

- No challenge poses a greater threat to future generations than climate change. 2014 was the planet's warmest year on record, 14 of the 15 warmest years on record, have all fallen in the first 15 years of this century. And the best scientists in the world are all telling us that our activities are changing the climate.

The Pentagon says that climate change poses immediate risks to our national security. We should act like it.

(VOICEOVER):

Since 2001, the Medical University of South Carolina's public information and community outreach initiative, and its many partners, have delivered hundreds of programs in support of healthy communities nationwide. Through community leaders institutes, national conferences on health disparities, and made-for-television dialogues, the Medical University has presented a vision of community health that recognizes the unique relationship between human health, environmental quality, environmental justice, and economic development.

This in turn, has sharpened programmatic focus on such topics as climate change and its disproportionate impact on low income and minority Americans. How do we respond to global issues at local, regional, and national levels? Here's a sampling of comments from the made-for-television dialogue entitled Climate Change A Global Reality, supported by the US Department of Energy and co-produced with South Carolina Educational Television in 2015.

- People confused sometimes weather with climate and

they like to say, oh well the weather today doesn't mean the climate is changing. So I think you have to look at it from a very long term perspective, decadal century perspective, and that's what we do at NOAA. And I think the reason why we have to care is one word, and that's impacts.

To give you a perfect example, back in the 80s, we saw about two storms that cost this country a billion dollars. Today, we're seeing double digits. And even when you normalize it down to consumer price index, you're seeing double digit billion dollar disasters in this country caused by climate and weather events.

As a country, we can't afford billion dollar disasters. We have to think about prevention and putting money into protecting communities for the future.

- What's the headline? What is the single biggest impact on public health? Is it one particular illness, one particular ailment?

- George Mason University and the National Medical Association did a study, a nationwide study, of African-American physicians in the National Medical Association, and we found that 88% of them are seeing health effects, and the effects are very, very different. And this is across the country. The number one issue that they're seeing is 88% are seeing injury from severe weather, which was quite a surprise to us.

- Our farms and ranches can't get up and move, but they are getting up and moving. We've lost 500 dairies in the past five years, and it's economy of scale, and it's a lot of things. It's a market, it's recession, it's not just climate change and water, but it's all these things together, do

make some very scary times. We've got, and I think we do have recognition, that we want to continue to grow the fruit and vegetables that we supply the nation.

Over 50% of the fruits and vegetables for the nation come out of California. It's an important source for food security reasons that we support agriculture. And I think we're getting there.

- When we talk about native peoples, we really are looking at a perspective and a value in which the Earth and the environment heal and that the environment is a religious and cultural resource. And so when we see the impacts of the science and what changes are occurring in the land, it really has a impact on who we are as native peoples.

- There are a number of ways, on a number of levels, in which our infrastructure is not prepared for climate change. To start with, like a lot of critical infrastructure sectors, we have a \$1.3 trillion dollar price tag on the infrastructure upgrades we already need to do, the aging infrastructure.

The great news in our business is water mains lasts for a 100 years in the ground. The bad news is a lot of them are a 100 years old now. And according to the American Water Works Association and the American Society of Civil Engineers, it's going to cost us \$1.3 trillion dollars right now to catch up.

- I probably will get in trouble for saying that we are very high on the list of people that are into denial sometimes. And I really think that because tourism is something that requires you to have the infrastructure, the environment in place, the coastal areas to be working. You would think

that we were thinking about doing something different and we are not quite thinking about it that way.

We should be thinking about economic diversification in a different way. We should be thinking about how to deal with where are you going to move people. Those are the kinds of questions that are going to start coming up.

- The science of climate change has clearly established some things, and other things are still pretty much wide open.

- Something has changed about the weather patterns. And the water that we've been able to rely on for that century is not reliable anymore.

- I've been coming out here since 1971 and I've watched the lake come and go 30 or 40 feet in depth at a time, and we're much lower than that right now and for a much longer sustained period. But it's a very different place than it was.

- You can see the waterline on the pillars behind me, it would not be uncommon for there to be 150 boats tied up to these docks. I'm an optimist that it's going to come back some day. You know, I kept waiting for that to happen and then it became inevitable that we couldn't wait any longer.

- The effect of carbon dioxide on climate is as well, or even better understood as the effect of the sun on climate. So the idea that increasing carbon dioxide levels would cause warming is equivalent in terms of sound science that's saying that it increased the intensity of the sunlight, would cause the earth to warm. There's really no question about that.

The next question though is, how much will it warm?
Climate's going to change between maybe two and six degrees. And at the low end, not so big a problem. The high end, potentially major problems.

- People always said around here, don't worry it'll rain, and it historically has for people's memory to rain, but then it really cut back and things changed dramatically in 2008. That's when things started getting bad. And in 2011 they really fell off the table. We're finding there's these natural climate effects that we didn't anticipate could cause these things. How long do we have to make it before maybe that the climate change flips back?

- In 2010 they estimated about \$2.4 billion of taxable property value on lakefront, and then another \$1.9 billion of value in neighboring lake area communities that are not necessarily waterfront. So about \$4.3 billion in total taxable value. And Lake Erie properties have generally declined in value about 30% over the last several years. So 30% of that \$4.3 billion would be about a \$1.3 billion loss of taxable value in the area.

- You know, what we're seeing today is, in my opinion, the result of bad management. When people ask me about it, I say that this is bad practices that were failed to be covered up by mother nature.

- There's a problem because in terms of determining who should get the water, you get different answers from different folks. Naturally I as a farmer, I take pride in my profession. I like the fact that I'm feeding people, not just here, but around the world with the commodity I produce. I think there should be a certain amount of water reserved and set aside for me and my fellow farmers to

produce that food.

Corporations like Samsung and others can plunk down billions of dollars on facilities and turn over a whole lot more money in the economy than agriculture can. But at some point, we've got to decide, are we going to reserve some water for growing food here in the United States? Are we going to bring all of our food in from outside our borders?

- The thing I worry about climate change is the fact that we have such a wide uncertainty with how much of an impact it's going to have. We don't know what all the impacts are going to be. Nature can respond to climate change, but we've put in an infrastructure that makes it harder for species to migrate. We've entered these new species in different places. We've built our infrastructure based upon the correct climates, so whether it gets warmer or colder, it's going to cost money to adjust to it.

My attitude is if we were to sit down and say, is it OK to change the climate? The answer would be no, let's leave it the way, we don't want to mess with something so complicated, so unpredictable. So the fact that we are changing it, you know, that worries me.

- How often did you hear the words unpredictable, uncertainty there, when we produced that piece and the early spring drought was the big issue along on the Colorado River and Texas late May 2015 flooding, and the damage caused by massive heavy rains? Let's define what uncertainty means and doctor, let me start with you again Holly, uncertainty means what? And does the uncertainty, drought in early spring, flooding by late spring, early summer, does that cause paralysis in the conversation?

- Climate isn't something that's going to happen 10, 20, 30 years, I don't need to worry about it. It's happening now. We're seeing the impacts to communities and the economies. So we need to start making decisions, but we have to provide the information that allows people the understanding of the uncertainty of that information, need to communicate that, so they can make the best decision.

- In round numbers, round numbers, the water in this country goes roughly into three equal places. The biggest is the generation of energy, we're highly dependent on electrical energy in this country. Look at these lights and cameras. And then secondly, to agriculture. And as Cynthia made a good case, we need the food. And then the third category is everything else. And I think in all three of those areas we have challenges, but we also have opportunities to improve our efficiencies.

- On surface water, you have what is known as a prior appropriation doctrine. First in time, first in right. So in those times where a basin is in extreme drought conditions and people are going without water, then whoever has the oldest right gets that water first. But saying that and actually implementing it are two different things.

In 2009, in 2011, when the state was having to curtail water rights, we saw power plants that were junior in right and should have been cut off. But is it the appropriate public health decision to cut off a power plant that's generating electricity, that is powering our air conditioning units, when it's 107 degrees outside, is that the prudent thing to do?

Take it a step further. What if one of those policy

decisions that you're making is a determination that a city's sole source of water is a surface water right that is very junior? And that means that you should cut them off, are you really going to do that? Is that the public health thing to do?

What about the hospitals that would be impacted? What about the schools that would be impacted? Again, what this speaks to, is how at the local level through regional control and regionalization, you can better position all of the various user groups to be able to better respond and go through a drought.

- There are clearly going to be winners and losers as technology develops the fuels of the future. If you're an incumbent fuel, you may get some additional pressure from these challengers, and so it's going to be uncomfortable for some of the incumbent fuels, coal especially.

When we burn coal to make electricity, we're not factoring in the fact that we're allowing people to socialize their soot. That soot goes up in the air, ends up in people's lungs, they go to hospital. We pay all right. At the end of the day, we're all in this together. And at some point we're going to figure that out. At some point we're going to figure out too, that the world is counting on America to solve this.

- Now the science is clear that a lot of this that we were experiencing is preventable. We need to change some of our habits, some of our actions, in order to help have a positive impact on climate change. That's why we are here, so one big hall, though divided by now, to our kids that walk across that isle, and help develop policy that can help us balance the interest that exists in various

communities.

And so these things impact globally. And so in order for us to honor that, it means there are times when we have sit down and maybe a lot of this will be part of international treaties, or international agreements. And how we do that I think is very, very important. And that's why it's so necessary for us to really get serious about this whole issue of climate change.

- Because there is this political debate, how hard is it to get public policy makers to have the dialogue everybody here says is so important, when there is such political disagreement, number one and dysfunction, number two?

- That's a tough one, but as I said earlier and as the last video said, we are all in this together. We're in it together globally, and I mean globally in the literal and non-literal sense when we talk about energy, and agriculture, and water. We're all in it together, we're all in it together locally and if we can't start it at the national level, in the dysfunctional city where you work, then perhaps we can start it at the local level and begin to work together locally to address this problem.

- What we've been talking about, as far as I can tell, is a large need to have some level of collaboration among a number of different units. So it includes stakeholders, the government, CBOs, faith-based, everybody has to be involved in it, so that you can solve an issue, meaning how we live in a world that's going to be different than the one that is today.

- We want to continue down this path. California is saying that they're going to be a leader, well go be a leader,

bring it on. Bring these other states, bring these other provinces, bring these other subnationals. I mean they're doing it, but they're doing it in non-binding treaties, and that's window dressing. That is just window dressing that's saying, oh yeah we're going to go for this goal. They need to have what we have in our state, which is penalties if you don't get those goals. You've got to report those emissions and if you don't get it, you pay for it.

- I think that as a citizen democracy, we have a very strong voice in ensuring that the people who represent our interests in Congress, and in the White House, that their policies and that their initiatives align with conservation.

And so when those political voices run counter to conservation and are actually endangering our future, and the future of the earth, then we should un-elect them.

- The solution is going to fall in being a more resilient nation. In this country, we spend 15 times more money on post-disaster recovery than we do on preparedness. We have to turn that number around. We have to think about protecting our communities before the disaster hits.

- Right now, I mean I think we have the pieces in terms of we know what needs to be done, but we don't have all the players in place. And if we don't find some of them, I think the solutions that we're talking about are going to be harder to get to, be it dealing with water, food, security, health issues, we really need to find who those brokers are that are going to help us to get to the solutions faster. And I think if we're not able to do that, the country is going to have many more challenges than it needs to.

- We're going to have to feed about nine billion people here in another 20, 30 years. 70% more food has to be produced than is produced right now. The only way we can do that is if we're more efficient.

- Everyone needs to get involved in this dialogue. And literally I mean the dialogue, the discussion, but on a very rudimentary level, again I'm the water guy here, I encourage everybody to look at how you can reduce your water consumption personally. It will save you in your water bill, and it will save water. And particularly, in residential irrigation.

Residential irrigation is one of my soapboxes. I mentioned it earlier, about 30% of our residential water goes to irrigation. Usually trying to sustain ornamentals in the yard that weren't meant to grow there in the first place. So plant things that are meant for where you live. And if that means planting rocks, then plant rocks.

But your yards should have what nature intended for it to have. Every minute you run a sprinkler in your yard, one of the ones that goes like this or like this, it's the equivalent of flushing a toilet every minute. So an hour of a sprinkler is flushing the toilet 60 times.

- The lowest income people, the people who had the least to contribute to climate change, are the ones that are most affected, both on a local level and on a global level. So there's not just a small box, this is affecting everything and affecting everyone. And I think that we all need to contribute to address the issue.

[MUSIC PLAYING]