

Understanding City Engagement in Community-Focused Sustainability Initiatives

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Abstract

Many local governments are promoting sustainability initiatives ranging from progressive urban design and development to climate protection. Past research suggests that governments are often motivated to act because of the possible co-benefits, such as cost savings, associated with sustainability. However, many sustainability programs target in-house city operations, thus ensuring that co-benefits accrue to local government while not imposing regulations on businesses or residents. Co-benefits may be less likely to drive decision making when sustainability initiatives are directed to the larger community. In this paper, we examine why some cities actively pursue the more difficult prospect of community-wide sustainability policy. We merge secondary data with original survey data of local governments to explore three broad theoretical influences on decision making: interest group pressure; problem severity or need; and network strength. Our results suggest that regardless of the institutional structure within a city, participation in some inter-local networks promote community wide sustainability initiatives.

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Local governments are increasingly investing in programs and initiatives to promote sustainability. Sustainability policy casts a broad net and can include a variety of initiatives ranging from climate protection and energy efficiency to comprehensive land use planning. Efforts to advance sustainability at the local level have garnered considerable scholarly attention. As early as 1987 the Brundtland Commission's report, Our Common Future, identified city governments as critical stakeholders necessary to advance sustainable development (World Commission on Environment and Development [WCED] 1987). Since then, scholars and practitioners have developed a vibrant research agenda exploring the meaning of sustainability (Hempel 2009; Portney 2003; 2009), evaluating its impacts (Budd et al 2008; Fitzgerald 2010; Rabe 2008; Upadhyay and Brinkman 2010), as well as identifying the determinants of policies designed to promote local sustainability (Brody et al 2008; Bulkeley and Betsill 2005; Krause 2011; Lubell, Feiock, and Handy 2009; Pierce, Budd and Lovrich 2011; Portney 2009; Portney and Berry 2010; Sharp, Daley and Lynch 2011; Zahran et al 2008a, 2008b).

As scholarship in this area grows, two challenges remain. First, there is the theoretical and conceptual challenge implicit in advancing a more nuanced understanding of the relationship between economic development and environmental policy. All too often, these concepts are treated as competitive endeavors (see Hempel 2009 and Portney 2003; 2009 for a broader discussion of this point), limiting our ability to understand the "win/win" scenario that advances both environmental policy and economic development. This suggests there is a need to explore how different cities capitalize on contemporary post-industrial global economic forces. Second, there is a need to build upon the numerous findings of "co-benefits" as a motivator of city action

on climate change and other sustainability initiatives. Many scholars have found that energy cost savings to city government and similar co-benefits motivate policy adoption in this area (Betsill and Bulkeley 2004; Bulkeley and Betsill 2003; Kousky and Schneider 2003; Portney 2009).

While co-benefits are likely to loom large in decision making aimed at city operations, it is less clear if this explanation holds when city governments develop community wide sustainability policy that exceeds in-house city activities. Benefits from community wide policies are likely to drift across political boundaries, adding hurdles to pursuing broadly based sustainability initiatives (Rabe 2004; 2008). Ultimately, community wide sustainability initiatives are more complex than their in-house counterparts, and we know less about why cities embark on these broader, more challenging sustainability paths. Indeed, recent research identifies systematic differences in the determinants of greenhouse gas reduction policy aimed at in-house city operations compared to those initiatives targeting the broader community (Feiock and Bae 2011).

In this paper, we explore the determinants of community wide sustainability policy in more detail. Our analysis stems from our earlier work exploring cities' participation in and progress through the climate protection program promulgated by the International Council on Local Environmental Initiatives (ICLEI) (Sharp, Daley, and Lynch 2011). Our previous research suggests that that financially strapped cities are more likely to participate in ICLEI's climate protection program, advancing the notion that co-benefits are an important factor promoting policy adoption. But these same cities experience implementation difficulties; they are systematically less likely to achieve programmatic milestones. This result compelled us to question the relationship between co-benefits as a determinant of decision-making and the scale or breadth of a policy initiative. While there is growing scholarship aimed at understanding why some cities pursue sustainability initiatives and others do not, there is far less attention focused

on how broadly these initiatives are deployed, presumably due to data constraints. The data used for our previous analysis did not distinguish if cities' climate protection initiatives were simply in-house programs targeting local government operations, and thus more likely to be motivated by co-benefits, or if these programs were more ambitious community wide initiatives engaging a broader cross section of stakeholders in policy implementation.

Our current paper is a conceptual replication of the model used in our previous research that focused exclusively on urban climate change policy (Sharp, Daley and Lynch 2011). However, we adapt that model in several important ways. First, we rely upon different data sources. If our replication suggests similar patterns guiding decision making while relying upon different data sources to operationalize our concepts of interest, we can be more confident about the nature of these relationships (King, Keohane, and Verba 1994). We merge secondary data with original survey data supported by the IBM Endowment for the Business of Government and collected at Florida State University under the direction of Richard Feiock. This enables us to expand our focus beyond climate change policy and rely upon primary data from large cities to create a measure that represents an array of sustainability initiatives – an approach used by other scholars interested in sustainability as well (Lubell, Feiock and Handy 2009; Pierce, Budd, and Lovrich 2011; and Portney 2003). Second, the structure of the survey data allows us to distinguish between sustainability initiatives that are directed at in-house government operations versus community wide sustainability programs. Initial research in this area suggests that with respect to climate change decision-making, programmatic scale matters; different factors shape the uptake of in-house programs compared to community wide programs (Feiock and Bae 2011).

Comprehensive sustainability programs have the potential for yielding greater impact if successfully implemented, but they are, by definition, more complex and politically complicated.

We adapt the model from our previous research to examine why some large cities are embracing community wide sustainability programs, and others are not. Our analysis considers the role of political institutions, a range of organized interests, need or problem severity, with a particular emphasis on distinguishing how a city's economy relies upon more environmentally intensive activities compared to creative class enterprises, and finally, intergovernmental cooperation and network participation. Among other things, our results cast some doubt on co-benefits as a factor promoting community wide sustainability initiatives. Instead, our analysis suggests that regardless of a city's institutional structure, broad based organized interests within a community and participation in certain inter-local policy networks propel community wide sustainability policy. The next section of the paper outlines our theoretical and conceptual approach in more detail. Following this, we provide our research methods and describe our results and discussion. We conclude the paper by discussing our results in light of the broader literature on sustainability and suggesting fertile areas of research to build upon and expand these results.

Cities, Sustainability, and Environmental Decision-Making

Sustainability is a concept often examined at the international and national level (Aldy and Stavins 2007, 2010; Barbier 2010; Mazmanian and Kraft 2009; Rabe 2010), despite the long standing recognition of cities' importance in advancing sustainability (WCED 1987). Portney (2003) persuasively argues that in the American context cities hold tremendous promise for advancing sustainability. Indeed, he contends that several forces combine to highlight cities' prominence in this area. For several decades, the fragmentation and divided authority in American federalism has occurred against a near constant drum beat of advancing state and local rights. The result, on the federal level, has been an institutional environment unable to generate

– and at times openly hostile to – new environmental legislation. Instead, much of the recent political debate in environmental decision making has centered on returning authority to lower levels of government. The promise of such decentralization lies in scale: problems are more likely to be accurately identified, solutions are crafted at the local level by individuals who understand the political and social culture, and feedback and adaptive management can be more immediate. If something becomes better or worse, local governments can respond quickly and strategically compared to their federal counterparts. Portney (2003) contends that these factors, along with the sheer number of people living in urban environments, combine to make cities a serious and potentially effective level of government to advance sustainability. But what factors predict city governments’ propensity to develop community wide sustainability initiatives? We draw from previous research on urban sustainability to examine this question. In our estimation, there are four broad theoretical explanations advanced in the literature: political institutions, organized interests or interest groups, problem severity or policy need, and network participation, sometimes described within the context of multi-level governance.

Political Institutions

Past research indicates that a city’s local political institutions shape policy outcomes (Lubell, Feiock and Ramirez de la Cruz 2009; Ramirez de la Cruz 2009). The configuration of executive branch institutions is an important variable that mediates how other factors influence policy-making (Clingermayer and Feiock 2001; Feiock and Cable 1992; Sharp 2002; Sharp, Daley, and Lynch 2011). For example, the influence of supportive and oppositional groups should be more keenly felt in cities that have mayoral-council governments. This is a more politicized setting than a city-manager form of government; therefore, organized interests should be able to capitalize on this institutional setting to sway decision-making. We expect that

organized interests *for or against* sustainability initiatives will be more evident in cities with mayoral council governments. In contrast, city-manager governments are comparatively far more insulated from the vagaries of special interests and more likely to advance notions of economic efficiency in decision making (McCabe et al 2008).

Organized Interests

Theoretically, we expect that the presence of organized interests will influence the uptake of comprehensive sustainability initiatives. Groups that favor the pursuit of sustainability should encourage the uptake of broad based sustainability programs, and those groups that oppose such initiatives should dampen the pursuit of formal sustainability policy. As noted in the preceding section however, we expect these relationships to be mediated by the institutional arrangements within cities that either promote or inhibit access to decision makers. Previous research notes that civic capacity influences decision making in this area. Environmental groups and civic capacity, which is often represented by aggregate measures like income and education, are generally associated with the uptake of sustainability programs (Portney 2009; Zahran et al 2008b). Adding to this, Portney and Berry (2010) contend that researchers need to move beyond simply identifying environmental groups and diffuse forms of civic capacity as a force for policy uptake, and take more seriously the notion of measuring general participation in a city as providing either a constraint or opportunity for sustainability initiatives. They argue that an array of participatory forums, such as home owners associations and neighborhood groups, are an important and meaningful gauge of community level civic capacity.

Categories of organized interests must include oppositional forces. For example, past research suggests that developers are likely to oppose comprehensive sustainability policy (Ramirez de la Cruz 2009; Lubell, Feiock, and Handy 2009). Our past research measured

oppositional interests as the presence of a carbon intensive industry, manufacturing. While not an ideal operationalization, our results suggested that for mayoral cities, oppositional interest groups could constrain policy implementation (Sharp, Daley, and Lynch 2011). Other research finds a similar pattern: Krause (2011) notes that the greater the value added from manufacturing to the local economy, the less likely a city is to sign the US Conference of Mayors Climate Protection Agreement (USCM CPA).

Policy Need / Problem Severity

As we note in our previous analysis focused on climate protection policies, there is limited theoretical clarity in the literature regarding the way in which problem severity or policy need influences decision making (Sharp, Daley, and Lynch 2011). The general expectation is that all things being equal, problem severity motivates decision-making. In other words, local governments are more likely to act when problems are getting worse. However, there are no agreed upon or even widely used measures of problem conditions in the literature. For example, research that is more focused on sustainability policy directed toward land use decision making or development tends to conceptualize low density and/or sprawling communities as problematic and therefore, propel cities action to advance sustainability (Lubell, Feiock and Ramirez de la Cruz 2009; Ramirez de la Cruz 2009). Others argue that high density urban environments can, depending on the way the city operates, have a significant environmental impact or ecological footprint (Rees 1997; Bulkeley and Betsill 2003). This line of thinking suggests that if public decision makers are responding to problem conditions, then as population density increases a city's ecological footprint, the local government will be more likely to develop comprehensive sustainability initiatives.

In our earlier research, we relied upon the presence of manufacturing facilities relative to creative class industries within a city to represent two divergent hypotheses. First, manufacturing strength could be a proxy for oppositional interest groups. While this is not ideal, there are limited measures available for representing business interests when using secondary data. Second, we also conceptualized this variable as an indication of policy need or problem severity. Cities with more manufacturing facilities compared to creative class establishments are areas where the economy is heavily reliant on industries that pollute. Thus, this is also an avenue to measure the severity of pollution in an area relative to other economic opportunities. As we will detail in the next section, because we can in this paper rely upon survey information for more detailed measures of business interest, we only rely upon manufacturing presence as an indicator of the need for sustainability initiatives. In keeping with the previous problem severity hypothesis, we expect that cities where the economic sector is more reliant on manufacturing, will also be more likely to pursue comprehensive sustainability policy.

Our final hypothesis with respect to problem severity and policy need is related to co-benefits and fiscal stress. Past research suggests that co-benefits, such as cost savings, serve as important motivators for cities to engage in sustainability policy (Bulkeley and Betsill 2003; Kousky and Schneider 2003; and Portney 2009). Therefore, the ability of co-benefits to motivate policy action is directly related to a city's fiscal stress. Put another way, if co-benefits compel decision making, this is most likely to be evident in cities with limited fiscal resources. Our past research partially supports this notion: financially strapped cities are more likely to join ICLEI's climate protection program. But these same cities experience implementation delays (Sharp, Daley, Lynch 2011). Our past work could not distinguish if climate protection initiatives were in-house or community wide. While the literature advances co-benefits as important, we suspect

that its relevance is conditional on policy scale. Financially strapped cities may be more likely to adopt sustainability programs that improve fiscal health. These are likely to be in-house sustainability programs. In contrast, we expect that community wide sustainability programs will require fiscal resources, therefore, we expect that cities with better fiscal health are more likely to pursue multiple and comprehensive sustainability programs. This line of reasoning – that policy activity requires resources - is widely acknowledged in the state policy adoption literature (Berry and Berry 2007).

Inter-local Networks

This last category of hypotheses explores the relationship between network participation and community wide sustainability policy. In our previous research, our dependent variable measured participation in and progress through an inter-local network, ICLEI (Sharp, Daley and Lynch 2011). Other scholars have also pointed to the importance of local government participation in networks (Krause 2011). Moreover, much of the global governance literature on urban sustainability examines city action through a lens of multi-level governance and / or intergovernmental relations. This work advances the notion that interdependent levels of government must be seriously considered to adequately understand any local policy action in this area. In other words, local governments do not act in a vacuum (Betsill and Rabe 2009; Bulkeley and Betsill 2005) and the network or intergovernmental context is important to consider – a familiar argument in the public administration literature (Agranoff 2007; Rabe 2008). We expect that participation in pro-environmental inter-local networks will promote urban sustainability initiatives. More specifically, the longer cities are engaged with these networks, the more likely they are to tackle community wide sustainability programs. We expect, however, that some networks will be mediated by political institutions. For example, networks

tailored specifically to mayors should be more effective in mayoral cities. Inter-local networks that are more ecumenical with respect to their target audience should be associated with positive policy action regardless of the form of government of local institutions.

Research Methods

We merge original survey data with existing secondary data to examine the ways in which institutions, organized interests, policy need or problem severity, and network participation influence the uptake of community wide sustainability policy. The original survey is based on a random sample of cities with populations greater than 50,000 residents and asked a wealth of questions about energy efficiency and sustainability programs. For this paper, we restrict our analysis to only include cities with more than 75,000 residents to more closely replicate our previous research and maintain a focus on larger cities. The mixed method survey, web based with mail follow up, was completed in the fall of 2010. City managers and city administrative officers were the initial contact. The overall survey response rate is 57%; the response rate among the larger cities – 75,000 residents and greater – is slightly higher, 58.7%. We augment survey data with secondary data from a variety of sources to replicate our previous analysis.

Our dependent variable is drawn from the survey. It is an additive index score of several items related to community wide sustainability initiatives. Items include whether or not a city government has developed community wide policy to advance things like: green buildings; alternative transportation systems; energy efficiency; greenhouse gas inventory; renewable energy; smart grid technology; and integrative land use planning. Appendix 1 details the exact language of the survey questions used to construct the index. All told, there are fifteen items in

our additive index, each coded as 1 if a city has community wide initiatives for the particular survey question, and zero otherwise. Our survey items scale well together. Reliability analysis indicates a Chronbach's Alpha of .859. Figure 1 compares the percentage of cities in our analysis that have in-house and community wide sustainability initiatives. Not surprisingly, in-house initiatives are more common among cities, particularly those initiatives where energy saving co-benefits could accrue to local governments.

[Insert Figure 1 about here]

Table 1 outlines the independent variables used in this analysis. Our measure of political institutions is drawn from International City/County Management Association's (ICMA) 2004 survey of economic development. We use this to distinguish between mayoral-council cities and council-manager cities. For cities not included in that data set, we examined city web site to classify form of government.

[Insert Table 1 about here]

In our previous analysis of urban climate protection programs, like many other researchers, we relied upon broad measures of civic capacity (education levels and counts of environmental non-profits). The IBM survey provides a richer, albeit subjective, set of measures of stakeholder opposition and support. The survey asks a question regarding the level of support for sustainability decision making by several different types of groups. The scale on this question ranges from: strongly oppose (coded 1) to strongly support (coded 5). This allows us to create more fine tuned measures of organized interest support or opposition. We create three distinct variables to represent organized interests. First, we average the perceived level of support from business interests. These include the chamber of commerce, real estate developers and large business corporations. Our second measure is perceived support from environmental

groups. And finally, following Portney's (2003) thinking, we include a third variable measuring broad based community organizations to provide an indication of general civic capacity. This measure averages the support for sustainability initiatives from the general public, homeowner associations, and neighborhood organizations.

We utilize several measures to capture problem severity or policy need. First, using Census Bureau data from 2000, we add a measure of population density. Our second measure is the number of manufacturing facilities within a city in 2002 relative to the number of creative class establishments. In this case, we utilize census information on the number of scientific, professional, or technical establishments within a city as an indication of creative class economic activity. Our final measure of problem severity is fiscal stress. There is no consensus in the literature regarding a standard measure of fiscal stress for local governments. We opt to use the same measure included in our previous analysis. We construct this measure by dividing each city's total own source revenue per capita by median household income. The information used to create this variable is drawn from the Census Bureau.

We rely upon several measures to understand the influence of inter-local network participation. The survey included a question asking respondents to categorize how long they have been a member of two major sustainability networks: the USCM CPA and ICLEI's Cities for Climate Protection. This enabled us to construct two variables, one for each inter-local network, coded so that a higher number means longer membership. In addition to measuring participation in these two prominent sustainability networks, we also capitalized on the structure of the survey to note the breadth of intergovernmental relationships and collaborative behavior. We included a variable that is a count of positive responses on survey items asking about collaborative partnerships, informal and formal agreements on energy issues, and responsiveness

to comprehensive regional planning efforts. This composite indicator allows us test whether more extensive involvement in webs of inter-local cooperation influences sustainability policy uptake. Our final variable in this category is a dichotomous measure noting if a city is located in California. Because California is such a consistent innovator in environmental policy, particularly with respect to sustainability and climate protection (Betsill and Rabe 2009), we expect that cities within this state will be more likely to rely upon comprehensive sustainability policies.

We include population as a control variable in our analysis. Originally, we believed that restricting our analysis to cities of 75,000 residents and larger would preclude the need to add in this control variable. However, in looking at our data more carefully, we note that there is substantial variation in city size among mayoral cities compared to council manager cities. On average mayoral cities have a much larger populations (2006 average = 409,789) compared with council manager cities (2006 population = 178,724). Table 2 provides descriptive statistics divided by form of government and for the entire sample for all of independent variables used in this analysis.

[Insert Table 2 about here]

Results and Discussion

To maintain consistency with our previous analysis, and for added parsimony, we model mayoral and city manager cities separately. Table 3 presents the results from our regression analysis. Our dependent variable is an additive index of the number of community wide sustainability initiative within a city. Because our dependent variable is essentially a count of sustainability initiatives, we analyzed our data using negative binomial regression analysis and compared these results with results generated using ordinary least squares (OLS) regression.

There were no significant differences between the two modeling approaches. Therefore, we report OLS regression results for ease of interpretation.

[Insert Table 3 about here]

There are some interesting patterns in our results. We expected the influence of organized interests to be mediated by political institutions. This is, in fact, not the case. Two of the three variables we include to measure organized interests fail to reach convention levels of significance regardless of form of government in a city. Neither business nor environmental interest group support is consistently related to comprehensive sustainability policy. General interest group support, measured as perceived levels of support homeowners' associations, neighborhood groups and the general public matter for *both* mayoral and city manager cities. This is surprising, and not what we expected to find considering the political nature of an elected executive branch in mayoral cities. That said, this result is consistent with Portney and Berry's (2010) findings about the importance of such broad based civic organizations. Although their relevance in city manager settings is surprising when such groups are viewed as political interests, it is less surprising when such entities are viewed as the backbone for civic capacity. This result suggests that regardless of institutional structure, comprehensive action on sustainability policy is more likely when decision makers perceive support among residential stakeholders and the general public.

Our problem severity measures do not behave as we predicted. There is no evidence that density is relevant for understanding variation in cities' broader, community targeted sustainability policy. The role that manufacturing presence relative to creative class industries plays is contingent on form of government. When we focus on city manager cities, we find that cities whose economies are relatively heavy on manufacturing relative to creative class

establishments appear to be constrained from pursuing the community-focused sustainability policies of interest here; or to state it another way, cities where creative class industry is a relatively prominent component of the economy are more likely to do more sustainability policy. We find the reverse relationship for mayoral cities. By contrast, mayoral cities that are heavily reliant upon manufacturing industry are attempting *more* in the way of sustainability policies than are mayoral cities that are less reliant on manufacturing. The results for mayoral cities are thus consistent with one key version of the need/problem severity explanation. A more manufacturing-dominated economy can be taken to mean a city with a heavy carbon footprint and other environmental problems that make it relatively problematic on sustainability grounds. The strong positive coefficient for our manufacturing/creative class indicator in mayoral cities suggests that, in that governance context, cities with manufacturing-heavy economies are reaching for sustainability policies as solutions to the problems wrought by their manufacturing dependence.

The contrasting result for city manager cities is initially more suggestive of the organized interests interpretation that we took up when we encountered similar findings in our analysis of ICLEI implementation. That is, the negative coefficient could be taken to mean simply that greater prevalence of manufacturing establishments in the economy signifies greater strength of manufacturing interests which constrain sustainability activity that they find threatening. But it is not necessary to abandon a need/problem severity perspective to interpret the contrasting results in city manager cities. Instead, there is a second way in which the need/problem severity thesis can be framed. The negative coefficients that we observe suggest that the manager cities most aggressively pursuing sustainability policies are those whose economies feature a relatively heavier presence of post-industrial, creative-class enterprises. Unlike mayors of large cities still

dominated by manufacturing who may be pushing for sustainability policy in order to transform their economies, in city manager cities the need for sustainability policy may be defined as the importance of pursuing activity that is consistent with the needs of creative class establishments that have already emerged as relatively important elements of the local economy. Cities that have already become economically transformed enough that their economy is quite reliant on post-industrial enterprises have their own version of need for sustainability policy.

Our final variable in this family of measures of need or problem severity is fiscal stress. While previous research suggests cities pursue sustainability policy to capture co-benefits, we suspect that this relationship is conditional on the scale of a policy. We expect cities with more fiscal resources to be more likely to develop community wide – and costly – sustainability policy. Instead we find that fiscal stress is not a relevant predictor of sustainability policy activity in either mayoral or city manager-led cities.

When we look beyond the city's borders to the extra-local entities that might shape sustainability efforts, we find one important commonality and a pair of contrasts between mayoral and city manager cities. We hypothesized that the duration of participation in pro-sustainability networks would be positive and significant, and that when these networks target both types of city governments, their effect would not be mediated by form of government. Indeed, our results suggest that the longer cities have been involved with ICLEI, an organization that appeals to all forms of city government, then, these cities have more community wide sustainability policies. Our previous research suggested ICLEI's positive role in policy implementation for green house gas reduction, and the results here confirm this is also true when we are looking at the much broader and more demanding outcome represented by this paper's index of involvement in community-targeted sustainability programs.

In contrast, we expect that the USCM CPA will be a relevant predictor of outcomes for mayoral cities but not for city manager cities (because city manager cities, even hybrid-like ones with some sort of mayor, presumably do not identify with the USCM like leaders of strong mayor cities do). However, involvement with USCM CPA makes no difference for *either* type of city. More research is needed to unpack the differences between these two inter-local networks, but it may be that ICLEI's experience in this arena – active in this field since early 1990s - combined with the tangible support it provides local governments in the form of technical planning tools advantages its ability to influence cities to act comprehensively to advance sustainability.

In addition to the influence stemming from the length of their involvement in ICLEI, involvement in cooperative relationships with other local governments in the metropolitan area or region is a significant facilitator of sustainability policy activity *for mayoral cities*. This is not a relevant predictor for city-manager cities. This is a curious result, and one that we did not anticipate. It may be that mayors, especially mayors in larger cities have become adept at building coalitions needed to govern in a fragmented policy world. Reaching out to local and regional partners, forging relationships and building support may be something that an elected official is more savvy about and successful with than city managers who may not have similar public relation skills. Indeed, this result is consistent with Feiock, Steinacker and and Park's (2009) research noting that cities with mayoral cities are more likely to pursue inter-local agreements to advance economic development. But past work on inter-local cooperation is decidedly mixed. For example our result stands in stark contrast with Feiock's (2007: 56) thesis that both the emergence and the durability of cooperative intergovernmental agreements should be linked to the presence of council-manager government. More detailed research is needed to

better understand the role of contrasting types of chief executives in regional networks that are tied to sustainability policy initiatives.

On the other hand, the environmental policy leading role of the state of California is important only for city manager cities. City manager-led cities in that state have much more sustainability policy activity than city manager-led cities in other states, but the state context has no apparent impact on the sustainability policy activities of California's mayoral cities. This is the opposite of what we found in our previous analysis of progress in implementing ICLEI's milestones, where California city status was an important facilitator for mayoral but not city manager cities. This result may simply be an artifact of the distribution of mayoral and city manager cities in this sample compared to our previous sample. Our findings about the importance of the state of California, at least for its city manager cities, diverges from Krause's (2011) finding on the insignificance of state-level factors in accounting for cities' involvement in the USCM climate protection agreement. However, her research considers the contextual importance of all 50 states, looking at state characteristics such as whether or not a state action plan for greenhouse gas reductions and reduction targets existed before 2005. When we considered individual state-by-state differences in the perceived degree of state support for energy conservation and climate protection via the relevant item on the IBM survey, the coefficient for that item was insignificant (results not shown). Only being in California, which has been touted as such an extraordinary policy leader in this topical area (Betsill and Rabe, 2009) versus being in any other state is important, and then only for city manager cities.

Conclusion

This paper contributes to the growing body of literature examining urban sustainability in two ways. First, we systematically examine the determinants of community wide sustainability

policy. Relying upon original survey data, we are able to distinguish more narrow initiatives that target in-house government activity from more ambitious community wide policy. We focus on the latter to understand what factors compel cities to engage in more complex and politically difficult sustainability initiatives. Second, we approach this endeavor as a conceptual replication of our past research, but adapt this replication to capitalize on new data.

Our results paint an interesting picture. There is some overlap with our previous research, particularly with respect to the importance of certain types of network participation. In our past research, we found that, regardless of form of government, cities who had been ICLEI members for a longer amount of time were also more likely to have made progress in implementing green house gas reductions. In our current analysis, we find that ICLEI membership is consistently associated with more ambitious sustainability programs in both mayoral and city manager cities. This is consistent with past research suggesting that networks and multi-level governance participation are important (Betsill and Rabe 2009; Bulkeley and Betsill 2005). Inter-local cooperation also matters, however, only for mayoral cities. More research is needed to unpack the dynamics of cooperation on sustainability across cities.

This analysis departs from our past research with respect to the role of organized interests, and need or problem severity. General civic capacity, measured as perceived support from homeowners associations, neighborhood groups and the general public is critical for both mayoral and city manager cities. We expected organized interests to be mediated by institutional structure, and this is not evident. But, this result is consistent with Portney and Berry (2010) contention that broadly based civic capacity is needed to propel sustainability initiatives. Curiously, and in contrast to our past research, environmental and business interests are not significant factors *for or against* community wide sustainability policy. This divergent result

highlights the tenuous nature of measuring organized interests; on the local level, there is considerable diversity and it is challenging to identify appropriate groups that can be measured across numerous cities.

Our policy need or problem severity variables behave differently based on form of government. Mayoral cities with a heavy manufacturing base are more likely to engage in comprehensive sustainability policy. But, the opposite is true for city manager cities: a stronger creative class economic presence promotes community wide sustainability initiatives. In some respects, this result contributes to an already murky theoretical approach. There is limited consistency within the literature on how best to measure problem conditions and align these measures with clear theoretical expectations. More research is needed to understand how best to operationalize problem conditions. For example, we speculate that city manager cities that have transformed their economy may have a different version of “need” in terms of sustainability policy. Future research could focus on fine tuning these measurements. Finally, our research provides some additional insight into the notion of fiscal co-benefits as motivators for sustainability policy. While past research highlights co-benefits as important, our research suggests that they may be a more relevant explanation for understanding in-house sustainability policy. Future research in this area could examine the relationship and potential timing between in-house and community wide sustainability policies. It may be that in-house initiatives are “gateway” policies that create an opportunity to forge a broader community wide sustainability path.

References

- Agranoff, Robert. 2007. *Managing within networks: adding value to public organizations*. Washington, D.C.: Georgetown University Press.
- Aldy, Joseph E., and Robert N. Stavins. 2007. *Architectures for agreement: addressing global climate change in the post-Kyoto world*. New York, NY: Cambridge University Press.
- . 2010. *Post-Kyoto international climate policy : implementing architectures for agreement: research from the Harvard Project on International Climate Agreements*. New York, NY: Cambridge University Press.
- Barbier, Edward. 2010. *A global green new deal: rethinking the economic recovery*. New York, NY: Cambridge University Press.
- Berry, Frances S., and William D. Berry. 2007. Innovation and Diffusion Models in Policy Research. In *Theories of the policy process*, edited by P. A. Sabatier. Boulder, CO: Westview Press.
- Betsill, Michele. M., and Harriet Bulkeley. 2004. Transnational networks and global environmental governance: The Cities for Climate Protection program. *International Studies Quarterly* 48 (2):471-493.
- Betsill, Michele.M., and Barry.G. Rabe. 2009. Climate Change and Multilevel Governance: The Evolving State and Local Roles. In *Toward sustainable communities: transition and transformations in environmental policy*, edited by D. A. Mazmanian and M. E. Kraft. Cambridge, MA: MIT Press.
- Brody, Samuel D., Sammy Zahran, Himanshu Grover, and Arnold Vedlitz. 2008. A spatial analysis of local climate change policy in the United States: Risk, stress, and opportunity. *Landscape and Urban Planning* 87 (1):33-41.
- Budd, William., Nicholas Lovrich, John C. Pierce, and Barbara Chamberlain. 2008. Cultural

- sources of variations in US urban sustainability attributes. *Cities* 25 (5):257-267.
- Bulkeley, Harriet, and Michele M. Betsill. 2003. *Cities and climate change: urban sustainability and global environmental governance*. New York, NY: Routledge.
- . 2005. Rethinking sustainable cities: Multilevel governance and the 'urban' politics of climate change. *Environmental Politics* 14 (1):42-63.
- Clingermayer, James C. and Richard C. Feiock. 2001. *Institutional constraints and policy choice: an exploration of local governance*. Albany, NY: State University of New York Press.
- Feiock, Richard C. and Cable Gregory. 1992. Need, Institutional Arrangements, and Economic Development Policy. *Journal of Public Administration Research and Theory* 2(4): 387-398.
- Feiock, Richard C. 2007. Rational Choice and Regional Governance. *Journal of Urban Affairs* 29 (1): 47-63.
- Feiock, Richard, C., Annette Steinacker and Hyung Jun Park. 2009. Institutional Collective Action and Economic Development Joint Ventures. *Public Administration Review* 69(2): 256 – 270.
- Feiock, Richard C., and Jungah Bae. 2011. Politics, institutions and entrepreneurship: city decisions leading to inventoried GHG emissions. *Carbon Management* 2 (4):443-453.
- Fitzgerald, Joan. 2010. *Emerald cities: urban sustainability and economic development*. New York, NY: Oxford University Press.
- Hempel, Lamont C. 2009. Conceptual and Analytical Challenges in Building Sustainable Communities. In *Toward sustainable communities: transition and transformations in environmental policy*, edited by D. A. Mazmanian and M. E. Kraft. Cambridge, MA:

MIT Press.

King, Gary, Robert O. Keohane, and Sidney Verba. 1994. *Designing social inquiry: scientific inference in qualitative research*. Princeton, NJ: Princeton University Press.

Kousky, Carolyn, and Stephen H. Schneider. 2003. Global climate policy: will cities lead the way? *Climate Policy* 3 (4):359-372.

Krause, Rachel M. 2011. Policy Innovation, Intergovernmental Relations, and the Adoption of Climate Protection Initiatives by U.S. Cities. *Journal of Urban Affairs* 33 (1):45-60.

Lubell, Mark., Richard. Feiock, and Susan Handy. 2009. City Adoption of Environmentally Sustainable Policies in California's Central Valley. *Journal of the American Planning Association* 75 (3):293-308.

Lubell, Mark., Richard. C. Feiock, and Edgar E. Ramirez de la Cruz. 2009. Local Institutions and the Politics of Urban Growth. *American Journal of Political Science* 53 (3):649-665.

Mazmanian, Daniel A., and Michael E. Kraft, eds. 2009. *Toward sustainable communities: transition and transformations in environmental policy*. 2nd ed. Cambridge, MA: MIT Press.

McCabe, B. C., R. C. Feiock, J. C. Clingermayer, and C. Stream. 2008. Turnover among city managers: The role of political and economic change. *Public Administration Review* 68 (2):380-386.

Pierce, J.C., W.W. Budd and N. P. Lovrich. 2011. Resilience and Sustainability in US urban areas. *Environmental Politics* 20(4): 566-584.

Portney, Kent E. 2003. *Taking sustainable cities seriously : economic development, the environment, and quality of life in American cities, American and comparative environmental policy*. Cambridge, MA: MIT Press.

- . 2009. Sustainability in American Cities: A Comprehensive Look at What Cities are Doing and Why. In *Toward sustainable communities: transition and transformations in environmental policy*, edited by D. A. Mazmanian and M. E. Kraft. Cambridge, MA: MIT Press.
- Portney, Kent E., and Jeffrey M. Berry. 2010. Participation and the Pursuit of Sustainability in US Cities. *Urban Affairs Review* 46 (1):119-139.
- Rabe, Barry G. 2004. *Statehouse and greenhouse: the emerging politics of American climate change policy*. Washington, D.C.: Brookings Institution Press.
- . 2008. States on Steroids: The Intergovernmental Odyssey of American Climate Policy. *Review of Policy Research* 25 (2):105-128.
- . 2010. *Greenhouse governance: addressing climate change in America*. Washington, D.C.: Brookings Institution Press.
- Ramirez de la Cruz, Edgar E. . 2009. Local Political Institutions and Smart Growth An Empirical Study of the Politics of Compact Development. *Urban Affairs Review* 45 (2):218-246.
- Rees, William E. . 1997. Is "Sustainable City" an Oxymoron? . *Local Environment* 2 (3):303-310.
- Sharp, E. B. 2002. Culture, institutions, and urban officials' responses to morality issues. *Political Research Quarterly* 55 (4):861-883.
- Sharp, Elaine B., Dorothy M. Daley, and Michael S. Lynch. 2011. Understanding Local Adoption and Implementation of Climate Change Mitigation Policy. *Urban Affairs Review* 47 (3):433-457.
- Upadhyay, Naimish, and Robert Brinkman. 2010. Green local government in Florida: assessment of sustainability performance. *Sustainability: Science, Practice, & Policy* 6 (1):18-27.

World Commission on Environment and Development. 1987. *Our common future*. Oxford ; New York: Oxford University Press.

Zahran, Sammy, Samuel D. Brody, Arnold Vedlitz, Himanshu Grover, and Caitlyn Miller. 2008a. Vulnerability and capacity: explaining local commitment to climate-change policy. *Environment and Planning C-Government and Policy* 26 (3):544-562.

Zahran, Sammy, Himanshu Grover, Samuel D. Brody, and Arnold Vedlitz. 2008b. Risk, stress, and capacity - Explaining metropolitan commitment to climate protection. *Urban Affairs Review* 43 (4):447-474.

Figure 1: Percentage of Large Cities with In-House and City Wide Sustainability Initiatives

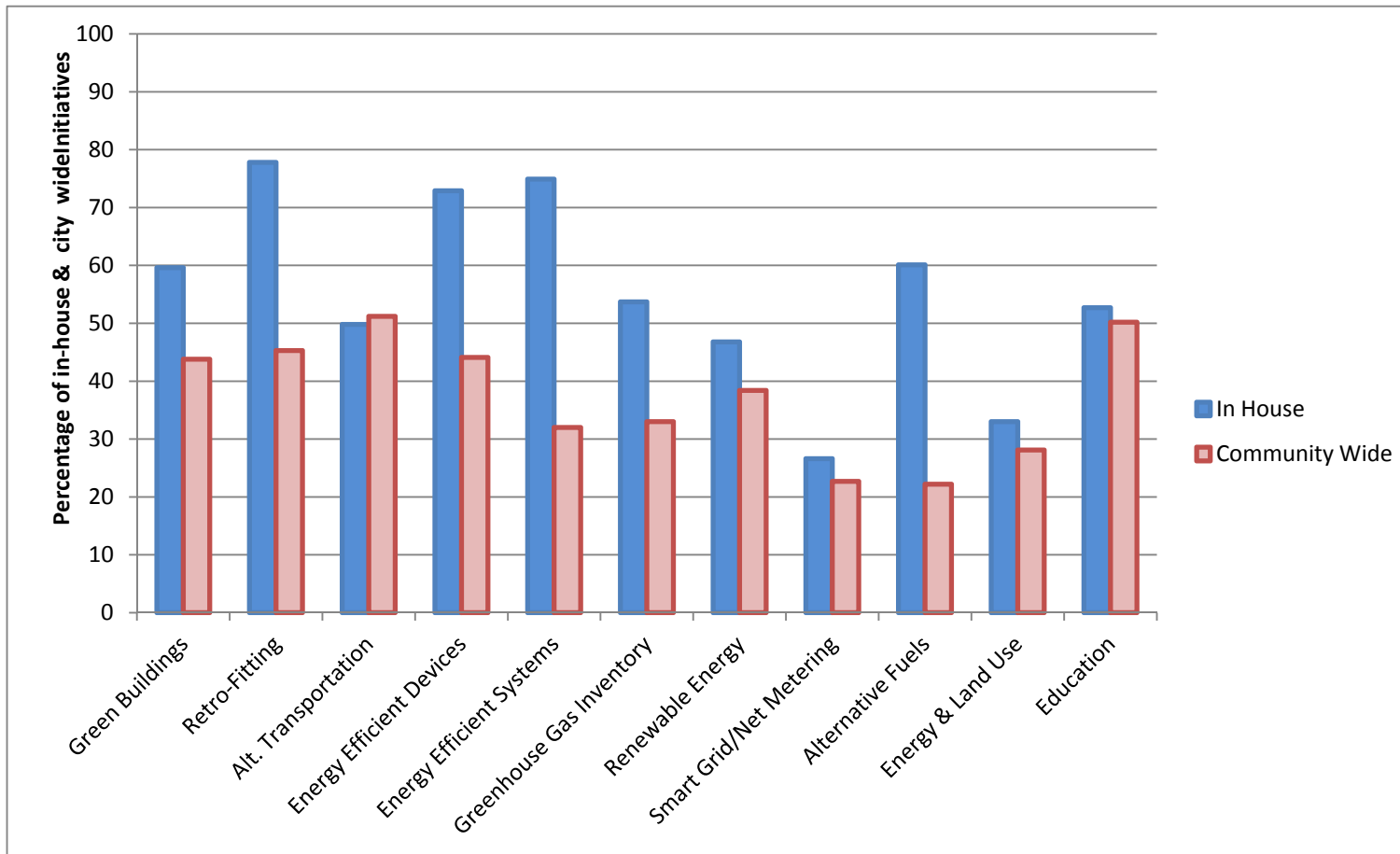


Table 1 – Variable Description

Theoretical Explanation	Variable	Description
Political Institutions	Form of Government	Dichotomous variable coded as “1” if the city has a mayor-city council form of government and “2” if the city has a council-manager form of government (ICMA and city web sites)
Organized Interests	Support for energy conservation/climate protection from:	Averaged scorings of perceived opposition-support (from strongly oppose=1 to strongly support =5) of :
	(a) Business	Chamber of Commerce, Real Estate Developers, and Large Business Corporations (IBM Survey)
	(b) Environmental Groups	Environmental Groups (IBM Survey)
Need or Problem Severity	(c) Other Non Business Interests	General Public, Homeowners’ Associations, Neighborhood Organizations (IBM Survey)
	Population Density	Total 2000 city population (in 000’s) divided by land area in square miles (Census Bureau)
	Manufacturing vis a vis Creative Class Economy	The number of manufacturing establishments in 2002 divided by the number of scientific, professional, or technical establishments (Census Bureau)
Extra-City Networking or Intergovernmental Context	Fiscal Stress	Total own-source revenue per capita, divided by median household income (Census Bureau)
	Length of time USCM CPA member	Length of time since a city adopted U.S. Conference of Mayors Climate Protection Agreement (IBM Survey) (0=never adopted; 1=since 2008-2010; 2=since 2006-2007; 3=since 2001-2005; 4 =since 2000 or before)
	Length of time ICLEI member	Length of time since a city joined ICLEI USA- Cities for Climate Protection (IBM Survey) (same scoring as previous item)
	Index of inter-local cooperation on energy efficiency or climate protection	Count of following 4 collaborative actions engaged in: Collaborative partnership with other local entities Informal agreement with one or more local govts on energy issues Formal agreement with one or more local govts on energy issues Policy or comprehensive plan changes based on regional planning efforts (IBM Survey)
Control Variable	Whether in California	Coded 1 if city located in California, else 0
	Population	Population in 2006 (Census Bureau)

Table 2 – Descriptive Statistics

	Mayor-council				City-manager				Total			
	Mean	St Dev	Min	Max	Mean	St Dev	Min	Max	Mean	St Dev	Min	Max
Sustainability Initiatives	5.687	4.367	0.000	15.000	4.981	3.711	0.000	15.000	5.254	3.980	0.000	15.000
US Conference of Mayors	1.200	1.314	0.000	4.000	0.722	1.136	0.000	3.000	0.893	1.221	0.000	4.000
ICLEI	0.771	1.206	0.000	4.000	0.543	1.075	0.000	4.000	0.623	1.125	0.000	4.000
Fiscal Stress	0.043	0.025	-0.001	0.131	0.032	0.024	0.007	0.145	0.036	0.025	-0.001	0.145
Population Density	4.624	4.115	0.440	26.400	3.478	2.531	0.480	15.760	3.886	3.223	0.440	26.400
Interest Groups	3.884	0.626	2.333	5.000	3.836	0.583	2.000	5.000	3.853	0.597	2.000	5.000
Business Interest	3.621	0.659	1.667	5.000	3.575	0.629	2.000	5.000	3.592	0.638	1.667	5.000
Environmental Groups	4.130	1.110	1.000	5.000	4.283	1.055	1.000	5.000	4.228	1.075	1.000	5.000
Manufacturing Strength	0.404	0.275	0.069	1.480	0.440	0.502	0.083	3.429	0.427	0.434	0.069	3.429
Interlocal Cooperation	1.042	1.212	0.000	4.000	1.225	1.233	0.000	4.000	1.160	1.226	0.000	4.000
California	0.056	0.232	0.000	1.000	0.279	0.450	0.000	1.000	0.200	0.401	0.000	1.000
Population	409789	1066857	75978	8274527	178724	179134	75515	1328984	260752	658250	75515	8274527

Table 3 – Ordinary Least Squares regression Results: Determinants of Community Wide Sustainability Initiatives

	Mayoral Cities		City Manager Cities		
	Coeff.	SE	Coeff	SE	
Business Interests Support	-0.818	1.048	0.134	0.57	
Environmental Group Support	0.189	0.446	0.119	0.313	
General Interest Group Support	1.751	0.986	1.509	0.634	**
Population Density	0.016	0.165	0.164	0.152	
Manufacturing/creative class industry	3.759	2.172	-1.151	0.615	*
Fiscal Stress	26.384	22.055	11.135	14.956	
Length of USCM CPA membership	0.068	0.466	0.005	0.304	
Length of ICLEI membership	1.211	0.537	0.904	0.32	***
Interlocal Cooperation	1.596	0.5	0.454	0.292	
California	-1.99	2.281	1.738	0.857	**
Total Population	9.08E-07	0	2.21E-06	0	
(Constant)	-4.897	3.858	-4.441	2.614	*
Adjust R²		.341		.407	
F		3.73		6.56	***
N		58		89	

Significance: *** p ≤ .01; **p ≤ .05; * p ≤ .10.

Appendix 1 – Composition of the dependent variable

The dependent variable is an additive index drawn from a series of survey questions. The web based survey (Implementation of Energy Efficiency and Sustainability Programs) was administered in the Fall of 2010 by Richard Feiock and supported by the IBM Endowment for the Business of Government.

1. Which of the following energy/climate related issues does your jurisdiction officially address (e.g., through regulation or policies as it relates to ... the community at large? (select all that apply)
 - a. Green Buildings
 - b. Retrofitting existing buildings for energy efficiency
 - c. Alternative Transportation Systems
 - d. Energy Efficient Devices (appliances, lighting, etc)
 - e. Energy Efficient Buildings (building controls, etc)
 - f. Inventory of Greenhouse Gas Emissions
 - g. Renewable Energy
 - h. Smart Grid/Net Metering
 - i. Alternative Fuels
 - j. Incorporating Energy in Land Use Decisions
 - k. Provide information about efficiency to residents
2. Has a greenhouse gas reduction goal been formally adopted by the city?
3. Does your jurisdiction offer loans to upgrade or retrofit buildings?
4. Does your jurisdiction offer grants to upgrade or retrofit buildings?
5. Does your jurisdiction offer rebates to upgrade or retrofit buildings?
6. Has your city adopted planning goals relating to climate protection or energy efficiency in either its general plan or a separate document?