

MITIGATING CLIMATE CHANGE AT THE MUNICIPAL SCALE  
AMERICAN URBAN PLANNING AT A CROSSROADS

by

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I dedicate this dissertation to Spice and The Guys.

July 15, 2011

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<sup>1</sup> "I said *SETS*, not *sex*!"

ABSTRACT

MITIGATING CLIMATE CHANGE AT THE MUNICIPAL SCALE:  
AMERICAN URBAN PLANNING AT A CROSSROADS

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The failure of international negotiations toward a successor agreement to the Kyoto Protocol to limit global greenhouse gas emissions has highlighted not only the problematic associated with a global agreement on such a scientifically and politically complex issue, but also the importance of sub-national action in lieu of such an agreement. This is especially true in the United States where any national climate protection framework seems unlikely in the foreseeable future. In the absence of any such policy leadership from Washington, it is increasingly falling to states, regional organizations, and municipalities to craft emissions reduction strategies that will contribute meaningfully to global climate protection. In support of these efforts, a municipal climate protection movement has emerged, spearheaded largely by nonprofit advocacy groups, attempting to motivate and coordinate action in communities and regions across the country. However, even these efforts have proven to be sporadic, halting, and economically contingent.

The Dallas/Fort Worth region is representative of many metropolitan areas across the country, especially those in the nation's South and West, in which planners have a vital role to play in promoting and securing a climate protection agenda. As one of the fastest growing metropolitan regions in the country, the Dallas/Fort Worth Metroplex is an excellent crucible in which to study prospects for meaningful local and regional action toward mitigating greenhouse gas emissions. Characterized by sprawling, low-density development, thoroughly dependent on the automobile for transportation, and facing a future of increasingly tenuous fresh water supplies as its climate becomes even drier and hotter, the region's population is expected to double over the next 20 years. It comprises a large number of politically independent, fractious, and economically conservative municipalities, suffers from weak regional policy coordination, and is hostage to ingrained development practices that continue to thwart cooperation toward mitigating greenhouse gas emissions and compromise local and regional sustainability in the face of impacts deriving from global climate change. If that weren't enough, it stands in one of the most politically conservative areas of one of the most politically conservative states in the country.

However, major political and institutional forces militate against local planners making meaningful progress toward greenhouse gas emissions reductions in their communities. These forces can be understood through the analytical lens of *ecological modernization*, a dominant discourse in U.S. environmental affairs that emphasizes the possibilities for win-win resolutions of the struggle between economic growth and environmental preservation through the application of technological innovation in a market economy. Both the premises and criticisms of ecological modernization discourse can be used to analyze the promises and

challenges facing local and regional planning initiatives in North Texas to address the climate protection agenda.

Dominance of the ecological modernization discourse at local and regional scales is examined in a variety of artifacts, including institutional and municipal planning documents and proclamations; regional planning initiatives; national survey data; and transcripts of interviews with area politicians, administrators, and planners. In addition, results from recently completed national survey of public sector planners are introduced to explore professional and community attitudes and initiatives toward climate protection. This analysis of the challenges facing its urban planners suggests a number of transformative moves that the American urban planning institution must take to motivate real progress toward meaningful climate change mitigation.

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## CHAPTER 1

### INTRODUCTION

David Harvey observed that “[the] long history of urbanization is, after all, one of the most significant of all the processes of environmental modification that have occurred throughout recent world history ... And environmental issues have emerged that are wholly specific to the ecologies our urbanizing activities have created (1996, p. 186)”. The twenty-first century is well and truly underway and many of the consequences of this environmental modification are now emerging. While over a century of modernization has brought great wealth and technological and social advancement, economic growth has been—and continues to be—inequitably distributed. “[E]conomic growth is unsustainable in poor countries, partly because it is sustainable in wealthy countries. Countries that export resources are subsidizing the consumption of importing countries” (UNEP, 2007). The industrialization that has driven this advancement has resulted in levels of pollution and natural despoliation that are threatening to roll back many of those gains.

Growing evidence indicates that the burden of environmental change is falling far from the greatest consumers of environmental resources, who experience the benefits of development. Often, people living in poverty in the developing world, suffer the negative effects of environmental degradation. Furthermore, costs of environmental degradation will be experienced by humankind in future generations. Profound ethical questions are raised when benefits are extracted from the environment by those who do not bear the burden. (UNEP, 2007, p. 11)

In the globalization process capital pits cities against one another in a globally contested game of zero-sum investment, production, and consumption. National economic health waxes and wanes on the whims of investors seeking greater returns

from lower costs of production. Labor, on which capitalist production and consumption depend, is located increasingly in urban areas. By 2008, over fifty-percent of the world's population was living in cities and metropolitan areas. By 2050, that proportion is expected to exceed seventy-percent (United Nations Human Settlements Program [UN HABITAT], 2009).

Still more problematic are local consumption and development choices that bear negative non-local consequences. From an environmental perspective, locally "rational" development choices can have deleterious effects at larger scales. Cement kilns in one community can plague downwind communities with air pollution over which they have no control. Even legally permitted dumping of treated wastewater from hydraulic fracturing operations can sentence downstream communities to polluted drinking water.

It is tragic that cities that now compete globally for investment capital and a "creative" working class are so often blind to the global environmental ramifications of local development decisions. In this post-industrial world, regardless of jurisdictional boundaries, local decisions have global consequences, both economic and environmental. The zero-sum, devil-take-the-hindmost attitude that drives local economic development initiatives also informs decisions of environmental consequence. These local decisions also generate environmental consequences that are widely and systematically rationalized or ignored in the localities where they are most controllable, a striking example of what German sociologist Ulrich Beck calls "organized irresponsibility" (Beck, 1995, pp. 63-65). Society has attempted to normalize identifiable, first-order risks associated with our technological systems by applying rational cost-benefit analysis and "polluter-pays" blame attribution.

Unfortunately, unattributed, residual—low-to-negligible probability and unacceptably high impact—risks are swept under the same normalization carpet.

Anthropogenic global warming—the warming of the Earth’s atmosphere due to greenhouse gas pollution by human agency—and the threats posed by resulting global climate change number among these residual risks and, ironically, derive from the same sources that have fueled global economic development since the Industrial Revolution. These include the sometimes maniacal pursuit of economic growth at all costs; the predication of industrialization and transportation on non-renewable and polluting fossil fuel sources; the rise of global supply chains that require the expenditure of significant amounts of energy and facilitate runaway consumption; and a reliance on complex technologies whose long-term negative consequences rarely are immediately apparent. These trends come laden with truly existential risks, many of which have become apparent only in the past quarter-century. “Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level” (Intergovernmental Panel on Climate Change [IPCC], 2007, p. 2). Unless these trends are halted or reversed:

- Hundreds of millions of people will experience increased freshwater stress due to changes in precipitation and drought patterns and salinization of freshwater supplies due to seawater infiltration.
- Species extinctions will accelerate around the globe.
- Millions of people, especially in low-lying coastal and island area, will experience flooding and displacement due to rising sea levels
- The world’s populations, especially in developing countries, will experience increased morbidity and mortality due to heat waves, floods, droughts, and the changed distribution of some disease vectors. (IPCC, 2007, p. 10)

Dominant social, political, and economic paradigms render problematic the sort of significant social and individual behavioral modifications that are essential to



mitigate the worst effects of global climate change. Modern instrumental paradigms require that environmental strategies be based on technological innovation, efficiency improvements, and win-win solutions that continue to privilege economic growth over ecological sustainability. None of these strategies necessarily entails—and collectively they tend to preclude—the sort of fundamental socioeconomic change that is necessary to dramatically and permanently reduce greenhouse gas emissions. Taken collectively, in fact, the paradigms that dominate contemporary production and consumption lead humankind to pursue a set of mitigation strategies that cannot produce the necessary GHG emissions reductions.

The practice of urban planning increasingly facilitates and legitimizes the global competition among cities. In countries where planning is well institutionalized at the state level and integrated at small scales, the worst effects of increasingly mobile capital have been ameliorated by balancing economic development with clearly stated and broadly accepted social objectives. However, in the United States, where no national, and few state, frameworks for urban or regional planning exist, planning is widely fractured along local jurisdictional lines. As a result, one municipality's economic development gain can be another's loss. Success at the local scale can aggregate into regional or larger scale dysfunction.

### 1.1 The challenge of climate change for American urban planning

Modernist planning emerged in the late nineteenth century in part to ameliorate the “negative externalities of industrialization and urbanization” (UN HABITAT, 2010, p. 49). It adopted scientific methods to document, codify, and manage the complexity of rapidly growing cities and regions.

Modernist planning was a prescriptive undertaking to impose order on urban space according to any number of utopian visions and political ideologies. Early in

the twentieth century the European continent embraced orderly and geometric urban designs of Le Corbusier and Howard, while American planners championed urban visions of Burnham and Olmstead. Following World War II, though, expansionist Americans were—and to this day continue to be—smitten with the sprawling suburban visions of Frank Lloyd Wright, longing for Jeffersonian ruralism as an antidote to “squalid” urbanism. Europe built up while, with notable exceptions, America built out. Europe built efficient urban and interurban transportation systems; America built the Interstate Highway System. European urban centers became vital hubs about which economic and social life revolved; much of the American urban core, increasingly abandoned by commerce and the moneyed elite, became prisons for the underclass.

In the first decade of the twenty-first century, as the shine is beginning to return to many urban centers, these polar characterizations may no longer hold as rigidly as once might have. However, in light of automobile-induced congestion, pollution, and increasingly tenuous supplies of the oil that makes their dominance possible, the implications of planning decisions made in the mid-twentieth century are becoming increasingly evident. While cities have contended with local and regional air and water pollution for over a quarter century, the *global* and *multigenerational* ramifications of low-density, auto-dominant local development are coming to the fore in policy discussions.

Nearly a century ago planning transformed the city from the industrial wasteland it had become into a vibrant crossroads of American life. However, implicit in the spatial planning and land use regulation responsible for that transformation are the politically mediated spatial and temporal boundaries that externalize associated costs and damages. Local responsibility for community development and

welfare often translate into organized environmental irresponsibility (Beck, 1995) that transcends jurisdictional and generational boundaries.

The recent increase in urban planning's attention to climate change research, education, and advocacy might seem to imply a significant commitment by the profession to a meaningful climate protection agenda. Over the past three years, the American Planning Association, the representative body of the majority of American planners, has formalized a climate change policy and generated a significant amount of material to support planners in their climate protection efforts. However, as argued in this dissertation, there is a considerable gap between APA's commitment to climate change activism and that evidenced at the local level.

Within the scope of its stated mission—to provide “leadership in the development of vital communities by advocating excellence in community planning, promoting education and citizen empowerment, and providing the tools and support necessary to meet the challenges of growth and change”<sup>2</sup>—the profession might seem to be making significant progress in addressing anthropogenic global warming and climate that threaten American and international communities. Unfortunately, notwithstanding examples to the contrary, the link between this leadership and local planning practice remains tenuous, at best. As will be demonstrated in Chapter 4, a significant proportion of planning community does not share and participate in the commitment demonstrated by the profession's institutional leadership.

Its strong commitment to sustainability and, more recently, climate protection agendas, should position the American planning profession as a major force in facilitating urban climate action planning. However, in spite of the policy advocacy and research performed by its leading professional and academic organizations,

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<sup>2</sup> American Planning Association Mission and Vision. Retrieved May 1, 2011, from <http://www.planning.org/apaatag/mission.htm>

significant political and institutional factors militate against local planners making meaningful progress toward greenhouse gas emissions reductions in their communities. The fundamental difficulty derives from the very lens through which planners currently view the problem. Captured by a commitment to economic growth, technological remediation, and a rejection of the idea of a monolithic public interest, few in the planning profession today possess the wherewithal which to engage the climate problem in the manner necessary for municipalities to decisively address the challenges posed by climate change.

The evolutionary trace of institutional planning in the United States betrays its rejection of its utopian heritage and its increasing complicity in environmental challenges that plague our society today. The injection of federal funding for badly needed housing following World War II not only greatly increased the demand for community planning but also compromised the independence of its vision for urban America and entangled it in the politics of urban space. Ironically, the wider acceptance of the need for urban planning in post-war America sowed the seeds for its marginalization. As it moved closer to the nexus of urban administration, it increasingly sacrificed the independent creativity that was its greatest strength.

The shift to staff status, and hence the politicization of the planner's role, did little or nothing to solve the inefficacy problem that had spawned the change in the first place. Indeed, the more lasting effects were those of rendering the planner's role suspect, of making that role subservient to larger political imperatives, and hence of diminishing the profession's aura of independent creativity. (Brooks, 1988, p. 243)

What once was an independent and creative vision for urban space became politically and economically contingent.

Today most American cities, fearful of economic decline and stagnation, afford the large-scale developer a red carpet reception. Planners are valued primarily to the extent that they 'facilitate' the development process. Attempts to inject other values into that process—values of justice and equity, of fairness to all groups, of

conservation, of aesthetics—are tolerated only until such values get in the way of private entrepreneurship. Then planning becomes dispensable. (Brooks, 1988, p. 246)

Its role in the development and reproduction of sprawling, polluting, unsustainable agglomerations of production and consumption are central to planning's complicity in the despoliation of Nature. In his analysis of urban sprawl, climate change, and ecological modernization, Gonzalez observes that what appears to be an expression of consumer preferences for single-family-detached dwellings in remote suburbia is in actuality an engine manufactured for economic growth in the United States.

Sprawling urban communities have been an important source of growth in global economic demand—pushing up consumption of such commodities as land, gasoline, electricity, automobiles and household appliances. While increasing effective global demand, urban sprawl has had the unintended consequence of significantly contributing to climate change. (Gonzalez, 2005, p. 357-358)

The evolution of American planning from utopian visionary of sustainable urban life in the first half of the twentieth century to bureaucratic facilitator of at-all-costs economic growth in the last half tracks the globalization of capital and the natural environment. In its present institutional form, the planning profession facilitates the competition for global capital among cities separated by jurisdictional boundaries and those separated by time zones and oceans. In countries where planning is well institutionalized at the state level and integrated at smaller scales (e.g., in the United Kingdom, Scandinavia, and the Netherlands), the worst effects of increasingly mobile capital can be ameliorated by balancing economic development with clearly stated and broadly accepted social objectives. However, in the United States, where no national, and few state, frameworks for urban or regional planning exist, planning is widely fractured along local jurisdictional lines. As a result, one

municipality's economic development gain can be another's loss. Success at the local scale can aggregate into regional or larger scale dysfunction.

### 1.2 Purpose of this dissertation

The relationship between the built and natural environments has, of course, always been an essential component of planning. Now, planners are thinking about how that relationship affects climate change.

Paul Farmer, APA Director and CEO<sup>3</sup>

At this post-modern juncture anthropogenic climate change and its consequences present urban planning with its greatest challenge. Cornered by the political economy in which it practices, the political context in which it generally operates, and the very development choices it has made over the past century, contemporary American urban planning lacks the capacity to meaningfully contribute to the reduction of urban greenhouse gas emissions that are forcing global climate change.

This dissertation applies ecological modernization theory to planning initiatives at the national, regional, and local scales to highlight and explain these capacity constraints. Casting American climate change planning in this frame enables a comparison between explicit climate change mitigation planning and more widely embraced—but, arguably, less effective—sustainable development planning. It examines:

- implicit and explicit assumptions that dominate municipal planning for climate change;
- the dissonance between the commitment of institutional planning and that of municipal planners to mitigating climate change at the local level;
- specific constraints under which planners operate when addressing climate change in their communities; and

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<sup>3</sup> Taken from a membership solicitation letter announcing publication of the an issue of Planning magazine dedicated to climate change; received by Jeff Howard on September 1, 2007.

- how planning might be transformed to accommodate a more aggressive and potent climate protection agenda at all geographic scales.

This research will help American planning practitioners and academics frame more effective local, regional, and institutional action to mitigate climate change. The breadth of literature examined in making the case for planning's limited climate change mitigation capacity can provide planners not only with a sense of the dimensionality and complexity of the problem, but also with a primer of fundamental pathways through which they can more aggressively and effectively mitigate climate change in their communities.

### 1.3 Analytical methodology

This dissertation applies the tenets and critiques of ecological modernization theory to a) analyze contemporary urban planning theory and practice; b) identify gaps or points of contention in dominant planning paradigms; and c) propose alternative or enhanced frameworks that might better address the identified shortcomings. As a result this dissertation is largely theoretical in approach and execution; it relies on climate science, urban planning, and environmental policy literature.

I augment the theoretical analysis with a variety of empirical data that span the national, regional, and local geographic scales in the climate change planning.

These data include:

- results from a just-completed national survey of U.S. planners, academics, and allied professionals;
- transcripts from a roundtable discussion of Texas mayors committed to local climate protection planning;
- documentation produced in the course of the Vision North Texas long-term growth planning project;
- transcripts from a roundtable of municipal planning directors from communities in the North Texas region; and

- transcripts from a series of interviews with politicians, administrators, planners, and activists from Arlington, Texas.

These data are used to demonstrate the salience of ecological modernization as a theoretical lens for examining municipal climate protection planning in the United States. They are introduced in greater detail in the “Organization” section.

#### 1.4 Organization

Following this introduction, Chapter 2 provides a high-level review of climate change science and an overview of current policy initiatives at international and U.S. federal, state, regional, and local scales. This discussion sketches the context in which contemporary urban planning operates in the United States and the extent to which it has engaged with climate change issues.

Chapter 3 presents an analytical framework—ecological modernization—to assess the capacity of American urban planning to make globally meaningful—and urgently needed—contributions to mitigating climate change. Arising in the 1980s as a policy narrative that accommodated continued economic growth while positively addressing the environmental repercussions of that growth, ecological modernization is a conceptual lens that illuminates and helps explain the depressingly circumscribed character of planning’s efforts to mitigate climate change.

I compare ecological modernization with sustainable development, a discourse widely embraced by the urban planning community and often employed as a panacea for all manner of urban ailments, including climate change. In addition, it is often used as a more politically palatable alternative to an explicit climate change references. I will demonstrate that conflating climate change with sustainable development is problematic, at best. At worst, a reliance on sustainable development to achieve unstated climate change mitigation goals can result uncoordinated and sub-optimally effective mitigation initiatives. I discuss *weak* and *strong* forms of both



EM and sustainable development and examine the extent to which either is effective in addressing global climate change.

Climate change is a uniquely urban problem. The urban environment is not only a primary contributor to global climate change, but also the stage for many of its consequences. The manner in which urban planning has manipulated urban form and function in the United States renders it complicit in creating the present global climate crisis and leaves it institutionally flat-footed in responding to that crisis. Critiques of EM theory not only indicate shortcomings in planning's approach to climate protection, but also ways in which it might be transformed to more aggressively and effectively contribute to climate change mitigation.

Chapter 4 grounds the theoretical arguments made in Chapter 3 in planning practice at national, regional, and local scales. I present results from a new, national survey of planners, academics, students, and other urban professionals that explores their attitudes and actions toward climate change mitigation. These data provide a geographically and professionally articulated view of planners' attitudes toward climate protection and highlights the difference between national and local commitments to climate change planning.

I provide a brief overview of the results of a recently completed multi-year, North Texas growth-planning project. Its initial reticence to explicitly address the regional challenges posed by climate change, followed by the introduction of the topic in the final analytic stages reveals an enduring ambivalence toward an aggressive climate protection agenda. It eschews the type of development that has left the region as one of the most sprawling and congested in the United States and adopts the language of sustainable development and growth practices. However, its

prescriptions reflect the EM tenets of voluntary regulation and economic-environmental co-benefits.

I examine transcripts from a roundtable of North Texas urban planners convened to discuss the climate change planning in their respective cities and the challenges they face in promoting those agendas. Data from these discussions indicate that conflation of sustainable development and climate protection dominates the environmental discourse throughout the region and confirms the centrality of economic growth to environmental decision-making.

At the local scale, I present the results from a series of in-depth interviews with politicians, administrators, and planners from Arlington, the third-largest city in the Dallas/Fort Worth Metroplex. Focused on the state of climate change planning in Arlington, these interviews confirm that an explicit embrace of climate change remains unpalatable in this politically conservative city; that once again, city leaders hope that mere sustainable development will provide climate change mitigation benefits; and that planners are not particularly engaged in conversation regarding the role of Arlington in contributing to global climate change or its impacts on the city.

Applying the theoretical frame established in Chapter 2 in the context of the science and policy summaries provided in Chapter 3, Chapter 5 contains a focused analysis of the empirical data presented and discussed in Chapter 4. I identify in each of the sets of data core tenets of ecological modernization theory and discuss how these unspoken assumptions constrain the range of policies and initiatives available to planners in addressing climate change in their communities. I explore links between EM theory and two postmodern theoretical frames: post-normal science (Funtowicz & Ravetz, 1993) and risk society (Beck, 1992). These discussions illuminate some of the constraints under which contemporary American planners

approach climate planning and suggest ways in which the planning paradigm might be transformed in order to render more aggressive climate protection possible.

Chapter 6 summarizes the dissertation's main arguments and conclusions, suggests strategies for transforming American planning into a more competent protector of the climate, and outlines areas for future research.

### 1.5 Summary of findings

Ecological modernization theory, in general, and its weak form, in particular, is extremely effective in analyzing planning's capacity to advocate and facilitate effective climate change mitigation policies and programs in the United States. Viewed through this lens, the constraints that fetter institutional and individual attempts at climate action planning become painfully clear. This clarity also suggests ways in which planners and their representative organizations can—and must—be more effective in these efforts.

This analysis suggests that urban planning must begin to practice outside political straightjacket that presently constrains its ability to advocate for the aggressive mitigation measures that it knows are necessary to prevent the worst consequences of anthropogenically forced climate change. It must directly engage the public far more actively, educating on the local consequences of climate change, and encouraging the participation of those outside the political or economic elite in formulating locally and regionally appropriate mitigation initiatives. While recognizing that technology and efficiency will play an important role in a meaningful climate protection agenda, planning must argue more forcefully and publicly for a fundamental change in consumption behaviors that are essential to society's evolution to more sustainable energy, food, and product production.

## CHAPTER 2

### CLIMATE CHANGE SCIENCE AND MITIGATION POLICY

In order fully appreciate the impediments that face American urban planning in responding to climate change, one must first understand the present state of climate change science and policy. Since invading the public consciousness and debate in the late 1980s (Hansen, 1988), climate science has advanced considerably toward providing policymakers at all scales with the objective understanding of how human agency is influencing changes in Earth's biosphere. Periodic assessments of the evolving state of relevant sciences by the IPCC have resulted in an increasing certainty of the scope and magnitude of this impact.

While representative of a broad international scientific consensus, the IPCC assessments are not intended as advocacy for policy options for mitigating or adapting to anthropogenic climate change. The IPCC has indicated that—but not how—greenhouse gas emissions must be substantially and quickly reduced in order to avoid the most cataclysmic of possible climate change outcomes. It has concluded that climate change due to human agency is already occurring and will continue to occur due to past greenhouse gas emissions, and that nations, states, and municipalities must take immediate action to prepare for those inevitable changes.

It remains a political task, though, to determine what actions should be taken at any particular scale. The mitigation of future anthropogenic greenhouse gas emissions and adaptation to the effects of inevitable climate change will surely require a realignment of economic and social priorities, but because regional contributions and impacts differ, so, too, will the nature of the mitigative and

adaptive responses. Furthermore, mitigation and adaptation are mutually dependent, at least at the global scale. That is to say that more vigorous mitigation will lessen the extent to which adaptive measure must be pursued. Conversely, the type of adaptation undertaken may have an effect on the extent of mitigation necessary to avoid particularly severe climate change (Howard, 2009).

This section provides an overview of the scientific research upon which international scientific consensus on anthropogenic climate change is based and a brief assessment of the state of climate policy at international, U.S., and local scales.

### 2.1 Climate change science

The most recent IPCC assessment of climate change science (2007a) has confirmed beyond reasonable doubt humankind's role in the warming of our atmosphere and driving of global climate change. The production of various greenhouse gases—primarily carbon dioxide—as a consequence of human industrial development is forcing the warming of our biosphere with measurable effect, and evidence is now emerging that links recent severe weather events to this warming (Pall et al., 2011; Min et al., 2011; Schiermeier, 2011).

Assessments of the scientific evidence have evolved from isolated descriptions of the scientific phenomena and their consequences (e.g., Hansen et al., 1988) to robust reviews of climate science that in no small detail paint a terrifying picture of Earth's ecosystems and the implications for human life a century or less from now. As the Earth's atmosphere has warmed, sea levels risen, oceans acidified, and ice caps melted, the warnings and pleas for aggressive mitigation action have become increasingly blunt and urgent (Hansen, 1988; IPCC, 1995; IPCC 1997; IPCC 2001; IPCC 2007a; Solomon & Friedlingstein, 2009).

Research into the history of Earth climate indicates that epochal tipping points characterize transitions between semi-stable, but very different, equilibrium phases (Gleick, 1987). The transition between these phases may be sufficiently rapid that human processes and ingenuity will be unable to adapt before being overwhelmed by them. As global carbon dioxide emissions race past 390 parts per million, this type of abrupt climate change precipitated by human forcing of global warming is now inevitable (Alley et al., 2003; Overpeck & Cole, 2006).<sup>4</sup> A widely anticipated melting of the Greenland ice cap or collapse of Antarctic ice shelves would in the rapid rise in average sea levels to which humans could not adapt. A slowing/stalling of the thermohaline current would cause rapid cooling in Northern Europe and disruption of global ocean currents and weather patterns. Regional shifts in rainfall and drought patterns could occur so quickly that current water management and planning processes could not adapt.

The IPCC has compiled four climate science assessment reports (IPCC, 1995; IPCC 1997; IPCC 2001; IPCC 2007a) that provide the global policy community with increasingly stark evidence that Earth's climate is changing as a direct result of human interference in radiative forcing mechanisms resulting in the warming of the global atmosphere. In its *Fourth Assessment Report* the IPCC reported that global sea level rise and significant temperature, precipitation, drought, and storm events in the mid- to late-twenty-first century are at least as likely, if not more, than reported in its *Third Assessment Report*. It specifically noted:

Cities that currently experience heat waves are expected to be further challenged by an increased number, intensity and duration of heat waves during the course of the century, with potential for adverse health impacts. Coastal communities and habitats will be increasingly

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<sup>4</sup> A concentration of carbon dioxide of greater than 450 parts per million (or even less) – the current level is 390 ppm and rising – may define one of those phase transitions that causes abrupt, as opposed to gradual, climate change.

stressed by climate change impacts interacting with development and pollution.” (IPCC, 2007a, p. 11)

Scientists continue to measure the progress of climate change and anthropogenic contributions to global warming and describe an inertia that derives not only from the dominant global political economy from which they derive, but also due the long-term persistence of greenhouse gases in Earth’s atmosphere. Were all human-caused greenhouse gas emissions eliminated tomorrow, those gases already emitted would remain in our atmosphere for hundreds of years to come and would continue to force further global warming and climate change to which humankind must adapt (Solomon, Plattner, Knutti, & Friedlingstein, 2009). Further, the climatic changes we presently observe are already changing the evolutionary trajectory of many of the ecological processes and resources on which human habitat and welfare depend. Scientists have documented impacts to biodiversity (Pimm, 2009) and human health (Gamble, Ebi, Grambsch, Sussman, & Wilbanks, 2008; Costello et al., 2009) that are not easily, if at all, reversible.

A significant portion of climate science has focused on climate change resulting from the incremental rise of greenhouse gas concentrations in Earth’s atmosphere. This *continuous* anthropogenic forcing results in gradual climate change indicators of which include increasing average global temperature, rising sea levels, and growing ocean acidity (IPCC, 2007a). Consistent with the normal, modernist scientific paradigm, the assumption scientists and policy-makers make in addressing continuous climate change is that any change in established systems is, by definition, incremental. Tomorrow will be very much like today, only a little warmer, and changes in Earth’s climate—and their impacts—will be correspondingly small. Further, changes that do occur are predictable and occur sufficiently slowly that

human technology and behavior can adapt fast enough to prevent the worst consequences of climate change.

However, scientists have long understood that Earth's climate is a complex, chaotic system, and that continuous climate change can precipitate abrupt and irreversible changes in Earth's climate and ecosystems to which human technologies, processes, and ingenuity cannot adapt. Scientists have confirmed that abrupt climate change has occurred in Earth's history (Overpeck & Cole, 2006) rendering the possibility of such future changes all the more real. Unfortunately, such processes are currently not captured in the current generation of general climate models (CCSP, 2008).

With the ironic subtitle, "Inevitable Surprises," a 2002 report from the National Academy of Sciences urged development of precautionary, "no-regrets" strategies to enable institutions not only to reduce vulnerability and increase adaptation capacity to abrupt climate change events, but also to enable more flexible institutional response to climate change in any form (National Research Council, 2002; also see Hulme, 2003).

The majority of climate science has been conducted and communicated at global—or at best, regional—scales with time horizons on the order of a century. As a result, there is a paucity of regionally- or locally-specific data that would help formulate policy at those scales.<sup>5</sup> While it is true that the general circulation models on which much of our knowledge of climate trends depends are improving in their abilities to address climate change at smaller geographic and temporal scales, the IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis

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<sup>5</sup> One of the predictable responses from the 2010 national survey results presented in Chapter 4 was planners' plaint that there is insufficient locally-relevant climate change data on which to base policy recommendations.



observed that there continues to be insufficient data on which to base sub-national (state, regional, and local) mitigation or adaptation strategies (Leary, Averty, Hewitson, Marengo, & Moss, 2007). In spite of these limitations, however, initiatives such as California's "Scenarios Project" demonstrate that states or other sub-national regions can utilize existing global climate change scenarios and data for local and regional sectoral impact assessments (Cayan, Luers, Franco, Hanemann, Croes, & Vine, 2008).

## 2.2 State of climate change policy

Global warming presents for the global community what very well may be an intractable problem. Its scientific and political complexity certainly defies straightforward resolution. Physical science research literature provides a significant portion of the objective basis upon which climate policy can be—and in much of the developed world is—formulated. However, climate change mitigation policy prescriptions are necessarily the product of scale-appropriate political negotiation and consensus.

### *2.2.1 International climate protection policy*

The 15th United Nations Framework Convention on Climate Change Conference of the Parties meeting in Copenhagen ended in December 2009 with no agreement among nations regarding a formal successor to the Kyoto Protocol for reducing greenhouse gas emissions. The Kyoto Protocol frames the international community's commitment to address the global warming threat in a timely and regionally sensitive manner. While negotiations continue among various nations over implementing the voluntary Copenhagen Accord (United Nations Framework Convention on Climate Change, 2009), the environmental community is immensely disappointed in—but not surprised by—the inability of developed countries to develop

a binding successor agreement (McKibben, 2009). In spite of progress in Cancun toward implementing voluntary greenhouse gas reduction measures and funding developing countries' adaptation efforts negotiated in Copenhagen, the persistent failure of a formal international agreement to succeed legally binding emissions reductions formalized in the Kyoto Protocol effectively denies the global community the opportunity to coordinate national climate protection initiatives while broadly and fairly distributing the burdens—and benefits—of those mitigation efforts. International failure at these negotiations means that it is even more important that *local* climate change mitigation policies and programs be systematic and vigorous.

In the absence of more effective international action, and cognizant of the big task ahead, alternative attempts at climate change governance and social action have emerged. These approaches recognize that international agreements—if implemented—provide only a partial means through which the mitigation of climate change can be directed, and in turn are reliant on actions in a variety of arenas and at different scales to be effectively implemented. (Bulkeley & Moser, 2007, p. 1)

Many countries—primarily those in Western Europe—have committed themselves to modifying their consumption-oriented economies in an attempt to reduce their greenhouse gas emissions to levels that the IPCC has indicated may protect world populations from the worst consequences of climate change. However, the world's major GHG emitters—China, the United States, and India—have yet to do so choosing voluntary conservation or techno-efficiency policies that do not compromise present economic growth priorities.

Among developing nations, China, India, and other emerging economic powers object to greenhouse gas emissions reduction schedules that would interfere with raising its standard of living—and conspicuous consumption—to match that of Western societies. Sustaining their present rates of economic growth will result in emissions volumes that will negate reductions achieved by Western European

economies (Li, 2009). Greenhouse gas emissions in China and India are expected to grow by 45 and 47 percent, respectively, by 2020 (Pew Center on Global Climate Change, 2011a). In nascent recognition of the damage its coal-fired growth is causing not only to its environment, but also to its prospects for future growth, China is investing heavily in alternative fuel sources as part of its economic growth strategy. All the while, the U.S. has yet to commit to any sort of climate protection agenda that might negatively impact its economic growth, relying on voluntary conservation measures, feeble incentives, and the chance that some future technology will rescue us from the worst impacts of a destabilized climate.

### *2.2.2 U.S. national climate protection policy*

In 1992, the United States, under then-President George H.W. Bush, signed the Framework Convention on Climate Change at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. In 1997, during the Clinton administration, though, the U.S. Senate voted 95-0 not to ratify the Kyoto Protocol, the treaty under which signatory countries would be required to reduce their carbon emissions by a negotiated amount.

In a June 2001 speech (Bush, 2001a), while admitting that human activity was contributing to global warming, President George W. Bush stated that the United States would not be bound by the emissions reduction targets contained in the Kyoto Protocol. A Cabinet-level assessment of U.S. climate change policy had highlighted that

The President has directed the Cabinet-level climate change working group to press forward and develop innovative approaches in accordance with several basic principles. These approaches should: (1) be consistent with the long-term goal of stabilizing greenhouse gas concentrations in the atmosphere; (2) be measured, as we learn more from science and build on it; (3) be flexible to adjust to new information and take advantage of new technology; (4) ensure continued economic growth and prosperity; (5) pursue market-based

incentives and spur technological innovation; and (6) be based on global participation, including developing countries. (Bush, 2001b, p. 1)

Americans continue to be blinded by the rhetorical gambits of climate change skeptics and the conservative media, and distracted by the state of the national economy and unemployment. With the conservative take-over of the House of Representatives in the 2010 mid-term elections, many climate change deniers have reassumed leadership roles on several important committees. Representative Joe “Smokey Joe” Barton,<sup>6</sup> senior Republican congressman on the U.S. House of Representatives Energy and Commerce committee, is one of the most vocal critics of climate legislation and proposals to regulate greenhouse gases. In the “Issues” section of his official House website Barton outlines his approach to climate change policy:<sup>7</sup>

Much research has been conducted by various organizations and universities on the subject of climate change, resulting in a wide range of conflicting conclusions. The Energy and Commerce Committee, of which I am the Ranking Member, is responsible for overseeing the debate on most environmental policy that moves through the House of Representatives. It is my belief that for the best possible policy to be written, all known facts must be considered as well as the impact of legislation.

Interestingly, Barton represents Texas’ 6th District, which includes portions of the North Central Texas planning area.

With support from the Obama White House and enlightened leadership from the Democratic caucus, the House of Representatives passed the “American Clean Energy and Security Act” by the in 2009 (Hitt & Power, 2009), putting a price on greenhouse gas emissions. The inability of the Senate to pass a corresponding piece of legislation—due to concerns for its impacts on domestic economic competitiveness

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<sup>6</sup> Rep. Joe Barton was dubbed “Smokey Joe” by the Dallas Morning News because of his long-time support of Big Oil and other polluting interests in his district and beyond.

<sup>7</sup> <http://joebarton.house.gov/issues.aspx?Section=52>

and job creation—doomed prospects national legislation mandating carbon emissions reductions, at least for the foreseeable future.

In October 1999<sup>8</sup> a group of private organizations petitioned the United States Environmental Protection Agency (EPA) to regulate under the Clean Air Act greenhouse gas emissions from new motor vehicles. In 2003 the then-EPA Administrator Carol Browner denied the petition on the grounds that the Clean Air Act did not give it the authority to do so, and that even if it did that the scientific consensus linking those emissions to global warming were not sufficiently compelling. The original petitioners, Massachusetts, and other state and local governments<sup>9</sup> appealed the decision to United States Court of Appeals for the District of Columbia Circuit, which ruled in favor of EPA. Writing for the Court, Justice John Stevens wrote, “EPA’s steadfast refusal to regulate greenhouse gas emissions presents a risk of harm to Massachusetts that is both ‘actual’ and ‘imminent’” (United State Supreme Court, 2007, p. 18).

Pursuant to the Court’s decision, in December 2009 EPA Administrator Lisa Jackson issued an Endangerment and Cause or Contribute findings for greenhouse gases under section 202(a) of the Clean Air Act (CAA).

The Administrator finds that six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations. The Administrator also finds that the combined emissions of these greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas air pollution that endangers public health and welfare under CAA section 202(a) (United States Environmental Protection Agency [EPA], 2009).

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<sup>8</sup> This brief historical review is adapted from the syllabus to the U.S. Supreme Court decision in *Massachusetts v. Environmental Protection Agency* (United States Supreme Court, 2007).

<sup>9</sup> California, Connecticut, Illinois, Maine, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, and Washington joined Massachusetts in the suit.

In 2009 the U.S. Chamber of Commerce requested that EPA conduct a legal review of its ruling—seen by some as a climate change equivalent to the Scopes trial—questioning the extent of EPA’s regulatory authority under the Clean Air Act (Burnham, 2009). The EPA rejected this request, but since then, numerous lawsuits have been filed against the EPA, its greenhouse gas endangerment finding, and related rulings (Bravender, 2010). A suit brought by the State of Texas is among these (Tresaugue, 2010).

Americans continue to rank global warming twentieth on a list of twenty pressing policy concerns (Pew Research Center for the People and the Press, 2010). A recent Gallup poll reported “the highest level of public skepticism about mainstream reporting on global warming seen in more than a decade of Gallup polling on the subject” (Saad, 2009, p. 1).

While it remains to be seen what these mitigative steps may be and when they may be implemented, it is clear that initiatives undertaken at the sub-national level will become even more important and necessary. Emissions reduction initiatives at the regional (multi-state), state, metro and local levels now assume new urgency in the wake of the failure of the Copenhagen negotiations and the conservative backlash against EPA’s proposed regulation of carbon dioxide under the Clean Air Act.

### *2.2.3 U.S. state climate protection policy*

The Pew Center on Global Climate Change documents seven state/regional cap-and-trade initiatives. These focus on the development of “systems to reduce carbon dioxide emissions from power plants, increase renewable energy generation, track renewable energy credits, and research and establish baselines for carbon sequestration” (2009). The report notes, “Regional initiatives can be more efficient

than programs at the state level, as they encompass a broader geographic area, eliminate duplication of work, and create more uniform regulatory environments” (ibid.). Predominant among these are:

- The Regional Greenhouse Gas Initiative<sup>10</sup> (ten partner states), the “first mandatory cap-and-trade program in the United States for carbon dioxide” (Regional Greenhouse Gas Initiative, 2009);
- The Western Climate Initiative,<sup>11</sup> an alliance of seven states and four Canadian provinces); and
- The Midwestern Greenhouse Gas Reduction Accord<sup>12</sup> comprising six states and one Canadian province.

According to the Center for Climate Strategies 30 states have completed climate plans; five states’ plans are in-progress; and 15 states have not started a climate plan.<sup>13</sup> As of March 2011, 31 states had completed greenhouse gas inventories.<sup>14</sup>

State climate plans differ in approach and substance reflecting political, economic, environmental, and social characteristics and preferences of the jurisdiction.

These state climate plans were the product of thousands of formal, intensive stakeholder deliberations, and represent what is politically achievable and institutionally feasible. Stakeholders were tasked not only to meet GHG reduction goals, but other objectives such as cost containment, economic growth and job creation, energy security, improved public health outcomes, equity issues, and a range of policy implementation feasibility constraints.

The results of state climate action plans in the U.S. have varied from state to state and over time, and include many similar and overlapping recommendations and findings. But the fundamental approaches to policy development and analysis have been consistent for the 16 states that retained the Center for Climate Strategies (CCS) for

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<sup>10</sup> Regional Greenhouse Gas Initiative at <http://www.rggi.org>.

<sup>11</sup> Western Climate Initiative at <http://www.westernclimateinitiative.org>.

<sup>12</sup> Midwestern Greenhouse Gas Reduction Accord at <http://www.midwesternaccord.org/>.

<sup>13</sup> State and Local Climate Blackboard. Retrieved July 30, 2011, from [http://www.climatestrategies.us/policy\\_tracker/state/index](http://www.climatestrategies.us/policy_tracker/state/index)

<sup>14</sup> U.S. EPA State and Local Climate and Energy Program: Greenhouse Gas Inventories. Retrieved April 3, 2011, from <http://www.epa.gov/statelocalclimate/state/state-examples/ghg-inventory.html>

facilitation and technical assistance, whose results are part of this study. Today, over 1,000 specific policy options have been designed and analyzed for these state action plans and converted to microeconomic or cost effectiveness analysis. (Peterson & Wennberg, 2010, p. 16)

As of March 2011, 31 states had completed greenhouse gas inventories.<sup>15</sup>

#### *2.2.4 U.S. municipal climate protection policy*

Compounded by the failure of national governance in the United States to develop a coherent, national climate strategy, bottom-up, municipality-based climate protection policy becomes all the more essential. While these largely uncoordinated local efforts may not aggregate to the scale of emissions reductions necessary in the short-term, they can constructively inform the national policy debate and provide a foundation for coordinated emissions reductions in future national climate change policy.

Many U.S. cities have made explicit commitments to climate protection, some more serious and some less so. ICLEI has enrolled more than 600 U.S. cities in its Cities for Climate Protection (CCP) program; more than 1,000 mayors have signed the U. S. Conference of Mayors (USCM) Climate Protection Agreement. Climate protection “poster children” among American municipalities include Portland (Oregon), Austin (Texas), Chicago, and New York. These communities have formally committed themselves to climate protection through a variety of planning and growth policies, development ordinances, and climate action. Results from these climate action planning efforts include:

- As a result of climate action planning begun in 1993, by 2008 Portland and surrounding Multnomah County had reduced their greenhouse gas emissions by one percent below 1990 levels (City of Portland, 2009).

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<sup>15</sup> U.S. EPA State and Local Climate and Energy Program: Greenhouse Gas Inventories. Retrieved April 3, 2011, from <http://www.epa.gov/statelocalclimate/state/state-examples/ghg-inventory.html>



- In 2006, New York City drafted PlaNYC, a comprehensive growth and environmental management plan that squarely addressed its responsibility for reducing its greenhouse gas emissions (City of New York, 2006). In 2007 it passed Local Law 55 committing the city to reduce its municipal carbon footprint 30% by 2017 and its citywide footprint by 30% by 2030 (City of New York, 2008).
- Through a broad range of municipal and community actions initiated by the *Chicago Climate Action Plan* in 2008, the City of Chicago has committed to a 25% reduction by 2020 of greenhouse gas emissions (City of Chicago, 2008). Over the two years since its adoption, over 1.8 million square feet of green roofs have been installed or are under construction (City of Chicago, 2010).
- The municipal Austin Climate Protection Plan adopted in 2008 has committed the City of Austin to power all municipal facilities with renewable energy by 2012 (City of Austin, 2009). The city is on-track to achieve this goal with 53% converted through 2010 (City of Austin, 2010).

But if these cities and their few peers are seen to be making meaningful efforts toward reducing their greenhouse gas emissions and demands on limited energy resources, the vast majority of U.S. communities have relied more on the symbolic value of their ICLEI and USCM commitments. Local climate change policies are increasingly just another dimension of competitive advantage in a municipalities' zero-sum economic development strategy. The value of advertised greenhouse gas emissions reductions is often more symbolic than substantial. In his analysis of state and municipal climate action plans in the United States, Wheeler (2008) concluded, "[M]ost of these plans lack the strong actions and political and institutional commitment needed to mitigate emissions or adapt to climate change." He also suggested that many cities set greenhouse gas emissions reduction goals that are realistically unachievable given their political or economic climates.

To the extent that adoption of green mitigation technologies or processes come with greater efficiencies and lower costs, investment—and interest—in municipal greenhouse gas reduction practices or technologies has been seen to wane

once the easy efficiencies are achieved (Portney, 2003; Bulkeley & Betsill, 2003; Wheeler, 2008).

While several medium-to-large U.S. cities have indicated that they are taking or will take constructive action to mitigate their communities' greenhouse gas emissions, some of these commitments are purely symbolic, others rhetorical, and many foundering on the hard realities of local economy. In the context of a small selection of cities, Bulkeley and Betsill examined some of the most common reasons for a community's lack of consistent and/or meaningful progress on a committed climate protection agenda (2003). Their research was focused on the success achieved by six cities that committed themselves to the ICLEI CCP initiative. ICLEI strongly recommends that candidates for membership make a political and procedural commitment to pursuing a climate protection agenda.

Adopt a resolution *within six months of joining* ICLEI to affirm the community's commitment to climate protection and sustainability action, to raise community awareness, and to provide an opportunity for public discussion about local priorities related to climate protection and/or sustainability. The sample resolution is designed to be customized to match local circumstances and priorities. Passage of the ICLEI membership resolution is strongly recommended as a part of becoming a member, but not required prior to joining.<sup>16</sup>

The mitigation portion of the program includes a five-step process toward making significant reductions in greenhouse gas emissions. These steps include:<sup>17</sup>

- Conduct a baseline emissions inventory and forecast
- Adopt an emissions reduction target
- Develop a Local Climate Action Plan
- Implement policies and measures

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<sup>16</sup> Retrieved May 4, 2011, from <http://www.icleiusa.org/join/process-of-joining/process-of-joining>; emphasis in original.

<sup>17</sup> Retrieved May 4, 2011, from <http://www.icleiusa.org/programs/climate/mitigation>

- Monitor and verify results

The CCP climate change mitigation process recognizes that these reductions can be achieved in both municipal and community operations. For political and demonstrations reasons, many cities elect to conduct greenhouse gas inventories and implement emissions reduction strategies internally before shifting their focus to the remainder of the community.

They discovered that the first round of municipal efficiency initiatives were relatively simple and inexpensive (such as replacing incandescent bulbs with light-emitting diodes in traffic signals, improving municipal building insulation, and other technology-based energy efficiency measures) and demonstrated clear, short-term financial savings for the municipality. Political leaders found it far more difficult to justify less symbolic, more far-reaching initiatives—at municipal and community scales—that bore no such immediate and obvious financial returns (such as more extensive GHG emissions reductions based on rigorous carbon footprint analysis and management). As a result, given that the benefits of local climate protection investments primarily accrue to the global community, and because they are unlikely to realize any tangible returns on their political capital investments in their terms of office, if ever, municipal politicians were unlikely to advocate a more expansive—in scope or time—climate change mitigation agenda.

Collectively, national, state, and local climate protection efforts suggest that there is wide, though spotty, public and political recognition that climate change requires assertive action toward climate protection at all levels of governance. That this conviction has not more fully permeated local environmental policy is a key motivator for this research.

### 2.2.5 U.S. comprehensive climate action

Citing the political, economic, geographical, and environmental diversity characteristic of the United States, there is growing support for effective climate change policy better reflecting this diversity.

The burgeoning state role in climate change policy must be seen as not merely an extension of existing authority, but rather a new movement of sorts driven by a set of factors distinct to the issue of climate change. These factors have proven increasingly influential in a wide range of jurisdictions, overcoming inherent opposition and building generally broad and bipartisan coalitions for action. (Rabe, 2006, p. 2)

These “bottom-up” efforts reflect the local specificity of global climate change impacts, jurisdictionally specific economic development issues, and the motivation of states to address environmental issues that might otherwise have been considered the province of the federal government (Rabe, 2006).

Among the more constructive climate protection policy efforts aimed at promoting “bottom-up” climate protection capacity are development programs that fall under the rubric of *comprehensive climate action* (CCA). In general CCA is characterized by a mix climate protection initiatives taken by the government at various scales and across numerous economic sectors.

Comprehensive approaches that draw upon the best choices in all sectors, all levels of government, and all applicable policy instruments ... can attain GHG targets while minimizing costs and maximizing co-benefits (including energy and environmental security. (Peterson & Wennberg, 2010, p. 14)

Claiming that U.S. climate change policy is “far more complex and rich than what is commonly thought,” Lutsey and Sperling characterize CCA in the following manner:

Out of the soup is emerging a consistent US policy structure. States (and cities) inventory their emissions, investigate GHG mitigation action plans, and commit to future emission reductions. These governments then choose from a menu of available policy alternatives, such as vehicle GHG standards, fuel standards, appliance efficiency standards, and renewable electricity portfolio standards, and innovate

with particular policy instruments that are tailored to their specific locale. State governments cooperate and coordinate their actions via multi-state regional initiatives, which appear to be on the way to eventually establishing emission-trading markets. These actions are beginning to add up to a sizable portion of US population and GHG emissions and substantial potential GHG emission reductions. (2010, p. 683)

Several studies have argued that multi-sectoral mitigation action taken at federal, state, and local levels can achieve significant reductions in greenhouse gas emissions comparable to those recommended by IPCC (Lutsey & Sperling, 2008; Peterson, McKinstry, & Dernbach, 2008; Peterson & Wennberg, 2010). The effectiveness of these non-federally-centralized programs is argued to provide a model on which future federal regulatory policy could be based. Benefits are argued to include:

(1) allowing more experimentation by more policymakers, (2) local tailoring of specific actions to fit more aptly the environmental preferences of constituents of various states and locales, (3) testing the political response of innovative regulatory and policy actions, and (4) gaining the benefit of local expertise and experience in enforcing programs and policies. (Lutsey & Sperling, 2010, p. 674)

Some observers believe that CCA solves the fundamental challenges presented by the global and institutional character of anthropogenic climate change.

Governments [in the United States] have largely overcome the "commons" problem in dealing with climate change, with a broad range of effective state- and city-level policy mechanisms being put in place. They are gaining much experience about what works, how to leverage each other's efforts, and how to link across jurisdictions and sectors. (Lutsey & Sperling, 2010, p. 683)

This optimistic assessment of CCA, though, relies on a significant assumption that actions taken and emissions reductions achieved in the several states with comprehensive climate plans and will be scaled and implemented across the nation and that an appropriate regulatory structure can be established at the federal level. The Center for Climate Strategies (CCS) conducted an analysis of the various actions taken in 16 states (all CCS clients) and concluded:

If full and appropriately scaled implementation of all 23 actions in all U.S. states, using the state stakeholders' target [for greenhouse gas emissions] ... is coupled with the K-L [Kerry-Lieberman] proposed cap-and-trade program for the Electricity and Industrial sectors, with strong revenue recycling to low-income consumers" then national-scale benefits would include the creation of over two million net jobs (by 2020) and expanding the U.S. gross domestic product by almost \$117 billion (by 2020). (Peterson & Wennberg, 2010, p. 7)

Even optimistic of CCA promoters note:

The adoption and pursuit of targets, goals, and potential reductions should not be confused with actual mitigation performance, and what has been accomplished still falls far short of the much deeper longer-term cuts that will be needed for global climate stabilization. Moreover, even the best intentions of multiple multi-government partnerships developing consistent emission-tracking systems does not ensure that a cross-jurisdiction and cross-sectoral emissions trading mechanism will come to fruition anytime soon, never mind function well. (Lutsey & Sperling, 2010, p. 683)

Rosy assessments also are founded on a further assumption that the relative responsibilities of various levels of government are rationalized so as to minimize "jurisdictional mismatch" in which state governments in a federal system exercise—or fail to exercise—environmental regulation at appropriate scales. "... [J]urisdictional mismatch produces sub-optimal levels of environmental protection, wastes regulatory resources, discourages innovation, and inhibits the adoption and evolution of more effective environmental protection measures" (Adler, 2005, p. 130). Adler appeals for federal environmental regulatory decentralization that would leverage local knowledge and expertise reflecting the ecological and economic diversity of the

country. "... [D]ecentralization, and the resulting policy experimentation and interjurisdictional competition, can encourage policy innovation as policymakers seek to meet the economic, environmental, and other demands of their constituents" (ibid., 2005, p. 137).

### 2.3 American Planning Association climate protection agenda

The American Planning Association is an independent, not-for-profit educational organization that provides leadership in the development of vital communities by advocating excellence in community planning, promoting education and citizen empowerment, and providing the tools and support necessary to meet the challenges of growth and change.

—APA Mission Statement<sup>18</sup>

The American Planning Association's vision is one of "vital communities" in which "decisions [are] based on sustainability at all levels" and "natural resources [are] protected or managed in a sustainable way."<sup>19</sup> It implements this vision, in part, through producing planning policy guides, conducting directed research programs, and advocating for "good planning" at the federal and state levels.

#### *2.3.1 APA policy guides*

In 1995 the American Planning Association (APA) published the first in a continuing series of policy guides outlining its understanding of and policy stances toward a broad range of planning issues. These policy guides "recommend specific actions on the part of APA members through leadership, chapters, divisions, and allied organizations that move toward an improved social and political environment for planning to play its most effective role."<sup>20</sup>

Policy guides are developed through a committee-led democratic process in which members representing their respective chapters provide guidance to APA

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<sup>18</sup> "Our Mission;" retrieved 3 April 2011, from <http://www.planning.org/apaatag/mission.htm>

<sup>19</sup> "Our Vision;" retrieved 3 April 2011, from <http://www.planning.org/apaatag/mission.htm>

<sup>20</sup> "APA Policy Guides"; retrieved February 19, 2010 from <http://www.planning.org/policy/guides>

regarding the nature of policies it should advocate in federal and state legislatures. Policy guides are used by the APA Centers for Research, legislative liaisons, chapter presidents, and others who represent APA's interests in these policy areas. Policy guides are not intended to inform practice nor are their contents formally integrated into planning certification, certification maintenance or other planner education curricula. They direct the association in its advocacy work on behalf of the membership.<sup>21</sup>

Three other APA policy guides published over the previous eight years also include language directed toward the reduction of carbon dioxide emissions, in the context of sustainability (APA, 2000), smart growth (APA, 2002), and energy (APA, 2004).

In these recent policy guides APA recognizes planners' "leadership role in forming and implementing the strategies by which communities seek to use resources efficiently, to protect and enhance quality of life, and to create new businesses to strengthen their economies, and supporting infrastructures" (APA, 2000, p. 6). "Planners have the tools at hand to create better communities. It is our professional and ethical responsibility to use these tools to produce results that are fair to all community members in the present and in the future" (APA, 2002, p. 4). The planning profession plays an important role in addressing energy sustainability is linked to the higher expectations that communities have for planners' integration of increasingly complex environmental, social, and economic demands (APA, 2004).

As early as 2000 in its "Policy Guide on Planning for Sustainability" APA formally recognized the patent unsustainability not only of society's reliance on fossil fuels as a predominant energy source but, also, automobile-oriented land use

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<sup>21</sup> Katy Schneider, APA Policy Liaison, personal communication, June 21, 2011.



planning driving both suburban sprawl and related greenhouse gas emissions. It cited global warming as one of several "global indications of unsustainability." "The world's scientific community continues to document that this buildup of gases is altering global climatic patterns" (APA, 2000, p. 1). It supports planning policies, economic development, and legislation that "encourage alternatives to use of gas-powered vehicles" and that "encourage all types of development to use alternative renewable energy sources and meaningful energy conservation measures" (APA, 2000, p. 6).

Its 2002 smart growth policy guide supports "a balanced energy policy including conservation and development of renewable energy resources" (APA, 2002, p. 12). It made no explicit mention of global warming or climate change, though it did note, "Geography, natural features, *climate*, culture, historical resources, and ecology each contribute to the distinctive character of a region" (ibid., p. 13; emphasis added).

In its 2004 energy policy document, addressing primarily non-transportation issues, the APA supports "the adoption of legislation and regulations that require the planning and evaluation of decisions regarding energy production, distribution, and use to mitigate associated adverse impacts" (APA, 2004, p. 6). It encourages its membership to "continue to reduce the negative environmental impacts of current fossil fuel extraction and electricity generation through research, technology, and community involvement" (ibid., p. 7). Again, this guide only includes a brief mention of the global atmospheric change attributable to human energy choice, but no suggestion of its consequences.

Transportation, stationary source combustion (primarily fossil fuel power plants), and industrial process emissions compose the bulk of anthropogenic sources of air pollution. Air pollution is implicated in a variety of health and atmospheric problems including respiratory

disease and cancer, acid rain, ozone depletion, and *global warming*. Pollutants produced when fuel is burned to generate electricity include ... carbon dioxide (CO<sub>2</sub>), which contributes to the greenhouse effect and climate modification. (ibid., p. 10)

It was not until 2008 that the APA adopted a set of climate change policy guidelines (APA, 2008) asserting the importance of the climate protection agenda for the planning profession. The "Policy Guide on Planning and Climate Change" recognizes that there is "clear evidence of climate change leading to specific, measurable effects ranging from [Arctic] melting and sea rise to heightened storm and drought severity" (APA, 2008, p. 3). It "recommends a policy framework to assist communities in dealing with climate change and its implications" (ibid., p. 3).

### *2.3.2 APA energy and climate change research*

In one of its most recent Planning Advisory Service reports, APA explicitly addresses climate change mitigation in predominantly technological and economic fashions. Its partner in the supporting research program, Environment and Energy Study Institute (EESI), is a non-profit organization that advocates clean energy policy and solutions through policymaker education, coalition building, and "win-win" policy development. "A healthy climate and a healthy economy go hand-in-hand. Transforming energy infrastructures, transportation systems, land use management practices, and community designs will create new opportunities for American entrepreneurs and put America back to work".<sup>22</sup>

Reflecting a dominant belief that energy policy lies at the heart of climate action planning, the research contributing to this report suggests a variety of ways that planners can take action in their communities to "promote greater energy efficiency and use of renewable energy, reduce greenhouse gas emissions, and prepare for and adapt to a changing climate" (Shuford, Rynne, & Mueller, 2010,

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<sup>22</sup> "About EESI," retrieved July 8, 2011, from <http://www.eesi.org/about>

p. 1). Consistent with planning practices usually advocated by the APA, the report emphasizes these “strategic points of intervention” (ibid., Chapter 5):

- Long-range community visioning and goal setting through surveys, workshops, scenario analysis, and task forces
- Technical, comprehensive, and functional plan-making (including climate action plans)
- Standards, policies, and incentives through the removal of barriers to “green” development in zoning, subdivision, and other regulations; the enactment of standards by which development will be assessed; and the creation of incentives that encourage development of climate-friendly projects
- Close review of development projects and encouragement of public-private development partnerships

It also outlines a number of tools that planners can use to guide decision-making processes related to development, public infrastructure, transportation, economic development, and natural resources. These tools emphasize visioning and goal setting that involves impacted parties in all sectors; creation plans that detail the impact of development on various climate-related issues; development of standards, policies, and initiatives to encourage climate-sensitive investment and development; climate-sensitive development that is context-appropriate; and public investment in climate-sensitive grey and green infrastructure. In a Planning Advisory Service Memo summarizing the report for its membership, APA encouraged planners to “help local communities meet energy needs, cut greenhouse gas emissions, and adapt to changing climate” (Mueller & Rynne, 2009).

In addition, APA and EESI cooperated in developing the searchable Planners Energy and Climate Database offering examples of state and community actions toward climate change mitigation and adaptation.<sup>23</sup> They have also compiled a Climate Change Reader, an extensive assortment of articles to help planners better

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<sup>23</sup> *Planners Energy and Climate Change Database*,  
<http://www.planning.org/research/energy/database/index.htm>

understand energy and climate change considerations as they relate to community planning practice. “Planners need to act boldly and innovatively to help their communities prosper physically, socially, and economically while addressing these challenges.”<sup>24</sup>

In 2007, as part of the *Planning and Climate Change: Mitigation and Clean Energy Strategies* research initiative with EESI, APA conducted a survey of members regarding energy and “climate action” planning in their communities. Patterned on a 2005 survey that was limited only to energy planning, this survey assessed “the integration of climate change and energy issues into community planning” (APA, 2007). Their brief report on the survey results indicated a growth in awareness of and action on energy and climate issues by respondents in comparison to levels measured in a similar 2005 survey.<sup>25</sup> It reported, “Climate change has become the top motivator for communities to address energy concerns, and citizen interest continues to be a major factor” (APA, 2007).

### 2.3.3 APA energy and climate advocacy

In 2006, APA joined with the U. S. Conference of Mayors and others in writing an *amicus curiae* brief on behalf of the Commonwealth of Massachusetts in its suit against the U.S. Environmental Protection Agency to force the agency to regulate carbon dioxide as a hazard to human health under the Clean Air Act (Dowling, Kendall, Bradley, McConihe, 2006). In their argument summary, the *amici* observed:

Global warming is not merely a future threat, but a present deadly reality, claiming the lives of up to 150,000 people each year due to malnutrition, malaria, and other maladies. In addition to these ongoing public health consequences, global warming is likely to mean more disasters such as intense hurricanes and storm surges crashing into America’s eastern seaboard, one of the fastest growing parts of the

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<sup>24</sup> *Climate Change Reader*, <http://www.planning.org/readers/climatechange/index.htm>

<sup>25</sup> The *Energy Survey 2005* did not explicitly address global warming, climate change, or the impact of greenhouse gas emissions.

country. Municipalities also must grapple with the less cataclysmic but still threatening challenges of climate change: more smog; sudden rainstorms that overwhelm and pollute municipal water supplies and flood transportation networks; and droughts that disrupt hydropower transmission and deplete local reservoirs. (p. 5)

The brief emphasized the responsibility that local officials will have in dealing with the effects of climate change absent regulatory action by the government.

With global warming, injury is a matter of degree. The issue is not whether the earth will be hotter; it already is. The question is how hot the earth will get. It is not whether the seas will rise, or the glaciers will recede, or the ice caps will melt; it's how much. (p. 25)

More recently, APA's legislative 2010 priorities include promotion of "a comprehensive national climate change program ... [recognizing] the critical role of community development patterns and planning decisions in limiting emissions through sources such as vehicle miles traveled and energy efficiency." In addition the APA supports the provision of high-quality federal data to "inform an array of local planning decisions from identifying hazard zones to mitigating climate change impacts" (APA, 2009).

CHAPTER 3  
ECOLOGICAL MODERNIZATION,  
SUSTAINABLE DEVELOPMENT,  
AND CLIMATE CHANGE

A discourse is a shared way of apprehending the world. Embedded in language, it enables those who subscribe to it to interpret bits of information and put them together into coherent stories or accounts. Discourses construct meanings and relationships, helping to define common sense and legitimate knowledge. Each discourse rests on assumptions, judgments, and contentions that provide the basic terms for analysis, debates, agreements, and disagreements.

John Dryzek (1997, p. 9)

Chapter 2 presented a broad overview of the state of climate science that provides the objective, scientific evidence upon which the international community bases many of its policy prescriptions. It further presented policies forged at various scales to reduce the human-caused greenhouse gas emissions that force climate change. Chapter 4 will present survey, meeting, and interview data that provide insights into how individuals and communities interpret the basic science and the policy established at higher jurisdictional levels.

In order to better understand the role of planners in mitigating climate change in their local communities, the analytical lens used to achieve that understanding must be clearly defined. This chapter examines three competing discourses—ecological modernization, sustainable development, and risk society—that permeate the climate change debate. Ecological modernization (EM) and sustainable development (SD) discourses emerged in response to resource limits-based and other radical environmental critiques that characterized the 1960s and

1970s. Both recognized the failure of end-of-the-pipe regulation to effectively address many of the environmental problems resulting from modern industrial economies, and sought to develop a way to bridge environmental protection and economic development processes. Sociologist Ulrich Beck postulated an advanced stage of modernization, "risk society," in which humanity faces existential threats emerging from modern industrial society itself (Beck, 1993).

### 3.1 Sustainable development

Sustainable development arose as a radical critique of global economic development and its geographical and class inequities. It was "a discourse of resistance, fusing radical environmental consciousness with a critical rethinking of a failed development enterprise. It provoked challenging questions about scarcity and limits, affluence and poverty, global inequality, and the environmental viability of westernization" (Carruthers, 2005, p. 285). It joined several interrelated, but previously formally uncoordinated, storylines into a single discourse: conservation and preservation of natural resources; control of runaway population and pollution; and concerns about global disparities in economic development (Cohen, Demeritt, Robinson, & Rothman, 1998). References to "sustainability" derive from underlying thermodynamic, entropic, and conservative principles characteristic of interrelated ecological systems. "Sustainable development" generally refers to socioeconomic processes necessary for the perpetuation of human systems (Jepson, 2003).

Sustainable development is defined and operationalized in ways that crucially shape the degree of integration of economy and environment. Weak SD assumes that human capital can be substituted for natural capital and emphasizes "environmental efficiency" (i.e., environmental impact per unit of economic output) over the maintenance of any specific level of environmental integrity. Implicit in this

assumption is that the ultimate exhaustion of a non-renewable resource should not necessitate the restriction of economic growth. Human ingenuity will generate a substitute process or technology enabling the sustainability of growth, if not the environment.

Strong sustainability rejects the notion of capital substitutability and asserts that regardless of what other benefits might accrue there must be a limit on how much environmental damage can and should be sustained (Gibbs, Longhurst, & Braithwaite, 1998, p. 1352). Implicit in strong sustainable development is the idea of natural limits to growth stemming both from the finiteness of Earth's nonrenewable resources and the drain on those resources posed by unchecked population growth.

In 1983 the United Nations General Assembly established the World Commission on Environment and Development (WCED) to assess global economic development and its impact on Earth's environment. In particular it examined the impact of inequitable and unrestrained natural resource exploitation on the long-term prospects for global human development. In its final report the WCED brought sustainable development into the international policy spotlight famously observing:

Humanity has the ability to make development sustainable—to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. (World Commission on Environment and Development, 1987, p. 8)

The WCED argued that SD requires:

- a political system that secures effective citizen participation in decision making;
- an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis;
- a social system that provides for solutions for the tensions arising from disharmonious development;
- a production system that respects the obligation to preserve the ecological base for development;



- a technological system that can search continuously for new solutions;
- an international system that fosters sustainable patterns of trade and finance; and
- an administration system that is flexible and has the capacity for self-correction. (ibid., p. 65)

Unfortunately, while still espousing the eradication of global injustice and inequality, the Brundtland report did so only in the context of economic growth that achievable within the boundaries of a globalizing, modern, capitalist economy. The SD agenda had effectively adopted a technocratic, positive-sum approach for matters economic and environmental, rejecting a serious reexamination of the dominant liberal political-economic paradigm in light of the more radical, limits-based elements of the original SD discourse. This was the “de-fanged version of sustainable development” (Carruthers, 2005, p. 290) that was subsequently adopted by the international community in 1992 at the “Earth Summit” in Rio de Janeiro and embodied in Agenda 21, its implementation plan.

It is this weakness of the SD concept that motivates its political strength. It creates the “prospect of reconciling concerns for improved material standards of living, social well being, and environmental sustainability that arguably underlay a whole series of local, national, and international policy initiatives in support of sustainable development,” yet “it is not clear that substantial progress is currently being made in achieving the goals of SD” (Cohen et al., 1998, p. 351-352). “Sustainable development” remains a contested term plagued by vagueness in formulation, hypocrisy in application, and delusions of a win-win solution in the struggle between economic growth and environmental sustainability (ibid., p. 352-353).

Gibbs, Longhurst, and Braithwaite (1998) summarized the broad spectrum across which sustainable development policy can be interpreted. The general parameters they used in their analysis were the limits assumed or tolerated for nonrenewable natural resources (capital), the substitutability of human for natural capital, the extent to which natural capital and ecosystem services can be economically valued, and the extent to which human systems were integrated into natural ecologies.

- *Very weak sustainability*—“Overall stock of capital assets remains stable over time, complete substitution between human and natural capital. Essential link between willingness to pay and sustainable development.”
- *Weak sustainability*—“Limits set on natural capital usage. Some natural capital is critical that is, non-substitutable. Related to the precautionary principle or safe minimum standards. Tradeoffs still possible.”
- *Strong sustainability*—“Not all ecosystem functions and services can be adequately valued economically. Uncertainty means whatever the social benefits foregone, losses of critical natural capital are not possible.”
- *Very strong sustainability*—“Steady-state economic system based on thermodynamic limits and constraints. Matter and energy throughput should be minimised.” (Gibbs, Longhurst, & Braithwaite, 1998, p. 1353)

Sustainability and sustainable development literatures examine one of the most dominant contemporary urban development discourses and provide frameworks in which to expose and examine the tensions among economic development, intergenerational equity, and environmental protection. The academic literature has been unequivocal on planners’ interest in sustainable communities and role in promoting varieties of development that contribute to sustainable growth (Jepson, 2001; Jepson, 2004). Jepson (2001) notes the increasing assimilation of the sustainability ethos by the planning institution into its academic literature and professional publications. He concludes that, “provided they can gain a perspective that draws from the organic tradition of their profession, planners have a potentially

significant role to play in the attainment of a more sustainable approach to development by building on the profession's intrinsic interest in integration and balance" (ibid., p. 507).<sup>26</sup>

However, Buttel (2000) notes that, in spite of their theoretical and practical popularity, sustainable development and sustainability have failed to provide solid guidance for environmental policy. This has largely been because the SD concept "could not overcome being seen as a nebulous knowledge claim which was too imprecise to generate a coherent set of hypotheses and body of research" (Buttel, 2000, p. 61). Jepson observes that while sustainability "is becoming increasingly accepted as a framework for planning ... this basis is not being carried through into actual policies and programs" (2004, p. 13). He proposes that this "integration and balance" is achievable only through a "reconciliation and effective integration of two seemingly conflicting worldviews, the expansionistic [reflecting the dominant economic predilection with growth] and the ecological [toward Daly's (1996) "steady-state" growth model]" (ibid.).

The sustainability discourse has been widely adopted by municipal governments and administrations if for no other reason than its "flexibility" enables cities to burnish their environmental credentials while continuing to emphasize the economic growth they consider necessary to support municipal services for their residents. While clear in its goals, sustainable development provides no practical guidance as to how to achieve a desirable—and sustainable—balance among environmental protection, social equity, and economic progress. As a result, initiatives that are termed "sustainable" see the light of implementation when the economic portion of the equation is satisfied.

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<sup>26</sup> By "organic" Jepson is referring to Friedmann's vision of "non-Euclidean planning" operating "[w]ithin the continuum of real time and local space" (Friedmann, 1993).

Citing literature documenting municipal efforts toward sustainable development, Krueger and Agyeman (2005) posit that a city may not have to explicitly adopt a sustainability agenda to plan sustainably. They suggest that sustainable development can be found in “actually existing sustainabilities”—“those existing policies and practices not explicitly linked to the goals of or conceived from sustainable development objectives but with the capacity to fulfill them” (p. 411). Schellenberger and Nordhaus (2005) argued that the modern environmental movement had become irrelevant due to a “policy literalism” (p. 7) that ignores what Krueger and Agyeman might call “actually existing environmentalism.” And in a small sample of U.S. municipalities, Berke and Manta Conroy (2000) found that an explicit sustainability agenda was apparently not necessary for a community to participate meaningfully in sustainable development.

In his assessment of the seriousness with which twenty-four cities take sustainability, Portney (2003) examined only communities with explicit, programmatic commitment to sustainability and sustainable development. That is, each had an officially recognized and supported sustainability plan created to guide policy formation and evaluation processes. In creating his 34-element “Taking Sustainable Cities Seriously” index (p. 65), Portney implicitly contends that serious municipal commitment to sustainability cannot be achieved through mere “actually existing sustainability” initiatives. It is the formal selection, design, implementation, and management of these initiatives—through either expert-driven, professional processes or public deliberation—that enable them to be woven effectively into the fabric of municipal affairs.

### 3.2 Ecological modernization

The essential idea is that a clean environment is actually good for business, for it connotes happy and healthy workers, profits for companies developing conservation technologies or selling green products, high-quality material inputs into production (e.g. clean air and water), and efficiency in materials usage.

—Dryzek & Schlosberg (2005, p. 301)

In reaction to the perceived failures of state environmental regulation, ecological modernization emerged in the 1980s as a policy-oriented discourse in German environmental politics to constructively address the increasingly fraught relationship between economic development and its environmental impacts. Generally, EM can be defined as “the discourse that recognizes the structural character of the environmental problematique but nonetheless assumes that existing political, economic, and social institutions can internalize the care for the environment” (Hajer, 1995, p. 25). From an economic perspective, EM furthers the modernization agenda by partially monetizing ecological degradation so that it can be better incorporated in traditional cost-benefit analyses (Barry, 2005).

At root, ecological modernisation works because the interests it balances are couched in the language of economic rationality. Environmental interests are considered only to the extent that these interests can be translated into the economic language of a cost-benefit calculation. ... [T]he underlying political economy of ecological modernisation is neoclassical environmental economics. (Barry, 2005, p. 315)

Ecological modernization adopts assumptions and tools from environmental economics based on fundamental neoclassical assumptions (Venkatachalam, 2007) in an attempt to balance development benefits with environmental costs. It prescribes a cooperative approach among individuals, the private sector, and the state in which the state facilitates—as opposed to regulates—the development and implementation of new, cleaner technologies that are adopted voluntarily by the private sector. As they consume, individuals provide the market signals to private

industry that encourage adoption of more efficient technologies that result in greener products.

Ecological modernization discourse rejects regulated, end-of-pipe solutions that characterized “the standard view” of environmental management (Harvey, 1996, pp. 373-376), opting, instead, for reengineered processes and new technologies that eliminate pollution further upstream through technological innovation and efficiency improvements. Ecological modernization has emerged over the past thirty years as a dominant environmental management discourse “as a result of a specific argumentative interplay between governments, environmental movements, and key expert organizations” (Hajer, 1995, p. 29). Hajer argues that ecological modernization necessarily reflected survivalist critiques of the modernization project such as the consequences of continued growth in the of finite stores of critical natural resources in *Limits to Growth* (Meadows, 1972) and the reevaluation of global capitalist economies found in *Blueprint for Survival* (Goldsmith, 1974). It also incorporated the emerging global concern for the equitable distribution of economic growth and environmental harms reflected in *Our Common Future* (Brundtland, 1987).

### *3.2.1 An historical perspective*

Prior to the 1970s, global environmental discourse was characterized by a set of Promethean dualisms. First, society considered Nature to be an inexhaustible resource base to be used in pursuit of human advancement, and where it was found not to be, human technology was trusted to (eventually) provide an alternative (Simon & Kahn, 1998). Development policies emphasized economic and industrial growth; little thought was given to the long-term (and often short-term) environmental consequences of development locally or globally. Government

regulation of the polluting impacts of industrial society were reactive and consisted primarily of after-the-fact, “end of the pipe” solutions—pollution control devices—that did little in the way of reforming production, did nothing to reduce the level of consumption, and denied that there might be any limits to the Earth’s store of natural resources fueling economic growth (or of human ingenuity in bending Nature to humankind’s will). Second, the environmental movement that evolved in the 1960s and 1970s and played a dominant role in exposing environmental hazards and demanding state action to mitigate them was largely based in fundamental opposition to the dominant capitalist political economy, either through reform or revolution.

In the early 1970s, the environmental discourses opposing business-as-usual environmental policy were dominated by radical deindustrialization/demodernization and neo-Marxist critiques of the prevailing environmental problematique (Mol & Spaargaren, 2000; Fisher & Freudenberg, 2001; Mol & Jänicke, 2009).<sup>27</sup> Proponents of demodernization held that ecological deterioration was proof that the modernization project was bankrupt. It contended that, “a fundamental reorganization of the core institutions of modern society (the industrialized production system, the capitalist organization of the economy and the centralized state) was essential in entering a path of long term sustainable development” (Mol & Spaargaren, 2000, p. 19).

Disenchanted with the results of traditional regulatory environmental policy, policy analysts embraced EM as a “discourse that recognizes the structural character of the environmental problematique but none the less assumes that existing political,

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<sup>27</sup> The apex of this radical environmentalism coincided with the publication in 1972 of the report, *Limits to Growth* (Meadows, 1972), which portrayed a bleak future in which exhaustion of natural resources through human growth and industry would inevitably lead to catastrophic reductions in global populations.

economic, and social institutions can internalize care for the environment” (Hajer, 1995, p. 25). Instead of throwing the baby out with the capitalist bathwater, as favored by the demodernization faction, pragmatist policy experts and politicians—beginning in Germany in the early 1980s and spreading throughout Europe—sought a rapprochement between environmental and economic policy that would promote *both* environmental conservation and economic growth (Hajer, 1995).

Based on seminal work by Joseph Huber (1982) and Martin Jänicke (1985), EM admitted that environmental degradation is an inevitable outgrowth of a modern capitalism that externalizes the ecological costs of production and consumption. However, it contended that the underlying capitalist institutions of production and consumption could be sufficiently reformed to mitigate the despoliation. In this view, moreover, the market mechanism could be used to motivate technological innovation that would reduce both industrial pollution and waste. This revised relationship between the economy and the environment would result in sustainable economic growth while at the same time preserving the environment (Schlosberg & Rinfret, 2008).

Neo-Marxist criticisms that solutions to environmental problems did not adequately account for the social and equity implications of environmental problems and their conventional solutions also motivated the emergence of ecological modernization theory. This radical environmental perspective emphasized the link between environmental reform and distributional inequities among classes, claiming that, “Environmental policies and strategies often have dissimilar socioeconomic (and sometimes even environmental and health) consequences for distinct economic groups or classes” (Mol & Spaargaren, 2000, p. 39). This perspective also holds that EM does not sufficiently distance itself from the traditional modes of production and



consumption, but only proposes to reform the capitalist enterprise to be less environmentally destructive. Such reform does not fundamentally resolve the ecological crisis and only more firmly entrenches socio-economic practices that benefit the already powerful (Mol & Jänicke, 2009).

One of the most passionate advocates for this radical perspective is Allen Schnaiberg who postulated "the treadmill of production" (1980), a self-perpetuating process by which he links capitalist production, consumption, and environmental exploitation.

The core logic of the treadmill is that ecosystem elements are converted by capitalists through market exchanges into profits. Capitalists reinvest some of these profits in more productive physical capital, which requires still greater ecosystem access to "efficiently" operate this equipment, i.e., to generate exchange values and eventually profits by using this equipment in and on ecosystems. This technological change in turn raises the capital-intensification of production. Thus, because a growing share of national production is then required to repay capital owners, expanded ecosystem use is necessary. Production must generate enough surplus to support this outlay to capital owners, to provide enough additional exchange values and social surplus to supply an adequate level of wages to maintain consumer demand, and to generate enough tax revenue to cover social expenditures of the state. This need for increasing exchange values typically accelerates the environmental demands of modern treadmills. (Schnaiberg, 1994, p. 25-26)

In the context of this dissertation, the ecosystem element being commoditized is the capacity of the biosphere (the atmosphere, flora, and oceans) to absorb and process greenhouse gases that are emitted in the process of the capitalist enterprise. These emissions are directly attributable to the manufacture of products the sale of which generates profit that is reinvested to modernize and expand the manufacturing process, pay the wages of workers so that they can afford to purchase these products, and support state welfare programs. This entails, then, even greater consumption of the biosphere.

In an attempt to resolve the tensions among these critiques, Maarten Hajer (1995) analytically distinguished two varieties of EM. The *techno-corporatist* variety is characterized by an emphasis on state policy-making in favor of a particular resolution to an environmental challenge as opposed to a more decentralized, competitive approach. On the other hand, *reflexive* ecological modernization encourages environmental management through debate over competing resolution scenarios that explicitly address social values and the distributional inequalities inherent in proposed solutions. While the former variety preserves the qualities of a traditionally modern society, the latter is explicitly postmodern and draws on the notion of reflexive modernization as developed by Beck (1992) and others (Giddens, 1990; Lash, 1993).

Christoff (1996) articulated EM as having *weak* and *strong* interpretations. Building on Hajer's distinction between techno-corporatist and reflexive versions of EM, Christoff suggests that applications of the theory may be seen to fall along a more nuanced continuum. *Weak* ecological modernization can be viewed as economic, narrowly technological and technocratic, instrumental, and hegemonic. Conversely, *strong* ecological modernization may be seen as ecological, institutional and deliberative, communicative, and participatory. Like the distinctions drawn by Hajer, the former is more strictly modern, cleaving to traditional hierarchical, expert-driven, one-size-fits-all policy prescriptions. The latter transcends the instrumentality of the modern by admitting that environmental challenges are fundamentally social and political and encouraging a participatory, argumentative, and situated approach to their solutions.

Christoff (1996, p. 490) characterized EM along the following dimensions:

Table 3.1 Weak *versus* Strong EM

<b>Weak EM</b>	<b>Strong EM</b>
Economistic	Ecological
Technological (narrow)	Institutional/systemic (broad)
Instrumental	Communicative
Technocratic/neo-corporatist/closed	Deliberative democratic/open
National	International
Unitary (hegemonic)	Diversifying

The gross features of American urban planning—minimal national and uneven state coordination, dominance of individual property rights, focus on local determination, and market orientation—realistically restrict its analysis to use of the techno-corporatist variety of EM. In Chapter 5 I explore these tensions—with the exception of national-international—and the criticisms of EM theory implicit in them to guide the application of the theoretical themes discussed below.

### 3.2.2 *Ecological modernization, American-style*

The discourse that emerged in the 1970s from the debate with the radical environmental left was distinctly European, taking root first in Germany, and then spreading, most notably, to the Netherlands, the United Kingdom, and Scandinavia (Hajer, 1995; Lundqvist, 2000). In spite of the theory’s emphasis on technological innovation, a key element of United States scientific and economic policy, and its ability to explain the relatively greater success Europe has had in addressing environmental challenges, environmental sociologists remained skeptical of its application on this side of the Atlantic. The cooperative structure between the state and the private sector, which continues to characterize European economies, “has simply not existed in the US, where the adversarial culture and institutional

pathologies of US policy-making encourage competition and conflict over cooperation and intelligent policy design” (Schlosberg & Rinfret, 2008, p. 256).

In their comparative analysis of the progress of four countries toward becoming a “green state,” Dryzek, Downes, Hunold, Hernes, and Schlosberg (2002) postulate that the degree to which a “previously confrontational movement [is integrated] into the core of the state” (p. 659) depends on the extent to which the movement connects with one or more of a state’s traditional imperatives: domestic order, survival, revenue, economic, and legitimation. They demonstrate that the four countries—the United States, Norway, Germany, and the United Kingdom—have systematically incorporated social agendas into their core policy frameworks in unique ways that reflect their traditional political systems. For example, the US is characterized as being *passively exclusive*, “presenting comparatively few obstacles to, and every incentive for, social movements to organize as interest groups to lobby government” (p. 661).

Employing ecological modernization and risk society theory, the analysis also assesses how far each of the countries has progressed toward rationalizing capitalist production and consumption with environmental concerns. The US has traditionally resisted ecological modernization, preferring to pit economic development against environmental preservation in a zero-sum game. More recently, though, technological innovation (e.g., efficiency in current consumption and substitution of technology for natural energy resources) has been touted as the path toward defusing the tension between growth and the environment.

Local governments, businesses, and mainstream policy organizations have adopted a weak form of EM that reflects the unique sociopolitical circumstances in this country. While eschewing the precaution that undergirds European eco-

modernization, the United States puts its peculiar brand on the theory by incorporating national security and consumption discourses (Cohen, 2006; Schlosberg & Rinfret, 2008). This is evident from the ubiquitous public policy emphasis on energy efficiency and the development of non-petroleum-based alternative fuels as a path toward "energy independence" (Alexander, 2008). These arguments are predicated not on the intrinsic value of Nature and environment, but instead on a vision of reducing the extent to which our economy and way-of-life is held hostage to hostile foreign interests. Ironically, though, opting for energy independence may not be a particularly "green" strategy (Stein, 2008). Not only will reducing foreign oil imports encourage environmentally damaging exploitation of domestic energy sources such as coal and natural gas, but climate-friendly alternative energy sources such as wind, solar, and nuclear each come with their own environmental difficulties.

Schlosberg and Rinfret further argue (2008) that "American-style" EM (p. 270) caters to deeply entrenched consumption habits. U.S. technology and industry are encouraged to produce "green" goods and service alternatives that encourage consumption in pursuit of environmental protection. The logic of Americanized EM derives from liberal economic assumptions that if "green" is perceived as "the new black," then consumers will demand that manufacturers produce such goods. We will consume our way out of our environmental problems. Examples of this trend can be seen in the increasing popularity of hybrid automobiles, biofuels, and "green" household cleaning products. As a result the consumption discourse appears to be explicitly economic and only incidentally environmental.

### 3.3 Conflation of ecological modernization and sustainable development

Storylines are narratives on social reality through which elements from many different domains are combined and that provide actors with a set of symbolic references that suggest a common understanding.

—Hajer (1995, p. 62)

In his analysis of the emergence of ecological modernization, Maarten Hajer (1995) argues that EM provides a set of “credible and attractive” storylines: “the regulation of the environmental problem appears as a positive-sum game; pollution is a matter of inefficiency; nature has a balance that should be respected; anticipation is better than cure; and sustainable development is the alternative to the previous path of defiling growth” (p. 65). If we examine the SD discourse as presented above, it becomes apparent that there are significant commonalities between EM and SD discourses. Specifically, both define a sustainable future as one in which both economic growth and environmental sustainability can be achieved simultaneously and that such a future must replace the status quo of “defiling growth.”

If EM and SD discourses are not identical, then, they are at least consistent in their policy aims. The areas in which they do not share common storylines are those related to equity and justice (topics on which EM theory has nothing to say) and, less rigorously, natural resource limits. Regarding the former storyline, EM theory never pretended to address distributional questions. As for the latter, EM takes the Promethean stance that human ingenuity and technology will provide substitutes for non-renewable natural resources; mainstream SD, as embraced by the Brundtland report, abandoned its radical, “limits to growth” critique of the prevailing capitalist mode of production (and consumption). Ecological modernization was conceived as a national, defensive policy strategy to address particular environmental problems; it

never seriously hoped to threaten the prevailing economic assumptions of the modern industrial state.

Langhelle (2000) cautions, though, that the two should not be conflated. He identifies fundamental differences in the geographical extent of their concerns and the institutional level on which each focuses. Sustainable development was international in its provenance; its focus was primarily global (especially focusing on development disparities between northern and southern hemispheres); and it directed its policy initiatives primarily at global and national governance structures. The origin of EM theory as national, addressed the economic and environmental concerns of western industrialized society, and concentrated on reforming national institutions.

#### 3.4 Climate change discourse

Climate change and the effect of human activity on the process have been understood for quite some time. Climatologists know that Earth's climate has warmed and cooled cyclically over many hundreds of thousands of years. Chemists long ago discovered the greenhouse effect and the role of certain gases and vapors play in determining the average global atmosphere temperature. And scientists have now concluded that human agency is more than capable of forcing Earth's climate to change not in eons, but in decades, by dumping enormous quantities of otherwise naturally-occurring greenhouse gases—byproducts of human industry—into the atmosphere.

A discourse of climate change is one that characterizes the way in which a segment of society understands, talks about, and reacts to climate change. Cohen et al. argue that three elements characterize the dominant climate change discourse. First, it is reductionist. The IPCC and other national and international physical science

bodies have dominated the debate, formulating the problem as a global environmental problem caused by the emission of greenhouse gases. Lamenting the "hegemony of GCMs" the authors observe that, "the question of global environmental change has been reduced from a wide-ranging one about the uneven political economy of modern capitalist development and underdevelopment to a narrowly defined problem of global atmospheric emissions" (ibid., p. 343).

The reductionist conception of global warming as an exogenous environmental force affecting humanity as a whole appeals to the common and undifferentiated interests of a global citizenry. It bypasses the complex, locally specific problems of SD, reducing them to the single imperative of controlling global greenhouse gas emissions. (ibid., p. 348)

Secondly, the discourse is an exercise in technical and instrumental rationality that has embraced equally technical and instrumental neo-classical economics to describe the impacts of climate change on society.

The social context under which greenhouse gases are produced has been largely ignored, except as technical questions about rates and physical processes. Luxury emissions of greenhouse gases from fossil fuel use in developed countries are analyzed in the same universal, scientific terms as survival emissions from agriculture in developing countries." (ibid., p. 347)

Finally, the climate change discourse has allied itself to "moral—liberal and rational—technocratic politics" (Cohen et al., 1998, p. 343).

The moral—liberal formulation depends on communicating scientific knowledge of the objective risks to CC [climate change] to sway self-serving naïve, or scientifically ignorant behavior contributing to global warming while the rational—technocratic relies on science to identify the optimal policy to which individuals must then submit." (ibid., 349)

The authors conclude that this particular discourse defines a relationship between science and politics that, "provides a weak foundation for responding effectively to CC [climate change]" (ibid., p. 349) that it enables those elements of society with interests vested in the status quo to claim that uncertainty in the



climate science is good reason to delay action on mitigating greenhouse gas emissions.

### 3.5 Sustainable development and climate protection

Given the increasing understanding of the linkages between sustainability and climate protection agendas and policies (e.g., Bizikova, Robinson, & Cohen, 2007; and Swart, Robinson, & Cohen, 2003), one can argue that any city committed to and pursuing a sustainable development agenda is having some salutary effect on the climate change agenda. Primarily focused on resource conservation, historic and natural preservation, and transportation efficiency, these initiatives include developing denser, mixed-use projects that collocate workers and their work; providing transportation options that include not only transit, but also accommodate bicycle and pedestrian travel, designed to reduce dependence on the automobile; and pursuing municipal energy efficiency and water conservation initiatives focused on preserving increasingly scarce resources.

Some may argue that municipal governments' pursuit of sustainable development is tantamount to climate protection. In Chapter 4 data from a planners' roundtable and from a national survey of planning professionals indicates that there is wide acceptance of this conflation. In many senses, commitments to sustainable development and climate protection are mutually reinforcing. To be sure, if more compact, multi-use development initiatives indeed result in a reduction in the number of automobile miles driven, the carbon emissions associated with those foregone trips are eliminated. Unfortunately, however, the notions of "sustainability" and "sustainable development" have been so broadly and laxly interpreted that assessment of their benefits is often difficult. For example, development of "complete

streets,” a currently popular planning trope,<sup>28</sup> does not necessarily imply that a community is also committed to developing the transit and commercial infrastructure necessary to reduce trip frequency, vehicle-miles-traveled and, consequently, automobile-related greenhouse gas emissions. Complete streets initiatives are designed to safely enhance transportation choice, providing space for more sustainable, non-automobile options such as walking, bicycling, and transit, and have embraced by cities seeking to reduce congestion.<sup>29</sup>

Analyses of American municipal sustainability agendas have identified only a tenuous link between those agendas and sustainability or, implicitly, climate protection (Berke & Manta Conroy, 2000; Bulkeley & Betsill, 2003). Berke and Manta Conroy found that a community’s promotion of sustainability principles is unrelated to the explicit inclusion of those principles in planning documents. This conclusion is consistent with Krueger and Agyeman’s “actually existing sustainabilities.” More strikingly, they found that “plans do not take a balanced, holistic approach to guiding development and moving toward sustainability. Instead, they focus narrowly on creating more livable built environments, which is the historic mainstream focus of plans” (p. 30). While the definition of a “more livable built environment” is enormously subjective, and its relationship to meaningful climate action planning is, at best, ambiguous, these conclusions are not encouraging.

While a substantial number of medium-to-large cities have indicated that they are or will take constructive action to mitigate their greenhouse gas emissions, some of these commitments are purely symbolic, others rhetorical, and many foundering

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<sup>28</sup> The American Planning Association partnered with the National Complete Streets Coalition ([www.completestreets.org](http://www.completestreets.org)) to produce a research report on how communities can develop streets that “accommodate pedestrians, bicyclists, transit, and cars, creating multi-modal transportation networks” (<http://www.planning.org/research/streets/>).

<sup>29</sup> Sustainable Complete Streets, <http://www.completestreets.org/complete-streets-fundamentals/factsheets/green-streets/>

on the hard realities of local economy. In the context of a small, global selection of cities, Bulkeley and Betsill examined some of the most common reasons for a community's lack of consistent and/or meaningful progress on a committed climate protection agenda (Bulkeley & Betsill, 2003). These turned on the relative ease of implementing municipal and community efficiency measures when compared to the expense (both financial and managerial) of implementing longer-term and, potentially, more meaningful initiatives. The authors identified communities' commitments to and success in meaningfully reducing local emissions of greenhouse gases to be dependent on a number of factors: individuals committed to the cause of local climate action; the (continued) availability of funding to support a climate protection agenda; the extent to which the climate protection agenda is integrated into the panoply of local policy priorities; the way in which climate change and associate issues are framed in the local context; and the extent to which the political will exists to engage in climate action planning. Each of these factors can be identified in the empirical survey and interview data presented and reviewed in Chapter 4.

When speaking to planners about their communities' climate protection agendas, as we will see in the next chapter in the context of a planner roundtable, one inevitably is confronted with the question of the relationship between sustainability (or sustainable development)<sup>30</sup> planning and climate change mitigation planning. Much local policy relevant to the climate protection agenda is couched—intentionally or unintentionally—in the language of sustainable development. Are the two the same? Can we realize one without doing the other? The strength with which

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<sup>30</sup> References to "sustainability" derive from underlying thermodynamic, entropic, and conservative principles characteristic of interrelated ecological systems. "Sustainable development" generally refers to socioeconomic processes necessary for the perpetuation of human systems (Jepson, 2003).

sustainability and sustainable development discourses are embraced—or rejected—at the local level will likely have a direct impact on the degree to which local environmental policy is protective of the climate.

In its Third Assessment Report, the IPCC forged an explicit linkage between the increasingly confident science of anthropogenic climate change and sustainable development. “Local, regional, and global environmental issues are inextricably linked and affect sustainable development ... The primary factors underlying anthropogenic climate change are similar to those for most environmental and socio-economic issues—that is, economic growth, broad technological changes, life style patterns, demographic shifts (population size, age structure, and migration), and governance structures” (IPCC, 2001, p. 29). This formal recognition of the relevance of the local scale of climate protection set off a surge in research exploring how this might be achieved, especially exploiting commonalities and bridging discontinuities in sustainable development and climate protection policy regimes.

Only in its later assessments did the IPCC explicitly emphasize the importance of development pathways on climate change and sustainability, indicating the evolution of a more nuanced understanding of the relationship between climate science and the societal response necessary to mitigate climate change. Its 2001 assessment noted:

Natural, technical, and social sciences can provide essential information and evidence needed for decisions on what constitutes “dangerous anthropogenic interference with the climate system.” At the same time, such decisions are value judgments determined through socio-political processes, taking into account considerations such as development, equity, and sustainability, as well as uncertainties and risk. (IPCC, 2001, P. 2)

More recently, the IPCC further integrated sustainable development into its assessment:

Making development more sustainable can enhance mitigative and adaptive capacities, reduce emissions and reduce vulnerability, but there may be barriers to implementation. On the other hand, it is *very likely* that climate change can slow the pace of progress towards sustainable development. (IPCC, 2007b, p. 18)

Academic research has increasingly focused our attention not only on the commonalities between sustainability and climate sciences, but also on the policy initiatives that contribute to the achievement of both agendas. Among other things, these studies emphasize the need to more fully integrate climate change policy into over sustainability programs, not merely tack them on in an ad hoc fashion.

Since the feasibility of stabilizing greenhouse gas concentrations is dependent on general socio-economic development paths [i.e., sustainable development, including technology], climate policy responses should be fully placed in the larger context of technological and socio-economic policy development rather than be viewed as an add-on to those broader [sustainability] policies. (Swart, Robinson, & Cohen, 2003)

The achievement of meaningful climate protection is increasingly recognized as highly contextual.

[A] notable trend is emerging in human-environment research wherein increasing attention is being given to the underlying societal characteristics that either help or hinder responses to climate change. These characteristics are crucial for ... the broader transition toward a sustainable development path, of which climate change responses are only a part. ... It is clear that many of the barriers faced by communities ["in designing and implementing such policies"] are part of path dependent institutional, cultural or political trajectories. (Burch, 2009)

While it still remains questionable whether one can make meaningful progress on climate protection while pursuing sustainable development that does not directly and explicitly address climate protection, it *is* clear that the two agendas are far more interrelated than we have realized. The capacity for a community to contribute

to the climate protection agenda is not independent of decisions it makes related to its sustainability in other areas. The degree to which communities are effective in achieving meaningful greenhouse gas emissions depends significantly on their willingness to rethink “business as usual” in a broad variety of individual, social, political, and technological processes. “[T]he effectiveness of adaptation and mitigation measures on their own is limited, especially those that aim for behavioural changes without challenging the underlying development pathway” (Bizikova, Robinson, & Cohen, 2007).

### 3.6 Risk society theory and climate change

The driving force in the class society can be summarized in the phrase: I am hungry!  
The collective disposition of the risk society, on the other hand, is expressed in the statement: I am afraid!

Beck, 1992, p. 49

Reflecting on society’s relationship with the environment, German sociologist Ulrich Beck postulated that the economics of scarcity, class struggle, and cost-benefit analysis that had heretofore characterized the modernist project had fundamentally eroded in late modernity. Opposed to the break with modernity hailed by postmodernism, Beck saw “a break within modernity, which is freeing itself from the contours of the classical industrial society and forging a new form—the (industrial) ‘risk society’” (Beck, 1992, p. 9). Instead of rejecting Enlightenment certitude and embracing postmodern relativism, he postulated the *renewal* of Enlightenment values by the reintroduction of the element of doubt abandoned by normal science and industrial society (Gleeson, 2000). Reflexive modernity “refers to a set of fluid socio-political structures—‘modernities’—that have emerged in response to a growing sense of critical self-awareness in the state, and also in economic realms.”

It also describes a progressive undermining of the social authority wielded by the twin institutional edifices of science and technology.

These reflexive modernities have superseded the 'stable' industrial technocratic order that had its roots in the Industrial revolution and which eventually emerged as the exemplary social form in the developed capitalist world in this century. (Gleeson, 2000, pp. 119-120)

His *risk society* theory contends that, "conventional definitions of social class are losing their significance in advanced nations due to the success of the welfare state in reducing economic scarcity. ... [N]ew social cleavages based on the distribution of environmental and technological risks are gaining salience" (Cohen, 1997, 105). "These threats are fundamentally different from those that existed in earlier eras for three reasons: (1) they are undetectable by direct human sensory perception; (2) they are capable of transcending generations; and (3) they exceed the capacity of current mechanisms for compensating victims" (ibid., p. 107).

Along with the threats posed by nuclear energy and environmental pollution by manufactured chemicals, anthropogenic climate change is the type of threat to which Beck referred. It is an outgrowth of the success of the modern industrial society, intergenerational in its emergence and impact, unobvious—or, at least, ambiguous—to the lay observer, and beyond society's capacity—politically and scientifically—to presently resolve.

Expressed in the language of reflexive modernity theories, ecological modernisation theory is a programme belonging to the 'simple modernisation' phase, making unproblematic use of science and technology in controlling environmental problems. Ecological modernisation is also different from reflexive modernity theory because it does not so much emphasise the relation between the global and the individual, but rather concentrates on strategies of environmental reform on the meso-level of national governments, environmental movements, enterprises and labour organisations. (Mol & Spaargaren, 1993, p. 454).

In the context of a reflexive, risk society, then, climate change is a threat that defies treatment by the tools or politics of "simple modernity."

### 3.7 Ecological modernization in local discourse

Although it has been applied at the sub-national level (e.g., in an analysis of natural resource development and environmental protection discourses in Alberta, Canada [Davidson & MacKendrick, 2004]), EM theory has focused primarily on national policy and macro-economic forms of environmental intervention, the most well known and oft-cited example being Maarten Hajer's (1995) analysis of the contestation of the acid rain issue in Germany and the United Kingdom. And though only indirectly, Al Gore promoted the techno-corporate EM framework in advocating a restructuring of the global economy and development of "environmentally appropriate" (p. 325) technologies in a Global Marshall Plan to combat the sources and effects of climate change (Gore, 1998).

Recently, however, there has been a nascent interest in applying the theory in the urban environmental context. Desfor and Keil (2004) undertook the most extensive application of EM theory to-date in their deconstruction and analysis of political and environmental discourses in Los Angeles and Toronto. They base their analysis on work by Whatmore and Boucher (1993) who argue that environmental planning discourse reflects an evolving social construction of Nature. Over the course of the twentieth century the traditional view of the "other" Nature that is conserved/preserved distinct from developed, urban space is reconceptualized to "question the dominant construction of nature as outside society and reconstruct the environment as a product of socio-economic processes" (ibid., p. 169).

They examine three constituent storylines that comprise the discourse. The conservation storyline defines "a regulatory, or state-led, system of zoning and formal plan-making which embodies and reinforces a conceptualization of nature as external to society" (ibid., 169). "In terms of planning practice, the conservation



story line is expressed in the form of nature reserves and parks corresponding to the scientific and aesthetic conceptualization of nature as the 'other' or the 'non-urban' (Keil & Desfor, 2003, p. 8). The commodity storyline blurs the boundary between the humans and the environment by incorporating Nature into the political economy through by "articulating a vision of the environment as a cultural artifact and the commercial value of 'nature' as a marketable commodity" (Whatmore & Boucher, pp. 169-170).

[T]he 'commodity narrative' rejects the regulatory planning ethos associated with the dominant environmental narrative. Instead, attuned to wider shifts in the political terrain of the 1980s towards free-market ideology and de-regulation, it recasts the ethos and practice of planning in the language of the market.

[G]overnment policy and local government financial pressures effected a real shift towards a planning system increasingly reliant on bargaining mechanisms, such as voluntary planning agreements and appeals, rather than statutory mechanisms such as local plan policies and designations. At the same time, the development industry (particularly volume housebuilders) gained an unprecedented level of influence on planning policy and practice. (ibid., p. 170)

The ecology storyline articulates "a vision of the integrity of human and non-human life and the ecological value of 'nature' as a life-support system" (ibid., p169).

The 'ecology narrative' reinforces a regulatory planning ethos in which land development remains a potential threat to the environment, but envisages an integration of ecological principles into the regulation of all land-use activities rather than an enforcement of segregated environmental uses or priorities. The main standard of this environmental narrative is that of the sustainability of land-use, and it seeks to impose an ecological vision of nature on the treatment of the environment. ... However, its radical implications for the political economy of land development and for the ethos and protocol of planning practice mean that it remains the most institutionally marginalized environmental narrative in contemporary planning policy. (ibid., p. 170)

Desfor and Keil (2004) argue, "society is currently in an urbanized period of capitalist accumulation, where traditional distinctions between the city and the

countryside become unwieldy [and that] solutions to environmental problems can and should be sought in the urban mode of regulation and within the sphere of the local state” (p. 46). Whatmore and Boucher’s storylines demonstrate the various ways in which the local state relates to the environment and, as part of the local state, planning treats the environment in the crucible of urban space. In them the historical trajectory that gave rise to EM theory becomes apparent. The transition between conservation and commodity narratives reflects the rejection of state environmental planning and the emergence of the EM policy frame. The distinction between weak and strong sustainability and EM arises at the transition of commodity and ecology narratives. Their analysis suggests that in those cities a weak variant of the EM discourse allowed power brokers to subordinate local environmental agendas to economic concerns, especially global competitiveness.

Audirac and Feiock (2010) treat ecological modernization as an historical continuum along which environmental policy development can be assessed. They identify the first phase of ecological modernization<sup>31</sup> as the 1960s and 1970s that “came at the cusp of the environmental movement’s denunciation of the growth logic of the state, consumer society, and technological change gone amok” (p. 1). Ecological modernization’s second phase followed during the 1980s and 1990s coinciding with “the rolling back of the federal state and the proliferation of professional environmental organizations (ENGOS) lobbying the federal state apparatus” (Audirac & Feiock, 2010, p. 1). Its third era was “determined to combat climate change and U.S. reliance on foreign oil” (ibid., p. 3). They emphasize planning’s role in the EM process:

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<sup>31</sup> I reserve the abbreviation “EM” to refer to ecological modernization theory as it is used elsewhere in this dissertation.

In planning for ecological modernization, environmental planners, engineers, designers, biologists, and economists play a central role in greening the industrial and physical infrastructure, while social scientists, social planners, and educators identify ecologically unfriendly social practices and devise strategies and programs to transform or reform them. (ibid., pp. 1-2)

### 3.8 Ecological modernization: A thematic summary

The discourses examined in this chapter—sustainability, ecological modernization, risk society, and climate change—and their related themes and critiques compete with one another in complex ways to condition the way in which the planning profession frames the climate change threat, and the ways in which individual planners conceptualize the related challenges posed by climate change to their communities. A number of distinct, though interrelated, themes emerge that can be identified in American climate protection planning.

#### *3.8.1 Environmental protection in the business value chain*

Anticipation is better than cure.

—Hajer (1995, p. 65)

Ecological modernization positions itself as a critique of and an alternative to an “ex post remedial strategy” that attempts “to control environmental pollution, dividing the environment into ‘components’ (air, water, soil, noise) and then drawing on specialized knowledge to define routine solutions for each sub-category” (Hajer, 2005, p. 31). In place of end-of-pipe filters on polluting processes, penalties levied on polluters, and after-the-fact environmental remediation, EM proposes to mitigate the environmental impact through upstream technical and institutional changes that benefit not only the environment, but also businesses.

Ecological modernization recasts pollution not as an inevitable product of an environmentally rapacious capitalism (and, at best, captured or cleaned up), but as process and product waste to be avoided. Inefficient industrial processes cost

businesses money not only in environmental remediation, but also in higher raw materials costs. Reexamining and modifying manufacturing and service delivery processes in pursuit of upstream cost and downstream pollution reductions was increasingly seen to be sound business practice that would result in enhanced financial—and social—returns to management and shareholders.<sup>32</sup>

### *3.8.2 A partnership between business and the environment*

“Indeed, ecological modernization is based on many of the solutions in the early 1970s: efficiency, technological innovation, techno-scientific management, procedural integration, and coordinated management”

Hajer, 1995, p. 32

Ecological modernization presents the opportunity to implement win-win solutions benefiting economic development *and* environmental interests. The traditionally contentious relationship between industry and environmental interests is deemphasized in favor of a more cooperative relationship between environmental interests and industry. Environmental protection and economic growth need not be mutually exclusive. This theme emphasizes not only that economic benefits can derive from environmental policy, but also that environmental preservation is essential to providing the natural resource security for continuing economic growth. By recasting the pollution debate in terms of resource and administrative waste and inefficiency, it addresses business’ focus on minimizing costs and maximizing the bottom-line profits. Obviously, environmentalists are attracted not only by the prospect of reducing the consumption of natural resources and by the reduction in attendant environmental pollutants but also by prospect of enlisting the business community into the environmental protection coalition.

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<sup>32</sup> For a discussion of the value chain model see, for example, Porter (1996).

The technological innovation necessary for advanced modernization is an increasingly important aspect of achieving greater manufacturing efficiencies and, ultimately, the promised win-win result for the economy and environment. Not only is the application of new technology often required to reduce polluting manufacturing process and increase production capacity, but the development of that technology—from basic research through implementation—is an increasingly lucrative capitalist enterprise itself. This theme also reflects persistent confidence in the capacity for human ingenuity and its byproducts to substitute for natural resources (a strategy for rejecting the radical “limits to growth” criticism).

Professing a neoliberal faith in consumers to signal their desires for “green” products and ecologically sensitive manufacturing processes through their market choices, EM does not fundamentally question the underlying capitalist logic of production and consumption. While recognizing that environmental damage is a regrettable byproduct of the modernist project this second storyline emphasizes that environmental preservation will be a natural outgrowth not of de-modernization, but of further modernization employing the logic and tools of liberal capitalism.

### *3.8.3 Social equity and environmental justice*

Consistent with modernist, technocratic approaches, EM sidesteps problematic social contradictions emphasized by competing, but more radical, approaches. In neglecting social equity and environmental justice issues—including the geopolitical, economic, and cultural distribution of responsibility for and impacts of environmental harms—adoption of the EM framework substantially reduces the number and complexity of potential solutions to specific environmental problems. Instead of inviting admittedly messy, plural, democratic deliberation, the expertise-intensive process is guided by technical feasibility and quantitative cost-benefit analysis. The

risks that are considered are those that are quantifiable. This technocratic orientation resists more democratic and egalitarian modes of addressing complex, post-normal environmental problems.

#### *3.8.4 Neoliberal, free market orientation*

It is also obvious that ecological modernization ... does not address the systemic features of capitalism that make the system inherently wasteful and unmanageable.

Hajer, 1995, p. 32

Finally, ecological modernization embraces dominant neo-liberal, free market capital economic philosophy emphasizing voluntary, enlightened adoption of environmentally friendly production and consumption alternatives. The substitution of technology and human ingenuity for fossil fuels alleviates the need for society to reexamine its growth trajectory. "It is a policy strategy based on a fundamental belief in progress and the problem-solving capacity of modern techniques and skills of social engineering. ... There is a renewed belief in the possibility of mastery and control" (ibid., p. 33). Aside from professing a liberal faith in consumers to signal their desires for "green" products and ecologically sensitive manufacturing processes, EM does not fundamentally question the underlying capitalist logic of production and consumption.

In Chapter 4 I present a variety of qualitative survey, interview, and workshop data gathered from planners, administrators, politicians, and others with vested interests in the urban planning and environmental policy. Through what they say and how they say they act, planners convey how they think about climate change, how they perceive the political climate in which they practice, and how they act regarding climate change give the constraints inherent in their communities and profession.

## CHAPTER 4

### AMERICAN CLIMATE CHANGE PLANNING: EMPIRICAL DATA

In the wake of the failure of the United States government to take concerted action toward generating a climate protection agenda, much has been made in the popular and academic literature of the role of cities and states in establishing systematic mitigation policies and programs. While it is not clear whether these policies and actions, in the aggregate, can make a meaningful reduction in our national carbon footprint, an increasing volume of research on and advocacy of local and regional mitigation strategies seems to cast an optimistic glow on the capacity of local communities to achieve nontrivial greenhouse gas reductions.

In this chapter I use a variety of first-hand data—some of which is presented here for the first time—to explore climate planning-related challenges planners face in their communities and how they respond to those challenges. Over the past five years, Jeff Howard and I have gathered interview, workshop, roundtable, and survey data from city and regional planners, urban administrators, urban affairs and planning academics, and elected officials that provides a unique—although far from comprehensive—picture of the attitudes and action toward climate action planning across the United States and in North Texas.

Since so much has been written about the relatively few U.S. cities that have engaged seriously in climate action planning and mitigation, it is informative to examine communities with less inspiring climate protection agendas. Assuming that a chain is only as strong as its weakest link, these examples—especially if they are representative of a broader swath of U.S. urban areas—can provide us with grounds

for tempering assessments of progress in climate protection that are perhaps unduly optimistic.

#### 4.1 National Climate Change Mitigation Survey

The Planners Climate Change Mitigation Survey (PCCMS) is the most recent element of an evolving urban climate change mitigation and adaptation research agenda commenced in 2005 by Jeff Howard and me (Hurst & Howard, 2010).<sup>33</sup> Conducted in late 2010 and early 2011, the PCCMS was a national survey of American planners, planning academics, planning students, and other urban professionals (e.g., municipal administrators, elected officials, architects, and land-use lawyers). The base populations for the survey were members of the American Planning Association state chapters. Although a few questions were posed regarding climate change adaptation, the majority of survey questions were designed to elicit climate change mitigation attitudes and actions from planners across the United States.

Over the past several years various organizations have conducted national opinion surveys of American public attitudes toward global warming and associated policy issues. Examples include a 2010 survey conducted by the Yale Project on Climate Change and the George Mason University Center for Climate Change Communication (Leiserowitz, Maibach, & Roser-Renouf, 2010a; Leiserowitz, Maibach, & Roser-Renouf, 2010b); a series of surveys sponsored by the Brookings Institution (e.g., Rabe & Borick, 2010; and Borick & Rabe, 2008); and 2009 polls conducted by Gallup (Saad, 2009) and the Pew Research Center for the People and the Press (2010), a 2010 poll conducted by Pew Research Center for the People and the Press (2010).

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<sup>33</sup> All data referenced in this section derive from this survey unless otherwise cited.



I have been able to identify only two climate protection-related surveys of planners. In 2007, the American Planning Association (APA) conducted a survey of its membership regarding energy-related issues with explicit reference to climate change (American Planning Association, 2007).<sup>34</sup> This appears to be the first time that the APA formally explored the climate change topic with its entire membership. In the second, updating a series of surveys stretching back to 1989, Robert Zehner conducted a 2006 survey of Australian planning directors regarding their prioritization of climate change mitigation and adaptation issues in their local governmental jurisdictions (Zehner, 2007). While not directly relevant to this research, a future comparison of Zehner's results with those from this survey may provide unexpected insights.

National administration of the survey attempts to capture the regional specificity not only the steps that planners are taking in addressing climate change in their communities, but also any geographical variability in planners' attitudes toward climate protection planning. These national data also provide a context for assessing progress toward climate protection by North Texas planners and the communities in which they practice. The survey will also allow me to discriminate between responses from planners in cities that have publicly committed to the ICLEI Local Governments for Sustainability Cities for Climate Protection and/or the U. S. Conference of Mayors Climate Protection Agreement. This will enable comparison of these survey data with those included in Portney's analysis (2003).

In this dissertation I do not conduct extensive statistical analysis on these data; I cite only simple statistics from these data, relying on data summaries to

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<sup>34</sup> The 2005 version of this survey contained no reference to climate change.

provide anecdotal evidence in the course of arguments made in this dissertation<sup>35</sup>. However, more extensive analysis of these survey data may provide the foundation for future research projects. In anticipation of this, I have included a range of questions that exceeds the focus of this dissertation.

I originally intended to enlist the cooperation of the APA in the survey, thereby gaining use of the association's membership list.<sup>36</sup> While not all practicing planners are APA members, APA is the foremost professional body representing city and regional planners in the United States.<sup>37</sup> After a long series of contacts with various members of APA leadership, negotiations, and two formal proposals, the national leadership of APA declined to participate in this survey on the grounds that doing so would violate member privacy and set an unwelcome precedent.<sup>38</sup> However, APA did announce the survey in the 1 October 2010 issue of the electronic newsletter, *Interact*.

The survey was administered electronically using *SurveyMonkey* and included yes/no, multiple choice, and five-point Likert scale questions. Respondents were given the opportunity to provide additional open-ended responses to most questions. In order to respect anonymity and encourage honesty, respondents were asked to identify themselves only by the county and city in which they serve as professional planners and by their primary planning role/title. This information will enable me to

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<sup>35</sup> I anticipate publishing a more robust analysis of the results following graduation.

<sup>36</sup> At the time the survey was developed APA membership exceeded 40,000 planners, academics, students, elected/appointed officials, and allied urban professionals.

<sup>37</sup> The United States Bureau of Labor Statistics (2010) estimates indicate that 2008 employment for "urban and regional planners" was 38,400. While all APA members are not necessarily practicing planners, when I compared with APA membership numbers for the same period (approximately 40,000), it was reasonable to assume that a survey of APA membership would provide results consistent with a survey of all U.S. planners.

<sup>38</sup> When approached in spring 2010 regarding APA's interest in participating in the survey, Paul Farmer, APA CEO and President, indicated that APA does not release its membership list for any purposes; he suggested that I speak with the research office. Bill Klein, Director of Research and Advisory Services, subsequently said that unless I was able to provide funding for such a survey, APA Research would be unable to participate. In addition, he stated that APA's participation in such a survey would set an undesirable precedent (i.e., apparently, cooperating with graduate students on dissertation research).

normalize the data for multiple responses from within a given jurisdiction. By voluntarily supplying a contact e-mail address, respondents were provided the opportunity to receive a summary of the survey results and/or to provide follow-up information regarding his/her survey responses.

Most survey questions were constructed to provide data allowing comparison of this survey population with prevailing national public opinion. Other survey questions were constructed to elicit responses that can be mapped directly to the ecological modernization framework and salient criticisms thereof. The appendix contains a copy of the survey instrument. The following summary of the survey results is adapted from the report provided to survey participants.

The survey initially was targeted at members of the American Planning Association (APA) and was announced in the 1 October 2010 edition of the APA's online newsletter, *Interact*. Due to low initial response rates, I extended invitations to planners and other urban professionals visiting APA groups on *Facebook* and *LinkedIn*, and planning academics on *PLANET*. I also directly requested that APA chapter presidents encourage their members to participate in the survey. Throughout the duration of the survey administration, I provided regular statistical summaries of response rates and their geographical distribution to APA chapter presidents by e-mail and to all other participants by posts on the aforementioned electronic distribution channels (except *Interact*).

The survey comprised 37 primary questions designed to elicit four principal kinds of information:

- demographic information enabling us to locate the respondent geographically and within the professional planning hierarchy;
- the respondent's own attitudes and perspectives regarding climate change mitigation;

- the respondent's assessment of community attitudes, perspectives, and capacities regarding engagement in climate change mitigation planning;
- the respondent's assessment of the capacity of planning institutions to meaningfully embrace climate change mitigation planning; and
- real and/or perceived impediments to discussing, developing, or implementing a climate protection agenda within the planner's jurisdiction.

The potential respondent population likely exceeded 40,000 planners and other professionals, academics, and students located throughout the United States.<sup>39</sup> Despite protracted publicity efforts designed to elicit responses from all geographical regions in the United States and further repeated attempts to encourage APA member participation in states whose response rates were low, in the end many areas of the country were poorly represented or unrepresented in the survey results.

In order to respect anonymity and encourage honesty, respondents were asked to identify themselves only by the county and city in which they serve as professional planners and by their primary planning role/title. By voluntarily supplying a contact e-mail address, respondents agreed to provide follow-up information regarding their survey responses (if needed) and were provided a summary of the survey results. This summary was also posted on the electronic channels used to solicit respondents. All survey responses were tagged with an electronically generated identification number; this is the sole means by which respondents will be linked to their responses.

The response from this announcement was poor. One week following the APA newsletter announcement, only 100 responses had been submitted. Based on unrelated conversations to which I had been party regarding the poor penetration *Interact* had been generating, I expanded my invitations to APA groups on *facebook*

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<sup>39</sup> APA national members who are also (state) chapter members number approximately 36,500 (as of October 2010). Response rates in this report are based on chapter membership counts published by APA.

and *LinkedIn*, and the *PLANET* listserv for academic planners. I also directly invited APA chapter presidents to e-mail the survey URL and a cover statement to state chapter members.<sup>40</sup> While the net was cast wide during the administration of this survey, response rates remained depressingly low.

After allowing the survey to run for fourteen weeks, I closed it on 6 January 2011. Eliminating approximately 200 incomplete surveys<sup>41</sup> left 1,502 valid responses.<sup>42</sup> For analysis purposes, the final data were segregated by state (California and other) and respondent type (planner, academic, other professional, and student). Only 97 (6.5 percent) of the respondents (28 from California) characterized themselves as students (as opposed to planners, academics, or other specified professionals). Of the 517 non-student respondents from California, 492 (95 percent) identified themselves as planning professionals. Of the 888 non-student respondents from outside California, 794 (89.4 percent) identified themselves as planning professionals. The majority of respondents from professions allied with planning identified themselves as academics, urban administrators, architects, and land use lawyers.

#### *4.1.1 Response data quality*

The low response rate for most of the states and the geographical holes in the survey data suggest that the response data may reflect a distorted distribution of attitude, assessment, and opinion of planners across the country. In spite of the very real note of climate change denial found in almost 10 percent of respondents, were

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<sup>40</sup> All members of APA are automatically members of their respective state chapters.

<sup>41</sup> Questions 1-14 requested demographic data. For the purposes of meaningful analysis, incomplete responses were deemed to include those containing no non-demographic data (i.e., questions 15-37). These records likely resulted from mid-stream respondent resignation from the survey process and were discarded.

<sup>42</sup> Fourteen responses were received from students and professionals outside the United States. These responses were excluded from the present analysis, but are preserved in the final data set for future research.

those that responded more likely to be “true believers” in human-caused climate change? Were they more likely than those that chose to not respond to believe that planners have a responsibility to work aggressively for the mitigation of greenhouse gas emissions in their practices? Do these data present a real picture of the state of American urban planning and its capacity to forge real progress in urban climate protection?

Analysis of these data is intentionally limited to a summary level in order to provide anecdotal support or refutation of claims made and/or conclusions drawn in this dissertation. The data are used as a reflection of the range of thinking in the planning community about climate change and the role of planners in mitigating it. However, summaries of the survey data can be compared to and corroborated with responses obtained in subject interviews, roundtables, and workshops (presented in following sections) in order to connect local, regional, and national scales and draw overall conclusions regarding themes relevant to climate protection planning. These data comparisons will serve as an informal validation of the survey responses.

Analysis of these survey data (outside the scope of this dissertation) may be able to assess the extent to which the data are representative of the diversity and intensity of opinion in the planning community. In those states with a particularly high relative response rate (e.g., California) the data may be sufficiently robust to enable statistically valid conclusions to be drawn from them. No such analysis is attempted in this dissertation.

#### *4.1.2 Main survey findings*

Survey responses revealed that planners and allied professionals in the United States are aware of and, to a greater or lesser degree, informed on and concerned about the threats posed by climate change for the communities in which they

practice. As evidenced by the uneven distribution of responses across the country, planners are variably willing or able to engage climate action planning as a fundamental part of their professional responsibilities. A small, but significant, proportion of respondents remain skeptical of anthropogenic climate change, some stridently so.

Planners do not speak with a single voice regarding climate change and certainly do not uniformly reflect the position that APA has taken (e.g., in its policy guides) vis-à-vis planning's role in climate change mitigation. While planners in some areas of the country are making progress toward local planning for climate change mitigation, many are hobbled by a lack of public and political commitment, regional and local climate change impact data to support locally relevant climate action planning, and inadequate professional support from the professional planning organizations that represents them at local, state, and national levels.

The typical survey respondent was an AICP-certified senior-level planner employed in the public sector with a masters-level planning degree from a PAB-accredited program. While the majority of respondent planners indicated that they participated in planning for a single community, more than ten percent (185) of the respondents described themselves as planning for multiple communities, counties, councils of government, or other geographical regions. Twenty-four respondents chose not to reveal the communities in which they practice.<sup>43</sup> Fourteen responses came from respondents located in cities outside the United States.

Figure 1<sup>44</sup> displays the percentage of respondents by APA electoral region.<sup>45</sup> These figures belie the unevenness of response rates among states in those regions

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<sup>43</sup> In spite of the strong anonymity options provided in the survey instrument, several respondents expressed concern that their participation, if discovered, might endanger their jobs.

<sup>44</sup> Adapted from an APA graphic at [www.planning.org/apaatag/ance/electoralmap.htm](http://www.planning.org/apaatag/ance/electoralmap.htm)

(Figure 2 and Figure 3 at the end of this chapter). Responses from California comprise approximately one-third of the data and account for almost 11 percent of APA-member planners in that state. Vermont planners achieved the best response rate, with more than 20 percent of APA members participating.

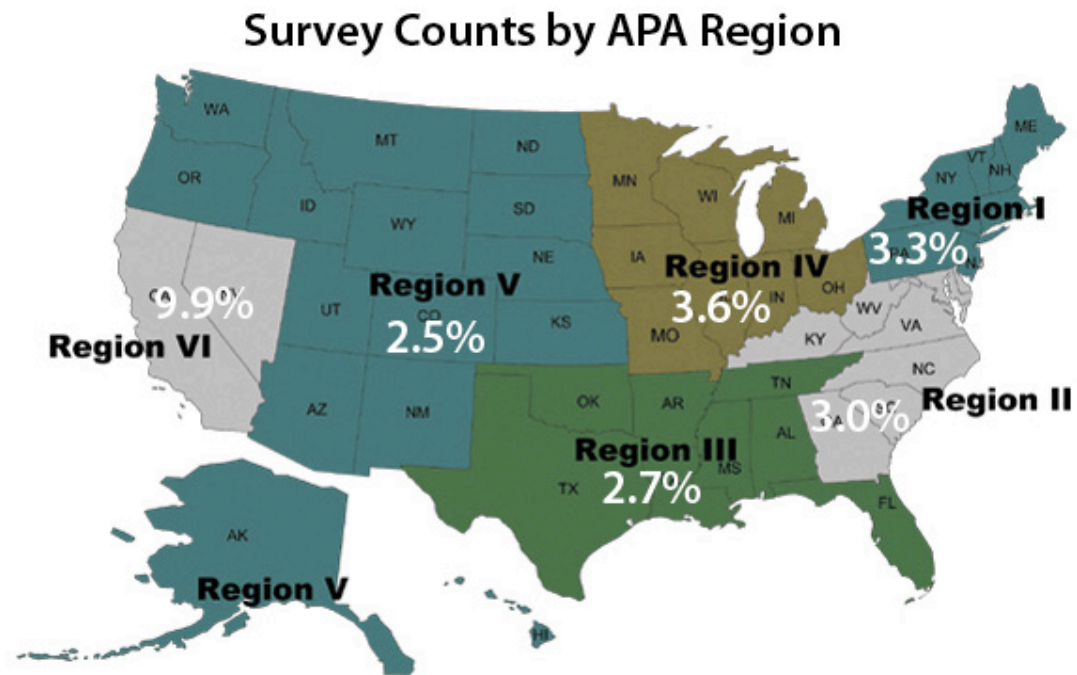


Figure 4.1 Survey respondents by percent of APA region membership

States with response rates of five percent or less represent:

- nearly 75 percent of American planners;
- almost 75 percent of the United States population (2009 estimate);
- over 91 percent of the general coastline (and over 92 percent of the tidal coastline);
- over 75 percent of 2007 anthropogenic carbon dioxide emissions;
- six of the top ten and 14 of the top 20 emitters of carbon dioxide (2007).

<sup>45</sup> Membership data used for this survey indicated that APA regions comprise approximately equal proportions of its membership, between 15.2% (VI) and 17.5% (III).



Troublingly, almost 10% of respondents indicated skepticism toward the reality of anthropomorphic climate change, a surprisingly high number given the increasingly high visibility climate change has attained inside the APA. Comments ranged from the measured—"The assumption that CO2 is a pollutant that needs to be remediated is premature and needs further investigation" (#1209692631)—to the hostile—"Climate change is crap" (#1196712191).

This indication is consistent with response data obtained elsewhere in the survey:

- Approximately 10 percent of respondents assert that local manifestations of climate change will only emerge later than 2050, if at all.
- Over 34 percent of respondents replied that their municipal governments do not have a climate action plan. Almost 20 percent indicate that they don't know whether or not their municipality has such a plan.
- Almost 45 percent of respondents indicated that they do not feel encouraged in their work environment to speak out about the effects of climate change on their communities.
- Respondents indicated that only 40 percent of local residents or elected officials are concerned about the local impacts of climate change; just over 20 percent of local businesses are concerned about those local impacts.

Finally, in completing the survey and in subsequent e-mail correspondence, respondents provided more than 3,000 unscripted comments. While not amenable to detailed summarization, these comments were generally helpful and reflected a desire to implement appropriate greenhouse gas mitigation measures at the local level. Many planners expressed frustration that they did not have better regional and local climate change impact data with which to buttress their appeals for more aggressive action.

#### *4.1.3 Planners' preparation for climate action planning*

Less than 20 percent of respondents said that they had received formal training on climate change in their college courses. This is likely due to the relative novelty of climate change in planning curricula. A majority of respondents indicated that they actively pursued information on climate change through seminars, conferences, and reading. (California respondents rated approximately ten percentage points higher in pursuing continuing climate change education).

In their work, respondents indicated that their most influential sources of climate change information were informal discussions, conferences, popular and professional media, and continuing education. Less than one-quarter of respondents rated APA-supplied material on climate<sup>46</sup> as influential in their daily work. Less than half of respondents indicated that advocacy for climate change planning by APA had been helpful in their climate change mitigation efforts.

Respondents indicated that the public perceives planners as more knowledgeable and concerned regarding the local impacts of climate change than are local residents and political and business leaders (considerably more so in California). Individual planners claimed to be more knowledgeable and concerned than planners in general.

#### *4.1.4 Planners' role in mitigating climate change*

By a wide margin (approximately 60 percentage points), climate change mitigation efforts at the local scale were seen to be insufficient. Outside of California, the picture was almost identical for mitigation efforts at the *regional* scale, while in California the margin dropped to a mere ten percentage points.

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<sup>46</sup> The survey specifically mentioned the APA Climate Change Policy Guide, the APA Sustainability Policy Guide, the APA Smart Growth Policy Guide, and the APA Climate Change Reader.

Approximately 60 percent of respondents said that they promote climate protection knowledge in their work environments. Sixty percent of California respondents indicated that they feel encouraged to do so (either by their superiors or by the general work atmosphere); only half of national respondents claimed to feel so encouraged. By a twenty-point margin, respondents nationwide supported mandatory, as opposed to voluntary, greenhouse gas reductions. However, more than 80 percent expressed confidence that meaningful greenhouse gas reductions can be achieved through policies and practices that make no explicit reference to climate change.

A number of respondents questioned the role of planning in addressing climate change as an institution or in their communities. #1197863978 stated, "APA should not be taking a stance on this issue given the disagreement amongst scientist[s] about the data fitting the theory." #1209114995 rejected the planners' advocacy role: "I am not an advocate of climate change mitigation. This is a policy decision that is best left to elected officials." More constructively, #1196439113 suggested, "APA needs to figure out how to empower planners to say what they know and believe when City Managers browbeat them into sugar coating reports to City Councils. This profession has little backbone."

Although the survey focused on climate change mitigation, it included several questions on adaptation. By a wide margin respondents outside California indicated that their focus should be on *adapting* to climate change. In California, though, respondents favored *mitigation* by the same large margin. Outside California, 80 percent of respondents indicated that they believe local growth and climate protection agendas can be achieved simultaneously. In California, though, only about half were so optimistic.

#### 4.1.5 Community climate action planning

When respondents were asked to estimate when their communities would experience impacts from climate change, a majority indicated that they were *already* experiencing such impacts (and over three-quarters indicated that they would do so by 2030). Strikingly, a small but significant contingent, about eight percent of respondents, indicated that local impacts would be experienced only after year 2100 *if at all*. This number is consistent with the number of respondents who contended, in supplementary remarks, that the survey was biased in its assumption that human agency has a significant role to play in climate change.

Just over 50 percent of California respondents indicated their municipalities already had or were preparing climate action plans; less than 50 percent indicated that their communities had or were preparing climate action plans. Outside of California, less than 25 percent indicated that their municipalities and communities already had or were preparing climate action plans. Surprisingly, approximately 20 percent of all respondents claimed to be unsure of the status of climate action planning within their municipalities and communities.

Respondents who indicated that their communities have prepared or are in the process of preparing climate action plans indicate that local pressure was a major reason for pursuing climate action planning. The most frequently cited goals of such plans were environmental quality and energy conservation. Less frequently cited reasons included protecting natural resources, contributing to global sustainability, and reducing vehicle-miles-traveled. Nationwide, less than ten percent indicated that reducing vehicle miles traveled was a goal. Nationally, respondents indicated that the primary barriers to successful climate action planning in their communities were the persistence of carbon-intensive social preferences; a lack of political

consensus on and local interest in climate change; and the complexity of climate science.

#### 4.2 Climate change planning in Texas

The State of Texas and the Texas Commission on Environmental Quality (TCEQ) have no discernible climate protection agenda. While TCEQ supports a repository for the recording of point-source “criteria pollutant” emissions, carbon dioxide has yet to be listed among those pollutants.<sup>47</sup> Its website only provides guidance documents for the voluntary reporting of greenhouse gas emissions.<sup>48</sup> The administration of Rick Perry has joined a lawsuit against the U. S. Environmental Protection Agency to prevent it from regulating carbon dioxide under the Clean Air Act pursuant to the 2005 Supreme Court decision in *Massachusetts v. EPA* and the 2009 EPA endangerment finding. In its capacity as guardian of the environment, neither the State of Texas nor the TCEQ provides any support or guidance to regions or cities in addressing climate change.

In June 2007 the University of Texas Arlington School of Urban and Public hosted the Texas Cities for Climate Protection meeting, co-hosted by Arlington mayor Robert Cluck, ICLEI—Local Governments for Sustainability, and Public Citizen. The one-day meeting attracted mayors (or their designated representatives) from Texas cities that had enlisted under ICLEI’s Cities for Climate Protection initiative. A representative from Physicians for Social Responsibility and the Administrator for EPA Region 6 also attended in addition to numerous academics and support staff.

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<sup>47</sup> Texas Commission on Environmental Quality. (2011). 2010 Emissions Inventory Guidelines (RG-360A/10). Austin, Texas.

<sup>48</sup> See *Inventory of Voluntary Actions to Reduce Greenhouse Gases* at <http://www.tceq.texas.gov/p2/P2Recycle/inventory-of-voluntary-actions-to-reduce-greenhouse-gases>.

The majority of the conference in June 2006 consisted of productive discussions about an evolving mayoral initiative headed by Mayor Laura Miller (Dallas) to block the construction of eleven new coal-fired power plants in Texas.<sup>49</sup> Catherine Thomasson, then-President-Elect of Physicians for Social Responsibility, emphasized the importance of mayoral responsibility in confronting the climate-related threats and hazards. When asked by Mayor Robert Cluck (Arlington, Texas) if the EPA should regulate carbon dioxide, Richard Green, EPA Administrator, Region 6, responded that it should if the Supreme Court so ruled<sup>50</sup>, but that cities should not wait for what would probably be a long and contested rule-making process.

#### 4.3 Climate change planning in North Texas

Given the continuing national population shifts toward the south and west (U. S. Census, 2010), as well as the relative resilience of many of the Southwest's urban economies in the wake of the 2008 recession<sup>51</sup>, Texas, in general, and Dallas/Fort Worth (DFW) Metroplex—which includes Dallas, Fort Worth, Arlington, and over two hundred demographically and economically diverse municipalities—in particular, can be considered representative of areas across the country, especially those in the nation's South and West, in which planners have a vital role to play in promoting and securing a climate protection agenda. Characterized by sprawling, low-density development, thoroughly dependent on the automobile for transportation, and facing a future of increasingly tenuous fresh water supplies as its climate becomes even drier and hotter, the region's population is expected to double over the next 20 years. It comprises a large number of politically independent, fractious, and

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<sup>49</sup> Minutes from the Texas Cities for Climate Protection meeting, June 30, 2006. Inasmuch as no audio recording was made of the meeting, all quotes attributed to the participants are paraphrases taken from the minutes. See <http://preview.tinyurl.com/TX-Mayors-CP>.

<sup>50</sup> *Massachusetts v. EPA* was not decided until April 2, 2007.

<sup>51</sup> According to the Brookings Institution Metro Monitor for the fourth quarter of 2010, 14 of the 20 strongest performing metro areas were located in southern and western states (notwithstanding California's recovery difficulties).

economically conservative municipalities, suffers from weak regional policy coordination, and is hostage to ingrained development practices that continue to thwart cooperation toward mitigating greenhouse gas emissions and compromise local and regional sustainability in the face of impacts deriving from global climate change. They can also be considered to be areas in which there may be some of the greatest political resistance to the sort of transformative change in land use and consumption behaviors required over the next half-century to meaningfully mitigate greenhouse gas emissions.

At the regional level, the North Central Texas Council of Governments does not betray any concern for climate change in the context of its advocacy for sustainable development. Its Environment and Development Department emphasizes traditional environmental issues such as solid waste management, storm water management, and air quality (primarily transportation-related ozone and particulate pollutants). Its Center for Development Excellence maintains a set of technical tools that encourage adoption of their ten Principles for Development Excellence that “promote quality growth in North Central Texas that enhances the built environment, reduces vehicle miles of travel, uses water & energy resources effectively and efficiently, and helps advance environmental stewardship in order to ensure continued economic vitality and provide the highest attainable quality of life for all residents.”<sup>52</sup> While adoptions and use of these principles may directly or indirectly influence the level of greenhouse gas emissions, neither global warming nor climate change is explicitly mentioned in the Council’s environmental agenda.

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<sup>52</sup> See *NCTCOG Center for Development Excellence* at <http://www.developmentexcellence.com/principles.asp>.

#### *4.3.1 Vision North Texas*

In 2005 with the sponsorship of NCTCOG, the Urban Land Institute, and the University of Texas Arlington spearheaded Vision North Texas (VNT), a long-term regional growth planning initiative to design development priorities to accommodate an expected doubling of the regional population by 2050. Following a series of regional and sub-regional public meetings gathering a large and diverse set of stakeholders from across the region, a set of four scenarios was defined to support the creation of “a preferred future for North Texas” (Vision North Texas, 2010, p. 1); these provide distinct growth and infrastructure development visions alternative to a prevailing “business as usual” scenario.

The early years of the VNT process were conspicuous for their lack of attention to climate-related issues. In a comment on the planning roundtable discussions VNT Project Manager Karen Walz, FAICP, observed, “Climate change has not had as much focus in VNT as some issues because there have been fewer resources to address it” (Howard & Hurst, p. 112). The Vision North Texas Leadership Summit held in September 2006 to “to bring together elected officials from the North Texas region who face common challenges and opportunities because of their communities’ character and location within the region” and to “set priorities for action through Vision North Texas and other initiatives” (Vision North Texas Leadership Summit Report, 2006, p. 3). The top four regional priorities identified by attendees were water, air quality, education, and transportation. Only two among the approximately 100 attendees identified “environmental” as regional top priority. A review of 2007-2008 sub-regional meeting materials<sup>53</sup> contain few, if any, explicit references to the impacts of climate change or its mitigation, but focus primarily on

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<sup>53</sup> See “What have we accomplished” at <http://www.visionnorthtexas.org/accomplishments.html>.



the broader issues of air and environmental quality. Considerable attention was devoted to the characterization of the North Texas region as part of the global economy, but no mention was made of its contribution to global (or even super-regional) environmental or climate challenges.

In December 2008 report, VNT presented an overview of workshop results and a summary of supporting demographic, economic, land use, environmental, and other research (Vision North Texas, 2008). In this report, VNT made its first explicit reference to anthropogenic climate change presenting IPCC conclusions from its *Climate Change 2007: Synthesis Report* (p. 48) and suggesting that the any one of the alternative development scenarios would be likely to reduce the region's carbon footprint from that implicit in the business-as-usual scenario (p. 91). The VNT report noted that progress toward mitigating greenhouse gas emissions was already underway and recognizing the involvement of many North Texas communities in the ICLEI Cities for Climate Protection. It also stated, "[O]ver 60% of the people in the North Texas Region were living in cities whose mayors had signed the U.S. Conference of Mayors Climate Protection Agreement" (p. 92).

While a June 2009 workshop presenting a status report on analyses being conducted by conducted by VNT and NCTCOG on the four alternative development scenarios made no mention of climate change, the formal presentation of the completed alternatives analyses in September 2009 (Vision North Texas, 2009) presented a set of climate change indicators and an assessment of the four alternatives in terms of those indicators (p. 16). These assessments confirmed earlier suggestions that implementation of any one of the alternative development scenarios would result in reductions of greenhouse gas emissions in the North Texas region.

Released in a March 2010 regional summit meeting, *North Texas 2050* described “a future that current residents would like to achieve and its Action Package (Chapter 5) proposes tools and techniques that can be used by many different private and public decision-makers to help achieve this regional vision” (p. 6). In the section entitled “Climate Resilience” the report states, “International research has led some (but not all) scientists to conclude that increasing levels of carbon (and other greenhouse gases) in the atmosphere contribute to global climate change” (p. 28) and concludes that implementation of this “preferred future” could help reduce carbon dioxide emissions by 7-10% “below 2030 projections” (p. 29).

#### *4.3.2 Climate planning roundtable*

In November 2009 under the aegis of the School of Urban and Public Affairs at the University of Texas Arlington, a roundtable meeting was convened to better understand “how ‘climate leader’ municipalities of North Central Texas—and urban planners in those communities—are responding to the looming challenge of climate change” (Howard & Hurst, 2009, p. iv). Invitees were selected based on their respective communities’ membership in ICLEI Cities for Climate Protection and/or their adoption of the U. S. Conference of Mayors Climate Protection Agreement. The meeting attracted regional planning directors (or their representatives) for a five-hour conversation about “how climate change concern is—or isn’t—being translated into changes in zoning decisions, building codes, transportation plans, education programs, solid waste practices, energy purchases, and related matters in North Central Texas communities that lead the region in responding to the threat of climate destabilization” (ibid.).

In framing the context of the meeting Jeff Howard observed:

U.S. urban planning practitioners—as represented by their primary umbrella organization, the American Planning Association—are now

mounting a high-level institutional response to the climate crisis (see APA 2008).<sup>54</sup> However, it remains to be seen how this response will manifest at the local level, where it confronts the economic and political forces that have made cities major contributors to climate change and that for decades have thwarted so many efforts at sensible urban planning, forces starkly reflected in the iconic landscape of sprawling urban areas designed to accommodate automobile-dependent growth and economic development propelled by the fossil fuel economy. (ibid., pp. 8-9)

Howard's analysis of the proceedings revealed three primary mitigation-related themes (p. 11-12):

- In spite of concerned rhetoric in these communities, economic concerns continue to dominate climate- and sustainability-related decision-making.
- Little traction has been achieved in significantly reducing greenhouse gas emissions beyond municipal operations.
- Due to enduring political sensitivity to climate change issues, local planning community is reluctant to explicitly engage in explicit and aggressive advocacy of greenhouse gas mitigation initiatives preferring, instead, to embrace and trumpet sustainability initiatives that have little or no impact on climate change.

Texas State Representative Lon Burnam offered the following assessment of the roundtable discussions:

I must say, however, that upon reading the transcript from the discussions on mitigation and adaption, I am concerned that our region's planners do not yet grasp the gravity of the threat posed by climate change and the magnitude of the task before us ...

If you share the scientific community's sense of urgency, as I do, most of the mitigation efforts discussed in the roundtable are woefully inadequate. Recycling programs and hike and bike trails are great things for our cities, but as climate change mitigation strategies, they are about as effective as an umbrella in a Class 5 hurricane. (p. 110)

He concludes, "Averting climate change catastrophe requires a paradigm shift in urban planning" (p. 110).

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<sup>54</sup> Referring to the newly released APA *Policy Guide on Planning & Climate Change* and the August/September 2007 special issue of *Planning* focusing on climate change.

#### 4.4 Climate planning in the City of Arlington

The City of Arlington is the twentieth-largest city in the United States and the third-largest city in the Dallas-Fort Worth Metroplex with approximately 380,000 residents (U. S. Census Bureau, 2009). Located halfway between Fort Worth and Dallas, Arlington lies at the geographic center of the Metroplex and is the largest city in the United States with no public transportation system.<sup>55</sup> It is a conservative bedroom community that is generally representative of the traditional low-density suburban development characteristic of many of the south and western cities which are expected to absorb the majority of national population shifts over the next half-century.

Following the Texas Cities for Climate Protection meeting, Jeff Howard and I interviewed Mayor Cluck and conducted a series of successive interviews with City of Arlington administrators, planners, and community environmental activists. These interviews were designed to better understand the extent to which rhetoric in support of climate change planning was being translated into action and to determine the extent to which the city's climate protection agenda was shared throughout the municipal administration.

##### *4.4.1 Robert Cluck, Mayor*

A practicing physician, Mayor Cluck<sup>56</sup> engaged the climate change issue from a public health perspective and had positioned himself strongly in favor of vigorous urban climate action planning. In a message to the residents of Arlington posted on the city website he highlighted the increasing certainty that human action—specifically, the increasing use of fossil fuels as an energy source—was responsible

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<sup>55</sup> The city does sponsor Handitran, a reservation-based van transportation system for mobility-impaired residents. The University of Texas Arlington sponsors a circulator system for students, staff, and faculty serving the campus and adjacent areas.

<sup>56</sup> All quotes in this section were taken from a transcript of an interview held with Mayor Cluck by Jeff Howard and Kent Hurst on July 5, 2007.

for transforming our climate; and called for further action by Texas cities to reduce carbon dioxide emissions.

Increased use of fossil fuels is leading to a changed climate. ... We must take concrete steps now, to avoid more serious consequences. ... Skeptics will say that we could be wrong about global warming and that we will waste resources and time, trying to correct it. But that's actually the best possible outcome, because the worst possible outcome -- one that science is pointing to more strongly every day -- is that global warming is indeed occurring, and if we stick our heads in the sand we will pass a point at which we cannot correct it.<sup>57</sup>

He cites energy efficiency and alternative fuels programs undertaken in Austin, Texas, and touts initiatives to conserve energy in City of Arlington municipal operations (e.g., procuring more fuel-efficient vehicles and replacing incandescent with light-emitting diode (LED) traffic lights) and states, "Even little things can add up to big benefits, and yield a financial benefit, too."

In a subsequent interview, Mayor Cluck indicated that his constituency did not share his concern regarding climate change and its impacts on Texas cities. "It's very unpopular because I'm a Republican. And so I've heard from some Republican friends that that's not a Republican issue. ... I don't care about that. ... I am an MD. And I don't think that it's a Democratic or Republican issue. It's a public health issue, and we all should work on it together."

Although the Community Planning & Development (CP&D) Department has a significant role to play in the development and administration of vision and ordinances for green building, Mayor Cluck indicated that it was not currently visibly active in promoting a climate protection agenda. However, Mayor Cluck said that he was hearing more from them on associated issues than he once did. "I used to hear nothing, and now I hear more and more people talking about it. Not nearly enough.

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<sup>57</sup> "Texas Cities Can Fight Global Warming," Robert Cluck, July 12, 2006, [http://www.arlingtontx.gov/mayor/message\\_071206.html](http://www.arlingtontx.gov/mayor/message_071206.html)

You know, literature is becoming more and more replete with ideas of how to trim greenhouse gases”

#### *4.4.2 Jim Holgersson, City Manager*

Jim Holgersson<sup>58</sup>, the Arlington City Manager, characterized Mayor Cluck’s approach toward addressing climate change and its impacts as “pragmatic” with initiatives being linked to tangible results: outcomes—the City of Arlington administration is pursuing individual initiatives with financial and/or economic development payoffs and, only secondarily, environmentally focused outcomes.

It’s driven first by economic development, which is all about America and the capitalistic system, but when you get into livable places, it’s about environment. So you can piggyback the two, and strategically it’s what we’re working to do. ...

To the extent that we can take some of these economic development dots and other important priorities and connect them at the same time to the environment, that’s going to spell the success of the strategy.

Holgersson confirmed that the Mayor was largely alone in his support of climate action planning in a city in which a significant proportion of Arlington residents are uninformed and/or skeptical regarding anthropogenic climate change and in a political context that does not favor local or regional (much less federal) action on climate change. “I don’t think that most residents pay any attention to it nor can be convinced about it.” He expressed hope that the Mayor’s resulting preference to couch climate-related policy in explicitly non-climate change language (i.e., public health and clean air) would generate progress equivalent to that achievable under an explicitly climate-focused agenda. Holgersson hoped that comprehensive plan and zoning ordinance revisions to encourage Smart Growth

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<sup>58</sup> All quotes in this section were taken from a transcript of an interview held with Jim Holgersson by Jeff Howard and Kent Hurst on August 21, 2007.

strategies would enable CD&P to make substantial contributions to local climate protection efforts.

#### *4.4.3 Jim Parajon, Director of Community Planning and Development*

Consistent with the approaches of Mayor Cluck and Jim Holgersson, Jim Parajon<sup>59</sup>, Director of Community Planning & Development (CD&P), chose not to explicitly frame climate action planning in the larger context of climate change. His approach in guiding the planning department has been entirely pragmatic in pushing organizational improvements and initiatives that are easily marketable to the community and will generate near-term, recognizable benefits (e.g., better organization performance, energy savings, and development efficiency). He perceives the risk of pushing such an agenda to be too great and characterizes such an approach as “all-or-nothing.” In reference to the ongoing update of the city’s comprehensive plan he stated, “We’re in the process of rewriting our comprehensive plan, [and] I don’t envision us highlighting [mitigating the effects of] climate change. That may be the results of some of the things we do. We might want to highlight it in a different way. I think that it’s going to be difficult to grasp why we are devoting resources to ‘climate change.’”

Although he noted that planners are constrained by the political and regulatory climate of the time and place in which they practice, Parajon suggested that the planning profession and its representative organizations—historically and presently—should take a more proactive, vocal role in educating the public and its political and municipal representatives on built environment and land use choices and consequences. He opined had the profession had taken a more thoughtful and active stance on the post-World War II urban stampede to the suburbs, society

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<sup>59</sup> All quotes in this section were taken from a transcript of an interview held with Jim Parajon by Jeff Howard and Kent Hurst on September 6, 2007.

might have avoided many of the negative consequences of unchecked sprawl that are increasingly problematic today.

Parajon recognized that the APA national office has begun to be more vocal in its advocacy, but lamented the timidity of the planning profession and its leaders in promoting appropriate planning and development practices. At least at the national level, the planning community should become much more politically engaged in an active attempt to influence the course of the development of the built environment. “It bothers me when we have a discussion about a situation like climate change. You’re hearing from scientists and you’re hearing from other entities, but are you hearing from the APA president?”

#### *4.4.4 Clayton Husband, Senior Planner*

Clayton Husband<sup>60</sup> was the senior long-range planner responsible for coordinating the first comprehensive rewrite of the city’s zoning ordinance in over 20 years. He was unaware of a programmatic environmental, sustainability, or climate protection emphasis in CD&P, but suggested that any environmental concerns were likely to appear in the city’s comprehensive plan. He suggested tree preservation and landscaping ordinances, and nascent green building standards, as examples of an emerging environmental commitment in Arlington that are and may soon be reflected in the zoning ordinances. During the interview, Husband expressed surprise when he learned of a draft environmental strategy document that was recently produced by the newly reformed Environmental Services Department (previously responsible for solid waste management and sewerage). To his knowledge, no CD&P staff had been involved in the production of the document.

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<sup>60</sup> All quotes in this section were taken from a transcript of an informal interview held with Clayton Husband by Jeff Howard and Kent Hurst on November 20, 2007.



Husband recognized that planners might be afraid to use climate-protection language in promoting environmental initiatives out of fear of possible political and/or financial repercussions. However, he stated that planners (especially those involved in comprehensive and other long-range initiatives) had an ethical responsibility to future generations. Just as this generation may blame previous generations of planners for present-day environmental degradation, so too will future generations reflect on and assess the consequences of what we do—or fail to do—today.

#### *4.4.5 Grace Darling, Citizen Activist*

In an attempt to provide an alternative perspective on the issues discussed with Arlington officials, we interviewed Grace Darling<sup>61</sup>, a long-time environmental activist in the community. A founding member of the Citizens Environmental Committee (CEC), an advisory group formed by the Arlington City Council, she had played a key role in recommending to the council a set of green building regulations. However, she lamented their “timidity” and suggested that the CEC was managed in such a way to ensure that its recommendations would be politically and fiscally practical and achievable. With respect to Mayor Cluck’s climate protection agenda, she confirmed that he was generally isolated in his advocacy of more vigorous action, especially since the departure of Mayor Laura Miller of Dallas.<sup>62</sup>

#### 4.5 Climate protection planning: A thematic summary

Examination of survey responses and the documentation and transcripts from workshops and interviews with practicing planners reveals a number of themes that help clarify the difficulties faced by planning professionals in promoting climate

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<sup>61</sup> All quotes in this section were taken from a transcript of an interview held with Grace Darling by Jeff Howard and Kent Hurst on October 25, 2007.

<sup>62</sup> Mayors Cluck and Miller had been strong allies in lobbying the state government to kill plans for building as many as 11 new coal-fired power plants. Ultimately their activism resulted in approval of only three of those projects.

protection in their communities. Given the political ideologies that constitute public discourse of global warming, climate change, and society's contribution.

- Challenges rationalizing local behavior with global consequences and global climate change with related local phenomena;
- Political intractability of the climate protection agenda in the face of economic priorities and ideological beliefs; prioritization of short-term, choice-based, market-driven growth over environmental protection.
- Indiscriminant conflation of "sustainable development" and "climate protection" agendas; and

In Chapter 5 I will use these empirical themes and those derived from EM theory in Chapter 3 to examine the climate protection challenges facing planners in the United States.

## CHAPTER 5

### ECOLOGICAL MODERNIZATION AS AN ANALYTICAL LENS FOR CLIMATE PROTECTION PLANNING

Ecological modernisation is the appropriate political, economic and cultural mode for addressing ecological problems at this present state of social development, since it does not challenge the underlying ownership relations and organization of the capitalist economy (i.e., the mode of production), the organization of the nation-state, nor consumer culture. It does not signal a radical, or even a major, change in society and therefore is perfectly suited to the prevailing limited opportunities available, desired or permitted by the prevailing and dominant political *Zeitgeist* in the west.

—Barry (2005, p. 318; italics in the original)

As Earth's climate and ecologies show the accelerating effects of human-induced global warming, American urban planning is confronted with one of the most serious and consequential challenges in its history. In spite of APA's recent emphasis of climate change mitigation planning in its policy documents, themes emerge in academic literature empirical data that call into question the capacity of contemporary urban planning to respond sufficiently to the immediate and growing challenge to mitigate anthropogenic greenhouse gas emissions destabilizing Earth's climate.

This chapter analyzes American climate mitigation planning applying ecological modernization theory and its discursive themes and theoretical critiques to the empirical data and literature presented in previous chapters. First, I summarize themes that characterize EM theory and applications using information presented in Chapter 3 and review several major themes guiding the practice of contemporary planning in the United States using the literature, policy statements, and empirical

data presented in chapters 2 and 4. Next I assess the extent to which the two sets of themes—EM and planning—overlap; that is, the extent to which U.S. climate planning adopts an ecomodernist frame. Using a number of the prevailing critiques of EM theory I demonstrate both the limitations of EM in addressing climate change and also the constraints it imposes on the efforts of American urban planning to engage constructively with the need for aggressive climate protection planning. Finally, I discuss why the weak ecological modernization frame fits American climate protection planning as well as it seem to.

### 5.1 Thematic review

*EM Themes*—In Chapter 3 I summarized several themes characterizing the ecological modernization framework. First, environmental protection is increasingly recognized as an essential element of the economic value chain. Process and managerial technologies replace end-of-pipe remedial strategies in addressing the ecological harms inherent in modern industrial production and consumption. Protection of environmental resources—including the capacity of the Earth’s ecological systems to metabolize anthropogenic carbon emissions—contributes significantly to the long-term viability of local manufacturing and service provision economies.

Second, that these investments derive not only environmental, but also economic, benefits motivates public and private sector investment in technology and process enhancements. These win-win solutions make businessmen and environmentalists partners in environmental protection, not adversaries. Urban planning plays an important role in developing local economies, not only by ensuring the existence of appropriate physical infrastructure, but also to secure the

sustainability of the natural environment critical both for local and aggregate economic success, but also for the community wellbeing.

Third, EM is a fundamentally pragmatic framework that seeks to balance economic and environmental gains. Rarely, though, does the cost-benefit calculus of EM policies address economic and social inequities characteristic of or arising from these solutions. As planners contribute to securing the sustainability of local economies and ecosystems, so, too, are they responsible for ensuring that the benefits and costs of these initiatives are shared equitably throughout the community.

Finally, and perhaps most importantly, the EM policies structuring these solutions assume the primacy of maintaining economic growth in spite of negative environmental and/or social consequences. They rely on neoclassical economic theory that emphasizes self-interested (voluntary) production and consumption decisions made by well-informed individuals and businesses. As such EM does not critically question its commitment to and the consequences of the traditional neoclassical economic model.

While planners may not believe that it is their responsibility to question the fundamental fairness of the capitalist system, it does fall within their purview to ensure that the decision-makers clearly understand the environmental and social consequences of urban development initiatives. Failure to factor into the decision-making process the initiative's costs, as well as its benefits, can only result in the long-term instability of a community and its economic and natural support systems.

*Themes of local climate planning*—In chapter 4 I presented empirical data gathered from planners and others at national, regional, and local scales. Several distinct themes arose from these survey, workshop, and interview data. First, in the

absence of coordinating regional, state, or national frameworks—the rule in the United States—urban planning is largely conducted in jurisdictional isolation. In the United States, community planners work to achieve the local jurisdiction’s development priorities with little or no coordination among neighboring jurisdictions. Further, there is a practical, if not conceptual, disconnect between local production, consumption, and planning behaviors, their impacts at the global scale, and the subsequent consequences for urban sustainability.

This political and jurisdictional Balkanization of local planning activity and its consequences characterize the relationship between local production and consumption behaviors that result in the greenhouse gas emissions and their contribution to global climate change and its impacts. There is a further disconnect between these local behaviors and their impact on local sustainability that prevents local decision-makers from envisioning how global climate changes to which their policies contribute might redound to their community’s unsustainability. The magnitude of this disconnect is further exacerbated by the enormity of the local and global climate change risks. Incremental changes in local weather patterns or other gradual environmental dysfunction may appear to be manageable by tweaking local policy. Aggregated over 50 or 100 years, though, these changes (or those attributable to more abrupt climate change events) will outstrip the capacity of municipal decision-makers alone to protect their community. While planners may understand this relationship and appreciate the ultimately catastrophic nature of local mitigative inaction, their efforts are constrained by the absence of planning guidance from state and federal administrations and jurisdictional limitations on the applicability of their recommendations. The lack of inter-jurisdictional coordination of

local mitigation initiatives compromises their global effectiveness and, in turn, renders them less effective from the perspective of local sustainability.

Second, the prioritization of traditional economic growth agendas often compromises good-faith efforts to take constructive action on increasingly serious environmental threats. The nationwide preoccupation with economic growth and job creation is reflected in policy and budget decisions at the local level. Environmental protection is often only an incidental benefit of economic development; rarely is it the priority absent an economic upside. In times of economic stress (such as these), environmental protection is often viewed as an unaffordable luxury.

While planners may appreciate the role that the environment plays in a community's long-term viability, action on these concerns inevitably must be quantified in such a way that it is demonstrated to contribute to local economic development goals. Absent this connection, promotion of local climate mitigation initiatives is often futile.

Third, planners often do not understand the relationship between sustainable development and climate protection, or they fail to appropriately discriminate between the two. It is highly unlikely that any development is truly sustainable—at least not under current quality of life assumptions—if the global climate is destabilized. Global climate change has ramifications for a broad variety of ecological systems upon which local sustainability depends.

As architects of sustainable urban space, it is incumbent on planners to clearly enunciate these dependencies in the context of local development initiatives. Failure to do so compromises the ability of elected decision-makers to forge public resolve and policy toward mitigating the local causes of global climate change.

*Themes From Critiques of EM Theory*—The criticisms of EM theory discussed in section 3.2 are characterized by several themes. First, the internalization by EM of neoclassical economic theory and analytic tools prevents it from addressing environmental problems from a more ecological perspective. In its emphasis on balanced approaches to climate protection, the planning profession reinforces the primacy of economic concerns over those of the environment by employing planning time horizons too short to account for the long-term impacts of many of their initiatives.

Second, its reliance on expert-led, technological innovation may subvert fundamental—though messy—communicative, democratic processes essential for the contextual appropriateness of its environmental policy and its perceived legitimacy. In spite of its formal rejection of expert-led, top-down, physical planning, the profession reflects the technocratic dimension of EM in its promotion of its own planning expertise (and that of allied professionals such as architects and engineers), its embrace of the discourses of technologically facilitated consumption efficiency, and the introduction and promotion of professional planning certifications.

Third, the technocratic and technological characteristics of its processes and solutions effectively circumscribe the applicability of EM policies and the extent to which they can achieve targeted environmental protections. Further, the jurisdictional context and planning horizons under which these initiatives are implemented can geographically and temporally externalize costs that may accrue to unsustainable levels.

Finally, EM tends to be myopic to distributional inequities inherent in its programs. The instrumental nature of its prescriptions renders EM less sensitive to



the diverse needs of particular geographical and social contexts thus perpetuating the *status quo*.

*Tensions Within EM*—Through his analysis of the myriad interpretations and criticisms of its theory, Christoff concluded that EM could be described as a function of a set of tensions. The thematic tensions identified in Christoff’s analysis of EM theory (Christoff, 1996; Section 3.9) reflect not only the nature of the policy prescriptions emanating from the framework, but they also internalize inherent ideological compromises and resulting critiques of its completeness as a policy framework. These structural tensions span the range of possibilities between Christoff’s “weak” and “strong”—or Hajer’s “techno-corporatist” and “reflexive”—extremes of EM policy.

In the following analysis I examine American climate protection planning through the lens of these tensions demonstrating not only that EM is a suitable framework for discussing the current state of urban climate change planning in the United states, but also providing a foundation for the discussion in Chapter 6 of its potential for transformation and climate protection efficacy.

Implicit in Hajer’s “techno-corporatist” *versus* “reflexive” EM and Christoff’s “weak” *versus* “strong” versions are criticisms that that been levied against the theory and its policy implications since its emergence. Each of these criticisms can be interpreted as providing a path on which the various weak aspects of EM theory can be reformed (or transformed) into their strong counterparts. Particularly germane to this dissertation are criticisms of the following orientations of the EM policy continuum:

- Economistic v. ecological
- Technological v. institutional

- Technocratic v. democratic
- Instrumental v. communicative
- Hegemonic v. diversified

Each of the above dimensions will be explored in the remainder this chapter in in the context of American climate protection planning. In Chapter 6 these discussions will inform an assessment of the capacity to contribute to meaningful climate change mitigation at the local scale.

### 5.2 Economistic v. Ecological

One of the most recognizable and salient of the tensions between weak and strong EM is that characterizing the location of environmental policy along the continuum of economism to ecologism. This tension arises from the confrontation between the conception of neoliberal economic freedom and the radical push to reevaluate the foundation of national and global production/consumption economies. Economistic policy prescriptions are fixated on system inputs (labor, capital, raw materials, natural resources) and outputs (consumables, environmental pollution) associated with advanced capitalist economies, and seek to reduce environmental impacts through input/output efficiencies or substitutions. Neoclassical economic theory treats the natural environment and its ecosystems as external to, though variably integrated with, the economies of production and consumption. Nature provides sources for raw materials that serve as inputs to our production processes. For example, oil, coal, and natural gas are three such resources that provide energy for our production and transportation economies. Nature also provides sinks for the waste products from those production and consumption processes. Earth's atmosphere, its oceans, and its flora serve to sequester variable amounts of the wastes—primarily carbon dioxide—from these processes. Whether or not economic

analyses include or externalize environmental costs into decision-making processes, the environment remains external and only variously integrated into our production/consumption cycles only when its services can be quantified. Economism's conception of the environment is bounded by the limits of the chosen technologies *not* to transform the environment, but to *measure* the extent of those transformations. To the extent that it can be priced, an industrial input or an output can be integrated into a cost-benefit calculation demonstrating a win-win outcome for the economy and the environment. EM, then, provides political cover for the state intent on maintaining its legitimacy through being seen to facilitate economic growth; for private business enterprises intent on increasing capitalist and shareholders wealth; for environmentalists desperate to save the planet from rapacious industrialization and globalization. Figure 5.1 shows the closed relationship between human economy and the environment, commonly referred to as the circular flow model (adapted from Glucina & Mayumi, 2010, p. 24).



Figure 5.1 Circular flow model

However,

If EM focuses merely on 'win-win' opportunities that are easily accessible to available technical solutions, then there is a danger that structural barriers will remove the positive sum ecology/economic outcome envisaged in EM theory when these opportunities dry up. In this sense the growth logic of capitalism would need to be challenged,

if only to produce a 'reflexive' response of a society-wide drive to seek new technical opportunities. (Toke, 2001, p. 285)

Ecological modernization's view of the environment is also conditioned by the ideological characteristics of the capitalist political economy in which it is immersed. The environment is considered either (external) source or sink for industrial processes. Whether because it would be inconvenient or unprofitable, economic EM restricts itself to what might be termed "first-order effects" of its policy prescriptions that have a direct impact economic growth or the corporate bottom-line. While they may be immediately environmental (e.g., achieving efficiencies in resource consumption or pollution production), more extended, complex impacts such as biodiversity and long-term sustainability tend to be ignored.

Another weakness of ecological modernisation is its limited view of the 'environment', or the range of environmental issues, problems and protection it deals with. For example, unlike sustainable development, it is not concerned with biodiversity conservation, focusing as it does on water and air pollution, and minimizing energy and material natural resources. In this way it reduces the environment to 'critical natural capital' in a manner similar to environmental economics, but with a crucial difference. Whereas 'critical natural capital' in environmental economics is defined as natural resources and processes which are essential for human life and welfare, in ecological modernisation, the resources that are critical are those essential to the process of economic growth and capital accumulation. (Barry, 2005, p. 316)

It is often the case that EM-inspired policy is adopted as a cynical ploy to deceive the general public into thinking that business actually has a genuine concern for the environment.

[E]cological modernisation may simply put a green gloss on industrial development in much the same way that the term 'sustainable development' has been coopted—to suggest that industrial activity and resource use should be allowed as long as environmental side-effects are minimized. Given this dominant emphasis on increasing the environmental efficiency of industrial development and resource exploitation, such EM remains only superficially or weakly *ecological*." (Christoff, 1996, p. 486; emphasis in original)

In his economic analysis of the eco-efficiency<sup>63</sup> (EE) argument made by ecological modernization theory, Korhonen (2008) recognizes its attractiveness as a tool in contemporary environmental policy.

EE simplifies complex problems, is easy to understand as a measure, is provocative, is in line with the universal striving towards increasing economic growth, and can be tested with methods of conventional neoclassical economics, with positivistic logic, with quantitative methodologies, and with monetary value. (Korhonen, 2008, p. 1343)

However, he identifies limitations in EE approaches to environmental policy that may compromise its—and EM's—capacity to motivate the radical transformation necessary to move modern society toward sustainability. He raises two general concerns. First, the incremental improvement of processes and behaviors achievable through application of more efficient technologies expresses a modernist conservatism and preference for the status quo. While this approach may result in reducing resource consumption and environmental damage, he questions whether EE is the paradigm shift that many sustainability scientists and environmental policy-makers claim will deliver us from our ecological challenges. Second, the boundaries inherent in EE fixes are often not clear resulting in localized benefits, but increased harms at other scales. “Because of the complexity of the environmental issues, both in terms of natural science and in terms of social sciences and cultural studies, the current oversimplification in the use of EE is a risky endeavor” (Korhonen, 2008, p. 1343).

One of the most cherished assumptions underlying the liberal free-market political economy is that of *homo economicus*, the utility-maximizing consumer able to thrive by independent, rational analysis of freely available market information. EM embraces this construct to deemphasize environmental regulation in favor of

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<sup>63</sup> Korhonen defines eco-efficiency as follows: “By increasing the *environmental efficiency* of the economy—the rate of environmental damage caused per unit of output—growth can be achieved even while environmental damage is reduced” (Gouldson & Murphy, 1997, p. 74; emphasis in original).

voluntary adoption by businesses and individuals of “greener” processes, technologies, and products.

Rather than regulating economic activity directly, the facilitator or enabler state seeks to create conditions that allow economic or social actors to govern particular activities. These changes have been reflected in the range of environmental policy instruments that are used in many settings, with experiments with economic and information-based instruments and an increased emphasis on voluntary approaches and different forms of self-regulation. (Bailey, Gouldson, & Newell, 2010, p. 685)

As a result of vesting so much confidence in non-state actors, decisions to invest in more environmentally-friendly behaviors, technologies, or products (be they industrial or consumer-related) is motivated only by rational assessment of the relative costs and benefits that accrue to the investor.

On the other extreme of this EM tension lies an assumption that the natural environment contains all processes be they environmental, economic, or social, and that all costs to the environment must be accounted for and borne by this all-encompassing system. Figure 5.2 provides a graphical interpretation of the ecological economic model in which the circular flow model of the economic system is included as an open subsystem of the Earth’s geobiosphere (Glucina & Mayumi, 2010, p. 24).

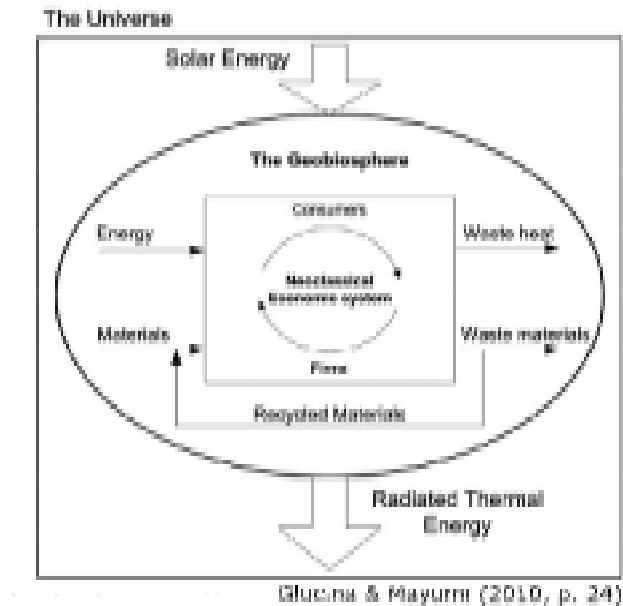


Figure 5.2 The ecological economic model

Given the non-local extent and complexity of the ecosystems driving and impacted by climate change, and the dependence of human survival on those ecosystems, any economic conception of the relationship among humankind, its social processes, and the biosphere is likely to result in the externalization of costs that are ultimately detrimental to human survival.

Applied to anthropogenic climate change the economic-ecological tension evidences itself in the tendency of economic policy prescriptions to ignore or marginalize environmental costs (i.e., greenhouse gas emissions) the effects of which cannot be (easily) quantified and integrated into cost-benefit analyses. As policy becomes more ecological the demand for absolute certainty (i.e., quantification) of risks (costs) is relaxed and precaution becomes a more pronounced element. In these cases, policy-makers admit that what we don't know just might hurt us and that we are better off safe than sorry.

Recognizing that local resistance to explicit climate protection action may exist at the local level due to ideological or economic reasons, APA climate change policy strongly advocates “no regrets” approaches that generate more tangible, collateral benefits while still tacitly addressing climate protection concerns.

Planners must also understand that there is a “**no regrets**” approach to much climate change work. Reducing GHG emissions also reduces pollution; further, if these emissions reductions are achieved through green building development and reductions in vehicle-miles-traveled, there are economically measurable savings in energy expenses and traveler convenience. A more compact urban form has the potential to reduce both GHG emissions and infrastructure costs. ... If these sorts of actions are undertaken to address potential climate change impacts or to reduce its effects, they will have collateral benefits regardless of the future state of the climate. (APA, 2011, p. 5; emphasis in original)

APA climate policy recognizes that not all communities may have developed formal climate protection plans, they should recognize that actions taken in pursuit of other goals can have consequences that contribute to climate change mitigation (or adaptation). While this runs the risk (not addressed in APA policy) of conflating sustainability and climate protection planning, it may be all that a community can accomplish given the political or economic environment.

While some communities have adopted climate change mitigation and/or adaptation plans, virtually every community has some land use, capital improvement and hazards management planning activities or programs. These plans and programs can form the basis for responses to climate change at the local level, provided they are adjusted to address anticipated local and regional impacts from climate change. Furthermore, these plans and programs can be viewed by decision-makers as “no regrets” responses to climate change; that is, even if there is limited local support for direct climate change action due to political or economic concerns, significant progress can be made through relatively minor adjustments to other plans and programs. ... Finally, local climate change leadership can help compensate for inaction at the state and federal level or complement actions taken by higher levels of government. (APA, 2011, p. 20)



Along similar lines, APA also suggests that there are synergies to be had among traditional development initiatives<sup>64</sup> and climate protection.

By promoting the synergy between smart growth, sustainability and climate change mitigation and adaptation, planners can effect positive outcomes through a so-called “no regrets” approach, whereby actions taken to adapt to or mitigate climate change are ones that should be taken anyway for other reasons related to smart growth and sustainability. (APA, 2011, p. 7)

Reflecting a national policy focus on “no regrets” climate protection solutions, local planners and officials perceived a need to “sell” climate protection to local decision-makers and citizenry, highlighting budgetary, cost and efficiency, public health, or natural beauty benefits. As one respondent to the climate change mitigation survey said, “We must learn how to sell action on climate change or it will always be business as usual” (#1234750232).

For planners working economically disadvantaged communities such as the one that I work in, communicating the economic benefits of addressing climate change are key to getting interest from local officials, business leaders and residents. Showing how increases in efficiency and competitiveness from a focus on greening the community (such as the long term growth in green jobs that ties into international markets) could be key selling points in getting buy-in to focus on climate change as a key issue. (#1196518807)

In a 2007 interview with two City of Arlington Environmental Services staff responsible for developing the city’s first comprehensive environmental strategy, the word “sell” was used ten times—far more than any other action verb—in reference to motivating both City Council adoption and community acceptance of the plan. In reference to a proposed solid waste-recycling plan, one of the interviewees discusses her approach to persuading the Mayor to promote a “recycling summit” among local businessmen to generate interest. In spite of the Mayor’s previous support for climate protection measures, she mirrors his strategy of “selling” the collateral,

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<sup>64</sup> APA has published policy guides for sustainability and smart growth that are not as of yet integrated with the climate change policy guide.

financial benefits of the initiative. It's not about the climate; it's about budgetary bottom lines.

*City of Arlington Environmental Services staff member:* I'm meeting with a consultant today at lunch, and we're going to talk about how the Mayor could do so sort of recycling summit. I don't want be bring in any academics. I don't want go bring in anybody who does things that are unachievable. What I want to do is bring in people who talk about it on a practical level. Talk about the economics. Talk about the financial. Talk about the fact that we have businesses in Arlington that we want to grow and thrive. And recycling is actually financially beneficial for them. That's how I'm going to sell it because *that's* how I'm going to modify behavior and make it sustainable, because there's something in it for them financially. That's how we'll sell it. I know in my bleeding heart what I really want to do is to save the planet, but I've got to sell it in a way that's palatable. That's the challenge municipal governments have: making what you're talking about work for them in an operational way.

Regardless of the Mayor's explicit personal and professional commitments to environmental preservation and climate protection, municipal employees—planners among them—realize the extent of his power is significantly circumscribed by economic growth considerations, public opinion, and external political pressures. They rarely advocate for an environmental initiative that does not have demonstrable collateral economic, public health, or other community benefits.

### 5.3 Technological v. Institutional

The extent to which EM relies on narrow technological innovation to motivate the broad institutional transformation necessary to address contemporary, global environmental challenges constitutes fundamental criticism of EM theory as well as a tension between its weak and strong versions. On one extreme, "EM is fundamentally a technical cost-minimisation strategy for industry and an alternative to labour-saving investment—a form of 'ecological rationalisation' which will lead simultaneously to greater 'ecological and economic efficiency'" (Jänicke, cited in Christoff, 1996, p. 480). APA consistently advocates energy efficiency, alternative

electricity sources (e.g., solar and wind), smart growth (e.g., compact and transit-oriented development), and carbon sequestration among other technology-driven mitigation strategies (APA, 2011). Unfortunately, not only are there problems in the rate those technologies are being developed, but the side effects of many of those technologies may present environmental challenges of their own.

With urban sprawl serving to help stabilize the international economy and a key source of future economic growth, the leading international business organisations seeking to address climate change ... have sought to do so through technology and have eschewed environmentally sensitive land management. Such an approach to land management would directly and assuredly reduce climate change emissions, and be consistent with strong ecological modernisation. [Leading international business organizations] instead advocate weak ecological modernisation via technology that could potentially abate greenhouse gas emissions or capture them, or, ideally, offer a cheap and clean substitute for fossil fuels. But such technologies could be just as environmentally damaging as greenhouse gas emissions. Moreover, while one waits for such technologies to develop and be deployed, the environmental effects of climate change emissions could become irreversible. (Gonzalez, 2005, p. 358)

Interviewees and planning workshop participants continually emphasized the role that technological innovation will play in the mitigation of greenhouse gas emissions in North Texas communities. Arlington mayor Robert Cluck was enthusiastic in citing the reductions in energy consumption that he attributed to the installation of light-emitting diode traffic signals ("We hit a real home run with [traffic] signal lights ... That was a real big one.") and installing energy efficiency and management features in municipal buildings. At the same time Arlington remains the largest city in the United States with no public transit system (admittedly yet another variety of modern technology) that might encourage drivers to use of fossil fuel-burning automobiles. Cities that are investing in alternative sources of energy to increasing its procurement of energy from wind and solar sources (e.g., Denton, Texas, buys 40 percent of its energy from renewable resources [Howard &

Hurst, 2009, p. 48]) or instituting energy efficiency programs such as those in Arlington are doing little to encourage modification of the behaviors that consume energy in the first place. Arlington, in fact, is now home to the new Dallas Cowboys football stadium, and no expense has been spared to increase the capacity of the highway system that delivers fans to its acres of convenient parking. Little effort is being expended on re-localizing portions of the economy previously conceded to the global market (e.g., local agriculture).

The APA climate change (2011) policy guide highlights the role of alternative energy, building structure and efficiency, and energy efficiency technologies in achieving greenhouse gas emissions reduction targets. To its credit, APA does advocate local food and energy production that can reduce the amount of energy consumed (and greenhouse gases emitted) from importing those products. "The result will help minimize VMT by limiting food transport and avoiding regional imports of consumer goods that can be produced locally, helping the local economy" (APA, 2011, p. 65). Aside from its encouragement of more integrated and coordinated planning, this is the only advocacy for institutional change in the entire document.

The failure of EM theory to seriously examine the social processes that buttress prevailing production and consumption behaviors prevents it from attacking the climate change problem from an institutional perspective.

"In this sense, such a narrow version of EM does not necessarily reflect any significant and overwhelming changes in corporate, public or political values in relation to desired ecological outcomes. ... Innovation and implementation may be confined to those areas and types of technical improvements which ensure market competitiveness" (Christoff, 1996, p. 480-481).

Survey respondents were largely in agreement (over 70 percent nationwide) that successful mitigation of climate change in their communities is dependent on the development of technologies to achieve necessary greenhouse gas reductions. There

was mixed sentiment among survey respondents that the technologies necessary to achieve climate change mitigation goals—alternative fuel technology and clean power generation among them—are not being developed at a pace commensurate with the acceleration of climate change effects. This is exacerbated by the lack of a federal policy framework and sufficient research and development funding.

The requirements to address climate change are coming too rapidly for the market to adapt to. As a result technology, financing, and other options that would keep the economy afloat are not yet available. Also, the lack of a federal level policy will simply lead to a shifting around of industry into different states (and countries) instead of solutions. (#1175932258)

On the other hand, there was sentiment that technological fixes are insufficient to meet the challenges presented by climate change. Over 84 percent of survey respondents indicated that meeting greenhouse gas emissions targets is dependent on modification of “social and behavioral preferences.” As one respondent commented: “Technology is certainly NOT the answer, and reliance on it is misplaced and damaging. Plain and simple this is a “value change” issue, and technology will not begin to put a dent in it” (#1183233170).

It appears that planners tend to be pragmatic when it comes to recognizing that technology will provide them with some of the tools necessary to achieve mitigation targets. At the same time, though, they fully understand that their success is significantly constrained by social institutions and behaviors.

#### 5.4 Technocratic v. Democratic

In spite of its potential for generating environmental gains that do not compromise economic growth, the embrace by EM of narrowly technological as opposed to broadly institutional environmental policy runs a number of risks. Among these numbers the perception by a society on whose behalf these policies are ostensibly developed that they reflect the public interest and achieve the

fundamental environmental protections promised. In the current political-economic context, it is more likely that such solutions will have limited, unevenly distributed, and potentially adverse consequences.

“[T]here is a danger that [EM] may serve to legitimize the continuing instrumental domination and destruction of the environment, and the promotion of less democratic forms of government, foregrounding modernity’s industrial and technocratic discourses over its more recent, resistant and critical ecological components” (Christoff, 1996, p. 497).

Not only must the policy process be perceived as fair, inclusive, and transparent, but it must also serve the larger geographic and temporal public interest. Discredited in a contemporary society focused on wealth accumulation in a global economy, the collective interest of the present American polity has been increasingly portrayed as xenophobic, focused on individual rights and *laissez-faire* governance, and supportive of free economic markets. It relegates to the margins of public discourse considerations of the (negative) social and generational impacts of individual enterprise.

Political conditions in the United States are oriented today toward concerns of the market rather than social or environmental concerns ... These issues are often tied to mystical, antiscientific thought that weakens rational consideration of public affairs and reinforces conformance to societal norms. ... It is [a] society during a period of aggressive globalized competition for power and economic dominance that overwhelms alternative values and concerns. Whether one cares for metanarrative or approves or disapproves of what is happening today, to ignore the pervasive strength of aggressive globalized competition is to intentionally divorce one’s thinking from events near and far and from conditions facing billions of people and the physical environment. (Box, 2008, 591)

In his analysis of its changing role of public administration, Richard Box suggests that a more broadly democratic definition of “the public interest” is warranted that encompasses “the societal conditions in which the public interest

emerges; the knowledge needed for the public to envision alternative futures; and recognition of the temporal dimension” (Box, 2008, p. 596).

The reliance of environmental preservation on the development and implementation of more efficient technologies is a fundamentally modern, expert-mediated policy response. Unfortunately, it is unlikely that society will be able to cure modern industrial ills by continuing to apply the same modern industrial methods. Funtowicz and Ravetz (1993) argue that this sort of policy analysis excludes increasingly important varieties of non-expert knowledge that are essential not only to the success of a given policy implementation, but also to its legitimacy. While suitable for “normal” problems solvable through incremental technological progress, this sort of analysis is insufficient to address a problem as complex and socially, politically, and economically contingent as climate change.

The variety of post-industrial environmental risk that increasingly characterizes the risk society (Beck, 1995) cannot be mitigated without squarely addressing the social, technological, and industrial processes that led to them. To the extent that society relies solely on technological efficiency to address these global problems, only marginal—and not systemic—improvements can be achieved. Further, these approaches do little to encourage a fundamental change in the consumption behaviors that continue to contribute to these risks.

Insofar as EM focuses on the state and industry in terms which are narrowly technocratic and instrumental rather than on social processes in ways which are broadly integrative, communicative and deliberative, it is less likely to lead to the sorts of embedded cultural transformation which could sustain substantial reductions in material consumption levels, significant and rapid structural transformations in industrialised countries, and major international redistributions of wealth and technological capacity. (Christoff, 1996, p. 489-490)

Nor will nibbling around the edges—as opposed to reassessing the fundamental political economy—of these problems motivate the rapid change that is necessary to avoid truly calamitous environmental consequences.

“The pace of global environmental change is out of sync with the pace of institutional reform advocated by EM. While much is still unknown, the apparent acceleration of climate change, the globalized effects of industrial pollution, the problems of invasive species, disease threats, reduced biodiversity and other complex environmental problems are occurring in ways that challenge the central argument of EM that industrial societies can be made sustainable with modest adjustments and corrections” (Warner, 2010, p. 553).

EM is a fundamentally modern framework that employs scientific and technocratic methods to further its policy goals. It relies on modern functional expertise and technological innovation in the free market context to ameliorate environmental problems. It is fundamentally oriented toward reducing or eliminating environmental harms by mitigating waste in the economic value chain through the implementation of efficiency technologies and conservation limits that tend to be politically “safe.” In spite of this relative “political neutrality” environmental initiatives are too often derailed by the vicissitudes of geography and time. This contributes to the blind spot for geographical and generational distributional inequities characteristic of many EM policy prescriptions.

#### *5.4.1 Expertise*

In assessing the technocratic trajectory of modern industrial society, Beck agrees with the Funtowicz and Ravetz and their claim that decision-making regarding the social introduction of technologies is a process reserved to experts and, perhaps, consultants.

In the innovation process of industrial society the opportunities for democratic self-determination were *institutionally truncated*. From the outset, techno-economic innovations as a motor for permanent social change have been excluded from the possibility of democratic consultation, monitoring and resistance. ... The goals that are to be



achieved through democratization are clear enough; the practice of having public political discussions only after research and investment decisions are made is to be broken up. (Beck, 1992, p. 228, 229)

The technologies being developed and/or implemented to address energy and climate concerns are becoming more politically controversial (e.g., hydraulic fracking to release natural gas resident in shale formations or development of genetically modified grains resistant to drought) because of their long-term residual impacts on the environment. The election to employ those and other technologies increasingly demands the involvement of non-experts who can bring nontraditional knowledge to bear on the decision-making process.

Referring to the extent that public officials—to whom planning departments usually report—are knowledgeable about climate change science or its impacts, an environmental planner from one of the mid-cities in the Dallas/Fort Worth Metroplex lamented:

I doubt that there are too many people among your bosses, your city managers, your assistant city managers that are knowledgeable about what the stats *really* are, what the science *really* is. It's so easy to dismiss it because it's overwhelming, and that's what we tend to do. And that's a huge mistake. (Howard & Hurst, 2009, p. 104)

In 2007 an activist in the Arlington (Texas) community was chosen to sit on the Citizens Environmental Committee, formed to provide input to the City Council on environmental issues and related policy. When reflecting on one of their first meetings discussing the state of green building in the community, her assessment of her committee peers belied a general disconnect between ostensibly engaged citizens and environmental issues.

Nobody knows about green building except a couple of us. The people on the committee at that time were not environmentally— Not *knowledgeable*, but they just didn't care. They'd never even *thought* about it. (Howard & Hurst, 2009, p. 24; emphasis in original)

In observing the need for local elected and administrative officials to understand climate change mitigation, adaptation, and the relationship between the two, Patrice Parsons, Regional Director, ICLEI South Central USA, commented:

The only solution is for local governments to clearly understand the significance of both mitigation and adaptation, and know how to evaluate the effects of particular actions they are considering implementing for their effects on both objectives. (Howard & Hurst, 2009, p. 121).

While APA does not seem to consider planners to be climate experts, it attributes to them the expertise in plan development, transportation networks, community design, and spatial development, and interdisciplinary facilitation.

Planning can play an important role in influencing societal actions that can slow the pace of climate change, mitigate the effects that do occur and allow adaptation to the ultimate impacts of global warming. The planner's role will be extremely important because it will deal with such basic issues as community design, transportation networks and use and increasing development density. Elected leaders and citizens will rely on plans, direct investment, design, and development strategies that are efficient and sustainable and which comport with other community priorities. Planners will also have to address the potential costs imposed on households by climate change and the policies adopted to address it. (APA, 2011, p. 6)

Since planners often are responsible for programs that engage stakeholders from diverse backgrounds, they are particularly well-positioned [sic] for leadership in convening and conducting the interdisciplinary processes needed to address various aspects of climate change. (APA, 2011, p. 29)

Planners are also expected to have local knowledge that will ensure that any climate protection agenda is developed and implemented as fairly and equitably as possible.

"Understanding" generally in terms of local, not global, environmental impacts. To the extent that knowledge of and prescriptions for climate change are framed in terms of local relevance, the policy conversation will assume the boundaries of that framing. Local politicians, administrators and planners have the capacity to

To the extent that public outreach and stakeholder education are core components of planners’ professional responsibilities and competencies, it is incumbent upon planners to be knowledgeable about climate change and associated issues.

Planners have a professional obligation to educate themselves about climate change issues. In addition, they share an obligation to include education about climate change in community outreach efforts in all planning programs aimed at the public and local policymakers. (APA, 2011, p. 26)

While there was widespread agreement from survey respondents that planners must take an active role in climate change mitigation (86 percent in California; 83 percent, elsewhere), there was some uncertainty as to the knowledge-based competency of planners to do so. In California, 57 percent of respondents indicated that they thought the public considered planners to be knowledgeable about climate change; elsewhere, 42 percent. Respondents were more likely to rate themselves as knowledgeable about climate change than they were other local planners. They were significantly more likely to rate local elected officials, business leaders, and city residents as *unknowledgeable*.

Table 5.1 Assessment of community climate change knowledge

	California	Elsewhere
Respondents themselves	93%	85%
<i>Other planners</i>	82%	68%
Elected officials	47%	32%
Business leaders	22%	17%
Residents	29%	21%

It is reasonable to assume that the higher profile and legislative validation of climate change and associated issues in California would result in higher respondent (and “other”) knowledge ratings than elsewhere in the United States. That the respondent self-ratings are higher, if not significantly higher, than are the other-ratings may the

difficulty and uncertainty in assessing such topical expertise in others or merely self-enhancement bias (DeAngelis, 2003).

In general, though, the leaders and residents of the communities are deemed to be moderately to grossly uninformed about climate change and the potential impacts on their respective communities. Given California state legislation making climate change planning mandatory for all communities, it is unsurprising that the respondent/other planner ratings are approximately equal. Disconcertingly, though, outside California there is significant disparity in the respondent/other rating. It is unclear which, if either, rating reflects the actual knowledge level of respondents?

#### *5.4.2 Voluntary adoption of climate protection measures*

Minimizing state-led environmental regulation while embracing market-oriented solutions is a core theme of ecological modernization. It assumes that voluntary or incentivized adoption of appropriate pollution control measures will result in benefits for economic and environmental interests. Given its general lack of administrative clout, planning relies almost exclusively on analysis, advocacy, and facilitation to encourage the voluntary adoption of climate-friendly policies.

As first discussed in Chapter 2, in 2008 the American Planning Association issued its first policy statement specifically addressing climate change, subsequently updating it in 2011. Referring to conclusions reached by the IPCC in its latest climate change assessment (2007), the policy formally recognizes the source and nature of the threat for cities and the role of planners in mitigating the worst effects of climate change and preparing their communities for the consequences of climate change that is already underway and unavoidable. In spite of its recognition that regulation may be necessary at time (especially in frameworks adopted at the federal and state levels), the APA climate change policy relies on the creation, advocacy, and support

of education and incentives that induce emitters—municipalities, businesses, and individuals—to reduce their emissions in a manner that is appropriate to the context.

In its mission to define and recommend implementation policies for “a preferred future” for the North Texas region, Vision North Texas (VNT) framed its treatment of climate change largely in terms of the region’s carbon footprint, which it states is as large as that of the entire state of New Mexico. Based on working group research VNT ultimately recommends an “Action Package” of voluntary measures that the region’s communities might adopt in order to reduce carbon emissions between seven and ten percent as compared with a business-as-usual growth scenario. Derived from possible future development scenarios, these measures include regionally coordinated actions addressing ecosystem management, economic development, infrastructure investment, mobility improvement, and “climate resilience” (VNT, 2010). They assume that growth will continue—indeed, that growth is desirable—and suggest ways in which that growth could be accommodated. “These policy recommendations reduce vehicle miles traveled and lower energy consumption in building construction and operation, so they help the region grow in a way that is environmentally responsible” (VNT, 2010, p. 29).

Motivated by the realization that business-as-usual growth in North Texas is inherently and increasingly unsustainable, modeling by Vision North Texas of regional civic engagement to bridge traditional jurisdictional barriers to cooperative development planning provides an excellent example of the potential for such exercises. Absent a framework requiring such cooperation and providing metrics to gauge its progress, it is unlikely to result in the “preferred future” envisioned. By painting a picture of the future promised by business-as-usual growth, the VNT process and product were designed to educate a politically and socially fractious

region motivate the voluntary adoption of strategies to modify spatial production and consumption behaviors. Regrettably, VNT presently lacks any regulatory or fiscal authority to ensure that its policy recommendations are enacted. At best, the regional planning responsibility of the metropolitan planning organization function in the North Central Texas Council of Governments will provide some degree of coordination of transportation and mobility projects across the region. But this, too, lacks the sort of federal legislative framework to ensure that transportation infrastructure development is fundamentally climate-sensitive.

During a climate change policy interview Robert Cluck, Mayor of Arlington, Texas, expressed confidence that enlightened self-interest will ultimately persuade presently reluctant private interests—in the highly regulation-averse political context of North Texas—to adopt more climate-friendly practices.

Mayor Cluck: I think that members of the business community are finally beginning to understand that it affects them, too. They were very resistant to it because of the fear of— [losing] money. [Hurst: And more regulation?] Yeah. More regulation. Right. And the way we're doing it, you don't have to regulate it. You just have to generate enough interest where there will be self-regulation, and people will start bragging about clean power, green power. And even though it may cost more, I think as the demand goes up, the price comes down, and those people will feel [more] guilty. I'm not sure they feel guilty at all, right now, but I think they will.

In general the participants in the climate change planning roundtable involving senior planners from throughout the North Texas region were supportive of a broad variety of climate-related sustainability policies, but were convinced that these should be voluntary or incentive-based. John Promise, Director of Environment and Development, North Central Texas Council of Governments (NCTCOG), stated that the Vision North Texas growth planning recommendations (referring specifically to the “connected centers” scenario, one of the five scenarios from which the

preferred future scenario was developed) were not intended to dictate to communities how they must pursue sustainable development.

Promise: The intent is that we have put these scenarios forward as responding to a need. This is not government regulating ... the pattern of growth. It is not necessarily saying government would exercise greater regulatory authority in other issues (i.e., other than transportation funding). It is saying that if, through whatever ways we can get consensus, it appears that individuals in the future will really want to live and work and play in a region that has stronger connected centers, then it is in everyone's interest to cooperate together to attract those individuals who might otherwise go somewhere else if our region's development is not based on connected centers. (Roundtable, 2008, pp. 93-94)

Respondents to the national Planners Climate Change Mitigation Survey favored mandatory greenhouse gas emissions reductions—63 percent in California, 55 percent elsewhere—though the proportion favoring voluntary reductions is significant—20 percent in California, 25 percent elsewhere.<sup>65</sup> These response data may reflect California's leadership role in climate protection planning at all jurisdictional levels (required by state legislation). That California respondents also indicated that they disfavored voluntary GHG emission reductions by over non-California respondents may indicate that they recognize that voluntary measures that voluntary measures may be less effective in addressing climate change.

Anything that is voluntary in our community, even if incentivised, never seems to work. The big developers will get away with anything that is not explicitly mandatory. "Voluntary" requirements leave things open to negotiations, and we all know how that goes with most local politicians in the Central Valley. (#1196471443)

We already have 'voluntary' guidelines to reduce climate change, and the results don't amount to a pile of beans. (#1208263249)

That such large proportions of all respondents disagreed that mandatory measures are sufficient—and agreed that voluntary measures are sufficient—

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<sup>65</sup> The following data include planners and non-planners but exclude student respondents. For presentation purposes "Strongly agree" and "Agree" responses are aggregated under "Agree"; "Disagree" and "Strongly disagree" are aggregated under "Disagree."

indicates that there is a significant difference of opinion or policy orientation in how planners throughout the country think that climate change mitigation should be approached. However, these survey data indicate that the majority of respondents believe that meaningful climate change mitigation cannot be accomplished without state regulatory intervention.

Other respondents were more specific, highlighting institutional and policy changes that could improve climate protection planning in the transportation area.

We need a framework at the federal level to have an even playing field across the US so that it is harder for states (the dumb layer of government) to race to the bottom to avoid carbon pricing, etc. Local governments need incentives for better land use planning. Mostly they have incentives for highway-oriented development. MPOs [metropolitan planning organizations] need to be empowered and state highway departments need to have planning authority removed and become implementation agencies only. (#1223861009)

Certain emissions reductions need to be mandatory, such as point (e.g., power plants should have both not-to-exceed thresholds and incentives to reduce emission) and mobile emissions (e.g., regulating auto emissions) (#1196463261)

And still others were more measured in their advocacy of mandatory policy limits urging a balanced policy portfolio

Have a state law that provides a framework for enacting local laws and zoning codes to incentivize sustainable land development. (#1234551757)

An effective GHG reduction strategy needs to have both mandatory and incentivized measures--no two communities are alike. (#1197410704)

GHG reduction goals should be mandatory, with a "soft start" (i.e. not in full effect until...) depending on the GHG source. Incentives should be used to move people towards the mandatory goals quicker. I am only mildly familiar with APA advocacy related to GHGs. (#1197351780)

In promoting the sustainability of local communities, planners emphasize the need to support the economic development essential to generating the tax revenues that enable the municipal government to support community maintenance and growth priorities. Environmental preservation is essential to community health and



welfare and to the attractiveness of the community for economic development and population growth.

As examined elsewhere in this chapter, APA approaches economic issues from the perspective of impacts of climate change on economic development activities assumed to be essential for the sustainable growth and welfare of communities. While mitigation measures are discussed in the contexts of transportation, land use, and various development strategies, their policy prescriptions make no attempt to recognize the obvious dependency of climate change on the very economic activities they encourage. In its advocacy for the “no regrets” approach to climate protection, continuous economic development and growth is a fundamental assumption. Conservation, efficiency, and technological substitution are their primary tools in achieving climate protection through economic development and growth.

The APA’s treatment of economic development in its 2011 climate change policy guide demonstrates its modernist emphasis on economic development as necessary for climate protection. In other sections of the policy guide (e.g., land use, transportation, energy, and green development), the role of the built environment and urban systems is clearly linked to climate change. Compact development is a common approach used to encourage reduction in vehicle trips, in the total number of miles traveled by residents in these developments, and in the amount of fossil fuel burned and carbon dioxide released into the atmosphere.

Development patterns that may result in greenhouse gas reductions play an explicit role in APA’s approach to climate protection. Echoing its sustainability and energy policy guides, compact development is promoted as essential to reducing the consumption of carbon-intensive urban consumption habits.

[T]he major climate change mitigation response for local and regional land use decisions involves the creation of a more compact urban

form. The significance of such a development pattern on the mitigation of climate change is both complex and comprehensive. A more compact urban form has characteristics that allow for significant reductions in the amount of greenhouse gas emissions associated with buildings and the transportation, utility and service networks that support those buildings. (APA, 2011, p. 31)

The development and adoption of energy efficiency measures and less carbon-intensive energy sources are also essential elements in APA's approach to climate protection.

More energy-efficient transportation—infrastructure, vehicles, modes—can play a significant role in reducing carbon emissions in the United States, helping mitigate climate change. (APA, 2011, p. 39)

Planners can address climate change mitigation through plans, incentives, and regulations which promote the efficient use of energy in buildings, transportation and industry; though the use of less carbon-intensive energy sources; and through the production and use of renewable energy, and through exploitation of local sources of energy, including methane from landfills. (APA, 2011, pp. 51-52)

And channeling Architecture 2030<sup>66</sup> APA climate policy notes that the built environment is a key contributor to greenhouse gas emissions.

Since building operations create at least a quarter of U.S. greenhouse gas emissions and 75 percent of U.S. buildings will be newly constructed or significantly altered over the next 20 or so years, improvements in the way that buildings and sites are designed constitute a major method by which planners can help mitigate climate change. (APA, 2011, p. 56)

Recognizing that cities are nodes of production and consumption in a global economy, climate change is treated as an economic externality that will have negative impacts on local economic sustainability. It approaches economic development in the context of climate change from a purely adaptive posture neglecting the central role that economic development plays in creating the climate phenomena to which it must now react. The thirteen pages of the economic

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<sup>66</sup> Architecture 2030, The Building Sector: A Historic Opportunity, [http://architecture2030.org/the\\_solution/buildings\\_solution\\_how](http://architecture2030.org/the_solution/buildings_solution_how)

development section (APA, 2011, pp. 66-78) present an extensive list of the sectoral impacts to which planners must tailor local economic development opportunities, including agriculture, manufacturing, tourism/recreation, and physical vulnerabilities.

In local communities, practicing planners recognize that economic development is of paramount importance. Sixty-five percent of respondents to the Planners Climate Change Mitigation Survey admitted that climate protection planning in their communities was contingent on fulfilling the mandate for continuous economic growth—"Our whole economy is heavily dependent on continuous economic growth" (#1196430124)—and in many instances interfering with climate protection planning—"The 'mandate' for continued economic growth is undermining constructive mitigation initiatives" (#1183834560). Especially during these stressful economic times following The Great Recession of 2007-2008, "Our severe economic conditions make climate change actions a low priority for most people and local governments unless it involves actions that reduce cost (e.g. energy efficiency measures with short-term pay back" (#1223794026).

One of the most salient themes in the 2009 regional climate change roundtable was the dominance of economic concerns in the planners' communities.

The participants indicated, both explicitly and implicitly, that their cities' day-to-day and long-term decision making on issues that have a direct bearing on climate change continue to be dominated by economic considerations – by the assumption that economic growth in the short or medium term must have priority and that environmental initiatives must not be perceived to infringe upon the traditional prerogatives of developers or traditional understandings of the rights of property owners. It seems that in these communities climate change, despite its enormous implications for public health and welfare and for the economy, both locally and globally, has not yet interrupted the political-economic assumptions on which the sprawling, carbon emission-intensive development of North Central Texas has been based. (Roundtable, 2009, p. 11)

Responding to the issue of whether or not climate protection should be an explicit agenda Karen Walz, FAICP, project manager for the Vision North Texas growth planning initiative, suggested that the environmental benefits of such explicit policy initiatives should be balanced by demonstrated economic benefits.

The area in which I think the region gains the most by an explicit consideration of climate change is to the extent that potential structures to deal with climate change (like carbon sequestration) may provide economic benefits that also help with other community goals (like retention of natural areas). (Howard & Hurst, 2009, p. 131)

However, almost 80 percent of survey respondents indicated that they believed that "it is possible to maintain economic growth without further contributing to global warming" (Hurst & Howard, 2010). "Economic growth will be increased if we purposefully work on mitigating global warming" (#1209088011). "[P]oint out how 'easy' it is to mitigate while not hurting economic growth" (#1183047385). The APA advocates that community planning emphasize the creation of "green collar" jobs, explicitly linking employment and sustainable economic development to the achievement of climate protection goals.

Use comprehensive planning and shift economic development and working training programs to support local jobs in sustainable businesses. ... Businesses in 'green' industries (or businesses that use 'green' approaches to traditional industries) will become increasingly important to greenhouse gas reduction and to sustainable economies. As companies and individuals seek to reduce their 'carbon footprints', they will look for more sustainable materials, technologies and services. Support for the businesses that are using green practices will make it possible for local climate change goals to be met. These businesses can also form the foundation for 'green' economic growth that can reduce reliance on fossil-fuel-based economies. Green businesses can be a positive focus for economic development, which supports a living wage, offers career ladders as well as robust training programs to increase income to help everyone adjust to increasing costs. (APA, 2011, p. 71)

### 5.5 Instrumental v. Communicative

The relationship between society and nature is pragmatic and instrumental: nature exists solely as a set of resources to be exploited by human industry. Weak EM reinforces this perspective through its perpetuation of modernist economism and technocracy. As the scarcity of Earth's resources becomes apparent and society confronts the global challenge of climate change it is increasingly confounded by this simplistic conception of its relationship with nature. Whereas the closed, economic model of human industry presumes an inexhaustible supply of natural raw materials and a bottomless natural pit for production and consumption wastes, the open, ecological model reveals that these resources and sinks are limited in their capacity. The appropriation and use of scarce resources becomes increasingly political and contested in an ecological world requiring the adoption of more communicative processes by which to negotiate the use to which these resources are put according to some conception of a reemergent—and diverse—public interest.

Environmental planning as it is conducted in most contexts is a procedural activity based on scientific rationalism and analysis that is often conducted at the interface between development and nature. As discussed above, it is predisposed to employ "objective" cost-benefit analysis in which environmental impacts are accommodated only when they can be quantified.

To the extent that environmental policy predicated on a weak interpretation of ecological modernization fails to engage the public in a discussion about the nature of the challenges explicit in accelerating climate change, it also fails to recognize the diversity of the public interest it is designed to serve and the variety of impacts from that policy. In this context "planning could be associated with the dominatory power of systematic reason pursued through state bureaucracies"

(Healey, 1993, p. 235). "Neither the comprehensive plan nor goal-directed programs have more than a temporary existence in such a conception of communicative and potentially transformative environmental planning" (ibid., p. 244).

Communicative planning is not only innovative, it has the potential to change, to transform material conditions and established power relations through the continuous effort to "critique" and "demystify"; through increasing understanding among participants and hence highlighting oppressions and "dominatory" forces; and through creating well-grounded arguments for alternative analyses and perceptions—through actively *constructing* new understandings. Ultimately, the transformative potential of communicative action lies in the power embodied in the "better argument," in the power of ideas, metaphors, images, and stories. (Healey, 1993, p. 243-244)

The widespread lack of political support for a robust discussion of climate protection has made planners shy of broaching associated topics in the course of their work. However, as Healey noted, "Nothing is inadmissible except the claim that some things are off the agenda and cannot be discussed" (1993, p. 244).

Insofar as EM focuses on the state and industry in terms which are narrowly technocratic and instrumental rather than on social processes in ways which are broadly integrative, communicative and deliberative, it is less likely to lead to the sorts of embedded cultural transformation which could sustain substantial reductions in material consumption levels, significant and rapid structural transformations in industrialised countries, and major international redistributions of wealth and technological capacity. (Christoff, 1996, 489-490)

As a result, the conversations necessary to educate the electorate, which sanctions municipal leaders and decision-makers, never take place and policy decisions remain firmly biased toward the political-economic status quo. The vaunted "communicative turn" in planning theory is not often realized in planning practice.

#### 5.6 Hegemonic v. Diversifying

One of concerns with EM theory that is most salient in an unevenly developed world is related to its cultural provenance and the extent to which its prescriptions can be flexibly adapted in different geographical, social, political, and economic

contexts. Ecological modernization emerged from conflicts in modern Northern European society and has been embraced most widely in western industrialized nations. As a result it reflects the cultural norms characteristic of the largely developed world that participates most actively in the global economy (Langhelle, 2000). Based as it is on tenets of neoclassical economic science held dear to the hearts of developed nations, it has a myopic conception of development and progress.

Ecological modernisation does not ... require alternative measurements of human welfare or radically different understandings of 'progress' or development. Rather, dominant and conventional understandings of progress and development as economic growth (as measured by GNP) wealth and income, paid employment in the formal/money economy, increases in the consumption of commodities and services, etc., are accepted as the given (and therefore non-negotiable) ends or outputs of ecological modernisation, which seeks to achieve these ends with more ecologically friendly means. (Barry, 2005, p. 316)

The dominance of modern (Western) science and technology in EM's kit of treatments for global environmental problems reflects a particularly totalizing—perhaps patronizing—idea of how environmental problems should be solved. It fails to recognize the enormously unequal distribution of responsibility and harm across geography and time.

[E]cological modernization has no established relationship either to the global environmental problems or to social justice. There are, in fact, no explicit references or connections at all to the global dimensions of developmental and distributional problems. As such, ecological modernization is neither concerned with social justice within our own generation (intragenerational justice) nor with social justice between generations (intergenerational justice). (Langhelle, 2000, p. 309)

Furthermore, immersing its environmental protection ethos in the neoliberal agenda, EM is blind to the very source of the problems it proposes to remedy.

What [ecological modernisation] neglects to note is that modern society is composed of very divergent interests and that inequalities of wealth and power are endemic—indeed, a natural outcome of the process of the market economy. [Ecological modernisation theory]

appears to be indifferent to the processes by which its project is brought about. (Blowers, 1997, p. 854)

For varied, but interrelated, reasons, then, there is very real and warranted concern that EM has the capacity or credibility with which to constructively address such a systemic, global problem as climate change. For its part APA emphasizes rational, efficiency- and substitution-based meta-narratives (e.g., “smart” growth, “green” economic development) in indirect pursuit of climate protection (APA, 2011), but does not contemplate an alternative to the hegemony of monotonic economic growth.

The American environmental justice movement has traditionally concentrated on issues at the community scale, and planning has reflected this focus. Whether related to the siting of public services, transit routes, highways, or garbage dumps, planning proposals must not only be efficient, but must also address distributional equity and historical justice issues. However, political ideologies and jurisdictional boundaries constrain the effectiveness and fairness of environmental plans. Mol suggests that global issues such as climate change appear less locally relevant.

Environmental justice arguments as put forward by this movement seem to have been used particularly for ‘localised’ environmental problems: chemical and nuclear waste disposal, local air pollution, and the like. In turning their attention and involvement increasingly to national and global environmental issues (biodiversity, global warming, ozone layer depletion, the oceans, etc.), national environmental organisations have initially been less receptive to these new ideas, as they initially seem to make less sense for such problems on a national basis. (Mol, 2000)

However, the planning community fails to clearly establish a motivating link between jurisdictional climate policy and extra-jurisdictional consequences.

The American Planning Association (APA) addresses equity and environmental justice issues only prescriptively, noting that “[p]lanners are required to address social equity in their work as part of APA’s AICP Code of Ethics and Professional



Conduct,” (APA, 2011, p. 7). Its treatment of equity and environmental justice as they relate to the impacts of climate change is brief, generic, and adaptation-focused in comparison to the wide variety of policy prescriptions presented in other areas.

[P]lanners need to ensure that the responses they develop to address the impacts of climate change take into account the varied needs of all sectors of the community in order to equitably meet the significant challenges facing us. (ibid., p. 7)

Many policy and regulatory responses to climate change adaptation and mitigation pose the potential for initial disproportionate impacts and costs on low-income communities. These impacts on low-income households and communities should be addressed and, to the greatest degree possible, off-set as part of any comprehensive federal, state or local approach to climate change. (ibid., p. 30)

The only specific direction offered is that planners at all levels must “Engage all affected stakeholder groups in initiatives to create and implement climate change plans to ensure that no group is isolated from the process” (ibid., p. 29).

The most specific guidance provided by APA that might be considered related to equity is contained in the scant three pages devoted to the impacts of climate change on public health.

The American Planning Association, its Chapters and Divisions, and planners support efforts to effectively manage public health impacts resulting from climate change, including customization of efforts to address particularly vulnerable populations. ... Certain populations will be more vulnerable to climate-related public health effects than others. Effective delivery of public health services will require special efforts to ensure that these populations are reached with information and any necessary services/treatment. (APA, 2011, p. 80-81)

It is interesting to note that social equity and environmental justice are treated similarly in APA’s other policy guides. All emphasize the necessity for planners to involve all stakeholders—especially those groups least represented in the community’s power structure—in discussions of transportation, housing, energy, or other initiatives that may affect them and urge that facilities—energy generation, housing, transportations facilities—be sited in a manner that does not disadvantage

any particular group. However, there is little specific guidance related to the means by which any sort of distributional equity can be achieved.

Planners appear to be aware of distributional issues, but are constrained by economic and jurisdictional limitations. Several survey respondents reflected in their comments the apparent lack of emphasis afforded social equity concerns not only at the local level, but also by APA.

The discussion of climate change and planning is too devoid of consideration of equity concerns. In my community, it is mostly focused on increasing density, with little attention paid to the consequences of redevelopment for existing communities, nor to the transit ridership impacts of their displacement. [The] main motivation seems to be profit to be made and tax revenue to be garnered through TOD [transit-oriented development]. (#1200363375)

These comments also suggested that increased attention to equity issues and the tools with which to address them would be helpful in enabling planners to more constructively address climate change issues in their local practices. One survey respondent suggested that "a greater sense that equity concerns were taken seriously by the planning community and that tools to incorporate them were really available and used" (#1200363375). Another recognized the potential for planners in addressing climate change and associated equity issues in their communities.

Planners are uniquely positioned to talk about improving communities in a way that will mitigate and adapt to climate change. If the APA made the provision of technical information and talking points to planners, as well as address issues of equity impacts and climate change that would help me make climate change more relevant to the community that I work in. (#1196518807)

One planner suggested that s/he could be a more effective advocate for climate change mitigation "if it were linked to social justice issues of poverty, capitalism, etc. and not simply 'green jobs'" (#1183557198). When asked what would make her a more effective advocate for climate change mitigation, another planner opined that, "a greater sense that equity concerns were taken seriously by

the planning community and that tools to incorporate them were really available and used" (#1200363375). To the extent that the most vulnerable populations are likely to suffer most from the impacts of climate change, it is incumbent on planners to raise these issues explicitly in the context of their community interactions.

I would also include addressing equity issues such as the impact on economically disadvantaged persons - if higher temperatures result in higher cooling costs there would be direct effects on my community. Clearly articulating this could have benefits for planners who want to articulate the need for climate change mitigation in these communities. (#1196518807)

Disturbingly, not a single planner in even one of the roundtable or individual interviews conducted for this research suggested that social equity or distributional fairness might be an issue in his community.

The manner in which particular populations are likely to experience climate change impacts will vary as a function of geography, socioeconomic station, and life history. As a result, no one solution will necessarily be appropriate for all. The current economic, technological discourse that dominates the climate protection agenda throughout the United States is particularly narrow in that it assumes that all residents participate equally in and benefit from the prevailing economic system and that everyone has the wherewithal to benefit from technological innovations being promoted by policy-makers.

### 5.7 Summary

In each dimension of the broad tension Christoff identifies within EM, American climate protection planning skews away from a strong, reflexive posture and settles into a weak, techno-corporatist posture, as shown in Table 5.1, below.

Table 5.2 American climate protection planning

Techno-corporatist (weak) EM	American climate protection planning ←-----→	Reflexive (strong) EM
Economistic	X	Ecological
Technological	X	Institutional
Technocratic	X	Democratic
Instrumental	X	Communicative
Hegemonic	X	Diversifying

With rare exceptions (e.g., California, which has legislatively mandated consideration of climate impacts for all urban development projects), American climate change mitigation policy is economistic in that it marginalizes ecological interests that do not contribute demonstrably to local economic growth; nature is preserved only to the extent that it benefits human interests.

American climate protection policy has a strong technological orientation, emphasizing technology-based resource use and consumption efficiencies over institutional transformation, tacitly assuming that current social institutions are incapable of sufficiently mitigating climate change. It is also strongly technocratic, promoting its expertise in urban spatial design and management. Although planners advocate community involvement in the planning process, lack of climate change

knowledge and concern on the parts of community citizens and decision-makers, alike, encourages this technocratic response.

The economic and technocratic orientation of American urban planning is demonstrated through its professional policy emphasis on functional expertise in planning and the environment, its promotion of technological innovation to increase energy and service consumption efficiencies, its claim to be able to facilitate engagement with such issues in the community, and its organizational integration into municipal administrations that are constrained by the strictures of budgetary finance and capital management. Although its “heart” may recognize the catastrophic consequences of climate change for the urban spaces for which it plans and its “head” advocates policies that will reduce anthropogenic greenhouse gas emissions in line with most recent IPCC recommendations that large reductions in greenhouse gas emissions by 2050, its “hands” are bound by the commitment of municipal, state, and federal governments to a economic growth agenda, which stands in opposition to achieving such policies.

Finally, it is instrumental and hegemonic. As was evident in analysis of APA policy guides and demonstrated in the Vision North Texas process, the profession and its practitioners promote comprehensive planning as central to guiding climate protection, but any communicative elements of that process are focused on identifying a preferred future among *achievable* alternatives. Due to its economic and technocratic characteristics, American climate protection planning facilitates urban growth machine and entrenched treadmill of production discourses instead of questioning the very processes that are driving climate destabilization. In the process it fails to adequately connect local decision-making to global impacts and *vice versa*. By avoiding the ideological and political controversy that often surfaces in

climate change debates, planning avoids engaging the public in a dialog regarding the true nature of the sustainability discourse.

I have argued that U.S. climate protection planning has a close affinity for weak ecological modernization. But why might this necessarily be so? It is certainly not the case that planning has explicitly adopted EM as a framework for its approach to environmental policy-making. EM theory emerged at a time in the modernist project when citizens and policy-makers, alike, were becoming disenchanted with the capacity of centralized, state-led regulation to protect the environment from widespread environmental degradation deriving from modern industrial economies. Policy-makers were desperate to transform the policy discourse in such a way that defused calls for more radical policy alternatives, reassuring the business community of its commitment to economic growth and private capital accumulation, and maintaining its governing legitimacy.

American urban planning has long been complicit in the local state and has a central role in the production of urban space. "Planning, virtually from its inception in the United States, has primarily been at the service of the growth machine" (Logan & Molotch, 1987, p. 153). In his critique of Marxist urban consumption theory Magnusson observes, "Although the production of an amenable space for consumption is obviously a concern of urban planning, this usually is subordinated to the concern for efficient organization of the space for capitalist production," which is "at the root of massive investments in urban infrastructure (power and water supply, transportation, communication, etc.) which business requires for its operations" (Magnusson, 1986, p. 115).

In their analysis of environmental policy-making, Desfor and Keil defined *urbanism* as "a critical element of the emergence of a global order" and argued that,

“regulation and governance of societal relationships with nature in cities is crucial to this role” (Desfor & Kiel, 2004, p. 212). In their studies of contests over environmental preservation in Los Angeles and Toronto, they observed that purely environmental arguments “lost legitimacy vis-à-vis concepts of efficiency, marketability, flexibility, and development pressures” (p. 215). This is precisely context in which ecological modernization rose to prominence in the 1980s and began to gain traction in the United States shortly thereafter. Traditional zero-sum ecological and economic arguments (as well as solely regulatory solutions) lost legitimacy to more cooperative policy proposals. Referring to pollution concerns in Los Angeles and Toronto, Desfor & Kiel observed:

No longer able to neglect or suppress legacies from urban industrial histories, growth regimes in both cities needed to find ways to secure their continued existence and relevance. One way this was done was by integrating concerns for urban environments more directly into the growth regimes’ programs. That turned out to be a win-win situation for ruling elites in both cities because the articulation of economic with ecological interests in their respective ecological modernization projects also coincided with defeats of more radical alternatives proposed by social and environmental justice groups as well as radical ecologists. (Desfor & Kiel, 2004, p. 225)

They conclude that, “ecological modernization is very much a process embedded in specific place-based policy regimes and regulation modes encountered in urban regions” (p. 224) and observe that, “pollution regulation has become a growth industry under neo-liberal capitalism, and ecological modernization has become the discourse and practice of choice for bringing nature and ecology into new growth regimes” (p. 225).

Herein lies the difficulty faced by the American planning institution: by joining with the local state, planning has rendered itself a slave to the growth machine. Planning is bound by and participates fully in the growth-obsessed policy consensus pursued by the local state. It could no more reject the weak EM approach to climate

protection planning than it could unilaterally impose on the local state a more radical ecological stance that might actually have consequence in mitigating climate change.



## CHAPTER 6

### A CAPACITY TO PROTECT?

Planning may be seen as the ability to control the future consequences of present actions. The more consequences one controls, the more one has succeeded in planning. Planning is a form of causality. Its purpose is to make the future different from what it would have been without this intervention. Planning therefore necessitates a causal theory connecting the planned actions with the desired future results. Planning also requires the ability to act on this theory; it requires power. To change the future, one must be able to get people to act differently than they otherwise would. The requirements of successful planning[, ] from causal theory to political power, grow more onerous as its scope increases and the demands for simultaneous action multiply at a geometric rate.

—Wildavsky (1971, p. 101)

EM theory and its policy prescriptions embrace neoclassical economic orthodoxy. It extends standard cost-benefit analysis to include previously externalized production and consumption costs resulting in environmental harms—its economics does become more environmental—but it resists a basic reassessment of the assumptions underlying its framework that would lead it toward a more ecological posture. It relies on the quasi-free market—EM approves of state incentives—to motivate adoption of environmental policy measures and believes that the enlightened self-interest of producers and consumers will afford the environments with an appropriate level of protection.

Further, the capacity of EM to address environmental threats of a global nature—characteristics of a post-modern society—is severely compromised by the boundedness of its policy prescriptions. Its reliance on market mechanisms to promote its prescriptions narrows its vision to more local, economic priorities. This myopia restricts its concern for the non-local impacts of its mitigation strategies and

the processes that are the focus of the mitigation. Further, its horizon in assessing and treating environmental harms is too limited. Most “long-range” planning is conducted for periods of 20 or 30 years.<sup>67</sup> In spite of the general tendency for communities to revisit and update these plans periodically, there is no mechanism to motivate thinking 50 or 100 or 500 years into the future to envision how present decisions might affect the lives of future generations of residents. Circumscribed technical, economic, or cultural transferability of the technologies it promotes limits the capacity of EM—and planners—to develop mitigation solutions that are broadly effective.

In spite of its ostensible dedication to environmental planning that serves the ecology of which the urban, built environment is a part, American urban planning is beholden to jurisdictional political and economic interests that control the planning agenda. To the extent that planners are able to persuade municipal politicians and development interests that aggressive climate protection is in the community’s best interest, then they may be successful in convincing the powers-that-be to adopt an aggressive mitigation agenda. Notable, if modest, successes have come in a number of American cities that have strongly committed to reducing their carbon footprints. To the extent that local planning is conducted within a regional or state legal framework, it will be able to coordinate its planning activities with those of surrounding communities and potentially achieve more extensive reductions in greenhouse gases.

Unfortunately, neither case is the rule, and U.S. urban planners struggle to make a difference in a sea of independent, competing jurisdictional social, political, and economic interests. To avoid complete irrelevance in often ideologically charged

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<sup>67</sup> These planning periods generally align with the maturity periods for the municipal bonds issued to finance many planning initiatives.

political environments, planners must play by the economic rules that guide most local decision-making. They are forced to abandon more transformational visions of cooperative, regional GHG reductions in favor of horse-trading incremental environmental gains for continued economic development. At the same time, even these gains may be illusory inasmuch as many, if not most, are predicated on the voluntary cooperation of individuals, agencies, and businesses.

In hopes of more completely understanding the present desultory state of American climate protection planning and encouraging the forging a more competent response to the truly existential threats that global climate change poses for local communities, this dissertation employed the theoretical lens of ecological modernization to provide a flexible language with which to discuss the theory, process, and results of contemporary climate change mitigation planning in the United States. In its course this analysis reviewed the emergence of EM as a contradictory set of impulses: a hopeful response to a problematic state-led system of environmental regulation; a calculated (some might say cynical) response to protect culpable Northern European industrial economies from themselves; and a defensive response to calls from the political left for a reexamination of the developed world's commitment to unfettered and environmentally rapacious capitalist production and consumption. Its applicability to trans-national environmental challenges such as anthropogenic climate change has been questioned. However, the introduction into the debate of economic globalization, its effect on the global atmospheric commons, and the role of modernity itself in precipitating the crisis suggested the application of the EM framework to this analysis.

Before this research was conducted, EM theory had not been applied to understand the role of urban planning and planners in responding at the local scale to the causes of global climate change. While public concern has grown over the course of the thirty years since James Hansen's 1988 congressional testimony and the involvement by various national, international, non-governmental agencies has significantly increased, American urban planning has remained curiously muted in its response. Over the past several years the American Planning Association, a professional association representing the majority of American planners, finally introduced a climate change policy (APA, 2011) and has engaged in energy policy-related research focusing on a "balanced" response to the coincident challenges of energy sufficiency and global warming. Unfortunately, there have been few concrete indications that these efforts and other public advocacy have resulted in a higher profile by the U.S. establishment with respect to the built environment and climate change.

Given planning's significant role in producing the present climate crisis, the crucial responsibility that cities have to reduce their carbon footprints, planning's functional expertise in facilitating the transformation of the urban built environment, and its only mildly effectual response to-date, can American urban planning be counted on to make a meaningful and adequate contribution to mitigating climate change? Will urban planners—and, more generally, the institution of planning—in the United States remain metaphorically stuck in first gear while climate destabilization and change accelerate?

## 6.1 Discussion

The analysis in Chapter 5 reveals that weak/techno-corporatist ecological modernization has a strong thematic resonance with American climate protect planning. Planning is captive of and dependent for its continued survival on the very economic and political institutions responsible for environmental degradation. In spite of its purported repudiation of rational-scientific planning and voluminous academic literature pointing the way toward a more inclusive, communicative, democratic future, the profession remains wedded to and confident in the very same technocratic, expert-driven, and instrumental prescriptions that brought it to this juncture. Finally, utilization efficiency and technological innovation continue to comprise its fallback position when it discovers its impotence in the fact of other social, political, and economic constraints.

This analysis suggests that urban planning as currently constituted and constrained cannot be counted on to make much of a contribution to mitigating greenhouse gas emissions in a country that so values economic growth that still believes that it can consume its way out of economic and environmental crisis. In a few states and isolated municipalities, this EM-oriented approach may have a pronounced impact—the sort needed in communities of all sizes from coast to coast—but these instances will be cumulatively too little and too late. Planning seems content to nibble around the edges of this most consequential of environmental challenges, trusting that good examples and best practices from the minority will miraculously inspire the recalcitrant majority to do their parts. Committed to working within an ecologically dysfunctional political-economic system and satisfying themselves with small victories, planners appear incapable of the sort of radical

advocacy and action that accelerating climate change demands in order to achieve the transformation of urban spaces and behaviors.

APA's "balanced approach" emphasizing energy substitution, efficiency, and conservation reinforces the de facto techno-rational approach embraced by the United States to reduce greenhouse gas emissions as a function of economic output. Persistence of the status quo in American urban planning will almost certainly bring modest climate change mitigation at the margins of current urban development processes. Unfortunately, though, balancing sustained economic growth with environmental preservation based on technologies whose adoption is primarily motivated by free market economic forces cannot adequately address the fundamental role that resource consumption and associated carbon emissions play in climate change; nor can it address the fundamental, dramatic, and rapid changes in urban space and behavior needed to achieve minimally acceptable greenhouse gas reduction targets set by the IPCC.

By soft-peddling its commitment to aggressive climate protection American urban planning and many of its practitioners fail to provide the leadership essential to help municipalities across this country transform themselves into sustainable communities. Relative to most other developed countries, the United States is already behind the climate change policy and mitigation power curves. Natural scientists are only now recognizing in local and regional weather patterns the gradual consequences of climate change. The baby steps toward environmental sustainability with which conservative municipal planning practice contents itself will not result in the greenhouse gas emission reductions necessary to avoid far more cataclysmic climate change impacts. Transformational change requires a vision of the desired

future and an integrated plan of how to achieve it. It is clear that American planning has neither.

If the reported successes achieved by comprehensive climate action (CCA) planning are to be believed, then there may be hope for a peculiarly American, “bottom-up” form of climate protection. Briefly discussed in section 2.2.5, CCA spans federal, state, and local levels of government and a wide variety of economic sectors. If it is to be an effective approach to developing and implementing American climate protection policy, then it is essential that urban interests—and planners—be represented in the debate.

It is worth a cautionary note, though, that at first glance CCA appears to have a strong affinity to weak EM. It relies heavily on decentralized technological and policy innovation and trusts that economic efficiencies derive from the scaling of local and state initiatives across the nation. In spite of its emphasis on including diverse and local knowledges in debating and forming climate policy, CCA still relies on a technocratic approach to address the complexities inherent not only in developing climate change mitigation policies and mechanisms, but also difficulty of coordinating myriad mitigation initiatives within and across scale boundaries. And its concern for environmental justice and “social performance” in climate protection relies exclusively on the broad participatory base it purports to engage in the policy process (Peterson & Wennberg, 2010).

## 6.2 Toward more effective climate protection planning

Over the past generation, climate change has emerged as a fundamental challenge to the notion that humans can manipulate the natural environment without consequence. It represents the environmental face of the collapse of modernity under the weight of its own contradictions and is a direct threat to the sustainability

of urban spaces in which over half of the world's population (and over 80 percent of the United States' population) lives. American urban planning has been instrumental in configuring and managing the built environment to accommodate modernity and its pretensions to mastery over nature. Planning's predominant response to climate change has not matched the urgency of the crisis. Its advocacy of an incremental, "no regrets," economistic, technocratic approach to reducing greenhouse gas emissions is institutionally naïve. Instead of decisively acting to mitigate the clear and present danger of gradual climate change and the catastrophic consequences of abrupt climate change, planning's soft, safe, accommodating, EM-oriented approach is a tacit capitulation to business-as-usual.

But what would more ecological climate protection planning look like? Following the analysis in Chapter 5, there is obviously quite a distance between American climate protection planning today and where it needs to be.

### *6.2.1 Account more ecologically*

Budgeting constraints cannot be used an excuse for failure to mitigate a community's contribution to global climate change. The planning institution should refine its commitment to "the three e's" of sustainability to recognize, as Paul Farmer recently observed:

Sustainability for most means the "triple bottom line" or the "three e's" — economy, environment, and equity. As with the proverbial three-legged stool, all three elements are essential. Two of the three doesn't mean we have achieved two-thirds sustainability. No, it's an all-or-nothing proposition. (Farmer, 2011)

While it is prudent and laudable to employ appropriate technologies, resource substitutions, and consumption efficiencies to achieve as much bottom line benefit as possible, too much sustainability—and climate protection—planning is made contingent on the tangible, financial return expected from associated initiatives.



Planning should formally advocate for a system of economic accounting that more completely recognizes the impact of a community's decisions on its global carbon footprint. Given the free market context in which planners practice, adoption of a formally ecological economic system by the planning profession might be unachievable. However, it is not too far fetched to imagine APA and its minions adopting a formal set of environmental accounting principles to guide the development and evaluation of local and regional plan alternatives. Planning should employ a much more robust risk calculus that recognizes the costs of local development decisions on other communities and the greater environment. A detailed carbon footprint calculation would help local decision makers better understand not only the source of local greenhouse gas emissions, but also the wider economic and environmental impacts of the community's consumption behaviors. It would also force them to adopt significantly longer and more honest planning horizons (Tonn, 1986; Tonn, 2003). Such a system would encourage municipal decision-makers to consider extra-jurisdictional impacts that might ultimately boomerang in space and time to harm their respective communities.

#### *6.2.2 Communicate clearly and unequivocally*

Planning and planners must be very clear in their assessments of the climate impacts of development alternatives. Their evaluations of the environmental risks of local development initiatives must address the very long-term—at least 50-100 years—consequences not only for the municipality and its future generations of residents, but also for surrounding and global communities. Adopting a more ecological cost-benefit accounting system can help in this effort. However, the greatest value that planning—and some courageous planners—can provide their communities is the ability and willingness to critique the political and economic

contexts in which development alternatives are proposed and the institutional interests they truly serve. American climate protection planning cannot afford to continue to naïvely pretend that planning as it has been practiced is sufficient to confront the existential threat posed by climate change.

APA, which claims to represent the interests of planners and their communities by advocating enlightened planning practice and providing cutting-edge education to planners and urban administrators, must speak clearly and unequivocally—internally and externally—about the immediate and serious threats to American cities posed by climate change.

It is revealing, then, that over 30 percent of all planners responding to the Planners Climate Change Mitigation Survey disagreed that, “APA policy and advocacy priorities appropriately reflect the urgency of climate change mitigation;” 29 percent were not sure. Over 29 percent of all responding planners disagreed that, “APA policies, advocacy, and tools help me promote climate change mitigation in my community,” and 30 percent were not sure. At the same time, though, 62 percent of responding planners agreed, “The American Planning Association advocates explicit local and regional action to mitigate climate change;” 27 percent were not sure.

When asked about whether various information sources were influential in shaping their understanding of and concern about climate change, 58 percent of all planners indicated that the APA climate change policy guide was not influential. In addition, 78 percent said that the APA Climate Change Reader<sup>68</sup> was not influential. That Reader has not been updated for two years.

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<sup>68</sup> APA Climate Change Reader, an online document repository that “pulls together articles from a number of APA publications and demonstrates how a focus on climate change dovetails with traditional planning topics; at” <http://www.planning.org/readers/climatechange/>

These data suggest that communication between the planning profession and its practitioners may not be as strong as advertised and that when it comes to climate change. Institutional attempts to promote progressive climate protection planning may be less effective than they should be. In spite of APA's recent efforts to elevate the importance of climate protection in American urban planning, practicing planners are still unsure of that commitment and in APA's ability to effectively advocate for long-term community sustainability.

### *6.2.3 Agitate from outside*

It is instructive to note the way in which another physical design profession has responded to the climate change crisis. In 2002, Edward Mazria founded Architecture 2030,

... a non-profit, non-partisan and independent organization, ... established in response to the climate change crisis ... to rapidly transform the U.S. and global Building Sector from the major contributor of greenhouse gas emissions to a central part of the solution to the climate change, energy consumption, and economic crises.<sup>69</sup>

The Architecture 2030 Challenge is an initiative that urges "the global architecture and building community" to commit itself to carbon neutrality in new buildings and major renovations by 2030.<sup>70</sup> The American Institute of Architects, the professional association that is for architects what APA is for planners, was the first adopter of the Architecture 2030 Challenge, stating,

The profession is confronting the fact that buildings are the largest single contributor to production of greenhouse gases and almost half of the total annual production. As architects, we understand the need to exercise leadership in our role in creating the built environment. Consequently, we believe we must alter our profession's actions and

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<sup>69</sup> "About Us," retrieved July 25, 2011, from [http://architecture2030.org/about/about\\_us](http://architecture2030.org/about/about_us)

<sup>70</sup> "The 2030 Challenge," retrieved July 26, 2011, from [http://architecture2030.org/2030\\_challenge/the\\_2030\\_challenge](http://architecture2030.org/2030_challenge/the_2030_challenge)

encourage our clients and the entire design and construction industry to join with us to change the course of the planet's future.<sup>71</sup>

Admittedly, it is simpler for architects to make the connection between the product of their work—buildings—and climate change than it might be for planners. The 2007 IPCC assessment report concluded that buildings had the highest mitigation potential among the economic sectors studied (IPCC, 2007a, pp. 14, 16) and buildings are responsible for nearly half of all energy consumed in the United States.<sup>72</sup> However, by virtue of their placement in municipal administrations and their expertise in built environment planning, planners are uniquely close to municipal decision-makers, a proximity not generally enjoyed by architects. Moreover, the objective of good urban planning – unlike the objective of most architecture – is explicitly to serve the broad public interest.

However, the planning profession has yet to make such a visible and targeted commitment to reducing greenhouse gas emissions in the communities it serves. Notwithstanding explicit and pointed encouragement to the association's members in his periodic editorials in *Planning* magazine by Paul Farmer, APA Executive Director and Chief Executive Officer, results from the 2010 Planners Climate Change Mitigation Survey and the workshop and interview data presented earlier indicate that the profession as a whole has yet to fundamentally and realistically confront the seriousness of the climate challenge. While there has been some serious discussion of climate change on planning social networks and blogs, a charismatic leader for the planning profession on par with Mazria has yet to emerge to focus urban planning on the extent of the climate crisis in American cities. In response to the lack of

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<sup>71</sup> "AIA 2030 Commitment," retrieved July 25, 2011, from <http://www.aia.org/about/initiatives/AIAB081490>

<sup>72</sup> Architecture 2030, retrieved July 26, 2011, from [http://architecture2030.org/the\\_problem/buildings\\_problem\\_why](http://architecture2030.org/the_problem/buildings_problem_why)

leadership provided by APA, Daniel Lerch, Program Director of the Post-Carbon Institute, spearheaded the creation of the APA Sustainable Community Planning Interest Group “[t]o assist the American Planning Association ... in becoming a national advocate and leader for sustainable community planning, within the planning community and beyond.”

Sustainability has gone mainstream in the last few years. Individual planners, firms, and agencies across the country are showing remarkable leadership on climate change, energy, food security, water management, and other urgent sustainability issues that challenge all of our communities.

Historically, however, leadership in community sustainability has tended to come from architects, local elected officials, and business leaders. *The planning profession is lagging behind, and until recently, institutional leadership within the APA has been minimal.*

More than any other profession, planners work with the combined economic, social, and ecological factors that shape our communities. We think planners should be leading the charge for sustainability. And we think the APA—from city halls to the halls of Congress—should be pushing a serious and far-reaching sustainability agenda.<sup>73</sup>

This initiative to marshal planners to climate protection action has not been endorsed by APA and has had only limited success. In a recent exchange regarding the transition town movement<sup>74</sup> and its relation to planning, one planner voiced his frustration:

I've had tremendous difficulty getting other local planners interested. They just don't give a shit. Sorry if that's offensive, but so's the situation ... More generally, I do find it disturbing that most planners routinely ignore the peak oil issue (not to mention the climate change issue) in their work.

In dramatically increased numbers, planners must push their representative organizations to more loudly and explicitly engage in the climate protection debate.

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<sup>73</sup> “Mission and Objectives,” retrieved July 25, 2011, from <http://apascp.wordpress.com/about/> (emphasis added). APA Sustainable Community Planning is not sponsored by the American Planning Association. It also maintains social networks hosted on Facebook and LinkedIn.

<sup>74</sup> APA Sustainable Community Planning Interest Group, “Are you aware of the transition town movement driven by peak oil and climate change?” retrieved July 26, 2011, from [www.linkedin.com](http://www.linkedin.com)

#### 6.2.4 Transform planning education and accreditation

The Planners Climate Change Mitigation Survey provides an indication that only a minority of practicing planners has been exposed to climate protection planning in their formal planning education. Fewer than 20 percent of responding planners indicated that their formal planning education had included coursework that explicitly addressed climate change. More than ten percent of responding planners admitted they had not participated in either formal (e.g., seminars or conference sessions) or informal (e.g., personal reading) continuing education explicitly related to climate change.

Accreditation guidelines that govern the broad characteristics of the planning programs that produce a majority of practicing planners emphasize the integrated, ecological nature of the human relationship to the built and natural environments and the fundamental limits of that relationship. They require that a degree program “shall ensure that the curriculum provides a full range of learning activities that will allow students to gain knowledge, skill, and values” in a broad variety of areas, including:

An understanding of human settlement as it relates to planning based on knowledge of the relevant concepts and theories from the *environmental sciences ... including knowledge about ecological and physical systems in relation to human activity at different geographic scales.* (PAB, 2006, p. 15-16; emphasis added)

and

An understanding of historical and contemporary planning practice, policy and processes based on knowledge of the relevant concepts and theories pertaining to the laws and policies relating to *environmental planning and the principles and scientific support for assessing the capacity of natural and built resources.* (PAB, 2006, p. 17; emphasis added)

Putting the planning institution on a more ecological footing will be the transformation of planner education programs. In arguing for a shift in the emphasis

of planning curricula toward communicative aspects of planning practice, Ozawa and Seltzer observed: “The curriculum for graduate education in planning has been largely dictated by a conception of the planner’s role as a technical advisor to decisionmakers. The rational planning model has shaped the construction of the core curriculum” (Ozawa & Seltzer, 1999, p. 257).

[P]lanning educators need to engage a broader discussion of what constitutes a valued worker in a new and emerging economy. Rather than returning to our institutions with the same old attempt to distinguish our discipline from all others, we need to interject the experience that our graduates have with practice into the ongoing debate within the university about what matters. (Ozawa & Seltzer, 1999, p. 265)

One of the five 2011 goals of the Association for the Advancement of Sustainability in Higher Education is that, “At least 10% of the courses offered at American colleges and universities will enable students to synthesize an understanding of environmental, economic, and social forces of change and apply that understanding to real world problems” (Association for the Advancement of Sustainability in Higher Education, 2011). According to the Planning Accreditation Board (PAB),<sup>75</sup> the accreditation body for undergraduate and masters-level graduate planning programs,

Planners integrate knowledge, skills and values to anticipate the future and improve the quality of decision-making affecting people and places. They understand the dynamics of cities, suburbs, regions, and the theory and practice of planning. They attend to the diversity of individual and community values. They develop and implement ethical plans, policies and processes. (PAB, 2006, p. 14)

In light of the emergence of climate protection as central theme in—and threat to—urban sustainability, accreditation standards for undergraduate and master-level graduate degree programs should similarly encourage (or require) the

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<sup>75</sup> The Planning Accreditation Board (PAB) comprises representatives from the American Planning Association, the American Institute of Certified Planners, and the Association of Collegiate Schools of Planning.

integration of climate change and sustainability principles not merely in isolated courses but throughout the planning curriculum. Scores of American planning faculty have self-identified areas of specialization that could be interpreted to include climate change (e.g., resource management, ecological planning, and environmental planning), but only 13 specifically indicate "climate change" as their area of specialization. Three of these are located at a single university (Association of Collegiate Schools of Planning [ACSP], 2010). It is essential that more planning academics be encouraged to specifically address climate change in the scope of their research agendas and integrate it into their syllabi. Further, planning programs must place significantly greater emphasis on climate change and urban sustainability in their curricula. Not a single program surveyed by ACSP volunteered that climate protection was a significant focus (ibid.).

As the local effects of climate change become more prominent it is also essential that the planning profession provide continuing education resources that keep planners current on the state-of-the-art in climate protection policy and practice. The American Institute of Certified Planners does not require that certified planners obtain some minimum number of continuing education credits related to climate-related planning topics. Of the 32 certification maintenance credits required each year, only 1.5 planning ethics and 1.5 planning law credits are required. The distribution of the remaining 29 credits is left to the discretion of the individual planner.

One of the areas left unexplored in this dissertation but of fundamental importance is the ethical responsibility planners have to protect the environment, in general, and the climate, in particular. While AICP-credentialed planners are bound by a code of ethics that includes care for the environment, planners not possessing



this certification are not. Even so, AICP Code of Ethics and Professional Conduct makes only a single, vague reference to environmental protection: "We shall promote excellence of design and endeavor to conserve and preserve the integrity and heritage of the natural and built environment."<sup>76</sup> It is unclear that this commitment is sufficient given the seriousness of the climate crisis.

In the face of the existential challenges presented by climate change in American communities it should be seen as professionally disingenuous and unacceptable for any planner to claim, as did one Florida transportation (bus route) planner that, "Climate change is not relevant to what I do."

#### 6.2.5 A cautionary note

One of the most disturbing indications that the institution of American planning is in need of serious transformation came from an e-mail comment received from a respondent to the 2010 Planners Climate Change Mitigation Survey. I reproduce it *verbatim* with elisions to preserve the planner's anonymity.

*I filled out your survey at work the other day and I am very worried that some of my responses could get me in very serious trouble—even fired. I work in a really conservative area of [a southern state]. Our county council recently withheld funds for a grant application unless we removed the words "climate change"—that is what you are up against, and what I wrote in my survey. Please find my responses and delete my name and the place—[city, state]—from the survey. You can just put that it was a respondent from the deep south.*

*You will never get real change in planning's ability to deal with climate change until you educate the public and their elected officials about it's [sic] reality. Good luck with that, too... I can't even get people to plant trees, or not cut down trees, here.*

*Sorry if I sound a bit bitter, it's not easy being a progressive planner in a place like this, but I keep trying.*

*Thanks and I appreciate you making me anonymous to protect my job.*

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<sup>76</sup> AICP Code of Ethics and Professional Conduct, retrieved July 26, 2011, from <http://www.planning.org/ethics/ethicscode.htm>

This brief message reveals what might be the most pervasive challenge to the planning institution in aggressively pursuing an agenda of greenhouse gas emissions mitigation in many U.S. communities: a lack of serious commitment by the planning profession to immediate and significant greenhouse gas emissions reductions at the local level, often because of ideological reasons. But climate change knows no ideology. While its impacts may be harsher on those least capable of coping with it, it will spare no one.

### 6.3 Conclusion

At the beginning of this research I was struck by what I perceived to be a fundamental disconnect between the commitment and the capacity of the planning establishment—foremost, the American Planning Association and its members—to constructively engage the causes and effects of climate change in the urban context. Over the past several years the association has attempted to integrate climate change mitigation into its federal and state policy advocacy efforts—primarily in the form of transportation, fossil fuel alternatives, and energy efficiency—and has begun providing its members with guidance on how climate protection policy can be developed and implemented at the local level. However, the institutional structure of urban planning in this country is such that it has little power to motivate the sort of transformational changes that appear to be necessary to reduce national greenhouse gas emissions sufficiently to avoid catastrophic climate disruptions during the twenty-first century and beyond.

Cities are increasingly connected to a web of production and consumption that makes them participants in a global dynamic of economic development and environmental despoliation. In the United States, local planners play a pivotal role in economic development activities intended to make their municipalities attractive to

global investment capital and the “creative class.” At the same time, they are responsible for facilitating the development of their communities as urban spaces that will continue to be vital for the foreseeable—and unforeseeable—future.

It is ironic that while most American cities happily compete for global capital, reputation, and influence, few have yet acknowledged their fundamental responsibility for maintaining the global environmental commons. Climate scientists have made it abundantly clear that significant GHG emissions reductions must be undertaken immediately if not sooner (Hansen, 2008), but in spite of unprecedented international commitment to aggressively mitigate climate change, the United States maintains the sad delusion that the world can develop its way out of the climate change crisis. APA remains content to soft-peddle the reality of climate destabilization to its membership and the public in the form of sustainable development and “no regrets” mitigation measures. Development at any scale cannot legitimately be viewed as a zero-sum process in which an actor can persistently externalize the consequences of his behavior. At present, though, most American cities continue to transfer the cost of their direct or indirect carbon emissions to other geographies and generations. The capacity of contemporary urban planning to prosecute a meaningful climate protection agenda is bounded not only by political-economic processes that define its priorities, but also by the planning institution’s willingness to play the game.

In the concluding remarks of their study of environmental conflict over economic development in two of North America’s largest metropolitan areas, Desfor & Kiel (2004) suggest a hopeful future for environmental policy-making transcending the domination of purely capitalist growth machine politics.

The current predominance of accumulation-oriented, neoliberal politics in Toronto’s and Los Angeles’s environmental mode of regulation and

policy regime is best understood as a momentary rather than long-term situation. There is little doubt that the floodgates of environmental justice and democratic concerns raised by urban environmental movements in past struggles over clean air and soil, and over land use along the rivers and other water courses, will not be closed for long by the countervailing forces of technocratic pragmatism and economic efficiency. Those forces were built on literal, and figurative, dams against articulations of ecological concerns ... (Desfor & Kiel, 2004, p. 226)

While greenhouse gas emissions may not be as tangible as traditional water and air pollution or land use choices along urban rivers, the consequences of failing to mitigate them are far more damaging to local communities the world over. American urban planning can play a central role in developing a more informed and concerned urban constituency for climate protection only if it is transformed from an agent of managed growth into an agent of true urban sustainability.

#### 6.4 Further research

While this research has suggested a new lens and vocabulary through which to view American climate protection planning, each of the ecological modernization tensions examined in Chapter 5 must be more fully grounded in economic, social, and planning theory and connected with contemporary practice.

More—and more geographically comprehensive—data is needed to supplement that collected in the 2010 Planners Climate Change Mitigation Survey. I hope that these results sufficiently interest APA to convince them to cooperate on a follow-up survey of its membership. Regardless, there is sufficient data from a number of states (e.g., California and Florida) to bootstrap further research on climate protection planning at the state level. I have entered into a nascent collaboration with the Coastal Areas Climate Change Education Partnership, an NSF-funded, University of South Florida-based climate change curriculum development project. My research may contribute to a more detailed survey of Florida planners

and related curriculum development research. It is also conceivable that the California survey data can be leveraged in more focused research into that state's unique climate protection planning processes and initiatives.

Left unexplored in this dissertation but of fundamental importance is the ethical responsibility planners have to protect the environment, in general, and the climate, in particular. While planners credentialed by the American Institute of Certified Planners (AICP) are bound by a code of ethics that includes care for the environment, planners not possessing this certification are not. At the same time, AICP Code of Ethics and Professional Conduct makes only a single reference to environmental protection in its list of "Principles to Which We Aspire:" "We shall promote excellence of design and endeavor to conserve and preserve the integrity and heritage of the natural and built environment."<sup>77</sup> It is more than a little troubling that there is no reference to environmental protection included in its list of actionable "Rules of Conduct."

Further research also needs to be devoted to examining the theoretical stature of urban planning in the post-modern, post-industrial, post-normal contexts presented by Beck, Funtowicz & Ravetz, and others. The institutional transformation required of planning to enable it to adequately address climate protection in practice—to cease being a key cog in the machinery of what Beck calls "organized irresponsibility"—cannot be achieved without redefining climate protection planning in more reflexive terms.

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<sup>77</sup> AICP Code of Ethics and Professional Conduct, retrieved July 26, 2011, from <http://www.planning.org/ethics/ethicscode.htm>

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<sup>78</sup> Document from US Cabinet-level working group charged with examining "the science, technologies, current U.S. efforts, and a wide range of innovative options for addressing concentrations of greenhouse gases in the atmosphere." Document was absent from White House archives.



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## BIOGRAPHICAL INFORMATION

Having fed repeatedly at the academic trough in his nontraditional career, Kent Hurst has earned degrees in physics (BS, MS), business (MBA), city and regional planning (MCRP), and most recently in Urban Planning and Public Policy (PhD). His research interests include planning theory and political economics, urban revitalization, and simulation modeling.

Kent began his professional career as a teenager building bicycles and selling paint at Montgomery Ward in Abilene, Texas, and proceeded to—and through—careers in software engineering, consulting, and higher education. He swims for the Fort Worth Area Swim Team Masters and has coached for the Fort Worth SwimAmerica program.

Born the same year that Sputnik launched and Velcro was patented, Kent is the eldest son of a decorated Air Force pilot (retired) and a retired English professor. His brother is a very successful corporate attorney; his sister is an extraordinarily talented professional musician and music director.

His partner is a technology consultant and manager with a doctorate in Chinese history. She and Kent share their home with four-plus-one cats and are almost always amused.