



THE  
**MELLMAN**  
Group  
RESEARCH  
BASED  
STRATEGY

**TO:** World Wildlife Fund  
**FROM:** The Mellman Group  
**DATE:** December 19, 2011  
**RE:** Focus Group Findings

This memorandum offers some observations derived from eight focus groups: two each in Pittsburgh, Pennsylvania (November 21), Fort Lauderdale, Florida (November 22), Albuquerque, New Mexico (November 28, and St Louis, Missouri (November 29). The groups were conducted among members of 2 of the 6 segments identified in the Yale “Six Americas” study: the Concerned and the Cautious. Segments were approximated by means of a screener that included the 10 core questions from the “Six Americas Screening Tool Manual”. Potential participants were asked the 10 questions and then selected based on their total distance across the 10 questions from the average responses of segment members on each question as reported in the “Six Americas” studies.

The first group conducted at each location consisted of what the “Six Americas” report dubbed “The Concerned,” whom they described as follows:

*The Concerned are convinced that global warming is happening, although they are less certain than the Alarmed. They are distinctly less involved with the issue than the Alarmed, yet they still have high levels of concern. Most of the Concerned believe there is a scientific consensus that global warming is happening, and overwhelmingly say human activities are the cause of the problem. They are less likely to view global warming as personally threatening or happening here and now than the Alarmed, but still distinctly more than members of the other four segments.*

The second group at location consisted of what the “Six Americas” report dubbed “The Cautious,” whom they described as follows:

*The majority of the Cautious say they believe that global warming is occurring, but this belief is relatively weak, with the majority saying they could easily change their minds. They haven't thought much about global warming, and do not view it as personally important. Almost half, however, say that they do worry about the issue. They perceive themselves as having some information on global warming, but not as being very well informed. About half believe it has human causes, and over a third believe that scientists disagree a great deal on the topic. They do not perceive it as being dangerous to themselves or to other people alive today, but expect greater harm to future generations and to plant and animal species.*

## **Background And Limitations**

It is important to remember that focus groups cannot be projected onto the population at large. In opinion research, the focus group approach seeks to develop insight and direction rather than quantitatively precise or absolute measures. Focus groups help us explore how people think about issues. The small, non-random nature of the sample precludes generalization. While these people's opinions provide rich material for analysis, they cannot be considered representative of the population at large. This type of research is intended to provide a first step in determining knowledge, awareness, attitudes and opinions.

## **The Lay of The Land**

**Participants had a variety of views about what needs protection in their area.** While there was no consensus in any location, participants were likely to mention some kind of threat to the environment or nature in cataloging those things requiring protection in their area. From the impending shut down of the county parks in St. Louis to the export of water resources out of Albuquerque to water pollution in Pittsburgh to concerns over the Everglades (and other waterways) in Ft. Lauderdale, many participants were cognizant of threats to the environment. However, not a single one of them spontaneously named climate change as a salient threat.

**Prompting for specifically naturally caused threats did not elicit any climate change responses.** Wildfires (not generally viewed as related to climate change) were the plurality response in Albuquerque, but elsewhere responses tended to revolve around unwanted contact between various human and animal populations. Some in St. Louis mentioned sprawl but there was also concern about locusts. Wildfires were important in Albuquerque, but we also heard about bears, bobcats, and coyotes in backyards as humans encroached on the animals' territory. There were concerns about drilling and extreme weather in Ft. Lauderdale but we heard even more at this initial juncture about invasive species including boa constrictors and other snakes, iguanas, lion fish, parrots, and coyotes. In Pittsburgh a few offered fracking and extreme weather but we were just as likely to hear about deer and stinkbugs.

## **General Discussion Of Extreme Weather And Climate Change**

**Many see changes in weather patterns characteristic of their areas and a trend toward more extreme weather events.** In St. Louis several participants remarked on the trend toward hotter temperatures. As one Cautious St. Louis woman said, "Every year it seems like it is warmer. We are having milder winters." In Albuquerque, participants had noticed droughts and lower total precipitation (along with more intense storms when there was precipitation). Lower total precipitation was manifested both in the form of water shortages and lack of snow (for skiing). One Concerned Albuquerque man recounted, "The past few years have been really terrible for New Mexico in general. You literally have to go to Colorado if you want to go skiing. That's been the case for the past five years or so." A Concerned Albuquerque woman said, "I think the general trends that I was seeing were more intense storms, more rain, and less snow." In Ft. Lauderdale participants noticed hotter weather and more extreme weather events like tornadoes. A Cautious Ft. Lauderdale man said, "It's been getting hotter and a lot of rain." A Concerned Ft. Lauderdale woman noted, "We're getting a lot more tornadoes than we ever had before, which is really surprising." Pittsburgh participants noticed milder winters and less

snow, with a Cautious Pittsburgh man commenting, “I think the winters are getting a little milder, not a whole lot, but slowly.”

**The discussion of weather underscored the significant differences in outlook between the Concerned and the Cautious.** In each location, we heard not only different interpretations of the facts about local weather, but even consistently different views about what those facts actually are. The Concerned frequently reported noticing increasingly extreme weather, while the Cautious were much less likely to do so. Where the Concerned see systematic trends, the Cautious see random fluctuations. While the Concerned may harbor some lingering doubts, they were much more likely to notice trends toward extreme weather and were also much more likely to attribute those trends to the influence of global warming. Meanwhile, the Cautious told us about natural cycles or said it just was not possible to know. The primary difference between the two segments was epistemic. The Concerned noticed differences and believed they had enough information to construe the differences as patterned, comprising a trend with a specific cause, i.e. global warming. The Cautious, on the other hand, were much more skeptical. Many perceived a variety of changes, but were often unable (or unwilling) to discern a pattern in the changes, much less attempt to infer a cause for such a pattern.

Differences between the Cautious and the Concerned emerged clearly in discussing the connection between extreme weather and climate change, with the Cautious saying either that climate change is part of a natural cycle or that they did not know. As a Cautious St. Louis woman said “How would we know?” A Cautious St. Louis man offered this analysis, “Climate change takes place over a long period of time. We are talking about the last five years -- that's next to nothing. You can have some good years, some mild winters, and then a frigid one. You can't tie that to climate change because every year is going to be different.” A Cautious Albuquerque man similarly argued, “Climate change is a cyclical event. Twenty five years ago we were talking about global cooling, and we were all afraid we were going to turn into an iceberg. Now we are all talking about global warming. It is cyclical.” A Cautious Ft. Lauderdale woman questioned the scientists directly, “I am saying some of the so-called experts are unsure... I don't worry too much about it.”

In contrast with the Cautious skeptics, who often offered comparatively long and detailed accounts of everything as a natural cycle, Concerned respondents tended to agree in a single word and leave it at that: for example, a couple of Concerned Albuquerque women answered the question about connection between weather and climate change by simply agreeing “Definitely” “Absolutely.” The skeptics and deniers tend to be more strident than those who are guided by the science and the skeptics often seem to dominate discussion to such an extent that global warming believers, few of whom after all are climate scientists themselves, seem more likely to simply avoid an argument and seek common ground. A Concerned Albuquerque woman explained, “Whether you label it global warming or just recognize the fact that weather and atmospheric changes are occurring. That nobody disputes. When people say global warming sometimes we get into some of these political realms. I just try to explain what I'm focusing on... are there changes in weather patterns regardless of what is actually causing that change, whatever you think is causing that change.” Left to their own resources, the Concerned are relatively reliable advocates for action on global warming. The argument that seems to drive the most uncertainty revolves around natural cycles, which appears “scientific” in its own right, places the burden of proof on the global warming believer, and requires sophisticated scientific evidence to refute – evidence few are in the position to provide.

**Even while acknowledging extreme weather or the climate change it portends, participants were not emotionally involved in or deeply concerned about the issues.** The most notable result of asking participants how they felt (or whether they worried about) extreme weather was the persistent failure to answer the question. The tendency was to go off on various digressions or simply mention some impact of climate change on their personal life without describing any emotions or feelings, despite repeated prompting. Only a few actually answered by saying “I am worried about x” or “I am concerned about y.” The one example of a first-person worry was someone expressing concern about earthquakes. The consistent inability to answer the question by offering up an example of an emotional response suggests that few are having significant emotional responses. (One could argue that the emotions are so strong as to be sublimated, but this hardly seems like an arena that would elicit that intense a response.)

Not long after discussing concerns over extreme weather, we asked whether people worried about “climate change,” itself. Few actually did. Most of the Cautious either did not believe in it or viewed the effects as relatively benign or far off in the future—while some were candid about not wanting to be inconvenienced. A Cautious St. Louis woman said, “We don't see the hurricanes, we don't see the earthquakes. It doesn't affect us, so we just go about our lives.” A Cautious St. Louis man argued, “If you are worried about it, that means you have to do something about it. I don't want to shut down the coal plants and tell people to stop driving their cars. It's easier not to think about it than to worry about it.”

Almost no one saw climate change as creating catastrophic problems in the near term necessitating an immediate, all hands on deck, response. Those who foresaw harmful effects of global warming felt they would eventuate 50-100 years from now. This view of the climate change timeframe had different effects on the Cautious and the Concerned. Among the Cautious the long time frame often meant it was not their problem. The Concerned, by contrast, were more likely to be, well, *concerned*. A Concerned Pittsburgh man said, “There are countries over in the Malaysia area that are only four feet above water and you will wipe out a million people.” A Concerned Albuquerque man noted, “When I started looking into the municipal water supplies and started looking at the forecast I became very nervous for now and in the future.” At the same time, the Concerned shared in the general timeframe and tended to be less concerned about themselves and more about the effects on future generations. A Concerned Albuquerque man said, “The next generation. You can't put a time on it but I think with time, I'm not going to be around but somebody else is and they're going to have to deal with it.” A Concerned Albuquerque woman said, “We've got to educate this generation so that they become good stewards of our land. I am worried about it. I'm not losing sleep about it but I'm concerned about it and have an opinion about it. I feel like I have a responsibility to educate those around me about it so that we're not just ignorant that it's happening.”

**An initial inquiry into specific examples of things that could be done to better prepare for extreme weather resulted in a scattering of ideas and several excuses for lack of preparation.** A few respondents were able to come up with examples of preparations for extreme weather, including building code changes and traffic light modifications, but we were just as likely to hear why preparations were not underway based on collective action problems and short time horizons. A Cautious Ft. Lauderdale man said, “I think it is a worldwide initiative, just one country and one zone can't do anything because everything is connected.” A Concerned Pittsburgh man confessed, “Sometimes I think on an individual basis you don't feel like there is a lot you can do personally to control it or make it better or worse.” A Concerned Fort Lauderdale man said, “It's just that it's gradual change. I mean, humans live, if you're lucky you hit 70 or 80, but the problem is weather patterns change over decades, centuries, and

of course we don't care, we're not going to deal with the huge problem that will occur perhaps 100 years from now."

**Few can accurately define climate change or global warming.** Only a few participants could actually describe the greenhouse effect and attribute it to the greenhouse gases at its root. More could say that global warming had something to do with rising temperatures. A Cautious Fort Lauderdale woman defined it this way "It is increasing temperature, I think." And a Concerned Pittsburgh man said, "A shift in your average temperatures going from two degrees up or two degrees down." But we also saw the usual confusion of global warming with the depletion of the ozone layer and the common identification of global warming with its effects, e.g. melting ice caps.

**Popular understanding of global warming/climate change seems to be evolving.** Making quantitative judgments from focus groups is not at all reliable, but it did seem that participants were defining global warming, and especially climate change, as simply more extreme weather or more variation in weather patterns, whether anthropogenic or based on natural cycles. In fact this seemed to be the dominant understanding for many in these groups. For example, a Cautious Albuquerque woman replied, "Extremes, whether it is hot or cold outside of the norms." A Cautious St. Louis man offered as a definition, "A change in the weather pattern over a period of time." without specifying if it was a change for the hotter or colder or for how long.

**Several participants drew a relatively sharp distinction between "global warming" and "climate change".** Although often taken as close synonyms, we also heard what seems to be an increasingly sharp distinction between "global warming" and "climate change," with the former understood as increasing temperatures and the latter as increased variation in weather patterns. A Concerned Albuquerque woman summed up this perspective very neatly when she said, "Global climate change meaning not so much warming but you are going to have more extremes in weather conditions I think. Cooler and warm, not just the greenhouse effect." A Cautious St. Louis woman echoed that view saying, "If you are talking about climate change, global warming, I think the words global warming are not appropriate. I think climate change is extreme changes in the temperature, and it's not just warming, it can go from hot to cold. Someone told me that global warming is not just warming, it just means that the temperature changes so drastically." A Cautious Albuquerque woman said, "Climate change as I understand it is cyclical, not manmade climate change."

**The Cautious were generally skeptical and the Concerned mostly believers in the reality of global warming.** Many of the Albuquerque Cautious were believers but among these Cautious believers we saw a range of views, including some who believed but also believed in natural cycles and some who believed in global warming but were opposed to government action. As a Cautious Albuquerque man put it, "When the climate in a particular part of the world over a period of maybe five years to 20 years makes a—it gets wetter or it gets drier. That's part of the climate, it gets hotter, it gets colder over that period of time on average." With regard to government action, a Cautious Albuquerque woman remarked, "I don't believe so. When the government gets involved—look at how much is added to the cost of a vehicle by what regulations they put on stuff. All of these things we are doing in California. In California there is a lot of pollution and there is something that can be done but I think when the government gets involved it is going to cost everyone a whole bunch of money and you are not going to see a dime of it."

The Albuquerque Concerned were largely believers but again had questions about natural cycles and the extent of scientific debate and wondered about how to find common ground with the skeptics. The believers were represented by one Concerned Albuquerque man who asserted, “There are a few Cocoa puff scientists that deny global warming but for the most part they’re in agreement.”

Often belief was mixed with doubt and willingness to compromise. One Concerned Albuquerque woman said, “I think there is a healthy debate. I think from the papers I read, and I do read the academic papers, I think there is a healthy debate. I think it’s not so much as what is happening as to how fast it is happening and what is contributing to it. I think that that’s where the majority of the debate is within the academic world right now.” Another Concerned Albuquerque woman told us, “Why does it have to be an either/or? Why can’t it be human-made? It is human-made and it is nature. I think that’s the polarization that works for a lot of politics and politicians is let’s keep it divided. We all have responsibility in it and it’s natural. I think there’s that combination so that we do have some responsibility. Therefore, we can be part of the solution. If we don’t take responsibility then we get off and it’s not our problem. I think it’s both.”

The St. Louis Cautious were almost unanimously skeptical to some degree and didn’t want government action. One Cautious St. Louis woman stated, “I would like to see it proved to me. I hear it and I could say that I believe it, but I would like to see more proof...” Others tended to be skeptical but were not entirely certain like the Cautious St. Louis man who said, “I go back and forth on it. Sometimes I think the environmentalists are trying to use scare tactics to try and get more money or whatever their purpose is. Some days I think maybe it’s real and some days I don’t think so.” The St. Louis Concerned, on the other hand, mostly leaned toward belief but several expressed uncertainty. One Concerned St. Louis woman said, “Yes, I feel like for every proof there is from this site to the next, there is some other proof that I’ve seen. I can’t quote anything but there’s no proof that it is real. I don’t know.” Another wasn’t sure either but preferred to err on the side of caution, “I’d say unsure but it is a pretty big risk just to say it’s not and just leave it at that. Why not figure on the side of conserving limited resources and maybe save the world at the same time?”

The Fort Lauderdale Cautious were more divided than the more uniformly skeptical Cautious we encountered elsewhere. In part this may be because so many manifestations of global warming are evident in the state of Florida, from increased temperatures, to sea level rise, to more intense storms, droughts, and wildfires. Many of them don’t know what to believe. Some were deniers, like the Cautious Fort Lauderdale man who said, “Weather changes are cyclical and the media says to put a label on it.” But more were questioners: as one Cautious Fort Lauderdale man said, “The planet is like millions of years old. It might seem frequent or strange for our lifetime but as far as the planet, who knows? You have to study for years and years and years to understand.” The Concerned Fort Lauderdale participants were strong believers. One Concerned Fort Lauderdale man confidently stated, “It’s pretty measureable. It’s not a theory anymore.”

The Pittsburgh Cautious were also likely to accept climate change as a reality, based mostly on temperature changes and reduced snowfall. One Cautious Pittsburgh man said, “It is already happening. You look at the Antarctica and the polar bears and where they live. The ice is dissipating, it’s going. It’s proven. They have less land to walk on because it is getting hot. It’s melting. That is proven. That’s not just someone saying it.” Others were less sure. “I don’t know either. Who says it is?” asked a Cautious Pittsburgh man. The Pittsburgh Concerned weren’t entirely sure what global warming is, with views ranging from that of one man with the

approximately correct concept of shifting average temperatures (albeit in either direction: up or down) who defined it as “A shift in your average temperatures going from two degrees up or two degrees down” to another woman who thought maybe it had something to do with the ozone layer, “Is it when the ozone layer is lifted from the sun rays from all of the pollution over the years?” to another woman who also wasn’t too sure but thought it had something to do with temperature extremes, “Is that related to global warming? I don’t know, the extreme? It does get super freezing, it is not warm here and the winters are not any warmer. I am curious. I don’t know, I am pretty ignorant on the issues.” A Concerned Pittsburgh man argued the linkage, “There has to be some kind of connection between these fossil fuels being burned and what is happening around us.”

Nevertheless, however they conceived of global warming, the Pittsburgh Concerned mostly thought it was real. One Concerned Pittsburgh man eschewed the science for the concrete images of shrinking ice cover, “I don’t think too much about the science. I think about everyone else, what you see, what you can put your mind around and the one thing that hit home to me was there was some reports—I watched this climate change thing that Al Gore did that the glaciers and the icecaps are so reduced they might disappear in our lifetime. That’s pretty significant to say something is going on and something is wrong.”

### **General Discussion of Impacts of Climate Change**

**Many of the Cautious were ideological skeptics but contextual believers.** The Cautious may be skeptical in the abstract but in all four locations they readily provided concrete examples of the effects of global warming with little concern (except in a few cases) for consistency. There seemed little difference between the Cautious and the Concerned when it came to being willing and able to name effects of climate change. The global warming effects offered ran the gamut from extreme weather to changing seasons to effects on agriculture and food prices to heat waves, forest fires, droughts, melting ice caps, tsunamis, economic damage, including harm to the insurance industry, glacial retreat, harm to coral reefs, erosion, rising sea levels, and water shortages.

**Discussion of impacts illustrates the evolution of the global warming skeptics’ position.** This balancing act practiced by the Cautious is less paradoxical than it used to seem. Ten years ago, if someone did not believe in global warming/climate change, they did not believe that the average global temperature was rising, hence did not believe there were any notable effects stemming from (non-existent) rising temperatures. With the evolution of the skeptical position away from skepticism about rising temperatures, toward skepticism about humanity’s contribution to the problem and our ability to do anything about it, contemporary skeptics are now able to agree with much of the science that finds rising temperatures and are not forced to deny the obvious, e.g. melting ice caps. The new global warming skeptic can accommodate all of these facts, minimizing their cognitive dissonance, while pointing the finger at natural cycles and bemoaning the futility (or even the necessity) of trying to stop them. This evolution is also reflected in the work of Leiserowitz, Maibach et al. on behalf of the Yale Project on Climate Change Communication in their November 2011 study<sup>1</sup> that shows, first, while 63% believe global warming is happening, only 50% of them (i.e. about one-third of American adults overall) believe in *anthropogenic* global warming, and second, that proportion is down from 57% just three years ago.

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<sup>1</sup> “Climate Change In The American Mind: Americans’ Global Warming Beliefs and Attitudes in November 2011”, Yale Project on Climate Change Communication and the George Mason Center for Climate Change Communication.

**Recognition of and concern about the effects of climate change were more salient among Fort Lauderdale participants than anywhere else, with the focus on drinking water, erosion, and wildfires.** Fort Lauderdale participants were significantly more likely to acknowledge real effects of global warming in their area. There were important differences between the Concerned and the Cautious in Ft. Lauderdale, as everywhere, but there was widespread agreement across both segments that the effects of climate change are evident in the Ft. Lauderdale area in the form of less drinking water, coastal erosion, and, to a somewhat lesser extent, wildfires. The reduced availability of water was undeniably evident to all in large part because of the new and now regular restrictions on water use. For the Concerned, the drinking water problems were to a significant extent a side effect of sea level rise, while the Cautious thought such rises were too gradual to be sure about. Erosion is also widely acknowledged, although the Cautious are somewhat less likely to attribute it to climate change. Finally, all agreed that there are more wildfires in the region, with the Concerned convinced that the increase in wildfires was related to climate change and the Cautious being less sure about their provenance. In addition to those consensual beliefs, the Ft. Lauderdale Concerned differed markedly from their Cautious counterparts in acknowledging stronger and more frequent storms. The Cautious, by contrast, tended to be more impressed by a recent decline in hurricane activity as storms in recent years tended to veer off into the Carolinas. The Cautious were also dismissive of any increase in smog and asthma, particularly as a consequence of climate change, while the Concerned said they did see an increase in smog and asthma, caused in the eyes of several by wildfires in the Everglades and elsewhere. Power outages, heat waves, transportation disruptions, and people being forced to move off the coastline were not seen as problems among either segment (although several acknowledged that people were being forced to move off the coastline by rising insurance rates, rather than climate change).

**The most salient local effect of climate change among Pittsburgh participants, particularly the Concerned, is the increase in extreme weather.** The Pittsburgh Concerned say they have noticed more extreme weather events, including stronger and more frequent storms and they attribute that to the effects of global warming. The Pittsburgh Cautious did not rush to refute the idea of increased extreme weather but nor did they acknowledge it. None of the other effects that we asked about resonated with the Pittsburgh participants beyond a few of the Concerned. A few of the Pittsburgh Concerned thought there may have been a drought the previous summer but overall it was not perceived as a major problem. Likewise with smog and asthma. The Cautious thought smog was a thing of the past—when Pittsburgh was a steel town and before plants had been subjected to tougher regulations, while some of the Concerned pointed to Ozone Action days. Traffic disruptions due to floods were only viewed as a problem in the “Bathtub” area of downtown. Heat waves and wildfires were not a problem at all for the Pittsburgh participants.

**Albuquerque participants were most likely to point to droughts and less drinking water, as well as to wildfires as the most prominent effects of climate change in their area.** The Albuquerque Concerned nearly all agreed about the increase in droughts and decreased availability of drinking water, as did many of the Cautious, although some were more inclined to ridicule Al Gore than to attribute water problems to climate change. Many Albuquerque participants included increased wildfires as among the effects of global warming, although some of the Concerned -- and even more of the Cautious -- pointed to drought rather than to global warming as their cause. Stronger more frequent storms were widely viewed as climate-caused by the Concerned but not among the Cautious. Power outages, heat waves, smog and asthma, and transportation disruptions were not really on Albuquerque participants’ radar screens. A few pointed to a shortage of natural gas during a cold snap the previous winter, but no persisting problem with power outages was described. Heat is seen as sometimes a problem but less so than in many other places, especially

back east, because the New Mexico climate is so low on humidity. Smog was viewed as a problem but was attributed to wildfires and to the fact that Albuquerque is ringed by mountains, not to global warming.

**Stronger, more frequent storms were the only notable local effect of climate change among St. Louis participants.** But even views about storms are qualified, with the Concerned saying storms are more intense but not more frequent and the Cautious tending to acknowledge that storms are more frequent but not being so sure if those more frequent storms are related to climate change. Power outages are seen as caused by storms and not conceived of as effects of global warming. These participants seemed to be cognizant of few, if any, problems with droughts, drinking water, heat waves, smog and asthma, wildfires, or transportation disruption in St. Louis attributable to climate change.

**The Concerned and the Cautious tended to have very different emotional reactions to the discussion of the possible effects of climate change.** While the discussion of climate change itself elicited few emotional reactions, talking about its effects did create an emotional involvement at least for the Concerned, who expressed negative emotions, most notably worry, stress, frustration, nervousness, anger, sadness, and disgust, as well as concern for future generations. The emotions that tended to be reported by the Cautious were more epistemic and action oriented. They felt confused as well as helpless, overwhelmed, and complacent. Several of the Cautious sought to downplay the importance of the climate issue compared to others like jobs and the economy. As one Cautious Pittsburgh woman said “You deal with it and go on.”

### **Preparing For Climate Change**

**While people do not necessarily have direct access to the mechanism by which their views change, some participants reported that discussing potential effects of climate increased their appetite for action and increased their desire for various levels of government do more, but those participants were only a minority and the proposals are small bore.** For example, the single most frequently mentioned action participants wanted to take after discussing climate change effects was recycling. Additionally, some talked about using less water, not littering, installing a raincatcher, etc. but no major mitigation proposals were offered. Several, particularly among the St. Louis Cautious, responded with extreme cynicism about the ability of government, whose officials they say are bought and sold, to get anything done. Others emphasized the futility of individual action. The fact that, according to the U.S. Conference of Mayors survey, 1-in-3 cities already incorporate preparations for climate change into their capital planning did more to inspire cynicism and skepticism than to accomplish anything constructive.

**Participants are mostly unaware of actions taken by their city or state government to deal with the harmful effects of global warming.** A few in each location were able to come up with examples like bike paths, solar panels on bus shelters, rebates for energy efficient appliances and hybrid cars, rooftop planting, free home energy efficiency upgrades, water restrictions, shale ordinances, and storm sewer upgrades, as well as the environmental cure-all: recycling. But most are unaware of any activity around global warming at the state or local level of government.

**The mocked-up articles generated many positive responses for demonstrating pro-active behavior but also several negative responses based on the potential cost to taxpayers.** Several participants, including a number of the Cautious, liked, as one Cautious St. Louis woman put it, the “proactive approach to problems” described in the text of the article. Another Cautious Fort Lauderdale man also liked that “they are being pro-active and trying to plan for the future.” A Concerned Fort Lauderdale man said, “I think it’s good. I like how they’re preparing.” A Concerned St. Louis woman said, “I found that to be encouraging. I didn’t know about it. I thought here are some actual things we can do to help.”

A Concerned Albuquerque man was motivated by the fact that the article did not dwell on the negative but pointed to things that he could do, “One of the things that I was paying attention to is things that people can actually do. Action things. A lot of things that I’ve read as you read all these doomsayer things where it’s like everything is going to hell good luck, with no good idea what to do. Specifics, I think helps—if I were just reading this in the *Albuquerque Journal* I would say, ‘Ah sweet, how do I do this, who do I call?’” Some said reading an article like this would improve their image of the mayor. A Cautious St. Louis man said, “It makes me feel good about our mayor, he is trying to protect the city, protect the infrastructure, and look into the future.” Overall, and in each location, the Concerned were more likely to feel more favorable toward their mayor for taking such steps. On a 4-point scale where “4” = “much more favorable,” “3” = “somewhat more favorable,” “2” = “somewhat less favorable” and “1” = “much less favorable,” the Concerned on average awarded a 3.4 “more favorable” rating toward their mayor (i.e. about half way between somewhat more and much more favorable) for taking the steps outlined in the article, while the Cautious averaged 2.9 (i.e. just short of “somewhat more” favorable).

But several negative reactions were also reported. The most common of these, mostly expressed by the Cautious, was to question the cost and wonder if it meant increased taxes. A Cautious Pittsburgh man asked, “How much tax money are they taking from me to do this?” A Cautious Albuquerque woman said, “If it is going to raise taxes that is concerning.” A Cautious St. Louis woman wanted to know, “. . .where he’s getting the money from. What programs is he cutting to do this?” A less common criticism was that the steps outlined in the article didn’t go far enough. As a Cautious Florida man said, “All of these actions wouldn’t even come close. This is only local. It needs to be an international initiative. . . .This is all smoke-and-mirrors stuff. What is planting trees going to affect? A two-block radius. It doesn’t do anything. It has got to be long lasting. It really has to be an American culture change”.

**Actions to deal with the harmful effects of climate change that enjoyed majority support included protecting water supplies, preserving and creating green spaces, planting vegetation to protect shorelines, public education, modifying building codes for increased rain and flooding, and engaging citizens in climate preparedness planning.** We presented a total of 39 specific potential actions that could be taken in response to the harmful effects of climate change and asked that participants read them over and circle only those that they thought really made sense to do. Note that not all of these were presented in each location but the percentage scores in the table below are standardized to account for differences in the number of times each was offered across all four locations. Out of the 39 actions offered, only the seven mentioned above achieved majority support.

**“Protecting existing water supplies” was at the very top of the list and was the only one to be chosen more often among the Cautious than among the Concerned.** Over the years we have consistently seen the vital importance people attach to protecting water quality. Drinking water is a matter of existential importance, and drinking water was an issue of particular salience in Albuquerque and Fort Lauderdale. As a Cautious Albuquerque man told us, “We are in a desert and we need our water and we are going to need our water. If Albuquerque is going to stay a vibrant city we need water and we better protect it or it won't be a vibrant city.” A Concerned Fort Lauderdale woman said, “To me that's just so fundamental. If we don't protect our existing water supply, we can't survive without water.” The problem for our present purposes is that support for water-related actions is highly over-determined by these vital pragmatic considerations and is not necessarily strongly connected to a desire to deal with the effects of global warming. In many participants' minds, the threat to water supplies stems from drought and few make the additional linkage from drought back to climate change. This problem is not limited to water policies and applies to most all the items in this exercise. It is perfectly possible to find overlap between actions that would help deal with the effects of global warming and actions that are independently supported on other grounds. To the extent that our goal is to help cities prepare for the effects of warming, that strategy is quite promising. But to the extent that that strategy is intended to go beyond preparation and generate support for climate change mitigation, it is far less clear how successful it will be. The results of this exercise provide grounds for skepticism about the efficacy of that approach. Even after nearly two hours of discussion of climate change, when asked why they had chosen the actions they did, only a handful of the 80 people we spoke to mentioned mitigating climate change. In each case, their preference seems to have been driven by the more immediate benefit.

**The 2<sup>nd</sup> and 4<sup>th</sup> ranked action items involved preserving and creating green spaces.** [“Create and preserve open and green spaces to reduce summer temperatures and increase air quality” and “Increase green spaces (parks, tree planting) to absorb rainfall”]. A Cautious Albuquerque woman explained, “Preserve open...and green spaces to reduce summer temperature. What we already have they are doing great. I drive by it every day coming to work on Alameda. They have redone this area that a lot of people go to and it is a recreation area too. That's for walking and hiking and bike riding. They have put a lot of trees and plants and they are water resistant. They are drought resistant plants and it looks great.” A Concerned Fort Lauderdale man said, “People tend to learn to appreciate things once they see it. So perhaps the more we see greenery and not deforestation. There are a lot of forests around here anyway. I think that people can grow to appreciate what vegetation and foliage does for us, which is a lot.” A Cautious Pittsburgh man was one of the few to appeal explicitly to a global warming rationale, “The trees, that helps eliminate the greenhouse thing of eating up our atmosphere; we need the trees to suck up the carbon dioxide or CO<sub>2</sub> so there isn't greenhouse gas.”

**“Educate the public about the impacts and about the city's vulnerability” was chosen by almost 2-in-3 participants.** Participants saw multiple benefits stemming from public education. Not surprisingly, since so many participants had confessed low information on the subject of climate change, many felt that the public (themselves included) needed the information to have an informed opinion and to make decisions. A cautious St. Louis woman said, “Educate the public about the impacts. We just don't know. I think we need to know what's going on. I don't think a lot of people are aware.” Secondly, education was viewed by some as a means to create buy-in among the masses for the money the government would spend implementing the action. By raising awareness, people would be more inclined to go along with the policy. A Cautious St. Louis man noted, “If you educate the public then they trust you a little more about what you're doing. If you just say, “We're going to do this.” You need to tell people why and what the impact is. Otherwise it just looks like the government is out there spending more money.” A Cautious Fort Lauderdale

man agreed, “I was right there with Andy, Kenny and Price to educate the public. If you don’t buy into what’s real, then they are not going to be willing to pay for it.” Finally, education was also viewed as an effective means to motivate individual action above and beyond action induced by the policy itself. As a Concerned Fort Lauderdale man put it, “Again because I think if people are educated they’ll take individual action as well as align themselves with movements that will impact the problem.”

**“Plant native beach dune vegetation to protect the shoreline, reducing erosion and buffering against storm surges” was also chosen by a majority.** Discussion of this particular action was limited since it was only asked in Ft. Lauderdale and few there had it ranked in their top 2, but one Concerned Fort Lauderdale man explained, “I put the plant native beach dune vegetation to protect the shoreline, because I’m always at the beach and I feel like the beaches are getting ruined. And I feel that we could do more to save the beach.”

**“Set building codes for new structures and public infrastructure to account for projected increase in heavy precipitation and flooding” was popular on average but very few picked as a top choice.** A Cautious St. Louis woman explained, “The reason I picked that one was rather than - - there are new structures coming up all of the time. If there's no code for them, they will put them up just like the old structures they are already suffering.”

**“Engage citizens in development and implementation of plans to make the city more resilient and better prepared” made it into the top tier of preferred action items by dint of its strength among the Concerned** (63% of whom circled it compared to just 38% of the Cautious). This action item was motivated by concerns similar to those that drove education efforts discussed above. A Cautious Fort Lauderdale man said, “I think if you engage people on what is going on that they have a more vested interest, but if you don’t encourage or inform people then they are left in the dark. I’m sorry. I just think that education is key and the more you let people know, the more they you involve them that the more they are trying to get what you hope to get accomplished.” Others saw citizen engagement as a necessary prerequisite to effectiveness, with one Concerned Albuquerque woman telling us, “I think we need to get everybody else involved in order to make it work. One person doing it on their own is not going to get it.” A Concerned Pittsburgh man argued that citizen engagement leverages local knowledge, “Get the local people [who] know what is going on. People that live down in Woods Run who lived there their whole lives know how it floods and how much rain it takes to flood. The same people that live over—pick a neighborhood anywhere, they are local and they know what is going on and they have a lot of good input on how to fix it. They might not be engineers but they might be able to say when it gets this much rain it comes over the bank.”

**The overwhelming majority said they would feel very positively toward their mayor if he or she took actions like these and that these actions would benefit the local economy.** The St. Louis Cautious were nearly unanimous in seeing these actions as important accomplishments. In this context, we heard words like “progressive,” “forward thinking,” “proactive.” One Cautious St. Louis man said “I would vote for him”. Concerned Albuquerque participants used words like “admirable,” “progressive” – one woman said “I’d be proud.” A Cautious Fort Lauderdale woman even made the global warming equation, “I would be impressed with the mayor if he was able to educate the public to do some of the things that were more natural. All of these natural things in here about replanting and putting this area back to what it used to be when we had the saw grasses on the beach and we had something to protect us from erosion but we decided to make the beach people-friendly and to leave the saw grass. I would be impressed if he started some major

initiatives. I think that would get more from people right up front that we are doing all this, why? Because it is protecting our environment from global warming.”

Only a few voiced a dissenting opinion, for example, the Cautious Fort Lauderdale man, “I [would] think he’s nuts and over reactive.”

Many participants argued these efforts would create jobs. A Cautious St. Louis woman concluded, “It would improve the economy. You would have to hire people to plant these trees and put the gardens in and pave the roads.” A Cautious Pittsburgh man was a bit more circumspect, “Depending on which ones you did, a lot more jobs. There could be a ton more jobs.” A Cautious Albuquerque woman said, “It could create jobs.” Others emphasized the benefit to the local economy that would follow from improving the city’s image and attracting businesses and new residents. A Concerned Albuquerque woman said, “I think it would increase the local economy because I think more people might want to move here because it would be more ecologically responsible. It’s not going to be the fear of droughts.” A Concerned Albuquerque man added, “I was just going to say a huge amount of impact on businesses considering whether they’re going to invest in Albuquerque for the next twenty, thirty, or forty years—does the city have the strategy for dealing with an incoming drought? If not, forget it. We’ll go to Phoenix.” A Concerned Fort Lauderdale man explained, “Since we’re a tourist area, if the word is getting out that it’s turning into a green city and things like that, that’s always a good positive.

CLIMATE PREPAREDNESS ACTIONS			
(frequency circled) <i>Blue = Ft. Lauderdale Only, Green = Ft. Lauderdale &amp; Alb Only</i>	<u>Total</u>	<u>Conc</u>	<u>Caut</u>
Protect existing water supplies	83%	80%	85%
Create and preserve open and green spaces to reduce summer temperatures and increase air quality	65%	73%	58%
Educate the public about the impacts and about the city's vulnerability	63%	68%	58%
Increase green spaces (parks, tree planting) to absorb rainfall	55%	68%	43%
Plant native beach dune vegetation to protect the shoreline, reducing erosion and buffering against storm surges	55%	70%	40%
Set building codes for new structures and public infrastructure to account for projected increase in heavy precipitation and flooding	51%	60%	43%
Engage citizens in development and implementation of plans to make the city more resilient and better prepared	50%	63%	38%
Rezoning to avoid building in areas prone to flooding	49%	58%	40%
Development additional water resources, including sea water desalination	48%	65%	30%
Incentivize use of water efficient appliances (i.e. washing machines, dishwashers, ice machines, watering systems)	48%	55%	40%
Tree planting for building and walkway shade	46%	55%	38%
Green roofs/garden roofs	43%	58%	28%
Increase culvert sizes to handle increased water flow	41%	53%	30%
Reinforce levees	40%	60%	20%
Change pavement to materials that absorb less heat	39%	43%	35%
Incorporate climate change preparedness into public infrastructure planning	39%	53%	25%
Install rain barrels to preserve water for non-drinking uses	38%	40%	35%
Implement active leak detection and repair systems to avoid wasting water	35%	45%	25%
Rezoning to avoid building in areas projected to be within sea-level rise	35%	40%	30%
Set water efficiency standards for buildings	35%	45%	25%
Develop new 100 year storm maps to identify hazard areas and building code needs for vulnerable regions	33%	43%	23%
Establish cooling centers for community members during heat waves	31%	45%	18%
Move power distribution centers away from flooding risks	31%	40%	23%
Amend zoning and building regulations	30%	50%	10%
Move critical infrastructure away from coasts	30%	60%	0%
Permeable pavement to better handle storm water runoff	29%	30%	28%
Assess vulnerability	26%	35%	18%
Elevate roads to avoid flooding	25%	38%	13%
Encourage shift to drought resistant vegetation	25%	35%	15%
Locate and design critical public infrastructure (roads, hospitals, wastewater treatment plants, police/fire stations) to account for sea-level rise	25%	30%	20%
Require waterfront buildings to put critical systems at higher elevations	24%	28%	20%
Paint roofs white to reflect heat	20%	25%	15%
Relocate residences outside projected sea-level rise areas	20%	20%	20%
Install special drain valves in flood-prone areas to prevent seawater from flowing into the streets from storm sewers	15%	20%	10%
Map cities with thermal radar to identify hotspots to cool	15%	18%	13%
Relocate residences outside floodplain	15%	13%	18%
Elevate or relocate furnaces, hot water heaters and electrical panels	13%	13%	13%
Install pitched roofs to withstand heavier snowfall	8%	10%	5%
Elevate existing residences above flood elevation on a new foundation	6%	8%	5%

**People most commonly have conversations about climate change either when the issue hits the media or when they directly experience its effects.** Several participants said their global warming conversations were occasioned by something they saw on TV or read somewhere. A Concerned St. Louis man told us, “We would usually have it if we are watching the news or something like that and there is something said.” A Concerned Albuquerque man recalled similar experience, “Right around the nightly news time. You see flooding. You see all these images from around the world. That’s the main time when I talk about this issue.” A Cautious Fort Lauderdale man reported, “If you hear something on TV or on World News Tonight if something comes up about it, the conversation will surface again.”

For others conversation was motivated by a personal incident. As a Cautious St. Louis woman said, “Well, until it happens to you, you don't have a conversation. Until I lost power, I didn't think about it. It wasn't a big issue. Now it is. After we had the big hurricane in the spring we started talking about climate change because we are wondering where it is going to hit next. At one time these disasters were remote, but once it happens on our block, we sit down and start talking about it.” A Concerned St. Louis man recalled, “The last time the conversation came up with us was due to the violent weather. We talked about it quite a bit that it is a shame that it is a fact.” A Cautious Ft. Lauderdale woman said, “My husband and I talk about it a lot during the summer when our poor little garden was drying up. We’ve got to pay more money to keep it watered. We have to sneak around and do it afterhours because we are on restriction. I can’t let my babies die, you know. It’s that kind of deal. It just depends on how you are impacted.” A Concerned Pittsburgh man focused on the weather, “I will tell you what. In July we are having conversations about it when we are having those blistering hot days and it is in November and our minds are away from it.”

**Conversations about global warming are uncomfortable for some participants, especially among the Cautious.** A Cautious St. Louis woman reported discomfort, “People get angry. They want to place blame.” A Concerned Pittsburgh woman commented, “They turn to arguments.” A Cautious St. Louis man said, “They get a little heated.” A Cautious Ft. Lauderdale man explained, “It is frustrating in America today whether you are Democrat or Republican. There is no compromise. The people in Washington are not working for the people. They are working for their own self-interest. It is on a local level, state level and a federal level, and that is unfortunate. They have the cap and trade that they tried to push through. Who the hell knows? You can read 14 different stories and get 14 different opinions on what it is all about, so it is very, very frustrating.” A Cautious Ft. Lauderdale man also bemoaned the politicization of the issue, “All of these conversations though that do come up occasionally, there is always a political part of it where people are divided politically and it is definitely global warming on one side, and on the other side, it is definitely not, so it is always a political-type conversation.”

## **Earth Hour Challenge**

**Most were unfamiliar with the name Earth Hour but a few people at each location recognized the concept by its description.** A Cautious St. Louis woman asked, “Is that where you shut things down?” A Cautious Albuquerque woman responded, “I think it is a great idea. We did that last year as far as—but I didn’t know it was Earth Hour.” Similarly a Cautious Ft. Lauderdale man, “I didn’t know it was Earth Hour but I have heard of turning lights off at a certain time.”

**Most participants were at least sympathetic to the idea of the Earth Hour Challenge between cities.** Initial reactions were mostly positive. There was a noteworthy difference in enthusiasm between the Cautious and the Concerned, with the Concerned much more positive about the idea and expressing fewer reservations—particularly in Pittsburgh and Fort Lauderdale. But there were very few who opposed the idea outright in any of our four locations. A Concerned St. Louis woman said, “Yes, I think it makes it more fun.” A Cautious St. Louis woman was a little more reserved, “Maybe, yes. I don’t know if everybody would, I don’t think so.” A Concerned Albuquerque woman was more positive, “I think it’s proactive.” A Cautious Fort Lauderdale man said, “Yes, if it is one hour in a day. Every little bit helps.” By contrast almost all the Fort Lauderdale Concerned chimed in with a simple “Yes,” as did the Pittsburgh Concerned.

**Supporters of the concept of an Earth Hour Challenge between cities pointed to raised awareness, the spirit of competition and hometown pride, while the less supportive were worried about potential costs and competing priorities.** As a Concerned St. Louis woman put it, “It gives people a thought. It puts a thought in people’s minds on a city basis.” A Concerned Albuquerque woman asked rhetorically, “Does it not start the conversation?” A Cautious Fort Lauderdale woman replied, “I would love to see us do it because this whole process is about raising awareness down to every single home.” A Cautious Albuquerque woman was positive but nonetheless concerned about government involvement, “I think so, to raise awareness. Whether it is for climate change or for anything being aware and not being wasteful is important. Getting the government involved, right there you are seeing waste. Having a committee of people, getting a group of volunteers of people that are educated in that field and that are interested in doing that would be important. Just raising awareness so that people aren’t wasteful.” A Cautious Pittsburgh man said, “It raises awareness to everyone.”

For some, motivation sprang from the competitive aspect and the teamwork. For a Concerned St. Louis woman it tapped human nature, “As humans, aren’t we naturally competitive anyway? To have some sort of competition, we would probably welcome it.” A Cautious St. Louis woman thought her area had a local spirit, “If there is a big event in St. Louis everybody would back it. St. Louis is a very supportive area.” A Concerned Fort Lauderdale man said, “I like it. Competitions between cities just on the west coast of Florida, I think that’s a good motivator.” A Cautious Pittsburgh man asserted, “Pittsburgh would kick anyone’s butt. Bring it on.” When asked the single best reason for Pittsburgh to enter such a competition, a Cautious Pittsburgh woman replied, “Make a name for themselves, a better name.”

Money and competing priorities remained an issue for some. A Cautious Fort Lauderdale man worried, “It would depend on how much it would cost the city A Concerned Albuquerque man pointed out, “It’s very important to do but you just have to have the funds for it. You have to make sure people have the money to do it.” A Cautious Pittsburgh woman asked, “The cost, where is the money coming from; what is the end result going to be? There are a lot of what ifs.”

A cautious Pittsburgh man pointed to competing priorities, “I think it is a good idea but there are too many other things that the city of Pittsburgh needs to fix first before they start these plans. Roads are bad; bridges are falling down.” A Cautious St. Louis woman said, “I don't really think that would do it. There are a lot of issues that are more important. I'm not saying it's not important, I just don't think people believe it's important. If we were back in our heyday and things were going well people were willing to do more.”

Several participants immediately asked about and/or recommended that there be a prize connected to the competition. It is almost part of the definition of a competition that there be a prize, material or otherwise. Granted, people often compete for the sheer honor of victory not just monetary reward, but a prize of some kind would definitely strengthen the appeal of a new, unbranded competition. A Cautious Fort Lauderdale man asked, “What are we competing for? What’s the prize?” A Concerned St. Louis woman immediately recommended, “I think it’s good. Throw in some prize money.” A Cautious St. Louis woman opined, “I think if the prize would affect each individual on some level, then everybody would be willing to jump in on this.” A Concerned Fort Lauderdale woman maintained, “I think they should make it enticing to go to something like that.” A cautious Albuquerque woman wanted to know, “What do they win?” A Concerned Albuquerque man pointed to a limitation, “I think it’s a great idea... The problem with that idea is that they’re not going to be able to fund it. If a city that has no money is looking down budget deficits and then staff reductions and you’re asking him to compete for something then they have to put something else behind it. Like either incentives... like if you win you get a million bucks. I mean, make it an American Idol.”

**Many liked piggybacking the inter-city competition onto the Earth Hour event, but once introduced in those terms, it was often hard to keep people focused on the competition rather than the shutting off of lights.** For example, when directly asked if he would participate in the competition, a Cautious Ft. Lauderdale man replied, “I would turn out the light.” Likewise a Cautious Albuquerque woman suggested she was reluctant to participate in the competition because “One hour of raising awareness doesn’t do anything for me. One day of raising awareness not only causes awareness but it actually saves 24 hours of electricity” – a nice sentiment but completely off point. In a similar vein, a Cautious Fort Lauderdale man commented, “Yes, if it is one hour in a day. Every little bit helps.” The upshot is that while piggybacking on the Earth Hour event is advantageous in some ways, communications will have to be extra careful to distinguish the Challenge from the Hour.

**Many participants predicted they would get personally involved in such an inter-city competition.** These kind of self-reports about future, socially-sanctioned intentions have to be taken with a grain of salt, but even when prompted in a way that implicitly gave participants permission to say otherwise, many insisted that they would be interested enough to participate in the Earth Hour Challenge. However, most responses were short and unelaborated, like the Cautious Ft. Lauderdale woman who said “Yes, definitely.” Several of the Ft. Lauderdale Concerned simply replied “Yes,” followed by another Concerned Fort Lauderdale woman who set a higher bar, “It has to be a great incentive.” A Concerned Albuquerque woman said, “I would take a personal action in trying to educate others.”

We then drilled down a bit deeper, asking participants specifically if they would sign a letter encouraging their mayor to participate in the Earth Hour Challenge or if they would attend meetings about the event. Again, we heard widespread intentions to do both, especially signing a letter, an act that requires very little time. The greater time commitment involved in attending a meeting created greater resistance, particularly among the Cautious. Several of the St. Louis

Cautious were unwilling to attend a meeting. A Cautious Fort Lauderdale man said, “I just don’t have the time for it.” Another Cautious Ft. Lauderdale woman thought others might be more willing, “I can see my neighbors doing it. They have time, and they don’t have kids.” The Concerned were more likely to say they would attend a meeting but with some qualifications. For example, a Concerned Albuquerque woman said, “It depends who is putting it on, if it was local, and what the media was saying about it. I think there would have to be some criteria for me to put my time in.” Another Concerned Albuquerque woman said, “I might show up for one meeting.”

**An Earth Hour Challenge among individuals or community groups—particularly one with a \$10,000 prize and/or one that is organized around schools—seemed to inspire a more enthusiastic response than the inter-city version.** Even before we had broached the idea of a version of the Challenge among individuals or community groups, some participants volunteered the idea on their own. For example, a Cautious St. Louis woman urged, “Get the grade schools involved in it.” to which another replied “That’s what I was thinking, yes.” A Concerned Fort Lauderdale woman suggested, “If you could keep it at a smaller level, community level. Maybe a homeowner’s association.” A Concerned St. Louis Man wanted it to be “schools versus schools.” These smaller units seemed more natural groups than cities, engendering more loyalty. As a Concerned Albuquerque man put it, “I think you’d get more of a buy-in if you bring it more closer to home. It will work better. If you’re taking it into smaller communities, church groups, schools, and everything.”

Many focused on schools and their children. A cautious Ft. Lauderdale woman said, “I’ve seen recycling programs be started through the schools. They’ve got them in the city of Fort Lauderdale and other cities around my kid’s school.” A Cautious St. Louis woman suggested, “It would have to be a science project kind of thing.” A Concerned St. Louis man had a similar idea, “It would be like a science project.” A Concerned St. Louis woman offered, “I think schools would be the best because that is where you want to start anything with the young.” A Cautious Ft. Lauderdale man agreed, “The schools would be a good place. They could educate the youth and get them involved in it. They are very creative. They could do something on Facebook or Twitter. They could do something that is high-tech to get the word out faster.” A few were worried about the strain it would put on schools however, as this Cautious St. Louis man, “Schools don’t have the resources.” A Cautious St. Louis woman added, “I know that the schools have a billion things on their plate right now. So one more thing? They don’t want it.”

A Cautious Fort Lauderdale man recommended the competition be tiered into comparable categories so that you wouldn’t have small towns with small town resources competing against major cities with big city resources (or, to make up an example, school kids competing against think tanks), “This sounds good. The only problem is that you would have more groups that are more informed and have more resources than other groups. The other thing to that is it is good for schools but then you need to have layers if you are going to do that type of competition. In other words, for cities or organizations that have this many people then they can give this type of prize. Otherwise, you have cities like Los Angeles competing against a city like Deerfield. There are more resources and it is inequitable.” A Cautious Fort Lauderdale man suggested, “Especially if they are offering money or a scholarship.” to which a fellow participant added, “Exactly. That’s a good point to bring a scholarship into it.” This dovetails neatly with the earlier discussion of the need for a prize, with a logical academic twist.

Some participants also indicated that they would themselves be likely to participate as individuals or as members of a community group, whether in the form of voting on someone

else's plan, e.g. a neighbor's plan or their children's school plan or, somewhat less likely, in the form of submitting a plan of their own. Of course, many of the statements were of the "Sure" and "Of course I would" kind which can be easily over-interpreted. Others were more specific, like the Cautious St. Louis man said, "I think there are a lot of organizations that would participate. I work for a housing organization. We are very small, but if we could win a \$10,000 dollar grant to do something that we could creatively think of something outside of the box that we could do, as a housing organization, that would help with global warming and climate change, we would certainly do it."

### **Message Thematics**

**Reponses to the six message thematics were quite consistent and clearly divide into two tiers of effectiveness.** The top tier (see table below) consists of two themes: 1) *Already See/ We Can All Agree* and 2) *More Extreme Weather/Heat Waves*. *Already See/ We Can All Agree* is a synthesis of the #1 and #3 messages from the Clean Air-Cool Planet research and was ranked as the most compelling message thematic in this research. *Already See/ We Can All Agree* is not only the strongest overall, it also received the highest ratings in each of the four locations considered separately and within each of the two segments. It not only performs best in relative terms, it also averages better than "somewhat convincing" among all of those subgroups, the only thematic to do so. Moreover, *Already See/ We Can All Agree* garnered more #1 votes (29 number one votes) than any other message, followed by *More Extreme Weather/Heat Waves* (17 number one votes).

*More Extreme Weather/Heat Waves* is the second of the two message thematics in the top tier and is a synthesis of what had been the #2 and,(tied for) #4 messages in the Clean Air-Cool Planet research.

The second tier of message thematics consists of the 4 other messages we examined, none of which on the average reached the level of "somewhat convincing" and none of which broke into double-digits in terms of #1 votes received. The message results were very consistent, with all the messages ranked in the same order in every location and within each segment (except for insignificant 1-place differences among some of the weaker messages). The Concerned consistently rated all of the thematics as more persuasive than did the Cautious.

**Both top-tier message thematics appeal to extreme weather, but the top message achieves notably broader appeal by going beyond the weather.** *Already See/ We Can All Agree* adds two elements to the extreme weather content that give it somewhat broader appeal than *More Extreme Weather/Heat Waves*. First, it adds the idea of energy independence. Second, it includes some conciliatory language acknowledging uncertainty in the timing of climate change and not taking a stand on whether climate change is natural or manmade. Although only a survey could disentangle all the factors feeding into the comparative effectiveness of these messages and how they fare among different groups with any real confidence, the added statements acknowledging uncertainty and urging conciliation appear to make an important difference, particularly among the more difficult to reach Cautious segment. While the Concerned rated both of the top-tier extreme weather messages almost equally (3.43 to 3.30), the Cautious on average rated *Already See/ We Can All Agree* more than "somewhat convincing" (3.10 avg.) while rating *More Extreme Weather/Heat Waves* short of "somewhat convincing" (2.78 avg.).

*Already See/ We Can All Agree.* The elements that drive this most effective message are widely agreed upon. While the bulk of the message content is about extreme weather, what really drives opinion is the conciliatory language seeking common ground by acknowledging uncertainty in the timing of climate change and by pointedly not taking a position on what you could call “The Genetic Question,” (i.e. the question of whether humans or natural cycles are responsible for generating higher global temperatures). Those who find the way this message handles the Genetic Question convincing fall into two categories: First, those who appreciate that the message doesn’t take a position on the Genetic Question because they want to continue to feel free to believe climate change is mostly natural in origin or that the anthropogenic argument is insufficiently supported. Second, those who believe in anthropogenic climate change but *appreciate the attempt to placate* those who do not.

The first category, of skeptics, was well exemplified by a Cautious Albuquerque woman who explained, “I like that it said whether it is manmade or a natural cycle because it seems like everyone—when you hear about it on the news it is manmade, it is because you are eating beef and things like that instead of focusing on we have had ice ages before and our earth goes in different cycles.” Similarly, a Cautious St. Louis man agreed, “I like the fact that it acknowledges potential skepticism, it's not something you are going to see today or tomorrow. A lot of the other ones used scare tactics, like it was the end of the earth. Like if you don't live in the right city you are going to die. So I thought it was educational and informative and it wasn't pushing too hard.” The second category of conciliators was represented by a Concerned St. Louis man who said, “Because that brings in both people who are already realizing it is happening as well as those who want to deny it. They can’t deny it and you are giving them that out but things are going to progress anyway.”

In addition to the conciliatory language, the concept of getting off our addiction to fossil fuels and gaining energy independence from countries that hate us seemed about equally important in driving opinion on this message. Those two were by far the most important factors, but we should also note that concern for future generations (“not leaving our children a polluted environment”) was also cited with some significant but lesser frequency as a point that some found particularly persuasive.

**There is an important strategic drawback to the *Already See/ We Can All Agree* message thematic.** Perhaps the major attraction to this message stems from the idea that the root cause of climate change does not matter. We can remain agnostic on the Genetic Question, stay on common ground, and reach an agreement on what has to be done. Rhetorically, a lot of people are comfortable with that approach, and it was clearly rated the most convincing of all the messages we presented to participants. But strategically, it may matter quite a lot how you come down on the Genetic Question. While we did not examine this issue, it may be that the wrong answer to the Genetic Question is tantamount to checkmate for some important purposes. After all, if the answer is that warming is primarily the result of a natural cycle, it is possible that people will refuse to believe there is anything we humans can do about it, which effectively rules out mitigation. If mitigation is the goal, the agnostic position may *cease to be neutral*. In other words, *Already See/ We Can All Agree* may be good tactics in certain specific situations in the short term but counterproductive strategy in the longer run. On the other hand it’s possible that acknowledging the uncertainties creates a more positive atmosphere within which to engage those who are already skeptical and makes it easier for believers to engage deniers in persuasive one-on-one conversations they now shy away from because of their conflictual nature. These are central strategic questions which this research does not, and was not designed to, answer.

***Extreme Weather/Heat Waves.*** This thematic focused purely on extreme weather. It was found convincing for three reasons:

1) For its emotional power, stemming from the stories about the mass deaths. A Concerned Pittsburgh man reported, “It was really powerful to me. About the heat waves and the statistics... You could put a face on it by talking about people, tens of thousands of people dying from heat waves and it gave things we can do to avoid that type of situation happening in our city.” A Concerned St. Louis man put it simply, “Tens of thousands of people died. That just shouldn’t happen.”

2) For its specificity, with a concrete story and concrete statistics. A Concerned Albuquerque man told us, “I like the specificity that this year these many people -- I remember that in Chicago in 1995 all those old people dying and it was just so sad. I turned off the TV. I couldn’t hear it anymore.” A Concerned Pittsburgh woman claimed, “It wasn’t as ambiguous, they gave a lot more concrete facts and descriptions of what the effects of climate change are.”

3) For its concrete plan to implement solutions. A Cautious Ft. Lauderdale man said, “Again, like Barbara said, it had facts in it. It talked about real cities where people actually died. It also talked about putting a plan in action to make things happen to make it better. I thought it was important.” A Cautious Ft. Lauderdale man liked “the steps they take in trying to do things to help people prepare, particularly elderly. A lot of them don’t have air conditioning so they are trying in advance, if they know a heat wave is coming, is to get ready for it. I thought that was important.”

**The four messages in the 2<sup>nd</sup> Tier were much less persuasive than those in the Top Tier though each one found its own smaller share of people who viewed it as very persuasive (and even the most persuasive in the bunch). Of these four, the Climate Change Insurance thematic was a little more persuasive than the rest, particularly more than Competition, which was the weakest thematic tested of all.**

<b>SUPPORT MESSAGES</b> (mean 1-4 scale, where 4 is very convincing and 1 is not at all convincing)	#1s	Avg	Conc Avg	Caut Avg	PA Avg	FL Avg	NM Avg	IL Avg
<b>Top Tier</b>								
<b>B) Already See/ We Can All Agree.</b> Climate change has many different effects, some of which will happen 100 years from now, some 50 years from now, and some that are already happening right now. It's hard to say for sure that a given effect will start to be noticed on an exact date, but we know we are already seeing many of the harmful effects of climate change, including rising average temperatures and more intense storms, floods, wildfires, droughts, and heat waves. And we know these things will only get worse. We need to change direction and start taking action now. Some people disagree with the science of climate change, but some things we can all agree upon. Getting off our addiction to fossil fuels and gaining energy independence from foreign countries that hate us, and not leaving our children a polluted environment are some of those things we can all agree on. Whatever the ultimate cause, whether it be manmade or a natural cycle, we need to support action to prepare for the harmful effects of rising temperatures.	29	3.26	3.43	3.10	3.10	3.35	3.10	3.50
<b>A) More Extreme Weather/Heat Waves.</b> As climate change worsens, more severe weather events, like hurricanes, tornadoes, floods, drought, and heat waves will occur. Take heat waves for example. Heat waves are killers, responsible for more deaths every year than tornadoes, hurricanes, floods, and earthquakes combined. In France in 2003, tens of thousands of people died as a result of an unprecedented heat wave. In Chicago in 1995, 730 people, mostly poor, elderly, and alone, died as a result of a heat wave, and in 1999, 103 Chicagoans died in the extraordinary heat. We need to take steps to cool our cities off in the summertime by painting roofs white, planting trees, and converting urban wasteland to parks and gardens. We need to be prepared for extreme heat events, creating an early warning system to contact those at risk, establishing public cooling centers, and preparing auxiliary medical facilities. And we need to use incentives and regulations to reduce the number of cars driving in our cities during heat waves. Climate change will also bring other extreme weather events more often, including disasters like Hurricane Katrina that devastated New Orleans. We need to make sure that at-risk cities are prepared to deal with these kinds of extreme weather events so we never lose another city like we did with New Orleans.	17	3.04	3.30	2.78	2.95	3.20	2.95	3.05
<b>Second Tier</b>								
<b>H) Climate Change Insurance.</b> Most of us pay for insurance to address risks: health insurance, homeowners insurance, car insurance, life insurance, etc. We do so to address risks with potentially serious or even catastrophic consequences even though we don't exactly know how big the risks are. But we do know enough to act. In the same way, climate change also poses risks to our local communities - some that could be catastrophic - that we must manage. We insure ourselves against climate change by investing in emissions reductions and in preparedness measures. In so doing, we enhance our capacity to survive in an era of rising climate change risks.	5	2.78	2.83	2.73	2.70	3.00	2.45	2.95
<b>G) Homeowners Appeal.</b> One of your most important investments is your home and the community you've chosen to live in. As such, you want the investment in your home and community to remain secure and resilient to changing conditions. Shouldn't your community invest in you by protecting your home and its property value? Cities need to properly prepare for dangerous heat waves and increased flooding and water scarcity that are getting worse. In a changing climate, it is the bedrock of the community, homeowners like you, that have the most to lose. Those who put down roots in a community should be rewarded, not put at risk.	9	2.72	2.81	2.63	3.00	2.68	2.70	2.50
<b>D) Self-Reliance.</b> Climate change is a big problem that affects us all, but you don't need to wait for the federal government or the United Nations for solutions. There are concrete steps you and your city leadership can take to avoid the negative consequences of increased water scarcity, flooding and sea-level rise. While the odds of getting a global agreement on climate change may feel like a long shot, it is a sure-thing that your family and community will benefit from improved infrastructure and services in your city. Cities can do a lot to prepare and deal with the problem of climate change on their own, without waiting for the federal government to act.	6	2.64	2.70	2.58	2.45	2.60	2.85	2.65
<b>E) Competition.</b> In the face of a changing climate, some cities will be winners and others will be losers. Is your city prepared to compete? Shifting climates and increased extreme weather events will fundamentally influence the competitive landscape for cities. The winners will be picked through people voting with their feet, choosing to live in communities that can better cope with flooding, dangerous heat waves and increased water scarcity. As some cities prepare for climate change and others do not, the choice will become obvious for people seeking a more stable, higher quality of life. Businesses wanting long-term certainty will also choose their location based on reduced risk of infrastructure damage and work interruption from extreme weather events. ...Prepared or Unprepared: what city do you want to live in?	5	2.45	2.75	2.15	2.55	2.20	2.55	2.50

## Terminology Testing

The phrases “Secure your home and community from extreme weather” and “Being prepared for extreme weather” generate the most enthusiasm for taking action on climate preparedness. Participants ranked their top 5 out of 13 short phrases (each of which was a variation of the concept of climate preparedness) based on how enthusiastic the phrases made them feel about supporting action to prepare for the harmful effects of climate change (see table below). Only 2 of the 13 phrases examined did not include the word “climate,” and those 2 ended up as the 2 most compelling overall as well as within each of the 2 segments (Concerned and Cautious). Moreover, these two phrases, which earned average ranks of 2.7 and 2.9 respectively (lower is better), constitute a distinct top tier of results, with the 3<sup>rd</sup> ranked phrase averaging a full half rank farther down the list (“Adapting to the effects of a changing climate” ranked 3.4 on average) and the rest of the phrases incrementally lower from there. Only 4 of the 13 phrases did not include the word “change,” and 3 of the top 4 phrases turned out to not include the word “change”. One possible interpretation of these results is that participants were avoiding the phrase “climate change” and either of its constituent elements. In fact, one Cautious Pittsburgh man explicitly explained his decision that way, “It's important, and the other thing is it eliminated the words ‘climate’ and ‘change’”.

Participants told us that they liked the top ranked phrase, “Secure your home and community from extreme weather,” (average rank of 2.7) because it appealed to something they had a strong personal stake in: their homes and their communities (in that order). For a Concerned Albuquerque woman, “It brought it more down to a personal level. My home, because that’s where I’m going to protect my family and my kids. I love them.” A Cautious Ft. Lauderdale man relied on his experience, “Well, when you think about when a hurricane comes, you first secure your home so you want to secure your home first and then look out for your neighbors and community. I think taking care of home is always first and foremost, and then you go to community.”

The second ranked phrase, “Being prepared for extreme weather” (average rank of 2.9) was liked for its reference to extreme weather and simply because participants like the concept of being prepared. A Cautious Ft. Lauderdale woman “...chose that one because extreme weather is a term that we are all familiar with here in South Florida.” A Concerned Ft. Lauderdale woman said, “I just think being prepared is important.” A Cautious Pittsburgh man explained, “The same thing being prepared, lowering the risk of anything bad happening if you are prepared.”

The 3<sup>rd</sup> and 4<sup>th</sup> ranked phrases also did not use the “climate change” formulation directly. Number three was “Adapting to the effects of a changing climate” (avg. rank of 3.4) which transforms climate change into the less familiar “changing climate” and reverses the word order perhaps making it sufficiently different from “climate change” to participants. Because this phrase was not the top-ranked phrase among any of the participants, it did not generate any discussion in the groups. The 4<sup>th</sup> ranked phrase, “Climate preparedness” had been the top ranked phrase in the previous Clean Air-Cool Planet research, and with an average rank of 3.5 in these groups was also one of the most effective tested. A Concerned Albuquerque woman “...picked climate preparedness as number one...I think it just kind of compiles everything, climate preparedness, I think it filters down to being ready for whatever happens.”

ENTHUSIASM FOR PHRASES (Ranked 1-5)	<i>Me</i>			<i>Others</i>		
	Mean Rank	Conc Mean	Caut Mean	Mean Rank	Conc Mean	Caut Mean
Secure your home and community from extreme weather	<b>2.7</b>	3.0	2.4	<b>3.1</b>	3.3	2.8
Being prepared for extreme weather	<b>2.9</b>	3.4	2.5	<b>3.0</b>	3.5	2.4
Adapting to the effects of a changing climate	<b>3.4</b>	3.8	3.2	<b>3.9</b>	4.4	3.3
Climate preparedness	<b>3.5</b>	3.8	2.9	<b>3.7</b>	4.0	3.4
Reducing climate change vulnerability	<b>3.7</b>	3.7	3.8	<b>3.5</b>	3.2	3.9
Reducing the economic losses from climate change	<b>3.8</b>	4.0	3.8	<b>3.5</b>	3.8	3.4
Building resilience to climate change	<b>3.9</b>	3.7	4.3	<b>3.8</b>	3.5	4.8
Preparing for changes in the climate	<b>4.0</b>	4.4	3.1	<b>3.8</b>	3.8	3.6
Climate change harm reduction	<b>4.2</b>	4.7	4.1	<b>4.2</b>	4.8	3.6
Preparing for climate change hazards	<b>4.3</b>	4.3	4.3	<b>4.5</b>	4.9	4.0
Climate change readiness	<b>4.4</b>	4.7	3.8	<b>4.2</b>	4.2	4.1
Managing [CITY]'s climate risk	<b>4.4</b>	4.6	4.3	<b>3.9</b>	4.7	2.9
Climate change adaptation	<b>4.5</b>	5.1	4.3	<b>4.6</b>	5.0	4.2

### **Strategic Conclusions**

The climate change debate continues to evolve in a dangerous direction for those committed to reducing emissions. As we have seen over the last several years, skepticism and defeatism continue to increase, while our supporters have become less sure of themselves and more reluctant to engage their friends, family, and acquaintances in discussion, often preferring to avoid the polarized debate. Most still see the harmful effects of warming as lying in a timeframe 50 or 100 years down the road – in other words not in their own lifetimes. The evidence, particularly in the form of extreme weather, continues to mount, but so do the voices and memes of the skeptics. Few bother to contest the legitimacy of the natural cycles argument, which seems to be increasingly made and provides safe harbor for doubters and skeptics. For most, even supporters of climate action, the science is essentially disputed. Not even extreme weather elicits significantly emotional levels of concern.

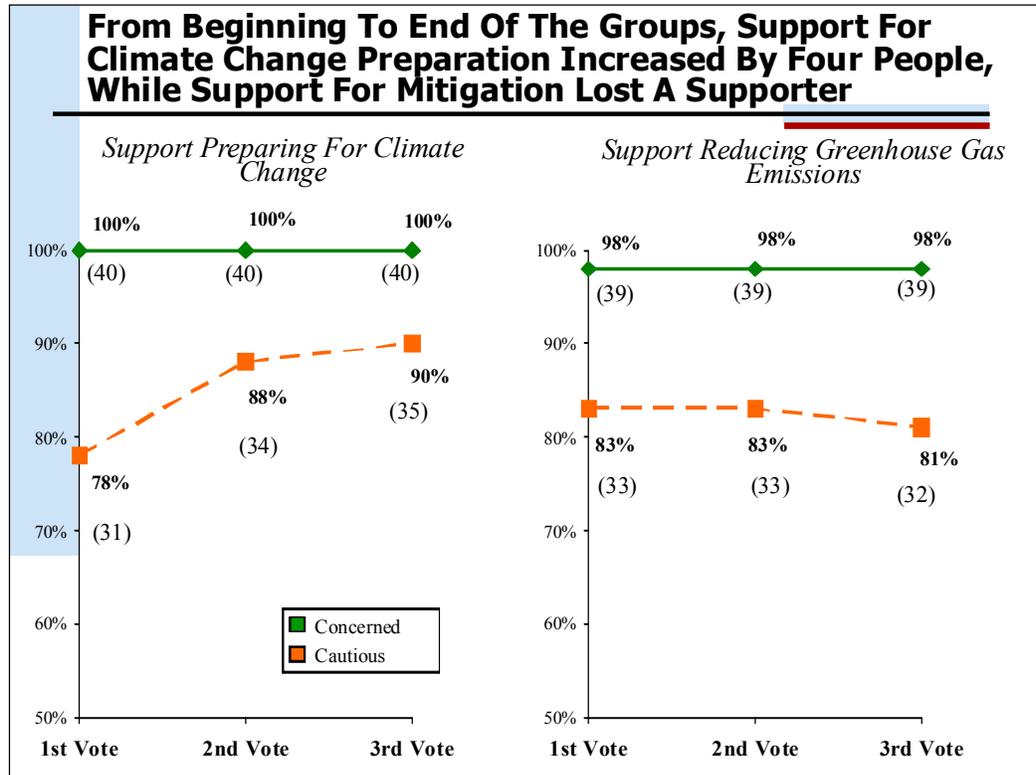
At the same time, there is substantial sympathy for taking action to prepare for the harmful effects of global warming and to mitigate emissions. Even those who are ideologically opposed to the concept of global warming operationally betray residual belief in the phenomenon, whose effects they can readily describe. By all accounts, participants would think more highly of a mayor who took concrete steps to prepare for the effects of climate change. This research has identified which effects are most salient in different locations, which actions to prepare for those effects would receive the most support from citizens, and what language is the most effective in generating support for taking action to prepare for the harmful effects. What’s more, the Earth Hour Challenge was found to be attractive and has the potential to generate significant interest and participation. We were able to identify potential modifications to the Earth Hour Challenge concept that would make it even more likely to generate enthusiasm and support.

One of the most important questions motivating this research was the validity of the “theory of change” WWF has articulated. In the words of the Resource Innovation Group’s report “Can Climate Change Preparedness Efforts Spur Greater Interest In Emission Reductions?” the Theory of Change is that “a facilitated, interactive planning process could build local support for climate

mitigation efforts.” As we discussed initially, while focus groups are very useful tools for exploring the structure of opinion, it is difficult to come to robust conclusions on causal linkages based on qualitative evidence alone. For that reason, we wouldn’t want to make any final pronouncements based solely on these groups, but to the extent that that hypothesis was put to the test in these groups, we would have to echo the Scottish verdict of “not proven”.

Arguably, participation in these groups themselves constituted some reasonable approximation of the kind of in-depth consideration of threats of climate change and possible responses to those threats, as well as detailed consideration and evaluation of concrete plans to deal with the effects of climate change contemplated as a potential change agent. (Though the groups certainly do not replicate that process.) As a rough (and statistically unreliable) measure of the effect of these kinds of discussions, we repeated 2 questions at 3 different points in each group. By means of a

written exercise very early on in each of the groups, we got an initial clean read on participants’ support for taking action to 1) prepare for the effects of climate change and 2) to reduce greenhouse gas emissions. Those questions were reasked about half way through



each group and once more toward the end to get a read on what effect, if any, all the discussion during the group was having on those key questions. As illustrated in the chart above, the Concerned were already solidly in support of both mitigation and adaptation from the beginning and did not waver. Among the Cautious there was some marginal propensity to increase support for climate preparedness (4 people changed their vote on the preparation question from the beginning to the end) but no sign of increased support for reducing emissions – in fact support declined by a net 1 vote. Thus discussion of adaptation increased support for adaptation but not for mitigation. Attitudes toward these goals seemed to operate separately and independently.

That said, we have to also note that large majorities, even among the Cautious, supported action from the beginning when asked simple up-or-down questions, and this creates a ceiling effect as there is less room for improvement. Moreover, as we have said, these kinds of delicate quantitative comparisons are far more appropriately and confidently decided based on survey and experimental data.

There may be long term, ancillary benefits from this approach. For example, in our groups, discussion of preparedness for specific threats seemed to “normalize” the issue a bit with even skeptics feeling better about a Mayor who was working to deal with these consequences.

But, in the final analysis, we cannot say that these groups provide supporting evidence for the Theory of Change articulated by WWF.