

The U.S. Mayors Climate Protection Agreement: A Model for Climate Change Action and Social Movements

MICHAEL SHANK

*Institute for Conflict Analysis and Resolution
George Mason University*

Abstract: Over seven-hundred U.S. mayors are signatories to the Mayors Climate Protection Agreement, which commits each signatory's city to aggressive emissions reduction standards. The seven-hundred-plus signatories represent a social movement that is unparalleled in the U.S.; no other public or private organization is exhibiting this kind of leadership on climate change. In response, this research attempts to do two things: 1) elucidate the specific factors motivating the mayors to sign the agreement and 2) delve into an analysis of social movements and collective action, specifically the prevalence of action by local and state elected officials when federal action is deemed insufficient.

RESEARCH QUESTION

Climate change has become a pervasive and commonly understood concept throughout the United States. The notion of a warming planet, due in part to human activity, is now ubiquitous in America. No longer is global warming the cry of the environmentalist only, everyone seems to be engaged in some way. Elected officials, businesses large and small, celebrities, and even media outlets are touting the benefits of "going green". Though much remains to be done in terms of substantive policy vis-à-vis greenhouse gas emissions reduction, energy efficiency initiatives, and conservation legislation, the political climate surrounding the topic is substantially different now than it was two or three years ago. Among the vast and divergent approaches to climate change prevention in the United States, however, there is one sector of American society that has shown particularly effective leadership on the issue, the U.S. mayors.

In March 2005, nine U.S. mayors sent a letter out to over 400 of their mayoral colleagues inviting them to join a newly established U.S. Mayors Climate Protection Agreement (MCPA). One month prior, in February, the Kyoto Protocol became international law with over 140 nations ratifying the treaty—though the U.S. abstained from ratification and has failed, to date, to ratify Kyoto. The MCPA, based on the standards articulated in Kyoto, voluntarily committed each mayor/signatory to three initiatives: 1) strive to meet or beat Kyoto standards for their city (i.e. reduce greenhouse gas emissions 5-7% from 1990 levels by the year 2012), 2) urge state and federal leaders to do the same, 3) urge Congress to pass greenhouse gas reduction legislation and install a national emissions trading system. As of November 2007, over 700 U.S. mayors have signed the MCPA. Given that the mayors are providing some of the most consistent and assertive leadership in the prevention of climate change, rivaled only by a few governors and businesses, it may be of use to figure out what provided the initial motivation to the signatories.

The primary research questions being posed by the researcher are this: What inspired the mayors to sign the Mayors Climate Protection Agreement and what, more generally, positioned the mayors, within the framework of the U.S. Conference of Mayors, to take the lead on climate change now? Was it the mayors' belief in climate change or other factors like political opportunity? Furthermore, did the degree of freedom experienced by each mayor impact whether or not the mayor became a signatory of the MCPA? While the primary research questions have direct implications on the climate change movement, the questions will also assist the researcher in better understanding social movements and collective action potential in the U.S. The researcher anticipates that the MCPA will help elucidate the prerequisites, if any exist, for effective collective action in the American democratic system. The following questions will be relevant to the research on the collection action components of the MCPA: Does full/associate membership in an organization have an influence on whether or not an individual will engage in collective action? Does an individual's historical record of socio-political activity correlate positively with a proclivity toward involvement in a new organization or initiative? Is there a positive correlation between an individual's personal relationship with the leaders of a social movement and the likelihood that the individual will join that movement?

Additional data gathered by the researcher will include general knowledge and awareness about the (social movement) topic, overall belief in the importance or urgency of the topic, presence or absence of movement by other leaderships on the topic, perception of potential impact on topic, altruistic factors motivating action on the topic, and perceived incentives stemming from action on the topic. All of these measures will help determine the necessary ingredients for a social movement to organize effectively and efficiently. In collecting these data, the researcher is interested in discovering what specifically laid the foundation for effective mobilization on climate change within the mayoral community.

Undergirding this entire research, however, beyond climate change action and social movement analysis, is an even broader analysis of the re-emergence of mayors on the political stage. The mayor, which represents the oldest form of city government in the U.S., was once a much more powerful political figure in U.S. politics. In the early 20th century, mayoral power was perhaps at its pinnacle, thanks, in part, to President Franklin D. Roosevelt. In 1932 Roosevelt founded the U.S. Conference of Mayors (USCM) in response to the Great Depression, to give order and form to the distribution of federal aid. The conference was a force to be reckoned with in New Deal politics, becoming one of the most successful lobbying organizations in Washington.¹ The USCM was an essential ally in the Roosevelt Administration's efforts to establish a framework for federal involvement in urban economic affairs: "On the political front, it lobbied Congress and influenced public opinion in support of stronger federal-city links and pro-city programs. On the administrative front, it acted as an informal extension of the federal bureaucracy by providing program information to city governments and administrative intelligence about program implementation to the federal government."²

For USCM mayors, the new alliance with the federal government provided much needed reprieve during the depression. States provided little or no financial assistance, forcing mayors to rely on Washington. For the Roosevelt administration, the USCM was a well-timed tool to be used for implementing the New Deal agenda. Receiving federal funding for the following fifty years, the USCM remained a critical branch of the federal government's urban policy program

¹ Richard M. Flanagan, "Roosevelt, Mayors and the New Deal Regime: The Origins of Intergovernmental Lobby and Administration*," *Polity*, Vol. 31, No. 3. (Spring, 1999), New York: Palgrave Macmillan Journals, p. 416.

² *Ibid.*

until President Reagan cut the contracts.³ In 1980, 64.3 percent of the USCM's budget came from federal funds; by 1985, the Reagan administration slashed funding nearly in half, to 34.2 percent.⁴ Reagan's new financing strategy forced the USCM to reduce its Washington staff presence in half by the end of the president's second term.⁵ By the 1990s, federal support for mayors all but disappeared. Two dynamics forced this new shift in attitude: Democrats and Republicans had "come to the consensus that the cities are better off if the Federal role is limited,"⁶ and the voting base for both parties "shifted to the suburbs, resulting in little pressing need for addressing big-city problems."⁷

What, then, precipitated the resurgence of the USCM as a political force in the early 21st century in the form of the MCPA? Did America's latest recession, claimed by some economists as starting in 2000,⁸ resurrect a similar fiscal dynamic witnessed in the 1930s or was it rather the emergence of a social problem on par with the depression, in this case a climate change crisis claim, that harnessed mayoral momentum? In 2000, the climate change claim was beginning to manifest in the mainstream polity of the United States. That year, President Bill Clinton acknowledged the claim by endorsing the report, "Climate Change Impacts on the United States: The Potential Consequences of Climate Variability and Change," completed by the U.S. Global Change Research Program.⁹ The U.S.'s recognition of climate change came on the heels of nearly ten years of work internationally by the United Nations Framework Convention on Climate Change, the producer of the Kyoto Protocol. Yet, since recognition failed to translate into policy, observed by U.S. refusal to ratify Kyoto in 2005 and the absence of federal-level greenhouse emissions reductions legislation, the USCM responded to the crisis claim by creating the MCPA. The findings from this research then will examine not only climate change action and social movement potential but also the emerging mayoral role in relation to state and federal governance.

LEVEL AND UNITS OF ANALYSIS

Researching on a national level, the unit of analysis is the individual United States mayor. Compiling data from the Mayoral Elections Database, the researcher has tallied 2,961 mayors within the 50 United States,¹⁰ not including the election database's additional record of 93 mayors from Guam, Mariana Islands, and Puerto Rico. The researcher selected mayors as the unit of analysis after observing that within all the possible U.S.-related sectors for climate change prevention to occur, the mayors have exhibited the highest rate of activity than any other sector. By choosing mayors as the unit of analysis, it also provides the researcher with an opportunity to study the impact of an existing social movement operating on behalf of multiple units of analysis.

³ Rochelle L. Stanfield, "'Defunding the Left' May Remain Just Another Fond Dream of Conservatives," *National Journal*, August 1, 1981, 1375.

⁴ Charles H. Levine and James A. Thurber, "Reagan and the Intergovernmental Lobby: Iron Triangles, Cozy Subsystems and Political Conflict," *Interest Group Politics*, 2d ed., ed. Allan J. Cigler and Burdett A. Loomis (Washington, DC: CQ Press, 1986), 214.

⁵ Jonathan Walters, "Lobbying for the Good Old Days," *Governing* 5 (June 1991): 35.

⁶ Richard M. Flanagan, "Roosevelt, Mayors and the New Deal Regime: The Origins of Intergovernmental Lobby and Administration*," *Polity*, Vol. 31, No. 3. (Spring, 1999), New York: Palgrave Journals, p. 449.

⁷ William Schneider, "The Suburban Century Begins," *Atlantic Monthly*, July 1992.

⁸ Nell Henderson, "Economists Say Recession Started in 2000," *Washington Post*, January 24, 2004.

⁹ BBC News, "Clinton's Climate Change Warning," November 11, 2007, see: <http://news.bbc.co.uk/2/hi/science/nature/1018813.stm> [Last visited: December 1, 2007]

¹⁰ Mayoral Elections Database, see http://www.usmayors.org/USCM/cgi-bin/database_search4.asp. [Last visited: November 10, 2007]

Less than half of the 2,961 U.S. mayors are eligible for full membership, with attendant voting privileges, in the U.S. Conference of Mayors, the official dues-paying organization representing cities with populations of 30,000 or more—of which there are 1,139 in the U.S.¹¹ The USCM offers associate membership, with no attendant voting privileges, to cities under 30,000 in population.

The researcher is interested in studying the efficacy of one social movement's impact—that of the USCM—on another social movement, the MCPA, using the same unit of analysis, the mayor. The USCM became one of the primary communication mechanisms for the MCPA recruitment and mobilization process, through use of the USCM website, annual conference, meeting agendas, etc. It stands to reason that mayors with full USCM membership, participating in all voting processes, will be more educated about the MCPA than associate members with no voting privileges and more likely to sign the MCPA or are, at a minimum, advantaged by the increased awareness. Comparisons will be made by the researcher between full/associate USCM members, active and non-active USCM members, and the impact that membership and level of participation have on likelihood of mayoral signatory status in the MCPA.

In terms of level and units of analysis, a final note is needed to explain why the researcher is studying the USCM, and its MCPA grouping of mayors, as opposed to the other predominant network involving U.S. mayors, the International City Management Association (ICMA). Historically, the ICMA, formed in 1914 and offering membership to cities of 5,000 or more,¹² “promoted the application of expertise and professionalism in municipal government”¹³ and represented cities with council-managers, an alternative to the mayor-council model, a model feared by some as giving the mayor excessive executive power. The USCM, comprised of mayors from both mayor-council and council-manager city models, differs significantly from the ICMA in that it lobbies the U.S. government. The ICMA, while maintaining public priorities, does not engage in lobbying.¹⁴ Given that the researcher is interested in determining the impacts of state and federal climate change action, or the lack thereof, on U.S. mayors, the lobbying relationship between the USCM and state and federal governments provides a critical determinant in this analysis. Later in the study, the researcher, using factor analysis, will examine potential differences in mayor-council and council-manager typologies.

SAMPLE

The sample will draw from the 2,961 U.S. mayors listed on the Mayoral Election Database, with a response goal of 1,000. In an ideal situation, if a high response rate could be guaranteed, the researcher could use random sampling methods within each U.S. state's data set of mayors. The benefits of a random sample would allow the researcher to control for states with larger mayoral data sets, either due to population size or political organizing preferences, (e.g. Massachusetts has more mayors than U.S. states with larger populations, possibly indicating a higher degree of mayoral freedom), control for geographic differences (i.e. states with more

¹¹ United States Conference of Mayors Official Website, see http://usmayors.org/uscm/about/what_is/what_is_uscm.html. [Last visited: November 10, 2007]

¹² Mayraj Fahim, “Council managers are running more and more American cities,” *CityMayors.com* December 18, 2005, see: http://citymayors.com/government/council_managers.html. [Last visited: December 1, 2007]

¹³ Donald C. Menzel, “Review: Collecting, Conveying, and Convincing: The Three C's of Local Government Interest Groups,” *Public Administration Review*, Vol. 50, No. 3. (May-Jun., 1990), Washington, DC: American Society for Public Administration, p. 402.

¹⁴ *Ibid.*, p. 401.

natural resources may be more inclined to prevent climate change), and control for states already engaged in greenhouse gas inventorying, climate change action plan design, the climate registry, and other regional initiatives.¹⁵ Given the realities of low response rates, however, the researcher instead will survey all 2,961 U.S. mayors, to enable the widest reach possible, with the expectation of a return of $n=1000$. The survey will be mailed to all mayors on the database, with follow-up phone calls to the mayors' offices and simultaneous outreach at USCM conferences, at the annual Washington DC winter meeting and the annual regional city meeting. The researcher will work with Seattle City Mayor Greg Nickels, the originator of the MCPA and with whom the researcher has contact, to receive official endorsement and support of this survey.

CONCEPTS AND MEASURES, OPERATIONAL THEORIES AND STATISTICAL CONTROLS

In determining the factors behind mayoral signatories to the MCPA, the researcher is attempting to figure out how dependent climate change prevention—measured by MCPA signatory status, the y variable—is upon several independent x variables: individual, social, political, financial, public health and environmental factors. Upon collecting the data and determining the various coefficients for each factor, the researcher is interested in discovering correlations between the various factors.

More generally, the data mined from this sample may provide insights into how democracies respond to constituent-wide problems or crises. The MCPA case study potentially offers lessons in understanding future responses to problems and crises, e.g. global pandemics, HIV/AIDS, terrorism, etc. For example, when a problem or crisis emerges within a democracy like the U.S., is leadership at the local level (in this case, mayoral) more likely, when there is a perceived lack of national leadership? There is some indication that such a trend is developing in the U.S., beyond what is evidenced within the mayoral sector. Recently, U.S. state legislatures, for example, in response to what states felt was insufficient action at the federal and international levels (i.e. U.S. government and the United Nations) are taking the lead in sanctioning foreign countries, like Sudan, Iran and Burma, through divestment and boycott measures. According to the Sudan Divestment Task Force, a nonprofit organization in Washington DC advocating for economic divestment from Sudan, forty-five state legislatures have initiated a divestment campaign to withdraw investments in Sudanese companies.¹⁶ This trend is not uncommon among state legislatures who increasingly see a leadership vacuum on the federal level.¹⁷ To better understand this trend, the researcher will also include several questions to gauge mayors' perspective on state-level divestment and sanctioning. This research on mayors, then, may offer clues into a broader trend emerging in the U.S.—that of local and state officials taking power into their own hands to respond to crises and conflict, when federal action is deemed insufficient.

Throughout this research, the researcher will pay attention not only to ways in which society responds to a crisis like global warming, but also how the concept of global warming was initially constructed. The study within social science of how social and political forces facilitated the construction of global warming as a legitimate social problem requiring ameliorative action has

¹⁵ See Attached Appendix II.

¹⁶ Sudan Divestment Task Force website, <http://www.sudandivestment.org/home.asp> [Last visited, November 11, 2007]

¹⁷ "States Considering Their Own Iran Sanctions," *All Things Considered*, National Public Radio, October 28, 2007, <http://www.npr.org/templates/story/story.php?storyId=15713248> [Last visited, November 11, 2007]

been ongoing since 1990.¹⁸ The concept of a claim and claims-making (underlying this research is the claim is that climate change is a social problem) seems to necessitate the agency of individual actors¹⁹ with explicit emphasis on observable behaviors.²⁰ If that is the case, then does it also require individual actors with observable behaviors to effectively respond to the claim and ameliorate the social problem? If the appeal of a claim stems from the personalized approach—i.e. individual actors—involving tangible and visible actions, might an ameliorating response to that claim—e.g. the MCPA’s response to climate change—be equally effective when coupled with individual actors and observable actions? In other words, is a mayoral response to climate change advantaged by the fact that there are identifiable individual actors capable of making significant and quantifiable emissions reductions within their community—a task or action that is much more difficult at the national level where emissions reductions are not as immediate or tangible and the individual actors not as readily identifiable? And finally—still within the concept of claims-making—was a mayor more likely to sign the MCPA when he/she was familiar and acquainted with the individual mayor making the invitation to join? This concept will be further fleshed out in the discussion at the end.

Another concept worth considering in evaluating the data from this research is the concept of political opportunity structure or what Sidney Tarrow defines as the “consistent—but not necessarily formal or permanent—dimensions of the political environment that provide incentives for collection action by affecting people’s expectations for success or failure.”²¹ The concept of political opportunity structure assumes that there are a “broad set of political constraints and opportunities” that shapes “social movement mobilization, form, and success.”²² In the case of the MCPA, did the mayors act as part of a political opportunity structure, instead of (or in response to) an aggregate sum of personal, social, political, financial, public health and/or environmental factors? In observing the federal government’s inaction, noted in their refusal to ratify the Kyoto Protocol, did the mayors assess that a vacuum was waiting to be filled regarding climate change prevention?

A survey of the available literature, which the researcher has conducted, manifests little in terms of understanding specifically the inspiration for and growth of the MCPA. Concepts that will be helpful in analyzing the mayors’ inspiration to become MCPA signatories will need to be extracted from research on social problems and social movements and the available research on global warming responses—as well as an analysis of the individual, social, political, financial, public health and environmental factors mentioned here:

Individual Factors: In these hypotheses, the researcher is accounting for all survey measurements that incorporate personal relationships, personal belief, and personal agency, i.e. participation and involvement that depends upon the individual mayor. *Hypothesis 1* (Personal Relationship): A positive correlation is expected between the existence of a personal relationship between mayor and MCPA leadership and the mayor’s MCPA signatory status. *Hypothesis 2* (Personal Belief): A positive correlation is expected between a mayor’s belief in the existence of

¹⁸ Aaron McCright and Riley Dunlap, “Challenging Global Warming as a Social Problem: An Analysis of the Conservative Movement’s Counter Claims,” *Social Problems*, Vol. 47, No. 4 (2000), Berkeley: University of California Press, p. 500.

¹⁹ *Ibid.*, p. 503.

²⁰ *Ibid.*

²¹ Sidney Tarrow, *Power in Movement: Social Movements and Contentious Politics*. New York: Cambridge University Press, 1998.

²² Aaron McCright; Riley Dunlap, “Defeating Kyoto: The Conservative Movement’s Impact on U.S. Climate Change Policy,” *Social Problems*, Vol. 50, No. 3 (Aug. 2003), Berkeley: University of California Press, p. 360.

climate change, its impact on the environment and public health and their MCPA signatory status. *Hypothesis 3* (Personal Participation): A positive correlation is expected between a mayor's USCM membership level and their MCPA signatory status, i.e. full membership makes MCPA signatory status more likely. *Hypothesis 4* (Personal Involvement): The level of individual political activity should have some impact on signatory status, though it is unclear to what extent.

Social Factors: In these hypotheses, the researcher is accounting for all survey measurements that incorporate social dynamics, social pressure, and social awareness. *Hypothesis 5* (Importance of In-Group Pressure): A positive correlation is expected between high numbers of existing signatories and MCPA signatory status. *Hypothesis 6* (Impact of Media): The exposure to media, specifically to the film "An Inconvenient Truth" is expected to correlate positively with MCPA signatory status. *Hypothesis 7* (Public Health): Concern for the impacts on public health due to climate change will only be marginally associated with MCPA signatory status. *Hypothesis 8* (Prestige/Uniqueness): Potential for prestige due to the uniqueness of the MCPA will be negligibly associated with MCPA signatory status.

Political Factors: In these hypotheses, the researcher is accounting for all survey measurements that incorporate political dynamics, political pressure, and political agency. *Hypothesis 9* (Commitment to Public Service): The desire to respond to constituent needs will positively correlate with MCPA signatory status. *Hypothesis 10a* (Existence of State/Federal Action): The existence of state and federal climate change action is expected to correlate positively with MCPA signatory status. *Hypothesis 10b* (Lack of State/Federal Action): The perception of insufficient engagement on climate change by state and federal governments is likely to have some positive correlation with MCPA signatory status. *Hypothesis 11* (Local-State vs. Federal Agency): The general belief that local and state officials should act when federal action is insufficient is expected to correlate positively with MCPA signatory status.

Financial Factors: In this hypothesis, the researcher is accounting for the survey measurement that incorporates financial pressure and financial incentives. *Hypothesis 12* (Financial Rewards): High perceptions of potential financial reward are expected to correlate positively with MCPA signatory status. **Environmental Factors:** In this hypothesis, the researcher is accounting for the survey measurement that incorporates environmental awareness, concern and urgency. *Hypothesis 13* (Environmental Protection): Belief in MCPA's positive impact on the environment is expected to correlate positively with MCPA signatory status.

In the discussion section, the researcher will examine and test these hypotheses for validity and measurability based on the data gathered in the survey. The next section details how the measurements will be exacted, which models will be used, and how outcomes will be processed.

THE LOGIT MODEL

Using a binary logit model and categorical dependent variables, the researcher will attempt to uncover what ultimately motivated the sample to respond positively by becoming an MCPA signatory (scored "1" for positive outcome) or negatively by not becoming an MCPA signatory (scored "0" for negative outcome). This regression model for binary outcomes will assist the researcher in explaining how each independent variable (previous activity, relationship, knowledge and awareness, level of belief, presence/absence of other movements, perceived impact, altruistic factors, and incentives) will affect the probability of the event (1=yes or 0=no to the MCPA) occurring. Most of the measurements in Appendix I will use a Likert Scale. The measurements will examine the type of recruitment approaches, individual belief in climate change, individual membership and participation level in the USCM, individual political activity, level of municipal, state and federal engagement in climate change prevention, affiliation with

existing mayoral signatories, level of perceived influence on state and federal governments, effect of the media, overall importance of a range of motivating factors (financial, environmental, health, etc.) the uniqueness of the MCPA approach, and the level of agency and empowerment local and state officials should be afforded.

Then, in processing the data that emerges from these questions, the researcher will determine the coefficients between the independent and dependent variables. The chart below charts out the various independent variables and establishes the framework to help determine what exactly inspired the mayors to sign the MCPA. Once data are available, the researcher will be able to determine the correlation between the independent variables and the dependent variables.

TABLE 1. Logit Analyses of Determinants in U.S. Mayors Climate Protection Agreement Signatory Status	
Independent Variables	1000 Mayors Responding Dependent Variable*
Type of Recruitment	
Individual Belief	
USCM Participation	
Individual Pol. Activity	
Level: Municipal	
Level: State	
Level: Federal	
Affiliation	
Perceived Influence	
Film Effect	
Financial	
Environment	
Public Health	
Prestige	
Agency	
Constant	
<i>N=1000</i>	
<i>*The dependent variable is scored "1" for mayor signatory status and "0" for non-signatory status.</i>	

THE STRUCTURAL EQUATION MODEL

In the structural equation model, the researcher is interested in understanding the context behind, and factors defining or influencing, each mayor's decision to sign, or not sign, the MCPA. There are three factors of particular interest to the researcher. All three, the Mayoral Freedom factor, the Political Opportunity factor, and the Climate Change Belief factor, are explained below, and then tabulated in Table 2 by the level of Municipal Population and Political Activity. The purpose of this comparison to population and political activity is to explore the potential differences that might arise among large versus small cities and high versus low political activity. It is unclear how the city size will impact each mayor's decision to sign the MCPA. Mayors of larger cities might feel overwhelmed by the emissions reductions commitments in the MCPA given the cutbacks associated with a larger population. Conversely, mayors of smaller cities might feel ill-equipped, technologically speaking, to mainstream emissions reductions, efficiency and conservation programs in an environment where standardized municipal systems are uncommon. It is also unclear how political activity will impact MCPA signatory status.

The *Mayoral Freedom Factor* analysis utilizes three points of external data to determine the level of freedom experienced by each mayor. The purpose of this specific factor analysis is to explore how the level of mayoral freedom correlates with MCPA signatory status. The first criterion is whether or not the mayor is represented by a mayor-council model or a council-manager model. The mayor-council model—though there are weak and strong variations of this model in the U.S.—provides the mayor with administrative authority and the power to appoint and dismiss department heads.²³ The mayor-council model is more closely aligned with the American political system and the role of executive leadership. In the council-manager model, on the other hand, the city council is responsible for making policy and the mayor primarily holds a ceremonial post. Priority is placed on the professional management of the city. Corresponding with levels of freedom for the purpose of this research, the executive-based mayor-council model will be considered a positive level of authority and autonomy, i.e. freedom, while the council-manager model will be considered as a negative level of freedom.

The remaining two points of data deal with percentage of votes in the last mayoral election and the number of climate change initiatives in each state. On percentage of votes, the mayor with the greater majority of votes in the last election is equipped with a higher level of freedom. Exceptions might include outgoing mayors with nothing to lose politically and newly elected mayors who are concerned with re-election and more timid as a result. On the number of climate change initiatives, the mayor residing in a state engaged in a greater number of initiatives (see Appendix II for list) is more likely to feel a higher degree of freedom when it comes to signing the MCPA. A higher level of climate change support on the state level is likely to give the mayor the freedom to make a similar decision. Exceptions to this might include cases when mayors and state legislatures are not of the same political party and are motivated to legislate differently.

Mayoral Freedom Factor Loadings:	Scores
Mayoral Status: Mayor-Council Model or Council-Manager Model ¹	
Percentage of Vote (four-point scale): 75-100 percent, 50-75 percent, 25-50 percent, <25 percent. ²	
Number of Climate Change Initiatives in State (five-point scale): 4/4, 3/4, 2/4, 1/4, 0/4 initiatives ³	

¹*Mayoral Status: Mayor-council models (MCMs) generally provide mayors with greater autonomy and authority whereas council-manager models (CMMs) provide mayors with lesser autonomy and authority. MCMs status will be coded as 1, connoting a positive level of freedom, whereas CMMs will be coded at 0.*

²*Percentage of Vote: This four-point scale shows the degrees of mayoral freedom, based upon the percentage of votes received in the last election. The higher the percentage of votes e.g. 75-100 percent, the greater the freedom. The lower the percentage of votes the less freedom experienced by the mayor.*

³*Number of State Initiatives: See Appendix II for initiatives by state. Mayors located in states engaging in all four initiatives—i.e. GHG inventory, Climate Change Action Plan, Climate Registry and Regional Initiatives—have the highest level of mayoral freedom given state-wide support for climate change action.*

The *Political Opportunity Factor* analysis utilizes seven points of data, all originating from survey questions. The purpose of this specific factor analysis is to determine how important the prospects of political opportunity were in influencing MCPA signatory status. The first two points of data, Q17 and Q18 below, evaluate the mayor's estimation of MCPA impact on state and federal decision-making. These questions also aim to elucidate mayoral perspectives vis-à-vis the power of the mayor more generally. The third data point, Q20, examines the financial aspect of political opportunity and the mayor's ability to appear fiscally responsible. The fourth

²³ Jane Mobley, "Politicians or Professionals: The debate over who should run our cities continues," *Governing*, February 1998, see: <http://www.governing.com/archive/1988/feb/managers.txt>. [Last visited: December 2, 2007]

data point, Q21, determines the level of political savvy of each mayor and the level of mayoral attentiveness to voter opinion and re-election prospects. The fifth data point, Q24, illuminates the level of prestige, by comparison to the remainder of the U.S., associated with the MCPA. And the remaining two data points, Q25 and Q26, reflect on the perceived lack of federal government leadership and the political opportunity for local and state officials to respond instead.

Political Opportunity Factor Loadings (four-point scale ¹ for each <i>Q</i>):	Scores
<i>Q17</i> . The MCPA will have significant and positive impact on my state's level of engagement on climate change.	
<i>Q18</i> . The MCPA will have significant and positive impact on the federal government's level of engagement on climate change.	
<i>Q20</i> . MCPA provides major financial boosts to mayors through cost-cutting energy-efficiency projects and through new funding for "green" projects.	
<i>Q21</i> . The MCPA is exactly the kind of initiative in which my city wants me to be involved.	
<i>Q24</i> . In the entire U.S., it is the MCPA signatories who are showing exemplary and unparalleled leadership in climate change prevention.	
<i>Q25</i> . U.S. state legislatures divesting from or sanctioning Sudan, Burma and Iran are doing exactly what state legislatures should do when the federal government refuses to act—taking power into their own hands in order to get something done.	
<i>Q26</i> . Local and state officials should not wait for the U.S. government to take action on critical issues like climate change and should instead take action immediately.	

¹In the survey (see Appendix I), each of the seven questions are scaled from 1-4, 1 corresponding with "disagree strongly" and 4 corresponding with "agree strongly". A high degree of mayoral interest in the political opportunity potential of the MCPA is defined by high scores on all seven questions above.

The *Climate Change Belief Factor* analysis utilizes three data points originating from survey questions. The purpose of this specific factor analysis is to explore the correlation between Climate Change Belief and MCPA signatory status. The first data point, Q5, is perhaps the most important because it determines each mayor's overall assessment of the crisis claim and its urgency. The remaining two data points, Q6 and Q7, question the impacts of climate change on the environment and public health. These two questions are intended to gauge the extent of the mayor's belief in climate change through specific references to climate change's impact on the natural and human environment. The researcher anticipates interesting results, that is, that high scores in climate change belief will not necessarily correlate positively with MCPA signatory status. Mayors may score high in Climate Change Belief but low in overall Mayoral Freedom and, as a result, may feel unable to sign the MCPA (more on this in the next section).

Climate Change Belief Factor Loadings (four-point scale ¹ for each <i>Q</i>):	Scores
<i>Q5</i> . Climate change is a problem that must be addressed immediately.	
<i>Q6</i> . Climate change will adversely impact the environment.	
<i>Q7</i> . Climate change will adversely impact public health.	

¹In the survey (see Appendix I), each of the three questions are scaled from 1-4, 1 corresponding with "disagree strongly" and 4 corresponding with "agree strongly". A high degree of mayoral belief in climate change is defined by high scores on all three questions.

In Table 2 below, the researcher is using a structural equation model to better understand the context, or set of factors, impacting MCPA signatory status. For example, upon entering in the data, will MCPA signatories score low in Climate Change Belief but high in Political Opportunity or will MCPA non-signatories score high in Climate Change Belief but low in Mayoral Freedom?

Perhaps MCPA non-signatories will score high in all three factors, i.e. freedom, opportunity and belief, but low in political activity. The researcher is interested in the range of combinations in order to uncover the factors most responsible for motivating MCPA signatory status.

TABLE 2. Structural Equation Models for Mayors Climate Protection Agreement Signatory Status by Level of Population and Level of Political Activity.¹

	Mayors Climate Protection Agreement Signatory Status²					
Structural Coefficients	<u>Small</u> Population < 100k	<u>Med</u> Population 100k-1m	<u>Large</u> Population > 1m	<u>Low</u> Political Activity	<u>Med</u> Political Activity	<u>High</u> Political Activity
Mayoral Freedom:						
	()	()	()	()	()	()
Political Opportunity:						
	()	()	()	()	()	()
Climate Change Belief						
	()	()	()	()	()	()
Model Fit:						

¹*Political Activity: Using the four-point scale in the survey, activity is evaluated using survey questions #9 (USCM participation), #10 (elections participation), #11 (reads news), and #12 (town hall participation). High political activity is defined by high scores on all four questions (#9-12), medium political activity by average scores and low political activity by low scores.*

²*Signatory Status: MCPA Signatories are scored as “1”; non-signatories are scored as “0”.*

What the researcher expects to likely emerge from the data collection and analysis in the logit and structural equation models above is that no single factor is responsible for garnering mayoral signatories to the Mayors Climate Protection Agreement. What will emerge, rather, is a confluence of multiple factors that when joined together creates sufficient will and capacity to enable this particular social movement to effectively organize. For the climate change movement or for readers interested in climate change specifically, this research hopes to illuminate the key factors motivating mayors to sign the MCPA. For readers interested in social movements, however, more analysis is warranted before answering the three concepts enumerated in the “Concepts and Measures” section. On the concept of democracy—which observes local action in lieu of state and federal action—this research will likely help affirm or disavow the notion that a trend is on the rise towards local agency and empowerment. On the concept of claims-making—which requires individual agency and observable behaviors to effectively make a claim—this research will help clarify how important the role of individuals and behaviors were in the MCPA recruitment and mobilization process, and by extrapolation, social movement processes. On the concept of political opportunity—which assumes that a broad set of political constraints and opportunities shape social movements—this research will help identify the levels of mayoral freedom and political opportunity within the MCPA movement.

In organizing the MCPA, the mayors are experiencing a resurgence of power, on par with the mayoral political presence of the 1930s. In analyzing the MCPA, this research aims to uncover the underlying factors behind this one aspect of U.S. mayoral renaissance. A new model of crisis response may be emerging on the local level, in time to save an overheated planet. However, whether the mayors as a social movement will continue to capitalize on their emerging prowess beyond climate change remains to be seen. It depends upon the level of mayoral freedom and political opportunity experienced by mayors, data this research aims to reveal.

APPENDIX I: SURVEY MEASUREMENTS*	
Q1. Are you a signatory to the Mayors Climate Protection Agreement?	Yes/No
Q2. Were you invited to join the MCPA by a mayor you know very well?	Yes/No
Q3. Were you invited to join the MCPA by the founders of the MCPA?	Yes/No
Q4. Do you know well the founders of the MCPA?	Yes/No
Q5. Climate change is a problem that must be addressed immediately.	1-2-3-4
Q6. Climate change will adversely impact the environment.	1-2-3-4
Q7. Climate change will adversely impact public health.	1-2-3-4
Q8. What is your membership level in the USCM? **	F-A-N
Q9. I actively participate in USCM meetings, conferences, correspondence.	1-2-3-4
Q10. I regularly participate in local, state and federal elections.	1-2-3-4
Q11. I regularly read news concerning local, state, federal, and international politics.	1-2-3-4
Q12. I regularly participate in local, state, federal town hall meetings, roundtables and dialogues.	1-2-3-4
Q13. My city is doing all it can to prevent climate change, including energy efficiency, recycling, conservation and greenhouse gas emissions reduction.	1-2-3-4
Q14. My state is doing all it can to prevent climate change, including energy efficiency, recycling, conservation and greenhouse gas emissions reduction.	1-2-3-4
Q15. The U.S. government is doing all it can to prevent climate change, including energy efficiency, recycling, conservation and greenhouse gas emissions reduction.	1-2-3-4
Q16. Many of the mayoral signatories to the MCPA are close colleagues of mine.	1-2-3-4
Q17. The MCPA will have a significant and positive impact on my state's level of engagement on climate change.	1-2-3-4
Q18. The MCPA will have a significant and positive impact on the federal government's level of engagement on climate change.	1-2-3-4
Q19. Al Gore's film "An Inconvenient Truth" made an immediate impression on me and inspired me to take action on climate change.	1-2-3-4
Q20. The MCPA provides a major financial boost to mayors, through cost-cutting energy efficiency projects and through new funding for "green" projects.	1-2-3-4
Q21. The MCPA is exactly the kind of initiative in which my city wants me to be involved.	1-2-3-4
Q22. The MCPA will help make the natural environment substantially greener.	1-2-3-4
Q23. The MCPA will be very good for the public health of my city.	1-2-3-4
Q24. In the entire U.S., it is the MCPA signatories who are showing exemplary and unparalleled leadership in climate change prevention.	1-2-3-4
Q25. U.S. state legislatures divesting from or sanctioning Sudan, Burma and Iran are doing exactly what state legislatures should do when the federal government refuses to act—taking power into their own hands in order to get something done.	1-2-3-4
Q26. Local and state officials should not wait for the U.S. government to take action on critical issues like climate change and should instead take action immediately.	1-2-3-4

**Questions 5-26 (with the exception of Q8) scale answers in the following manner: 1=Disagree strongly; 2=Somewhat disagree; 3=Somewhat agree; 4=Agree strongly.*

***Question 8: Full Member, Associate Member, Not a Member*

Appendix II: U.S. States	Total Mayors ¹	MCPA Signatories ²	GHG Inventory ³	Climate Change Action Plan ⁴	Climate Registry ⁵	Regional Initiatives ⁶
	2007	2007	2007	2007	2007	2007
Alabama	85	5	Yes	Yes		
Alaska	7	4				1
Arizona	43	7	Yes	Yes	Yes	3
Arkansas	33	4				
California	297	108	Yes	Yes	Yes	3
Colorado	37	14	Yes		Yes	1
Connecticut	50	15	Yes	Yes	Yes	2
Delaware	11	1	Yes	Yes	Yes	1
D.C.	1	1				
Florida	151	65	Yes		Yes	
Georgia	72	8	Yes			
Hawaii	4	5	Yes	Yes	Yes	1
Idaho	11	6				1
Illinois	97	21	Yes	Yes	Yes	
Indiana	61	10	Yes			
Iowa	34	30	Yes	Yes		1
Kansas	41	3	Yes		Yes	1
Kentucky	37	5	Yes	Yes		
Louisiana	62	4	Yes			
Maine	14	10	Yes	Yes	Yes	2
Maryland	35	10	Yes		Yes	1
Massachusetts	132	21	Yes	Yes	Yes	2
Michigan	95	18	Yes		Yes	
Minnesota	74	30	Yes		Yes	1
Mississippi	40	1	Yes			
Missouri	79	10	Yes	Yes	Yes	
Montana	9	3			Yes	1
Nebraska	22	3				1
Nevada	14	4	Yes			1
New Hampshire	11	7	Yes	Yes	Yes	2
New Jersey	142	83		Yes	Yes	1
New Mexico	24	7	Yes	Yes	Yes	3
New York	82	28	Yes	Yes	Yes	1
North Carolina	128	25	Yes		Yes	
North Dakota	12	2				2
Ohio	254	18	Yes		Yes	
Oklahoma	40	2	Yes			
Oregon	30	11	Yes	Yes	Yes	3
Pennsylvania	79	11	Yes	Yes	Yes	1
Rhode Island	22	3	Yes	Yes	Yes	2
South Carolina	34	5			Yes	
South Dakota	10	1				2
Tennessee	50	6	Yes	Yes		
Texas	188	19	Yes			1
Utah	26	3	Yes		Yes	1
Vermont	8	1	Yes		Yes	2
Virginia	38	7	Yes			
Washington	40	31	Yes	Yes	Yes	3
West Virginia	18	4	Yes			
Wisconsin	59	15		Yes	Yes	1
Wyoming	18	1			Yes	1

¹U.S. Conference of Mayors; Mayors Database; http://www.usmayors.org/USCM/cgi-bin/database_search4.asp

²Mayors Climate Protection Center; <http://usmayors.org/climateprotection/listofcities.asp>

³U.S. EPA; State Planning and Measurement; http://epa.gov/climatechange/wycd/stateandlocalgov/state_planning.html

⁴U.S. EPA; State Planning and Measurement; http://epa.gov/climatechange/wycd/stateandlocalgov/state_planning.html

⁵U.S. EPA; State and Regional Climate Actions Table; http://epa.gov/climatechange/wycd/stateandlocalgov/state_actionslist.html

⁶U.S. EPA; State and Regional Climate Actions Table; http://epa.gov/climatechange/wycd/stateandlocalgov/state_actionslist.html