 1991 (1995); Myres S. McDougal & Harold D. Lasswell, *The Identification and Appraisal of Diverse Systems of Public Order*, 53 AM. J. INT'L L. 1 (1959); Myres S. McDougal et al., *The World Constitutive Process of Authoritative Decisions*, 19 J. LEGAL EDUC. 253 (1967); W. Michael Reisman, *International Lawmaking: A Process of Communication*, 75 AM. SOC'Y INT'L L. PROC. 101 (1981).

geography analysis of international lawmaking can allow for a reconceptualization of current strategies. Certainly, a law and geography approach is not a prerequisite for innovative international legal theory; for example, the emerging body of global legal pluralism and new governance scholarship referenced in Chapter II makes a significant contribution, and generally does so without explicit reference to the discipline of geography.¹⁰⁹² But thinking geographically helps to delineate more clearly the differences among the various perspectives on international law, and in particular, the ways in which their view of the nation-state shapes the legal and institutional possibilities for progress.

a. The Enclosed Nation-State and Strict Westphalian View of the Case Studies

Treating the nation-state as an enclosed space, as stricter Westphalian accounts tend to, means viewing it as a singular entity with clearly delineated boundaries and viewing its internal workings as generally irrelevant to its international law commitments. Such a view of the nation-state is generally intertwined with a strong belief in the notion of sovereign equality. International law recognizes that, with very limited exceptions, states are sovereign over the space within them, which is treated as domestic and only relevant to international law as part of the national entity. States can protect themselves against intrusions upon that enclosed space and generally can choose when to enter into

¹⁰⁹² See *supra* Chapter II. I have previously explored how drawing explicitly from the discipline of geography could contribute to New Haven School scholarship. Hari M. Osofsky, *A Law and Geography Perspective on the New Haven School*, 32 YALE JOURNAL OF INTERNATIONAL LAW 421 (2007).

consensual agreements with other states to abide by treaties and establish customary international law norms.¹⁰⁹³ Figure 6 depicts this enclosed view.

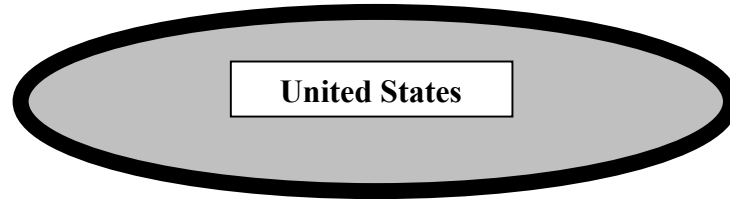


Figure 6. Enclosed Nation-State

Strict Westphalians would view climate change litigation, federal action, or agreements among subnational units as irrelevant to international law except for their contribution to national-level mitigation and adaptation as part of meeting treaty or other international obligations. Their story would begin and end with the international law efforts to address climate change. Lawsuits and federal- or subnational-level action would only be relevant to the extent that they influence the U.S. or other nation-states' negotiating positions or efforts to meet their obligations. Strict Westphalians would recognize that the many entities in these case studies represent a large percentage of global emissions, but would view their efforts as helping nation-states meet pledges under the Kyoto Protocol or Copenhagen Accord. In so doing, they would valorize the formal account with which this dissertation begins, and reject intuitions that there is more to the story.¹⁰⁹⁴

¹⁰⁹³ See *supra* note 10.

¹⁰⁹⁴ For a discussion of strict Westphalian conceptual approaches, see Osofsky, *supra* note 37, at 591–94; Kelly, *supra* note 39, at 364–94.

b. The Permeable Nation-State and Modified Westphalian Views of the Case Studies

But what if that portrayal of nation-state geography is inaccurate and incomplete? A number of scholars in different fields have grappled with this question. For the purposes of this chapter, I focus on two such accounts that draw from geography and legal scholarship introduced in Chapter II, each of which challenges this narrative in different ways.¹⁰⁹⁵ First, as discussed in Chapter II and above, geographer Julie Cidell has focused on the role of the individual in the creation of scale. Her work demonstrates that our delineation into scalar levels—international, national, state, local, community, individual—should take into account that the individual is not simply the smallest level, but a part of every level.¹⁰⁹⁶ This conception reminds us that the nation-state level is permeable because it is comprised of a myriad of individuals making choices. Judith Resnik, a legal scholar whose work contributes to the dynamic federalism literature, has argued that international legal norms move across sovereign borders continuously and become part of internal, domestic understandings whether or not they are formally accepted. She claims that battles over the use of international law in domestic courts, for example, miss the fact that international norms enter domestic decisions whether or not those decisions formally accept international law as relevant.¹⁰⁹⁷ This account suggests

¹⁰⁹⁵ I have explored these accounts in my previous work on nation-state spaces. See Hari M. Osofsky, *The Geography of Justice Wormholes: Dilemmas from Property and Criminal Law*, 53 VILLANOVA L. REV. 117 (2008); Hari M. Osofsky, *Climate Change and Environmental Justice: Reflections on Litigation over Oil Extraction and Rights Violations in Nigeria*, 1 JOURNAL OF HUMAN RIGHTS AND THE ENVIRONMENT 189 (2010).

¹⁰⁹⁶ See Cidell, *supra* note 1080, at 202.

¹⁰⁹⁷ Judith Resnik, *Law's Migration: American Exceptionalism, Silent Dialogues, and Federalism's Multiple Ports of Entry*, 115 YALE L.J. 1564, 1627–33 (2006).

that nation-states are not enclosed, but rather that norms can permeate their borders regardless of formal legal hurdles, as depicted in Figure 7.

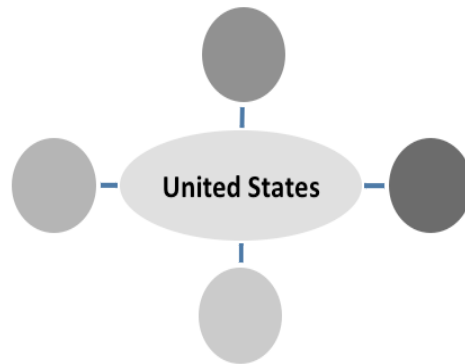


Figure 7. Permeable Nation-State

Bringing together these two insights provides the basis for what I have termed a permeable model of the nation-state. The basic account of what formally constitutes international law creation does not change, but the view of the nation-state within it does. The nation-state becomes a less monolithic entity, as international legal norms flow in and out of its borders and individuals (and other entities) within it shape its course.¹⁰⁹⁸ This change in viewpoint has significant implications for the narrative of international law creation generally and its relationship to climate change in particular. The formal moment of international law creation becomes less central as one describes the myriad interactions and evolution of norms that precedes it and influences its implementation.

Modified Westphalians provide an example of such a permeable approach; they would retain the central focus on nation-states participating in a treaty-making process as the primary international law account regarding climate change. However, they would consider the case studies as a relevant part of the story of how these treaties are made. For instance, transnational legal process scholars—introduced in Chapter II and highlighted

¹⁰⁹⁸ See Osofsky, *The Geography of Justice Wormholes*, *supra* note 1095.

in Chapter VII—might focus on the way in which litigation and subnational coalitions contribute to a process of norm internalization that they view as undergirding international law; the interactions described in the case studies are part of processes of “interaction, interpretation, and internalization,” which help to establish transnational climate change norms and put pressure on nation-states to codify commitments in line with these norms in the treaty-making process.¹⁰⁹⁹ These accounts thus bring the litigation, the complexities of national policy, and subnational coalitions into the international lawmaking story in ways beyond their domestic relevance, but still focus on the ultimate international law as formal treaty agreements are reached.

c. The Enmeshed Nation-State and Pluralist/Polycentric Views of the Case Studies

Once one recognizes the nation-state as permeable, however, further questions arise about the traditional model of international law. Namely, if the nation-state is constituted by individuals and entities and has borders that can be informally permeated, does the formal story also need to be changed? Should a view of the nation-state as fully enmeshed with and constituted by a wide range of actors and entities in multiple arenas change the way in which international law is created? In response to questions such as these, scholarship introduced in Chapter II on global legal pluralism, which owes an intellectual debt to the New Haven School, and on polycentric governance and new governance (among other potentially relevant literatures) begin to challenge the formal story.¹¹⁰⁰ Most significantly, this scholarship decenters the nation-state and allows for a

¹⁰⁹⁹ For an exposition of transnational legal process, see Koh, *supra* note 40, at 339.

¹¹⁰⁰ See *supra* Chapter II.

broader conception of what might constitute law. It provides the basis for a narrative of international law creation in which the complex dynamics described in the case studies might be integrated more with treaties among nation-states, as depicted in Figure 8 of the enmeshed nation-state. As noted in the introduction, this narrative has framed my portrayal of the problem of climate change and the governance issues in each of the case studies.



Figure 8. Enmeshed Nation-State

Specifically, the scholars who take this type of approach would view these dynamics as playing a greater role in the international lawmaking process than would modified Westphalians.¹¹⁰¹ For example, Myres McDougal and Harold Lasswell, who pioneered the New Haven School approach upon which many conceptions of global legal pluralism build, defined law as “a process of authoritative decision by which the members of a community clarify and secure their common interests.”¹¹⁰² The agreements by subnational coalitions arguably would count as international lawmaking under such an approach, as the participating governments are sovereigns making collaborative decisions to regulate greenhouse gas emissions, which they have the power to implement in their

¹¹⁰¹ For an exploration of a pluralist perspective on California as an international lawmaker in the context of climate change litigation, see Osofsky, *Climate Change Litigation as Pluralist Legal Dialogue?*, *supra* note 33, at 196–208.

¹¹⁰² LASSWELL & MCDUGAL, *supra* note 41, at xxi.

local contexts. The subnational governments make authoritative decisions about their individual approaches to land use planning and transportation and articulate their common interests in documents produced at the Conferences to the Parties. Although this articulation is not formally binding—the subnational governments would not suffer legal consequences from walking away—this process of clarifying and stating their common interests by the subnational governments would likely be adequate to form part of lawmaking in a pluralist account. These subnational efforts thus would each be pieces of overall transnational lawmaking on climate change.

d. Why This Choice Matters

As I have noted in my prior work, such categorization of scholarship becomes messy at the boundaries. The distinction between modified Westphalians and pluralists, in particular, is often difficult to make because once one begins opening up the nation-state and decentering it somewhat, the fullness of the decentering is sometimes unclear and may depend on circumstance. In addition, some theories may have elements of more than one category.¹¹⁰³ This complexity of categorization applies to the three basic categories of nation-state enclosure articulated above as well. If one recognizes the nation-state as at least somewhat permeable, the distinction between that permeability and full enmeshment may be hard to pinpoint. But this messiness does not diminish the central point, which is that the geography of the nation-state—especially its level of enclosure—influences how one should conceptually approach the case studies’

¹¹⁰³ See *id.*

interaction with international law. These conceptual differences translate into normative and practical possibilities for progress on climate change, which this section explores.

When our governance models focus too narrowly on treaties as the solution for climate change, we face two risks. First, in theory, we could address the problem through a rigorous treaty regime with which nation-states comply through aggressive national-level enforcement efforts; such enforcement might involve that involve mandates created through litigation or national-level requirements for critical subnational entities. However, such a solution is not politically realistic. I fear that due to (1) the timelags between emissions and impacts and (2) deep inequalities between major emitters and those facing the most immediate severe impacts, by the time the international negotiators are willing to face up to the hard choices posed by this problem, the choices will be very stark indeed. Unless treaties realistically can solve climate change or, at the very least, make more significant progress in reducing emissions, a conceptual model that focuses on them as the core of climate change governance may fail to address the problem.

Second, and more fundamentally, as argued in the introductory chapter, many of the efforts described in the case studies have importance to climate change governance that cannot be captured fully by reference to the treaty regime. The complex scalar dynamics of the litigation, federal regulation, and networks of cities involve many different types of law and key actors interacting at multiple levels of governance. They may well help the United States meet its voluntary emissions reductions pledges under the Copenhagen Accord, but that is only a piece of how they influence our ability to address climate change. For example, as Jacqueline Peel and I are exploring in a broader research project on climate change litigation, these cases not only have direct regulatory

influences, but indirect ones on norms and values and on costs that are much more difficult to measure. Treating climate change governance as polycentric allows for more complete understanding of how each piece of the complex puzzle interacts with other pieces to comprise or undermine an overall solution.

Climate change will pose a daunting governance challenge regardless of one's perspective on international law. However, exploring approaches, such as global legal pluralism, polycentric governance, and new governance, which rely upon an enmeshed view of nation-state geography allow for creative policy-making that the current process, grounded in Westphalian strictures, may miss. Such creativity is critical in the face of the potential risks we face if our solutions to climate change continue to fall short.

3. Towards Hybridity, Multi-Scalar Inclusion, and Regulatory Responsiveness

The case studies do not simply illustrate the complex scalar dynamics at the heart of climate change governance. They also provide a context in which to grapple with how to make progress on the three principles for effective and appropriate polycentric governance articulated through the streams of legal and interdisciplinary theory in Chapter II: hybridity, multi-scalar inclusion, and regulatory responsiveness.¹¹⁰⁴ This concluding section considers how the dissertation's analysis might suggest ways forward with respect to each principle and open avenues for future research.

With respect to hybridity, the case studies suggest that hybrid forms emerge not only in the ways in which formal institutions are constructed, but also through complex multi-scalar interactions. For instance, the litigation over climate change, with the interactions

¹¹⁰⁴ See *supra* Chapter II.

and rescaling it creates, arguably constitutes a hybrid form of regulation.¹¹⁰⁵ Similarly, the interaction between formal legal action at national and local scales and informal networks at multiple scales in the latter two case studies arguably adds hybridity to regulation at a particular level.¹¹⁰⁶ These examples suggest that geographic conceptions of scale can be helpful in developing hybrid elements in multi-scalar governance because of the way in which they reveal the nuances of interaction and new possibilities for formal and informal hybridity.

Similarly, regarding multi-scalar inclusion, the case studies indicate that interaction through litigation and multi-level networks provides possibilities for integrating multiple scales, particularly through iterative relationships over time. However, these forms clearly have their limits. For example, the conflictual nature of litigation does not always evolve into cooperation among its participants; the move from litigation to the National Program in the motor vehicles context is likely more the exception than the rule. But in the types of litigation and regulatory results highlighted in the first and second case studies, litigation did result in new regulatory forms and interactions, often involving multi-level networks.¹¹⁰⁷ Similarly, the limited ways in which networks of cities are interacting across scales and acknowledging differentiation within the local scale creates possibilities for the development of new connections among multi-scalar networks proposed in Chapter XIII.¹¹⁰⁸ These not only could encourage greater suburban participation in climate change mitigation, but also create new multi-scalar linkages that foster greater inclusivity of key

¹¹⁰⁵ *See supra* Chapters IV–VII.

¹¹⁰⁶ *See supra* Chapters VIII–XIII.

¹¹⁰⁷ *See supra* Chapters IV–X.

¹¹⁰⁸ *See supra* Chapters XI–XIII.

actors.

Finally, regarding regulatory responsiveness, the case studies are replete with examples of smaller-scale actors being nimble and responsive in ways that are often harder at larger scales. The speed with which Falcon Heights and some of the other suburbs studied were able to develop climate change mitigation efforts and refine them suggests the promise of adaptability in small local contexts.¹¹⁰⁹ Litigation also serves as an important mechanism for fostering greater regulatory responsiveness, particularly in the first two case studies. These cases and the threat of them not only help spur governmental officials to respond to climate change, but they also can provide cover for politically difficult action, such as the Obama Administration's greenhouse gas emissions regulation under the Clean Air Act.¹¹¹⁰

Although the case studies provide helpful insights for how to move forward in operationalizing the three principles, the above conclusions are necessarily jurisdictionally specific. They help advance multi-scalar governance in the United States, but likely cannot be applied directly to other jurisdictions due to differences in legal systems and society. As noted in the introductory chapter, this dissertation chose to focus its case studies within the United States in order to delve more deeply in its analysis and to provide insight into regulatory possibilities for a crucial nation-state that has made limited international commitments. This relatively narrow geographic focus allowed for context-specific exploration of hybridity, multiscalar inclusion, and regulatory responsiveness and of how they could form part of more effective U.S.-based polycentric climate change

¹¹⁰⁹ See *supra* Chapter XII.

¹¹¹⁰ See *supra* Chapter IX–X.

governance. It would be hard to provide insights into the United States or any other jurisdiction without this kind of detailed analysis.

However, if polycentric strategies are going to form a critical part of solving climate change, focusing on any one nation-state, even an important one like the United States, is not enough. The type of law and geography analysis provided in this dissertation must be replicated in multiple jurisdictions to allow for a nuanced understanding of what strategies would work in that legal system and society. Such studies will need to consider the possibilities provided by the specific type of legal system in that nation-state, as strategies will vary among common law, civil law, and Islamic law legal systems and those of nation-states like China—the largest emitter in the world—that mix elements of more than one type of legal system. For example, litigation would likely have a much more limited capacity to rescale governance in a civil law system that gives courts a more constrained interpretive role.¹¹¹¹

Similarly, legal systems vary in the extent to which they have a federalist system distributing authority among their levels of governance, but it is important to differentiate between the law on the books and law in action in analyzing this variation and its multiscale dynamics. For instance, although China is formally a unitary state, Jingjing Liu has noted that “economic reform has brought significant decentralization of economic administration, and in many cases, Beijing has been unable to supervise effectively the exercise of local government power, leading to substantial de facto autonomy for local

¹¹¹¹ For a comparison of common and civil law judicial approaches, see Charles H. Koch, Jr., *The Advantages of the Civil Law Judicial Design As the Model for Emerging Legal Systems*, 11 *IND. J. GLOBAL LEGAL STUD.* 139 (2004).

governments in many areas of activities.”¹¹¹² An analysis of how to approach polycentricity effectively in China would need to incorporate this complexity into its approach.

Even with these jurisdictional differences, this dissertation and its case studies suggest key types of inquiries that could be performed in many nation-states to expand upon its analysis. First, many nation-states have climate change litigation, but it takes different forms and plays varying regulatory roles in each context. While—as discussed in the first case study—there are a number of scholars around the world analyzing climate change litigation in different jurisdiction, few of them are focusing on its scalar role. More research is needed to understand how climate change litigation is affecting the scale of regulation in jurisdictions beyond the United States.¹¹¹³ Second, an enormous number of nation-states are regulating climate change in some form at a national level. More research is needed along the lines of the second case study into the multiscale aspects of their national-level regulation and to what extent approaches could incorporate key stakeholders at multiple levels more effectively.¹¹¹⁴ Third, as discussed in the final case study, many nation-states have cities, states, and provinces that are active in multi-level climate change networks. The kind of examination performed in that case study, which identifies cities by type and explores their participation in multi-level climate change

¹¹¹² Jingjing Liu, *Overview of the Chinese Legal System*, 41 ENVTL. L. REP. NEWS & ANALYSIS 10885, 10885 (2011). For further analysis of the complexities of the modern Chinese legal system and its evolution, see STANLEY B. LUBMAN, *BIRD IN A CAGE: LEGAL REFORM IN CHINA AFTER MAO* (1999); Yuanyuan Shen, *Conceptions and Receptions of Legality: Understanding the Complexity of Law Reform in Modern China*, in *THE LIMITS OF THE RULE OF LAW IN CHINA 20-44* (Karen G. Turner, James V. Feinerman & R. Kent Guy, eds. 2000); William P. Alford & Fang Liufang, *Legal Training and Education in the 1990s: An Overview and Assessment of China's Needs* 21 (1994); Mo Zhang, *The Socialist Legal System with Chinese Characteristics: China's Discourse for the Rule of Law and a Bitter Experience*, 24 TEMP. INT'L & COMP. L.J. 1 (2010).

¹¹¹³ See *supra* Chapters IV–VII.

¹¹¹⁴ See *supra* Chapters VIII–X.

networks, could be expanded to cities around world.¹¹¹⁵

In the final analysis, although geographically aware, polycentric approaches require creative reconceptualization and careful crafting, such an effort is worthwhile. The current reliance on traditional Westphalian notions of international law is not solving the problem of climate change quickly enough. Perhaps alternative approaches will not either. Neither polycentric strategies nor nuanced scalar analysis is a panacea, and the approaches highlighted in the case studies have not prevented carbon dioxide concentrations from crossing over 400 parts per million in the atmosphere. But given the urgency of the problem, some conceptual blockbusting is needed. In the context of this “super-wicked” problem, openness to more inclusive approaches puts more possibilities on the table. The polycentric governance approaches explored in this dissertation may not solve the problem of climate change, but they increase the hope of doing so.

¹¹¹⁵ See *supra* Chapters XI–XIII.

APPENDIX

TWIN CITIES METROPOLITAN REGION COMMUNITIES' NETWORK

PARTICIPATION, FROM CHAPTER XIII

| Community (7-County Metro Area)¹¹¹⁶ | GreenStep Cities¹¹¹⁷ | MN Energy Challenge Team (# Team Mems.)¹¹¹⁸ | EPA Region 5 Community Climate Change Initiative Partner¹¹¹⁹ | Mayors Agreement on Climate Change¹¹²⁰ | Copenhagen City Climate Catalogue¹¹²¹ | ICLEI¹¹²² |
|---|--|---|--|--|---|-----------------------------|
| Afton | | 23 | | | | |
| Andover | | 98 | | | | |
| Anoka | | 82 | | | | |
| Apple Valley | 6/9/2011 | 367 | 2009 | Mary Hamann-Roland | 7% by 2012 (1990 Baseline) | |
| Arden Hills | | 47 | | | | |
| Bayport | | 9 | | | | |
| Baytown | | | | | | |
| Belle Plaine | | 16 | | | | |
| Belle Plaine Township | | | | | | |
| Benton Township | | | | | | |
| Bethel | | | | | | |
| Birchwood | | 8 | | | | |
| Blaine | | 178 | | | | |
| Blakeley Township | | | | | | |
| Bloomington | | 435 | | | | |
| Brooklyn Center | | 103 | | Tim Willson | 7% by 2012 (1990 Baseline) | |
| Brooklyn Park | | 222 | | | | |
| Burnsville | 4/17/2012 | 277 | | Elizabeth Kautz | 7% by 2012 (1990 Baseline) | |
| Camden Township | | | | | | |
| Carver | | 19 | | | | |

¹¹¹⁶ *List of Community Profiles, supra note 775.*

¹¹¹⁷ *Greenstep Cities List, supra note supra note 786.*

¹¹¹⁸ *City Teams, supra note 982.*

¹¹¹⁹ *Region 5 Climate Change: Municipalities, supra note 810.*

¹¹²⁰ *List of Participating Mayors, supra note 702.*

¹¹²¹ *List of Commitments, supra note 1009.*

¹¹²² *Member List, supra note 985.*

| | | | | | | |
|-----------------------|-----------|-----|------|-------------------|----------------------------|------|
| Castle Rock Township | | | | | | |
| Cedar Lake Township | | | | | | |
| Centerville | | 8 | | | | |
| Champlin | | 100 | | | | |
| Chanhassen | | 89 | | | | |
| Chaska | | 85 | | | | |
| Circle Pines | | 44 | | | | |
| Coates | | | | | | |
| Cologne | | 4 | | | | |
| Columbia Heights | | 58 | | | | |
| Columbus | | 4 | | | | |
| Coon Rapids | | 188 | | | | |
| Corcoran | | 19 | | | | |
| Cottage Grove | 12/1/2010 | 118 | | | | |
| Credit River Township | | | | | | |
| Crystal | | 104 | | ReNae Bowman | | |
| Dahlgren Township | | | | | | |
| Dayton | | 11 | | | | |
| Deephaven | | 14 | | | | |
| Dellwood | | 1 | | | | |
| Denmark Township | | | | | | |
| Douglas | | 1 | | | | |
| Eagan | 8/17/2010 | 405 | | Mike Maguire | 7% by 2012 (1990 Baseline) | |
| East Bethel | | 9 | | | | |
| Eden Prairie | 6/14/2011 | 224 | | Nancy Tyra-Lukens | 7% by 2012 (1990 Baseline) | |
| Edina | 1/18/2011 | 503 | | James Hovland | 7% by 2012 (1990 Baseline) | 2007 |
| Elko New Market | | 2 | | | | |
| Empire Township | | | | | | |
| Eureka Township | | | | | | |
| Excelsior | | 30 | | | | |
| Falcon Heights | 1/12/2011 | 79 | 2009 | Peter Lindstrom | 7% by 2012 (1990 Baseline) | |
| Farmington | 5/2/2011 | 125 | | | | |
| Forest Lake | | 89 | | | | |
| Fridley | | 199 | | | | |
| Gem Lake | | 2 | | | | |
| Golden Valley | | 167 | | Linda Loomis | 7% by 2012 (1990 Baseline) | 2009 |
| Grant | | 5 | | | | |
| Greenfield | | 5 | | | | |
| Greenvale | | | | | | |
| Greenvale Township | | | | | | |
| Greenwood | | 3 | | | | |

| | | | | | | |
|----------------------------|------------|-----|---------------|------------------|----------------------------|------|
| Grey Cloud Island Township | | | | | | |
| Ham Lake | | 32 | | | | |
| Hamburg | | 3 | | | | |
| Hampton | | 4 | | | | |
| Hampton Township | | | | | | |
| Hancock | | 2 | | | | |
| Hassan | | | | | | |
| Hastings | | 67 | | | | |
| Helena Township | | | | | | |
| Hilltop | | | | | | |
| Hollywood Township | | | | | | |
| Hopkins | 11/1/2010 | 118 | | | | |
| Hugo | | 57 | | | | |
| Independence | | 12 | | | | |
| Inver Grove Heights | | 233 | | George Tourville | 7% by 2012 (1990 Baseline) | |
| Jackson Township | | 9 | | | | |
| Jordan | | 22 | | | | |
| Lake Elmo | 5/14/2012 | 38 | | | | |
| Lake St. Croix Beach | | 1 | | | | |
| Lakeland | | 30 | | | | |
| Lakeland Shores | | | | | | |
| Laketown Township | | | | | | |
| Lakeville | | 185 | | | | |
| Landfall | | 2 | | | | |
| Lauderdale | | 12 | | | | |
| Lexington | | 9 | | | | |
| Lilydale | | 3 | | | | |
| Lino Lakes | | 58 | | | | |
| Linwood Township | | | | | | |
| Little Canada | | 33 | | | | |
| Long Lake | | 41 | | | | |
| Loretto | | 20 | | | | |
| Louisville Township | | | | | | |
| Mahtomedi | 10/5/2010 | 58 | | Judson Marshall | 7% by 2012 (1990 Baseline) | 2008 |
| Maple Grove | | 224 | | | | |
| Maple Plain | | 45 | | | | |
| Maplewood | 12/13/2010 | 134 | Prior to 2009 | Diana Longrie | 7% by 2012 (1990 Baseline) | |
| Marine on St. Croix | | 10 | | | | |
| Marshan Township | | | | | | |
| May Township | | | | | | |
| Mayer | | 6 | | | | |

| | | | | | | |
|------------------------|------------|------|------|----------------|--|------|
| Medicine Lake | | 1 | | | | |
| Medina | | 16 | | | | |
| Mendota | | 4 | | | | |
| Mendota Heights | | 80 | | | | |
| Miesville | | 1 | | | | |
| Minneapolis | | 9519 | | R.T. Rybak | 12% by 2012; 20% by 2020; 80% by 2050 (2006 Baseline) | 1992 |
| Minnetonka | | 305 | | Janis Callison | 7% by 2012 (1990 Baseline) | |
| Minnetonka Beach | | 1 | | | | |
| Minnetrista | | 8 | | | | |
| Mound | | 41 | | | | |
| Mounds View | | 64 | | | | |
| New Brighton | | 146 | | | | |
| New Germany | | | | | | |
| New Hope | | 86 | | | | |
| New Market Township | | | | | | |
| New Trier | | | | | | |
| Newport | | 19 | | | | |
| Nininger Township | | | | | | |
| North Oaks | | 29 | | | | |
| North St. Paul | 7/3/2012 | 32 | | | | |
| Norwood Young America | | 3 | | | | |
| Nowthen | | | | | | |
| Oak Grove | | 16 | | | | |
| Oak Park Heights | | 2 | | David Beudet | 7% by 2012 (1990 Baseline) | |
| Oakdale | 3/8/2011 | 188 | 2009 | | | 2008 |
| Orono | | 34 | | | | |
| Osseo | | 26 | | | | |
| Pine Springs | | 2 | | | | |
| Plymouth | | 340 | | | | |
| Prior Lake | | 494 | | | | |
| Ramsey | | 131 | | | | |
| Randolph | | 5 | | | | |
| Randolph Township | | | | | | |
| Ravenna Township | | | | | | |
| Richfield | 1/10/2012 | 240 | | | | |
| Robbinsdale | | 129 | | | | |
| Rogers | 12/13/2011 | 27 | | | | |
| Rosemount | 12/20/2011 | 1454 | | William Droste | 7% by 2012 (1990 Baseline) | |
| Roseville | | 293 | 2009 | Craig Klausung | 7% by 2012 (1990 Baseline) | 2006 |
| San Francisco Township | | | | | | |
| Sand Creek Township | | | | | | |

| | | | | | | |
|------------------------|------------|------|---------------|----------------|----------------------------|------|
| Savage | | 148 | | | | |
| Scandia | | 9 | | | | |
| Sciota Township | | | | | | |
| Shakopee | | 129 | | | | |
| Shoreview | | 146 | | | | |
| Shorewood | 6/27/2011 | 34 | | | | |
| South St. Paul | | 65 | | | | |
| Spring Lake Park | | 14 | | | | |
| Spring Lake Township | | | | | | |
| Spring Park | | 1 | | | | |
| St. Anthony | 2/8/2011 | 27 | | | | |
| St. Bonifacious | | 9 | | | | |
| St. Francis | | 13 | | | | |
| St. Lawrence Township | | | | | | |
| St. Louis Park | 6/4/2012 | 476 | | | | |
| St. Marys Point | | | | | | |
| St. Paul | | 2806 | Prior to 2009 | Chris Coleman | 7% by 2012 (1990 Baseline) | 1992 |
| St. Paul Park | | 18 | | | | |
| Stillwater | | 225 | | | | |
| Stillwater Township | | | | | | |
| Sunfish Lake | | 9 | | Molly Park | 7% by 2012 (1990 Baseline) | |
| Tonka Bay | | 6 | | | | |
| Vadnais Heights | | 48 | | | | |
| Vermillion | | | | | | |
| Vermillion Township | | | | | | |
| Victoria | 1/9/2012 | 23 | | | | |
| Waconia | | 19 | | | | |
| Waconia Township | | | | | | |
| Waterford Township | | | | | | |
| Watertown | | 12 | | | | |
| Watertown Township | | | | | | |
| Wayzata | | 49 | | | | |
| West Lakeland Township | | | | | | |
| West St. Paul | | 64 | | | | |
| White Bear Lake | 12/13/2011 | 142 | | Paul Auger | 7% by 2012 (1990 Baseline) | |
| White Bear Township | | | | | | |
| Willernie | | 2 | | | | |
| Woodbury | | 257 | | William Hargis | 7% by 2012 (1990 Baseline) | 2011 |
| Woodland | | | | | | |
| Young America Township | | 3 | | | | |
| Totals: 183 | 22 | 133 | 6 | 21 | 20 | 8 |

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