VIEWPOINT LEARNING

Project Report

Citizen Dialogues on Sea Level Rise:
Start with Impacts/End with Action

Spring 2013

Prepared for the Union of Concerned Scientists
by
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Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

PROJECT REPORT

INTRODUCTION

In Spring 2013, Viewpoint Learning conducted two day-long Choice-Dialogues with diverse groups of citizens in Richmond VA and Tampa FL. The project, conducted in partnership with the Union of Concerned Scientists, was designed to explore how the public comes to terms with the issues and tradeoffs involved in addressing climate change. ***In particular, we set out to understand whether the public can be more effectively engaged by an approach that focuses first on a specific impact of climate change—in this case sea level rise—rather than trying to get people to agree about the more abstract (and more polarizing) question of climate science.***

The two dialogues yielded several important findings that shed light on widely shared public attitudes and priorities around sea level rise and climate change, as well as the public's learning curve. We found that:

- Starting with a specific impact like sea level rise sets up a very practical, action-focused conversation that allows people to go much farther and reach more common ground.
- Some questions—especially around the merits of climate science and whether it should guide public policy—are highly polarized along ideological lines, and people are very reluctant to cross those "tribal" boundaries.
- Trying to get people to accept the specifics of climate science as a prerequisite for talking about action risks slowing the learning curve or stopping it altogether.
- Starting with a specific impact and making the question of whether people agree about human-caused climate change less central to the discussion allows people—***including many who are uncertain or skeptical about the causes of climate change***—to agree on a wide range of practical measures. This agreement included taking significant steps to curb carbon emissions.
- Uncertainty about the timeframe and the magnitude of the threat blunts people's sense of urgency.
- The process of dialogue allows people to engage and make progress along the learning curve in a way that giving them facts alone does not.

It is important to note that the sample size here is small: as a result these results should be understood as indicative, not definitive.

About Choice-Dialogues:

Choice-Dialogues™ were developed by Viewpoint Learning to engage representative samples of the public in working through their views on complex, gridlock issues. Going far beyond polls and focus groups, Choice-Dialogues accelerate the learning curve on a research scale. Dialogue participants come to understand the pros and cons of various choices, struggle with the necessary trade-offs of each, and come to a considered judgment—all in the course of a single eight-hour day. So while a poll or a focus group provides a snapshot of where the public is at a given moment, Choice-Dialogues provide a basis for anticipating how the broader public will resolve issues once they have the opportunity to come to grips with them and insight on how best to accelerate the general public's learning curve.

The two Choice-Dialogue sessions were each conducted with a diverse sample of 35–40 residents of Richmond and Tampa. The total sample was ethnically representative and included participants from a wide range of backgrounds, incomes, education levels and political orientations. Overall, each group was slightly older, more educated and more middle-income than the general population.

Several key questions shaped the development of the materials and the design of the dialogue:

- Does starting with impacts change the conversation or outcomes?
- What steps are people willing to take to address sea level rise and/or climate change after having a chance to think about it?
- Does including adaptation as a separate choice affect the conversation and people's conclusions?
- How does dialogue affect people's understanding of climate change?
- How does dialogue affect people's support for various policy approaches?
- What are the most important questions people still have; what additional information do they need?
- Where do people get information and what sources do they trust?

As a starting point for the day's dialogue, participants used a workbook constructed around four very different approaches or scenarios for dealing with sea level rise. (Complete scenario text appears at right.) These scenarios were developed in consultation with UCS and included feedback from a wide range of experts, perspectives and beliefs: the goal was for anyone who walked into the room, from an environmental activist to a climate change skeptic, to find his or her perspective reflected in at least one of the approaches. These materials provided participants with a starting point only—people were encouraged to adapt and combine them as they saw fit.

FOUR SCENARIOS:

1. Respond to sea level rise as it happens

We will continue on our present course.

We will not make dramatic changes in the way we build our communities, the fuels we use or the way we live. We will deal with sea level rise as it occurs.

2. Prepare our communities for sea level rise

We will prepare for future sea level rise before it happens.

State and local governments will focus on adapting buildings and communities so they can withstand rising seas. We will not focus on reducing carbon pollution.

3. Create incentives to prepare for sea level rise and address its root causes

We will use incentives to get states, businesses and individuals to prepare for future sea level rise and reduce carbon pollution.

We will rely on market forces and American ingenuity. The federal government will use incentives to foster innovation and encourage businesses and states to cut carbon pollution.

4. Take urgent action at all levels to combat the root causes of sea level rise

We will use every means to prepare for future sea level rise and reduce carbon pollution.

The federal government will take the lead by creating laws and regulations that phase out carbon fuels. We will all work together—including federal, state and local government, the private sector and individuals—to rethink where we build, how we plan our communities and how we live.

In addition the Choice-Dialogue process is structured as a dialogue, where the focus is not on debating differences, but instead on finding common ground and mapping out broad areas of agreement.

Participants filled out written questionnaires three times over the course of the day: a brief baseline questionnaire given when participants first entered the room (before exposure to any background material), a second brief questionnaire given early in the day after a short presentation on background information and an outline of the four scenarios, and a much more detailed questionnaire at the end of the day's dialogue. The findings that follow draw on these quantitative results, as well as qualitative analysis of participants' flipcharts, the transcript of their discussion, and facilitators' and observers' notes.

As they worked through the choices and tradeoffs, participants discovered (often to their own surprise) that they shared a great deal of common ground. The findings outlined below were shared by strong majorities in both Tampa and Richmond, across lines of income, education, gender, and political ideology.

FINDINGS

Everyone agreed that sea level rise is happening. There was less consensus on why:

- ***Quick agreement on sea level rise.*** Some participants knew about sea level rise before they walked into the room; to others it came as a surprise. But everyone was quick to understand the importance of data from NOAA showing steadily rising sea levels over the last 50–70 years, and to connect that with their own observations and experiences. Only one participant out of the entire sample suggested that sea levels are not in fact rising.

- ***Little movement away from initial positions on the science.*** At the start of the day less than half of participants (42%) said sea level rise is the result of human-driven climate change. One third (33%) said it is natural, and 18% said that no one knows for sure. There was a similar divide around issue of climate change: Less than half (44%) said it's happening and caused by humans; about 1/3 (35%) said it's happening but is part of a natural cycle; 17% said it has not been proven.

  Few people stated outright that they believed climate change is not happening– but there were many skeptics and many people who said they believed both natural and human causes were at work.

  By the end of the day we saw few changes when it came to people's beliefs about sea level rise (Figure 1):

  - People who were initially certain that sea level rise is caused by humans remained constant in that belief.
  - Those who initially believed that the cause of sea level rise is unknown likewise remained constant.
  - Most people who said that the cause of sea level rise is natural remained constant in that belief, but about ¼ of this group shifted to saying that no one knows the cause.[1]

  Similarly, we saw few changes when it came to climate change (Figure 2):

  - People who were initially certain climate change is human-caused remained largely unchanged.
  - Those who walked into the room denying climate change is happening tended to remain deniers.

1. Much of this shift reflects the conversation in Richmond, where people were especially struck to learn that the land around the Chesapeake is sinking—it may be that some participants took in the idea that both human and natural causes are behind sea level rise and concluded that they could not say decisively it was one or the other.

Figure 1

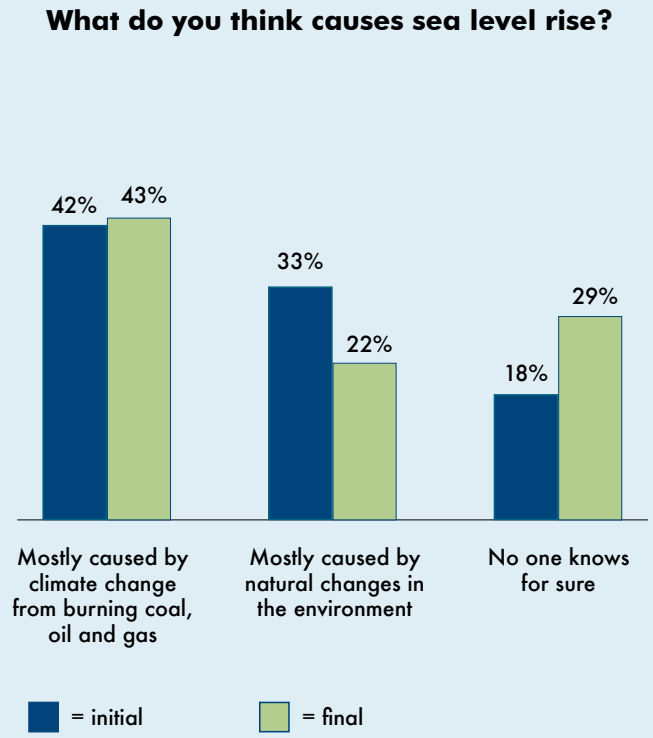
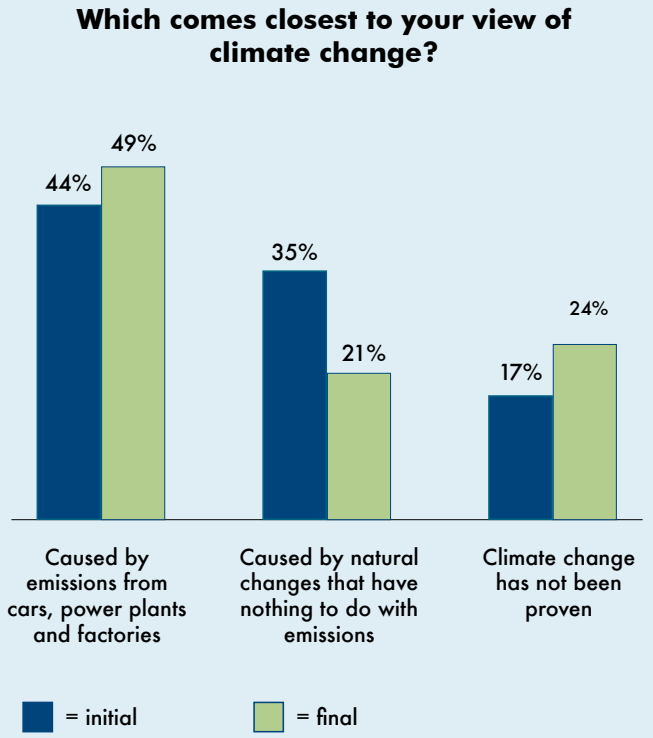


Figure 2



- There was some movement among the 33% of participants who initially said that climate change is caused by natural forces: about 1/3 of this group shifted over the course of the day to say that climate change is caused by human activity. About 15% of this group shifted to say climate change is not proven.

It seems clear that dialogue is not an especially effective way of getting people to embrace the science: only a handful of participants shifted to say that climate change and sea level rise are caused by human activity, and at the end of the day fully half the sample was still expressing serious doubts. ***But "I am not sure it is happening/I don't know what to think" does NOT mean "we should do nothing"!***

- ***People who were uncertain whether sea level rise & climate change are human-caused nonetheless strongly supported taking significant steps to adapt communities AND to reduce emissions.***

Dialogue does seem to be a good way of getting people to focus on taking action. In particular, starting the conversation by focusing on sea level rise (not do you understand/believe in climate change) seems to effectively focus attention on what to do about it and results in a very practical discussion.

Reaction to the 4 scenarios

- At the start of the day Scenario 1 (*Respond to sea level rise as it happens*) was rated lowest, and although it rose by a full point over the course of the day it remained lowest-rated throughout. (See Table 1.) This was reflected in the conversation—given the strong across-the-board agreement that sea levels are rising and rising rapidly, participants felt Scenario 1 offered an inadequate response.
- The other three scenarios were closely grouped—people seemed favorable to all of them even at the beginning of the day.
- Over the course of the day, there was a large jump in support for Scenario 2 (*Prepare our communities for sea level rise*), and a more modest increase in support for Scenario 3 (*Create incentives to prepare for sea level rise and address its root causes*). ***In general even as many people remained uncertain that climate change and sea level rise are human-driven, almost everyone became more certain that something must be done.*** This reflects not only their sense of urgency growing stronger over the course of the day, but also their increasing conviction that there are steps that can be taken to improve the situation.
- Scenario 3 was the most highly rated at the end of the day—this was an approach participants saw as taking significant steps but stopping short of the extreme regulatory measures of Scenario 4 (*Take urgent action at all levels to combat the root causes of sea level rise*).
- Scenario 4 remained flat over the course of the day, and in fact lost some support among liberals. This probably reflects concerns expressed throughout the day about federal overreach (a particular concern in the Tampa group). This is not to say that participants rejected government action—in fact participants in both groups said that federal or state government would need to take a lead role. But many felt that Scenario 4 pushed regulation too far and put too much power in the hands of the federal government.

Table 1: Rating the scenarios

Scenario	Initial rating (mean)	Final rating (mean)
Scenario 1: Respond to sea level rise as it happens	2.9	3.9
Scenario 2: Prepare our communities for sea level rise	5.6	6.5
Scenario 3: Create incentives to prepare for sea level rise and address its root causes	6.6	7.1
Scenario 4: Take urgent action at all levels to combat the root causes of sea level rise	6.6	6.5

Participants were asked to rate each scenario independently on a scale of 1–10, 10 being best.

In both groups people started by talking about adaptation

- ***Limit building and rebuilding in vulnerable areas.*** Both groups began the discussion of adaptation by referring to recent high-profile disasters like Hurricanes Katrina and Sandy (there were survivors of those disasters in both groups). Both groups had intense and extensive discussions of whether people should be allowed to rebuild in vulnerable areas after getting wiped out. They were aware of the cost—financial and cultural—of relocating entire communities after disasters, something especially underscored by those who had been affected by Sandy and Katrina. Many were also deeply committed to the idea that people should be able take on the risk of rebuilding if they so choose. But there was strong consensus in both groups that there should be limits on how many times people get taxpayers' money to help them rebuild. In most cases the prevailing sense was: "We'll help you rebuild once; after that you're on your own."

  People struggled a bit more with the question of whether people should be restricted from building in such areas in the first place (especially in Tampa). Support for private property rights came into conflict with

concerns about the impact of coastal development and the realization that even those who assume the risk of building do not bear all the cost of needed infrastructure like roads, electricity and sewers—costs that are passed along to the whole community.

At the end of the day participants expressed strong support for limiting building and rebuilding in flood prone areas. 82% supported limiting rebuilding; 75% supported limiting new building. (Table 2.)

- There was strong agreement on this point across partisan lines, with 86% of liberals and 77% of conservatives supporting limits on rebuilding after disasters. There was a wider gap when it came to restricting people's ability to build in the first place but overall strong support from both (81% of liberals supported placing limits; 67% of conservatives.)
- ***Commercial property not on the radar.*** This discussion focused almost exclusively around residential property—when facilitators asked whether participants had the same feelings when it came to commercial property and the economic impact of restricting building and re-building, most did not engage with that aspect of the issue.

- ***What do we build?*** Most people focused on the effect sea level rise would have on homes, roads and drinking water and how to protect and improve them. There was fairly little discussion of things like sea walls, floating buildings, and other technological/engineering fixes to protect against sea level rise—most participants deemed these impractical given the scale of the problem. ("You can't hold back the ocean," people said.) By the end of the day, 73% supported spending more to improve infrastructure, even if this makes taxes or fees go up.

"You have the choice to build where you want. You have the choice to go and build in a coastal area, but if your coastal home gets destroyed by a hurricane, FEMA shouldn't be the one that comes in and bails you out because you decided to live there. It's your personal accountability for your choice to live there. You should get your own insurance and rely on your own abilities to rebuild your house. [We're not saying] you can't build there: we're saying that if you're going to build there, you're not getting these benefits."[2]

Table 2

Support for adaptation steps	(Aggregate) %
Support preventing re-building in areas that are damaged by storms and floods	82
Support preventing people from building homes or businesses in areas at risk from sea level rise	75
Support spending more to improve bridges, roads, railways, flood barriers, and the power grid, even if this means an increase in taxes or fees	73

2. Quotes from participants have been edited for clarity.

Moving beyond adaptation

Many people said that while they agreed that we must take significant steps to adapt our communities to sea level rise, we shouldn't stop there.

- ***Scale of the problem a key motivator.*** In both dialogues participants grew increasingly aware that rising sea levels would require adaptation on a truly monumental scale. This uncomfortable realization spurred many to give serious thought to ways of addressing its root causes. As the magnitude of the challenge sank in, the conversation shifted more easily to cutting carbon.

  This was especially notable in Tampa, where the participants leapfrogged fairly quickly past adaptation to cutting carbon. Facilitators asked why this was: were participants taking it for granted that of course adaptation measures would be adopted? Surprisingly, the answer was no; they thought cutting carbon just seemed easier (one participant described it as "low hanging fruit"). This may be because they only had to look out the window to see the enormous scale of the adaptations needed and the expensive and disruptive effects on the horizon. When compared to the long list of other practical changes they needed to make, cutting carbon (for example by setting higher state-level fuel efficiency standards for cars and trucks) did not seem especially difficult.

  Even in Richmond, where the threat of sea level rise was less immediately obvious, participants were daunted by the magnitude and complexity of the problem. One participant pointed out that preparedness is far from simple:

  > *"There's a lot of different aspects associated with preparedness. You're talking about the ability to get to and from a job. What kind of food you can eat. If the groundwater is salty, how do you irrigate crops? Loss of property, homes going down. If homes go down, schools go down. Where do kids go? How do we move people from one location to another? Is that even feasible? Look at what transpired during Katrina. Look what's just transpired during Sandy…. If we don't start taking a real hard look at some aspects of preparedness here, our next door neighbor might be the one that's knocking on the door saying I need help. So what are we going to do?"*

  With this awareness rising in the room, Richmond participants soon moved to discussion of cutting carbon.

  By the end of the day in both sessions, comments on Scenario 2 included remarks like "This is better than nothing but I don't think it's enough"; some suggested that focusing on adaptation without tackling the root causes of climate change amounted to "procrastination."

- ***Growing support for taking action.*** The belief that action is needed was shared by participants across the board. As might be expected, those who believed that sea level rise is being driven by human-caused climate change immediately and vocally supported cutting carbon. ***More strikingly, participants who were skeptical about sea level rise and climate change being caused by human activity also supported such steps.***

- Looking just at those people who at the end of the day said that climate change has not been proven: 76% supported setting limits on carbon and using incentives to help people and businesses cut emissions (53% supported limiting emissions and penalizing businesses that don't comply). 70% supported higher efficiency standards; 59% supported making polluters pay into a fund to offset the impacts of sea level rise; 65% preferred developing renewable energy sources over increased domestic drilling.

There were several reasons that people who don't necessarily accept the idea of human-driven climate change/sea level rise supported cutting carbon emissions:

- ***Risk management/hedging our bets.*** A fair number of people doubted that climate change is entirely human-caused, but felt that human activity likely plays a role. As one participant said: "I think some of it is naturally occurring; I think some of it is a creation of our own industry. But in general I believe if we don't do anything things will just keep declining and getting worse." Several participants expressed a similar thought: we're not positive it's happening but it might be. And if it is happening, they said, then it's crazy and irresponsible to do nothing.

- ***It's cost effective down the road.*** Similarly, many participants who were on the fence about climate change suggested that if it is happening, we would do better to invest a little now and avoid much larger costs down the road. ("I'd rather pay a little bit on the front-end than have it go on and on for my children and my grandchildren to finance.") Several people suggested that making smart investments now could reap large returns beyond their impact on climate, in greater efficiency and cost savings.

- ***Downsides of fossil fuels.*** Throughout the day participants noted that fossil fuels have significant costs associated with them. Among the downsides mentioned most frequently:
  - ***Fossil fuels are a limited resource*** and will run out eventually.
  - ***Fossil fuels create pollution***, including oil spills, smog and health effects like asthma.
  - Some people mentioned ***national security,*** both in terms of the need for global peacekeeping to help secure our oil supply and the need to protect the domestic petroleum and energy supply from terrorists.
  - A few people also indicated that ***they did not like being beholden to big oil companies***: these corporations, they said, rake in enormous profits and do not have ordinary people's interests at heart.

"If you're a Henny Penny, then the sky is falling: 'It's all going to come crashing down on us. We got to do this! We got to do everything we can!' But those naysayers just might be right. And they might be able to forestall the disaster that would otherwise occur if we did nothing."

"There are other issues than the cost of burning fossil fuels. There's the health cost, and that tremendously affects our economy as well. Also the cost of replacing [aging energy infrastructure] in today's dollars versus 20, 30 years from now."

- ***Upsides of taking steps to curb emissions.*** Many saw steps to cut emissions as offering potential benefits to the U.S. economy and quality of life. In particular they cited:
  - ***Green jobs:*** Participants overwhelmingly agreed that investing in green jobs would be good for the economy: 91% of participants agreed in the aggregate, including 71% of climate skeptics.
  - ***Advantages of new technology:*** People pointed to many examples of energy-saving technology, including efficient light bulbs, appliances and high-MPG cars. Not only do these save consumers money, they said, they also often make daily life simpler and more pleasant.

"Clean energy in general should be the ultimate goal. We should try to encourage that and really promote that. [If we are] the leader in green energy that could actually be a big benefit to the economy. And it could also lead to solving a bunch of other issues."

- ***The desire to take action.*** Some people were skeptical that much could really be done to stop or slow sea level rise—but even so they wanted to do more than just roll up their pants and wait. One participant said, "I believe we should be doing what we can. I don't think it's going to prevent the ultimate. Once [sea level] rises it doesn't recede. But we need to do what we can and not sit idle."

- ***By the end of the day there was very strong across the board support for a range of steps to cut carbon emissions.*** *(See Table 3.)*
  - 93% supported putting a limit on carbon emissions and using incentives to help families and businesses reduce their emissions. This support was equally strong among both liberals (95% support) and conservatives (91% support).
  - 76% supported putting a limit on carbon emissions and imposing penalties on businesses that do not meet those standards. Richmond participants were more supportive than those in Tampa (82% to 70% respectively). There was a wider gap between liberals and conservatives on this question, though both expressed clear majority support (95% of liberals support; 62% of conservatives).
  - Higher efficiency standards (91% support).
  - Renewable energy (86% said this would be preferable to increasing domestic production of oil/gas).
  - There was less support in the aggregate for some other approaches:
    - Overall 60% of participants supported eliminating oil and gas subsidies. This approach was more popular among liberals and those who believe that climate change is caused by human activity. However, conservatives and

Table 3:

Support for steps to reduce emissions (Aggregate)	
Support setting acheivable goals limiting carbon pollution and provide incentives to help businesses and households reduce their emissions	93
Support setting ambitious goals for reducing carbon pollution and make businesses that do not meet those goals pay a penalty	76
Support setting fuel efficiency standards for cars and trucks, appliances and heating/cooling equipment	91
Support providing federal subsidies for states to expand or build public transportation	86
Support investing in developing renewable energy sources like solar and wind power (over investing in increased domestic drilling for oil, coal and gas)	86
Support requiring big polluters to pay into a fund to help pay the costs of dealing with sea level rise	85
Agree that investing in clean energy technology will create many new jobs	81
Support eliminating all subsidies for high carbon fuels like oil and coal, even if it means a rise in the price of these fuels	60
Support increasing the number of nuclear power plants in the US	57

people who said that climate change has not been proven were strongly opposed.

- Overall 57% expressed at least some support for building more nuclear plants. The question of nuclear power was not widely taken up in the discussion. In general liberals, moderates and those who thought climate change is caused by humans were more likely to support building more nuclear plants; conservatives and climate skeptics were split. This difference probably reflects the different levels of urgency about climate change among these groups.

People are willing to make changes in how they live

One of the main challenges to combating climate change is people's resistance to change; wishful thinking leads people to focus on solutions that they hope will solve the problem without requiring difficult or disruptive alterations to their way of life. On this front, we found that Choice-Dialogue participants moved farther along the learning curve than we anticipated and most were open to making significant changes in the way they live.

"In order for these policies and these movements to be effective, there needs to be a unified front. You're not going to get a unified front by pissing people off... You have to gve people alternatives. If you take away someone's privilege to drive in certain parts of Virginia, it's like cruel and unusual punishment. They have no alternatives. Give people alternatives, bike paths, other forms of transportation, other forms of energy. Right now there is none. And if you just make everyone's lives more difficult, then we're not going to get anywhere."

- ***Transportation was the way into this conversation.*** In both sessions people began by focusing on transportation: the topic was familiar, a big part of their every day lives, and most could see clear connections between changes in individual behavior and larger effects.

People liked the idea of having more alternatives to driving, including more convenient, efficient and affordable public transit, as well as better facilities for walking and bicycling. Some were motivated to by the prospect of cutting carbon emissions; others were attracted to the idea of more livable, walkable communities.

But they also recognized that making such measures truly workable will require changes to the way we build and design communities. Both groups showed consistent support (86%) for increasing federal support for public transportation. However there was also a widespread sense that this may be more easily said than done—several people in both groups maintained that a city like Richmond or Tampa simply would never be walkable or transit-centered. Several participants in the Tampa dialogue had moved there from denser urban centers like New York and Philadelphia; these participants often spoke regretfully about now having to rely much more on cars to get around, but they also did not think that it was at all realistic to expect Tampa to become a dense, pedestrian friendly city.

"I'm paying $50,000 for a truck and I'm paying $100 a week to fill it up. If there was something else available for me— more fuel-efficient, better, cheaper for me, I would definitely change the habit and get rid of that truck."

- ***Strong support for alternative fuels.*** Participants strongly supported the idea of wind and solar power as alternatives to coal and oil. They frequently referred to wind and solar as "cleaner" fuels, though some participants felt fossil fuels were "dirty" not because they generate carbon but because they contribute to smog, oil spills and other ills.

- ***Technology will help, but it does not provide all the answers.*** While people did not devote much attention to technological fixes for sea level rise, they did feel that technology would be important in addressing climate change. People expressed a great deal of faith in American ingenuity, and most felt that market forces would inspire the development of technical solutions (better renewable fuels, more efficient goods and manufacturing processes etc).

But they did not think these solutions would be enough to fix the problem without people also making some changes in their way of life. The sense was more that technical solutions would make it easier for us to make the necessary changes in the way we live—not that technology would allow us to go on as we currently do.

"American ingenuity got us into this mess. It could get us out of it."

At the end of the day participants were asked to indicate which of two statements came closest to their point of view: "We have to make major changes to our way of life to reduce effects of climate change" vs. "Technology can solve the problem of climate change without requiring us to make major changes to our way of life." 78% said that we will have to make changes in our way of life; only 22% felt that technology would fix the problem. (See Table 4.)

  - ***Climate skeptics were less likely to hold this view***: 53% said that technology can solve the problem; 47% said that we have to make changes in our way of life. This fits with their lower levels of urgency.

Table 4

Which comes closer to your point of view? (choose one)	
We have to make major changes in our way of life to reduce the effects of climate change	78
Technology can solve the problem of climate change without requiring us to make major changes in our way of life	22

Table 5

Which worries you more? (choose one)	
If we do nothing about sea level rise and climate change we will seriously damage our children's future	82
Taking steps to reduce sea level rise and climate change will harm the economy	18

- ***Awareness that costs will rise:*** In the discussion people expressed strong support for a measure that would require big polluters to pay into a fund to help pay for the cost of sea level rise. Facilitators emphasized that this would likely mean an increase in gas and utility prices, and while participants were not enthusiastic at the prospect, many felt that making polluters pay for the damage they do was worthwhile. At the end of the day, 85% of participants supported making big polluters pay, with the strong condition that we must find ways to soften the financial impact on working families, many of whom are already struggling to make ends meet.

But while economic concerns loomed large, in general the impact of sea level rise and climate change on future generations weighed on people far

3. A few people mentioned fixes like carbon capture and storage, but these concepts were unfamilar to most participants and they did not take these up as practical solutions to carbon emissions.

more heavily than the risk of harming the economy. When asked which worried them more, 82% said they were more concerned that doing nothing would damage their children's future; 18% were more concerned that taking steps to reduce sea level rise and climate change would harm the economy. (See Table 5.) Even skeptics largely agreed: of those who said at the end of the day that climate change is not proven, 59% were more worried that doing nothing could harm our children; 41% were more worried about harming our economy.

"It's up to individuals to make a difference in your day-to-day practices—like whether to drive versus riding your bike versus walking. Everything that people do makes a difference to their environment. It's easy to ignore and expect someone bigger to take care of things, but it does start on a very local individual level."

- ***Behaviors and social norms must change:*** In both dialogues people said they were eager to take steps in their personal lives that might make a difference. The specific steps they suggested sometimes were not especially effective in terms of their actual impact on carbon emissions (one small group spent a great deal of time discussing the importance of recycling), but they were extremely important to participants' sense of agency. In both groups people emphasized the need for individuals to change their behaviors and their ways of thinking: not only do small actions accumulate into bigger changes, many felt having the public lead from the grass roots was the only way to give risk-averse leaders the backbone they need to take forceful policy action.

- ***Transportation a more immediate issue than the electrical grid:*** Both transportation and the electrical grid were discussed at some length in the materials, but while both groups had lively discussions around transportation, they did not take up the discussion of the electrical grid in much detail. This was in part an issue of familiarity—most participants had never given much thought to where electricity comes from or how it fits into the overall energy picture. Even more important, this was not an area where people felt they had much say: they might have some limited control over how much electricity they use, but where that electricity comes from was simply not up to them. In contrast, transportation was concrete and immediate: they felt their decisions about what sort of vehicle to own and when and how much to drive would have an impact. Understandably, they were much more engaged by a topic where they felt their individual action might make a difference.

"I think fossil fuels are causing problems with warming. Now, whether you can say how much the sea level has risen, will it continue to rise, will it go back, you know, we don't know that. And we don't know how much [can be done] if you spend the money. There is no crystal ball to say [if we do this we will have] the best outcome or that we'll waste billions of dollars. But you've got to start somewhere at some point."

Urgency: Yes it's important, but we're not sure how to begin.

People agreed that doing nothing is not an option. In the aggregate 81% of participants agreed that climate change is an urgent problem that requires immediate, forceful action. As might be expected, climate skeptics did not share this sense of urgency: 100% of those who believe it is happening said that climate change requires urgent action; among those who say that climate change is not proven, that number falls to 41%. (As noted earlier, skeptics did support many of the proposed actions; they simply did not believe that it is especially important to take action now.)

At the same time, people across the board found it hard to figure out quite where or how to begin. There were several reasons for this.

- ***Uncertain timeframe.*** Many people simply could not got their heads around the timeframe involved. The timeframe is so long and the uncertainties so great (somewhere between 1.5 and 8 feet of sea level rise by the year 2100) that most people lacked a frame of reference for meaningful action. As a result, participants tended at first to think about sea level rise as something that our kids will have to deal with, not something in the here and now.

  This uncertainty also surfaced when people were asked what more they needed to know to feel confident about the steps they were prepared to take. In both Richmond and Tampa, many participants' top responses revolved around the question of timeframe: how quickly is sea level rise happening now; how quickly will it happen in the future; what is our timeframe for action?

- ***Pressure of other priorities.*** Many people were acutely aware of the pressure of other priorities (especially the struggles of people who are economically stressed). When people were asked what more they needed to know, their other top concern was the cost: what are the relative costs of action and inaction; how can we do the cost-benefit analysis; what will be the impact on my family and the economy?

- ***Political paralysis.*** Many people saw the need for action but felt that leaders lack the political will to take necessary steps, and they did not see much prospect for improvement. Some laid the blame at their own feet, saying that we are getting the government we ask for; others saw big money and corporate interests eclipsing the voice of the public. Some held out hope for the future—the focus on educating the next generation sprang from a sense that even though today's system seems completely dysfunctional, in the future we may have a democracy that works better.

"The thing that bothers me is, it's hard to get [leaders] to do things. They don't have the intestinal fortitude to do a lot of this—and we can't do it without them changing some laws and causing some things to happen."

Role of government

Throughout the day, people became increasingly aware that government was going to have to take action and they became increasingly supportive of a government role. Sea level rise, they said, is too big for the private sector and individuals to handle alone; ultimately both groups concluded that federal, state and local government would need to work together to create and implement solutions. However, the two groups were sharply divided as to what level of government should take the lead.

- ***In Richmond*** most saw dealing with sea level rise as a federal matter: at the outset, 55% said the federal government should take the lead; this rose to 68% at the end of the day. State government and local government would be important, they said, but they should play a secondary role.[4]

"We are not going to do it alone. It's got to be nationwide. You have to get the federal government on board. I hear a lot of people saying, 'Hey, policy is set by states.' But you have to get the government on board to set policy. To reduce emissions, to reduce energy sources, to come up with new energy sources and stuff, it takes the federal government."

"There should be incentives for companies, but they should be held accountable in a measurable way. You know, what did you do with this money? How did it benefit America? How did it benefit your state?"

This support for federal involvement may stem from Richmond's status as a government town, located close to Washington D.C. In the discussion, several participants raised strong arguments about the importance of national standards when dealing with pollution.

- ***In Tampa*** most participants felt that sea level rise should be handled at the state level (at the outset 50% supported state government taking the lead at the outset; this rose to 65% at the end of the day). Only 41% felt that the federal role should be primary, and this percentage stayed constant throughout the day.

  In general, Tampa participants expressed much greater mistrust of government than people in Richmond. This mistrust was especially acute when it came to the federal government.

"I love the beach and I think we need to do something about [sea level rise], but I don't want the federal government involved in any way, shape, or form. I think it's a state issue and we can take care of our own problems."

- ***Accountability and trust***. In both groups, there were concerns about accountability and trust of government. While people approved of providing incentives to support innovation and low-carbon practices, they also were concerned that there be good oversight of how the money is used and what sort of results are achieved. Several held up the case of Solyndra as a cautionary tale that should not be repeated. More broadly, some participants expressed a sense that government does not operate for the benefit of ordinary citizens: that it was either incompetent, paralyzed by political gamesmanship or actively corrupt. For many of these participants local government, being closer to home, was more easily held accountable. Others did not see much of a difference between different levels of government: the issue was that citizens needed to take the initiative and demand greater accountability from their leaders. Only when that happened would Americans see real change.

4. Some participants chose more than one level of government on this question, so totals add up to more than 100%.

Sources of information

When asked what information they find reliable and credible, many participants' initial reaction was negative. People had very little trust in most traditional sources of information, including newspapers, TV, and magazines—although they were clearly influenced by them.

- ***Scientists generally credible, but...*** If they had to choose a source of trustworthy information, most people pointed to scientists, but then were quick to qualify that trust. Several people asked: Which scientists? Those working for Exxon? For universities? For government agencies? Beholden to whose agenda?

  When questioned further about their views of science and scientists:

  - Scientists working for universities (especially local universities) were often cited as trustworthy, but even here there were questions about where their grant money was coming from.
  - People felt "Government scientists" were not trustworthy, but they were more willing to trust specific agencies (for example NOAA, USGS, NASA, EPA) that they felt had not been politicized and that they felt offered good value to taxpayers.
  - People had a general sense that peer review provides checks and balances on scientific findings. But several also expressed grave doubts that peer review was being conducted reliably or transparently.

"[Independent scientists] are scientists that aren't affiliated with companies or government. [Where would you find one?] In the colleges and universities that don't have a financial vested interest. Otherwise you see an [agricultural] study where Scientist A discovers this and that and it all happens to be funded by Monsanto."

- ***People turn to the internet first.*** In both groups the most cited source of information was the internet and participants' own research.
  - People wanted to sift through available information and come to their own conclusions (As one participant put it, "If Al Jazeera & CNN are saying the same thing, then I figure it's probably true.") This is an outgrowth of the trust issue—when "expert" or "official" sources of information have uncertain agendas, then individuals have to become curators of their own information.
  - This process of independent research was borne out in the room: when facilitators asked how many people had Googled "sea level rise" before the dialogue, about 2/3 of participants raised their hands.

- ***Social media.*** Many people also said they tended to rely on social media to check or confirm their research. Friends, neighbors and co-workers could largely be trusted not to have unspoken agendas (or at least, people felt, their biases were already known and could be taken into account).

- ***Low baseline of information.*** It was also quite striking how little even fairly well informed people knew about what is already being done and who is already talking about sea level rise and climate change. One Tampa participant, a well-informed older man, stated that what was needed was "some kind of international panel of scientists from all different backgrounds and countries, who get together and work on climate"—but he did not believe such an organization exists today (and no one else in the room seemed aware of one either).

- ***Views of scientific information are highly polarized.*** In fact the question of information is extremely vexed, especially when scientific data is at issue. Participants were asked which of two statements came closer to their point of view: "Scientific data about climate change is extensive and convincing and it should be the basis of our policies" vs "Scientific data about climate change is incomplete and inconclusive, and it should not be central to determining our policies."

  In the aggregate agreement was fairly strong: 64% took the position that scientific data about climate change is convincing and should inform public policy (74% agreed in Richmond, 53% in Tampa).

  But this agreement masks a marked partisan difference: 90% of liberals agreed; but moderates and conservatives were split [52% and 48% agree respectively]—this 42 point split is by far the largest partisan difference we saw on any question. (See Table 6.)

Table 6

Which comes closer to your point of view? (choose one)	liberals	moderates	conservatives	aggregate
Scientific data about climate change is incomplete and inconclusive, and it should not be central to determining our policies.	10	48	52	36
Scientific data about climate change is extensive and convincing, and it should be the basis for our policies.	90	52	48	64

Effect of dialogue

- ***Dialogue itself an effective source of information.*** Many people said they had gained a great deal of information and insight from the dialogue itself. At the end of the day, participants gave high marks to the materials and (especially) the conversation. Reactions to the dialogue varied somewhat around the partisan divide.
  - Moderates found both the background materials and the discussion extremely useful in helping them think about sea level rise. 72% said the background materials were "very useful"; 84% said the discussion was "very useful."

Table 7

How useful were the background materials in helping you think about sea level rise?	liberals	moderates	conservatives	aggregate
Very useful	57	72	52	60
Somewhat useful	43	24	48	38
Not very useful	0	4	0	1
Not at all useful	0	0	0	1
How useful was the discussion in helping you think about sea level rise?				
	liberals	moderates	conservatives	aggregate
Very useful	81	84	81	81
Somewhat useful	19	8	19	15
Not very useful	0	8	0	4
Not at all useful	0	0	0	0

  - Liberals and conservatives seemed a little less positive about what they read in the background materials (57% and 52% found them "very useful"). But liberals and conservatives agreed with moderates on the utility of the conversation (81% of liberals and moderates found the discussion "very useful"). (See Table 7.)

    This suggests that those who entered the room with stronger ideological leanings may not have been taking in as much from what they were reading (or were taking in mainly the information that supported their pre-existing views). At the same time they were listening to and engaged with the people around them and that engagement seems to have been able to bridge the partisan/skeptical divides.

- ***Several specific factors that made the dialogue effective:*** Several factors seem to have contributed to the effectiveness of the dialogue process.
    - ***People had a stake in their conclusions***. As people dialogued they developed a strong sense of ownership in their conclusions. Their support for measures at the end of the day arose from intense discussion and dialogue; an outsider telling them to adopt the same conclusion would have probably encountered stiff resistance.
    - ***A less polarized discussion.*** By focusing on common ground, dialogue creates a much less polarized discussion—something that often surprised participants themselves. One Richmond participant, a climate skeptic, said in his closing comment:

> *"The most surprising thing to me today was that 40 people of varying backgrounds and different upbringings could be locked in a room for eight hours and there's no bloodshed or name calling or backbiting or weeping and gnashing of teeth. The exercise was so productive because we focused on the commonalities. And I think that that's where it all begins. If we're going to move forward on this, we ought to understand we want the same thing. We want a brighter future for our kids. We want a prosperous and strong country. And if we can focus on the things that bring us together, we can actually take the right steps to fixing the situation."*

    - ***A step towards action.*** Many people felt a powerful need to deal with sea level rise and help keep it from getting worse, and they saw the dialogue as an important first step to making the changes that need to take place. Their enthusiasm may be unrealistic, but there is also real power in it. They came out engaged, feeling they had a stake in the issue and that their voices had been heard.

The role of science:

<u>People don't need to agree about climate change to have a helpful conversation.</u> In fact focusing on climate change and climate science seems to get in the way.

- ***Skepticism ≠ denial.*** Several people who were not entirely convinced of the link between sea level rise and climate change took the line that some amount of sea level rise is natural and some is caused by humans. They just weren't willing to state that it's ALL caused by humans. ***Trying to get these people to unreservedly accept the idea that climate change is caused by humans focuses attention on the wrong issue, and it may well be counterproductive.***

- ***Belief in climate change is a tribal question.*** The question of whether or not you believe in human-driven climate change has become highly polarized: taking a position on this issue marks an individual as belonging

to a particular "tribe." We saw this in the room: once the discussion turned to whether or not people accepted climate science, people tended to fall into pre-scripted narratives and the tone got much more contentious.

- ***Starting with impacts encourages a practical conversation.*** Starting conversation with sea level rise rather than the science of climate change allowed people to focus their attention on what to do—the result was a very pragmatic conversation in which people discovered a great deal of common ground. Focusing primarily on a single impact also helped reduce the hugely complicated topic to a more manageable scope.

Differences across demographic lines

In the interest of understanding how different groups responded to the dialogue and the materials, we examined our findings to see whether there were any major differences across lines of age, gender, race, or political orientation. While the sample sizes were extremely small, we were struck by how few of these differences there turned out to be. There were only a few places where large differences emerged between groups, and these were mostly differences of degree or intensity, not on the substance.

In this examination some subgroups emerged as audiences apparently more receptive to UCS' message. In particular women, people with a college degree, and young people between 18–34 showed greater awareness of climate issues, greater willingness to take action and a stronger sense of urgency.

IMPLICATIONS

These findings suggest some key implications for UCS and other advocates to keep in mind.

- ***People who questioned climate science tended to be skeptics, not outright deniers.***
  - In our sample, very few people stated categorically that climate change is not happening; the more prevailing attitude among skeptics was that it might be, or that they did not have enough information to be sure. Many participants indicated that recent extreme weather was making them suspect that perhaps something is happening.
  - This makes for a very different conversation than one where denial holds stronger sway.
- ***Dialogue appeared to move people further along the learning curve.***
  - We saw a slight increase in acceptance of human-driven climate change over course of the day—but also an increase in the number of people who said climate change has not been proven. Dialogue did not do much to move the needle on whether people embrace climate science. But as we have said, embracing climate science may not be the best needle to use to measure "success"—and in the end we saw much more agreement around practical policies than people's shifts on the science question would suggest.
  - At the end of the day Choice-Dialogue dialogue seemed to have moved farther along the curve than the general public in several respects:
    - Recognition that technology alone will not solve this problem;
    - Awareness that they will need to make changes in their own lives;

- Willingness to take action/sense of urgency;
- Support for a range specific actions, including: investing in renewable energy, expanding public transportation, limiting carbon emissions, raising fuel efficiency standards.

○ But most people seem to have been moved more by the dialogue itself than by the materials or scientific information. In our experience from this project and others, giving people more scientific information alone does not move them along the learning curve.

• ***Agreement on the science cannot be the price of action.*** People want to be responsible—they told us repeatedly that they are willing, even eager, to take steps to adapt to sea level rise and prevent it from getting worse. At the same time, many stopped short of declaring that those who are warning about climate change are right; if explicit agreement is the price of getting people to act, some will refuse to pay it.

○ The materials we used described several different factors that could contribute to sea level rise while noting that scientists agree that climate change is the main cause of sea level rise. But throughout people were given room to be skeptical or uncertain (and many were). This openness and flexibility seemed to help keep people in the conversation much longer. As soon as the conversation shifted to discussing the merits of climate science, the tone shifted dramatically and people began to dig in their heels.

○ Climate change and the scientific evidence for it have become highly polarized, which holds back the learning curve.

The most highly polarized questions we saw on the questionnaire centered around the scientific evidence for climate change and whether it should be the basis for public policy. ***This suggests that advocates who base their arguments for policy entirely on scientific evidence are fighting an uphill battle with a large segment of the population.***

○ People who remain skeptical about whether humans are causing climate change are nonetheless open to taking steps to address impacts and cut carbon. Their rationale includes risk management (better to hedge our bets if climate scientists are right), the downsides of fossil fuels, and the advantages of alternatives.

○ Talking about action is much less controversial than talking about science. People appear more open when the primary question is not "why did this happen," but "what should we do?" ***This suggests that when dramatic events grab the public's attention and crack open people's***

willingness to consider taking steps, advocates would do well to be prepared to respond not just with an explanation but even more importantly with a range of possible actions.

- ***A dialogue-based conversation has more chance of finding common ground and gets a lot farther than one based on ideology or scientific argument.***
    - For many people, the dialogue allowed them to learn more than they would from traditional sources; engaging in dialogue with other "ordinary" people seems to have allowed them to absorb much more of the information that was presented.
    - When people work through issues and choices themselves, they have ownership of the conclusions they reach. This is especially important in a climate of mistrust, when people place a premium on figuring it out for themselves rather than having an expert tell them what is best. When we asked who might have the credibility to lead on this issue, there were very few suggestions, and those that emerged were mostly celebrities who were seen as both likable and as having no personal stake in the issue.
- ***Starting with impacts has several advantages.***
    - ***It helps avoid the polarization that starting with climate change can provoke.*** The fact that sea level rise is occurring was readily accepted by almost every participant. In fact the issue has not been on the public radar (as far as we can tell no national polling organization has asked about it). Its having been absent from the highly politicized public discourse in this country means that it is less subject to the "tribalism" that surfaces around climate science.
    - ***It also makes the conversation more manageable.*** Extensive information, data and projections about climate change and its many impacts can be overwhelming (if not downright apocalyptic). Starting with sea level rise makes for a simpler conversation with fewer moving parts that need to be explained.
    - ***It keeps the focus on actions, where there is more common ground.*** Starting with impacts also makes it possible to have a more concrete discussion, where there is a great deal of common ground.
    - ***Adaptation to these impacts is such a big task that as people take it in it may accelerate them to consider the larger picture (including carbon emissions).*** We also found that including adaptation as a stand-alone choice also helped nudge people to consider how much greater the need for adaptation might be in the future if no steps are taken to address root causes.
- ***People are more readily engaged around individual action.***
    - The proposals that gained the most traction in our groups were those that focused on steps people could take in their daily lives: things like driving less, using energy-efficient appliances, and recycling. There was less engagement around steps more removed from people's day to day experience (for example changing the way electricity is generated), even when these were markedly more effective ways of reducing America's overall carbon emissions. Many participants were powerfully attached to the idea that individual actions can make a difference, and the sense of engagement and commitment that comes from taking those steps was a strong motivator.

- ***When possible, think local.***
    - ***Maps were hugely helpful,*** as was making clear the local and regional impacts of the issue at hand (the potential loss of Jamestown Island to sea level rise got the attention of every K–12 teacher in the room).
    - ***People trust local universities.*** Local universities had more credibility with most participants than Harvard, Stanford and other high prestige institutions. Participants saw their local colleges and universities as having local expertise and insight and committed to the interest and well-being of their community. UCS would do well to bolster its network in local areas.
- ***Trust the public.***
    - ***They may not move as fast as advocates would like, but we believe they are moving.*** We saw a real eagerness to engage, to take steps, to do something to make the future brighter for our children and grandchildren.

This study has demonstrated on a small scale that starting with a focus on impacts makes it possible to engage the public in a more thoughtful and productive conversation about responding to climate change. Further, it suggests that the public may be open to taking significant steps to tackle emissions even as some remain somewhat skeptical of climate science. There are significant barriers: especially understanding the timeline and the costs involved, coupled with the widespread mistrust of experts, government and business. But we also saw energy, commitment and widespread willingness to engage with the tradeoffs. More research is needed to confirm and further refine the findings of this study, but we believe these initial results are highly promising.

QUANTITATIVE FINDINGS

SESSION LOCATIONS/DATES

March 9, 2013: Richmond VA

March 30, 2013: Tampa FL

RATING THE SCENARIOS

Please indicate how positive or negative you feel toward each of these scenarios on a scale of 1 to 10.

1 = totally negative (you hate it)
10 = totally positive (you love it)

	initial (mean)	final (mean)
Scenario 1: Respond to sea level rise as it happens	2.9	3.9
Scenario 2: Prepare our communities for sea level rise	5.6	6.5
Scenario 3: Create incentives to prepare for sea level rise and address its root causes	6.6	7.1
Scenario 4: Take urgent action at all levels to combat the root causes of sea level rise	6.6	6.5

1. As you may know, sea levels have been rising in recent years, and the rise is expected to increase. Do you think this will cause problems for your family or community?

	%
No	46
Yes	53
blank	1

2. (If "yes" on question 1) What kind of problems do you have in mind? (Open-ended)

(# of responses)
Flooding 17
Beach erosion 12
Damage to property 6
Damage to the economy 5
Displaced population 4
Health impacts 4
Weather 4
Wildlife impacts 3
Danger to people 3
Problem for vacations 2
Air quality/pollution 2
Cost of aid/food 2
Insurance 2

n=37

3. (If "yes" on question 1) how serious do you think those problems will be?

	%
Very	50
Somewhat	45
Not very	5
Not at all	0
blank	0
	n = 38

4./18. How much do you think the U.S. Government should do to respond to sea level rise?

	initial %	final %
A lot	31	25
Quite a bit	40	56
A little	24	15
Nothing	4	3
blank	1	1

5./19. Which level of government should take the lead in responding to sea level rise?

	initial %	final %
Federal	49	56
State	47	50
Local	11	29
None	7	3
blank	1	0

6./21. What do you think causes sea level rise?

	initial %	final %
It is mostly caused by natural changes in the environment.	33	22
It is mostly caused by climate change (from burning coal, oil and gas) that is melting glaciers and polar ice caps.	42	43
No one knows for sure.	18	29
blank	7	6

7./22. Which of the following statements comes <u>closest</u> to your view of climate change?

	initial %	final %
Climate change has not yet been proven.	17	24
Climate change is a proven fact. It is caused mostly by natural changes that have nothing to do with emissions from cats, power plants and factories.	35	21
Climate change is a proven fact. It is caused mostly by emissions from cars, power plants and factories.	44	49
blank	4	7

8. There is a lot of talk in the news about fossil fuels and renewable energy. What energy sources do you think of when you think of fossil fuels? (Open-ended)

(# of responses)
Oil 34
Gas 26
Coal 25
Don't know 5
Electricity 4
Minerals 3
Finite 2
Decomposed plants 2
CO_2 2
Methane 1
Cars/Factories 1
Solar 1
Wind 1

n=63

9. What energy sources do you think of when you think of renewable energy? (Open-ended)

(# of responses)
Solar 44
Wind 32
Hydropower 13
Geothermal 6
Wave/Tidal generation 4
Biomass 4
Electricity/Batteries 4
Nuclear 3
Coal 3
Hybrid cars 3
Don't know 2
Recyclables 1
Gas 1

n=67

n= 72

	%

20. Please indicate whether you favor or oppose each of the following proposals.

20a. Spend more to improve bridges, roads, railways, flood barriers, and the power grid, even if this means an increase in taxes or fees.

Strongly favor	29
Somewhat favor	44
Somewhat oppose	21
Strongly oppose	6
blank	0

20b. Prevent people from building homes and businesses in areas at risk from sea level rise.

Strongly favor	50
Somewhat favor	25
Somewhat oppose	19
Strongly oppose	6
blank	0

20c. Prevent rebuilding in areas that are damaged by storms and floods.

Strongly favor	56
Somewhat favor	26
Somewhat oppose	10
Strongly oppose	7
blank	0

20d. Provide federal subsidies for states to expand or build public transportation.

Strongly favor	36
Somewhat favor	50
Somewhat oppose	7
Strongly oppose	7
blank	0

20e. Increase the number of nuclear power plants in the U.S.

Strongly favor	14
Somewhat favor	43
Somewhat oppose	25
Strongly oppose	17
blank	0

	%

20f. Set achievable goals limiting carbon pollution and provide incentives like tax breaks to help businesses and households reduce their emissions.

Strongly favor	54
Somewhat favor	39
Somewhat oppose	6
Strongly oppose	1
blank	0

20g. Set ambitious goals for reducing carbon pollution and make businesses that do not meet those goals pay a penalty.

Strongly favor	44
Somewhat favor	32
Somewhat oppose	14
Strongly oppose	10
blank	0

20h. Eliminate all subsidies for high carbon fuels like oil and coal, even it if means a rise in the price of these fuels.

Strongly favor	24
Somewhat favor	36
Somewhat oppose	32
Strongly oppose	8
blank	0

20i. Set higher fuel efficiency standards for cars and trucks, appliances and heating/cooling equipment to keep energy costs down for consumers.

Strongly favor	53
Somewhat favor	38
Somewhat oppose	7
Strongly oppose	1
blank	1

20j. Require big polluters to pay into a fund to help pay the costs of dealing with sea level rise.

Strongly favor	56
Somewhat favor	29
Somewhat oppose	8
Strongly oppose	7
blank	0

	%

23. Which comes <u>closer</u> to your point of view?

Scientific data about climate change is incomplete and inconclusive, and it should not be central to determining our policies.	36
Scientific data about climate change is extensive and convincing, and it should be the basis for our policies.	64
blank	0

24. How much do you agree or disagree with each of the following statements?

24a. Climate change is an urgent problem that requires immediate and strong action.

Strongly agree	39
Somewhat agree	42
Somewhat disagree	10
Strongly disagree	8
blank	1

24b. Investing in clean energy technology will create many new jobs.

Strongly agree	56
Somewhat agree	35
Somewhat disagree	8
Strongly disagree	0
blank	1

25. Which comes <u>closer</u> to your point of view?

We have to make major changes in our way of life to reduce the effects of climate change	78
Technology can solve the problem of climate change without requiring us to make major changes to our way of life.	22
blank	0

26. Which worries you more?

Taking steps to reduce sea level rise and climate change will harm the economy.	18
If we do nothing about sea level rise and climate change, we will seriously damage our children's futures.	82
blank	0

	%
27. What do you think is the best way to deal with energy issues?	
Invest in increased domestic drilling of oil, coal and oil, coal and natural gas.	14
Invest in developing renewable energy sources like solar and wind power.	86
blank	0
29. What are your major sources of information about sea level rise and global warming? (Check all that apply)	
Newspapers	17
Magazines	12
Television/radio	24
Internet	37
Word of mouth	9
31. How useful were the background materials in helping your think about sea level rise?	
Very useful	60
Somewhat useful	38
Not very useful	1
Not at all useful	1
blank	0
32. How useful was this discussion in helping you think about sea level rise?	
Very useful	81
Somewhat useful	15
Not very useful	4
Not at all useful	0
blank	0
33. How much impact did your participation have on your thinking about the issue?	
A lot	43
Some	46
Not much	8
None	1
blank	1

DEMOGRAPHIC INFORMATION

	%
34. Are you:	
Male	50
Female	50
35. How old are you?	
18-34	31
35-44	19
45-54	18
55-64	18
65 Or more	14
36. What is the highest level of schooling you have completed?	
Grade school/some high school	0
High school graduate	8
Some college or technical school	29
College degree	51
Graduate study/degree	10
blank	1
37. What is your ethnicity?	
White or Caucasian	44
Black or African American	35
Latino or Hispanic	15
Asian/Pacific Islander	3
Other	3
38. What was your total household income in 2012 (before taxes)?	
Less than $25,000	17
$25,000-34,999	8
$35,000-49,999	26
$50,000-74,999	21
$75-99,999	13
$100,000-149,999	10
More than $150,000	0
blank	6

	%
39. Do you own or rent your home?	
Own	53
Rent	47
40. Politically, do your consider yourself to be:	
Very liberal	7
Liberal	22
Moderate	35
Conservative	25
Very conservative	4
blank	7

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