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NATIONAL WEATHER SERVICE

AN INTERVIEW WITH LOUIS W. UCCELLINI
FOR THE
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INTERVIEW CONDUCTED BY
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Greg Romano: We are recording. This is an oral history interview with Dr. Louis Uccellini. The interview is taking place on Wednesday, September 15, 2021. The interviewer is Greg Romano. It's a remote interview with Louis in Columbia, Maryland, and Greg is in Buckeye, Arizona.

Louis, we will talk momentarily about the pivotal events of 2011 that led to the Weather-Ready Nation's strategic goal, but first we have to start with the NOAA strategic planning effort undertaken in 2009 and 2010. Tell us how this came about. I know in earlier discussions we've talked about the arrival of Jane Lubchenco as NOAA administrator and how that led to the overarching Weather-Ready Nation goal created by NWS and that NOAA accepted.

Louis Uccellini: Yeah. In 2008, of course, history shows that President -- we elected President Obama. So we had a new -- not only a new administration coming in in 2009, we had it coming in in a different party, right? There was a wholesale change that was occurring. Jane Lubchenco came out of the academic community, was one of the first people that Obama announced would be coming into the government as a political appointee. I think I might -- I believe I'm right on this -- is that John Holdren, of the OSTP (White House Office of Science and Technology Policy), was also part of that announcement with a very strong signal about climate and the climate change issue.

Fast-forward to 2009. Lubchenco is approved by the Senate fairly early in the process and arrives at NOAA. During that spring in 2009 there was a -- a call out to each line office -- there would be a new strategic plan for NOAA, sort of like a Resilient America or something, something like that. Each line office had to have a strategic plan that built into that overarching NOAA approach. Of course, there would be a very strong climate aspect to that that was recognized. In fact, one of the tactical goals that was going to come out of all of this planning activity was that there would be a climate service. Of course, that didn't work out. But the strategic planning then brought about the need for each line office to make a pretty serious effort on strategic planning for the new administration. So in the 2009 timeframe there was an effort spun up out of NWS headquarters that was led by Ed Johnson's division within headquarters. And I -- you know, we got briefed out. So Ed Johnson started working this with, I would say, a cadre of people from headquarters. Very internally developed, as were, I think, the other line offices too. And, you know, Ed Johnson was -- you know, came into the Weather Service under Jack Kelly leading strategic efforts. [He did a] great job. He also had responsibilities with respect to connecting with The Hill. So it just seemed like a natural thing that we would be working this kind of a strategic plan from headquarters like that.

Well, it wasn't really taking off. I don't remember the details now, but I remember the way that the rest of the organization was engaged was through the quarterly corporate board meetings that Jack Hayes held, and then Ed would brief out the strategic -- the status of the strategic plan. And it wasn't going well at all, actually. And there was -- there were many of us that didn't see ourselves in the plan that was ongoing. So at one of the -- I should note that Jack Hayes was aware that I rescued the Hurricane Forecast Improvement Program and with a strategic planning team. This is not just a solo act on my part, I put together a really solid team, came up

with those strategic goals and a plan to it that was very successful getting it through the organization, to The Hill and we got money for. He was aware that I led the strategic planning team for Ron McPherson for the creation of NCEP. He was also aware that I was a co -- I was a co-chair for the U.S. Weather Research Program that led the effort -- that ultimately led to the Hurricane at Landfall that came out of the U.S. Weather Research Program and then was picked up basically by the Hurricane Forecast Improvement Program.

So with that awareness at one of the corporate board meetings -- I believe it was on the Eastern Shore -- I learned later that Jack had been talking with other AAs about what to do and all that. He looked at me and suggested to Ed that maybe you need to -- maybe you can work with Louis and see what can be done to rescue the whole process. So when we got back to Silver Spring I realized that in private Jack basically said, you know, we got to start over and you're the lead. But I made sure Ed was in the first meetings with us as we created the team. There were folks on Ed's team that were -- that wanted to remain part of this. Certainly, this wasn't like, hey, you folks didn't come up with a plan, No, it was one of these things where we started pulling that original team together, but we added to it. Because the other person especially -- I remember this very clearly -- that was not part of the team was Bill Hopkins, who was the vice president of NWSEO (the National Weather Service Employees OrganiZation), who was at this time under the -- remember, we're in the Obama administration. The same thing that happened in the Clinton administration. You had a union -- you had a union lead in your agency meetings, either the president of the union or the vice president. Well, Bill was at that meeting also. Bill and I work very well together. We got a lot of things done through NCEP working together. We had a clear collaborative relationship. He was sitting right next to me when Jack started talking to me, and I -- so one of the first things I said was -- at the larger meeting -- I'll take a look at this, but I want to take a look at it with Bill Hopkins. And that was -- it was almost like a gasp in the room. But Bill was nudging me during the meeting saying, “We got to start over. Don't they understand what we can do?” We got -- he kept on saying we. You know, we got to start over, right? Not Louis, you got to start over. He said we, meaning him and me. So I mentioned him. I talked to Jack later and he said, That was a good idea. Good idea. Have Bill Hopkins in there with you.

So we pulled together a team that came out of the first team, but we made some additions to it. I want to read some of the names off here. And I think I've got them all. First of all, I want to mention Marie Lovern, and you'll understand why. She was a non-meteorologist.I think she came out of William and Mary or one of the schools like that. More of a -- you know, she's the one that would get into these consultant firms and has a broad knowledge. Policy, government working, all that. She was on the team. We have Mark Jackson, who was coming out of the Oxnard office. We had Mark Moran, who was an OMAO -- he was a NOAA Corps officer assigned to NCEP that was working with me. He helped on the HFIP plan. He was the main force in pulling that together with me and others. So I wanted him on that team. John Sokich. I think he was part of Ed's group. He was doing more of the legislative affairs. We had him on the team. There's John Gordon, who was coming out of the Louisville office. He's known as Flash. We all call him Flash Gordon. He's now the MIC there. We got -- we mentioned Marie Lovern. Dennis Staley, who was basically -- I didn't have an official deputy, but he was like the

budget officer and program officer. And then I had Dave Caldwell as the operation officer. Bill Hopkins was definitely on the team. I remember Ed Johnson being involved in some of the earlier meetings. And then I think Andrea Bleistein was in and out of this, too. And there might have been some others that I'm just not remembering. But these were the key members of this small team.

I remember in the very first meeting with -- especially with Gordon and Jackson as field operatives, but also with Bill Hopkins as the vice president of the union -- we wanted to have a clear understanding of what we should be shooting for that the field could accept. Because there were previous strategic planning efforts that didn't last the midnight shift. You know, like the one that came out, the No Surprise Weather Service, right? That got out into the field, and they just -- they ran away from it faster than you can -- than lightning. I always make the joke when I'm visiting offices, remember that No Surprise Weather Service? How many midnight shifts did it last? And they all -- the answer at the 95 percent level, people put up one finger. So we wanted to make sure what we did would stick.

So that was the first conversation we had. The second conversation we had -- and I believe this was in the first meeting -- was what is the goal going to be? This was a tough question, and I thought it'd be a really tough question that could tie us up for weeks or maybe months. We didn't have much time to do this because they -- you know, this is a second start. And other line offices. You know, National Weather Service lead. We're meeting with the leads from the other line offices. So the part of the discussion was -- was whether we should go beyond the forecast or not. Now, I was coming off -- this is in 2010 -- I was thinking -- I was already working with NOS on their Harmful Algal Bloom modeling and their services that the modeling would be done on our computer. The bay models would be done on quote/unquote the Weather Service computers, which is really a NOAA asset. I was looking at the idea that we could enable other line offices without telling them what to do. Not controlling what they're doing, not taking over what they're doing, but enabling. [That's a] very powerful word. I was looking for something in that line that would go beyond what we normally do in terms of our mission statement of observations, forecast, and warning. Remember, this is pre-2011. So, there was some Decision Support Services that were already going on in the Weather Service by this time. The Hurricane Center -- Bob Sheets gave me that lecture in 1989. If you think your job ends with the forecast and warning, go back to NASA. Because they (NHC) were already doing a form of Decision Support Services with the large Emergency Management [organizations]. We had that issue in there because there was this concept of a groundhog. I remember that. Or a hedgehog. Hedgehog. Not a groundhog. This wasn't Groundhog Day. A hedgehog. What's your hedgehog? What's your job, right? And our job is taking observations, issuing forecasts, issuing warnings. That's where our job ends, and this idea that we had to go beyond that.

GR: That's sort of that hedgehog approach. I think it was Chip Kelly and some other guys that sort of popularized that notion, right?

LU: Yeah.

GR: That is the fundamental thing that you focus on, right?

LU: Right. Because that is what you do.

GR: Got it. Right.

LU; So what I didn't realize then at the time was, yeah, we do that, observations, forecasts, and warnings for the protection of life and property. I didn't realize at the time I wasn't making the connection that we weren't really -- us -- getting to that second half because we're not the one walking the ground to evacuate people. It's other folks who are doing that, right? Not us. So it was right in that first meeting. You know, I'm basically recreating that whole first meeting. Not the first two weeks or the first month or the first half of the year or whatever. This is all happening in the first meeting. Marie Lovern gets up -- the only non-meteorologist in the room -- and says, “You have to have an outcome.” If you -- she basically said, If you guys come up with another strategic plan that says you're going to improve the prediction of a cold front by that much, I'm out of here. Because that's not what we need to do. We need an outcome. So I said, “Do you have -- do you have a suggestion?” Because she was pretty strong about it.

As you know Marie, she can be a very strong individual. She says, “Yeah. We ought to have something like we're going to build a Weather-Ready Nation.” And we all went, okay, let's talk about that.[Laughs] And she spoke for another five minutes, and I think she sold the whole room at that point. So we had the outcome. Build a Weather-Ready Nation. Now what? What's the strategic plan here? Well, remember I mentioned the Decision Support Services, and that was gaining momentum. One of the people who was pushing that within the corporate board was Bill Proenza from Southern Region. He was going to Emergency Management meetings on his own, not with anybody else. Doing a solo act but going nonetheless. He was talking about Decision Support Services, so DSS was already sort of being discussed. Not accepted, but being discussed.

So, during that first day it might have been either Gordon or Jackson or -- it wasn't necessarily me -- started talking about, well, maybe we need to work to see what this DSS is all about, this Decision Support Services. That's what initiated most of the discussion that then carried us for the next two or three weeks. Because we were getting very strong pushback from the field that our hedgehog was making a forecast and issuing a warning. This whole thing about Decision Support Services meant that we'd have to do a lot more. By the way, this is where the union president, Dan Sobien, and Bill got together and said we can do Decision Support Services with -- and the only way we can do it, by the way -- is with three extra FTE per forecast office. No FTE for the national centers. So the idea would be, I don't know, maybe we don't need the national centers. Maybe you do everything locally. That's why it went sour with me as the NCEP director. But also, I knew we needed a collaborative forecast process, that we needed a better handle on what was going on where the expertise was in the national centers, and the things that they were doing in the extended range would definitely be needed to make anything work in the local offices.

So DSS emerged. What we essentially did was develop a strategic plan that had Building a Weather-Ready Nation [as an outcome]. That it would be “ready for and respond to extreme weather, water, and climate events”. And that we would be working from -- I don't know exactly how we represented the field structure at this point, but the field would be providing Decision Support Services to enable that to happen. So this then -- so then we had three or four or five sub-goals that were being developed in the strategic plan that linked to the weather part of our organization, the water part of our organization, the climate part, some infrastructure and all that. And then on number six -- I remember putting number six in by specifically putting in it enabling ecological forecasts. Enabling as goal number six. So it was building into the beyond, taking the forecasting beyond the standard. We brought that.... So within a month or two, we had a -- we were able to point out that we had a strategic goal, which we phrased as the outcome of a Weather-Ready Nation. That we would build a Weather-Ready Nation. I can tell you -- I can't tell you what the goals were in the other line offices because I then -- I became the one that had to bring -- myself and Marie, okay, who she was on the staff for Jack Hayes. So that's why she was part of this team. But she and I would go over and have to brief the advances we were making in our strategic planning. I can tell you that we were the only line office to introduce our strategic goal at the first -- at the first meeting that was less than seven words long, and the only line office whose strategic goal was the same at the end of the NOAA process as it was at the beginning of the NOAA process. I got to tell you, I was at, like, two, three, or four meetings over a course of two months at the NOAA level where every line office was just stumbling over what their strategic goal would be and not accepted by the NOAA folks who were sitting on the whole process. Because they didn't have an outcome. Basically, they were focusing on tactical issues, not a strategic view of what we were working on. So I realized -- I didn't realize how successful Weather-Ready Nation would be at that moment, but I can tell you I realized -- I learned something new in this. And this was that this outcome was an important strategy in and of itself that we had this whole strategic plan based as an outcome. That Weather-Ready Nation was a very good outcome. It was sort of capturing preparedness. Because preparedness was being linked to resilience. Remember, this whole resilience thing was cooking. That -- so now the challenge would be can we get the field in. So that was the next step of the strategic planning exercise. I'll leave you there in case you want to get more questions on the front end of this.

GR: So you did this exercise. You came up with a plan. You mentioned Bill Hopkins' involvement and NWSEO's involvement. And I think you also mentioned to me earlier about the LOTs, the local office teams, that were looking into this.

LU: Right.

GR: How did that play into the acceptance of this plan in the field?

LU: This must have all happened within a month or so because I had to report back to Jack in a month. And Marie and I went back to him and said we got a plan. We got these -- we got the strategic outcome, and we got six goals. That's the good news. Bad news is we have some

concern, and Bill Hopkins has some concern that this plan won't be accepted by the field as well as we think they will. Because clearly, the Weather-Ready Nation is going to take them out of their comfort zone of making a forecast in one morning, to connecting with decisions-makers the next. Remember that with Katrina, the person who was on duty and put out that lifesaving message was viewed as a hero afterwards. Because he was doing it for New Orleans. It turned out to work out, but, you know, people criticized him when he did it. Look, your job's just to make a forecast; stop telling people what to do. So there was this tension. And we relayed that to Jack. He didn't like goal six, by the way -- thought we're getting out of our swim lane. I said, No. No. No. Look at that word. It's enable. Enable. So we had this -- we had a dynamic there -- I mean, we debated. We weren't arguing. I just asked him, let's just see how this plays out. But I said the bad news is we need another month. And Jack was very nervous about us being late by a month with respect to the new NOAA team. So I told him that -- He said, “What do you need it for?” I said Bill Hopkins wants to go out and do a LOT in every forecast office. He says, “Can't be done.” Jack says it won't be done in a month. We can't wait for that. We can't wait for that. I said, “We have to wait for it. We have to give him a chance to do that.” And so he -- Marie Lovern pounded in saying that we had to do this. So that's somebody from his staff also reinforcing this. Then we talked about goal six, and I said, “Let's just see how it plays out.” Because the enabling word's really important, and I've got this ongoing activity going with NOS, with Mary Erickson and others. I said, “Let's just see how it goes.” So he says all right. You've got one month, and then we'll come back and we'll discuss this and the six goals. Because he wanted to come back to the sixth goal. The next day we had a meeting with the team, and I -- of course I called up Bill Hopkins -- and then we had the meeting. I said, “Bill, you got it. You got a month.” He said thank you. He says, “I can make this happen.”

Now, you got to understand, I trusted him. He would do this because he was pulling the rabbit out of the hat on some of the issues at NCEP. Like the Unified Surface Analysis, getting five different components of the Weather Service to agree to a unified map with one team having 51 percent of the vote. He made it happen. Harmonizing the TAFB and developing what became OPC; he made that happen. So he did the LOTs. And he came back with something like -- Well, I got about 60 percent of the folks out there of the offices that are ready to move forward with this. We felt that was a very strong signal to move forward And he and Dan -- I know Dan was a very much part of this as well -- voted thumbs-up on this. So we came back. And they got it done before the month was over. And what was interesting, John Gordon and Mark Jackson predicted almost exactly with Bill -- Bill was sure he'd get over 50 percent, and they were very strong about that, too. So the field, even going into this, was pretty much in agreement with it. So we brought that back to Jack, and we had to write up the plan. It was written more as a paper, right, then it was the way we do it now with the, you know, really sharp just focused outcome and then, you know, the actual goals and stuff like that. So we did all that. And I got to tell you, when we submitted that to NOAA it was accepted. It was accepted -- I know there were other line offices that were still struggling. This is what I told Jack: Don't worry about the month. They're not even through their outcomes yet or their goals. We got the time. It really took a while. This made it through the ringer in 2009, 2010. But then Jack really didn't do anything with it. And the financial stuff started in 2010 and '11. It blew up

in 2011 and '12. But Jack became more concerned about that, and then it never really -- we never really did anything with this, with this plan, until 2011, 2012, going into 2013.

GR: So as you mentioned, this sat on a shelf. And then in 2011, one of the most well-remembered years in weather history because of the super outbreak of tornadoes that certainly affected the -- Northern Alabama [area] in April 27, 28. Of course, we also had tornados in North Carolina earlier that were, sort of, disremembered because of what happened in Alabama. Then we had the EF5 tornado in Joplin on May 22nd, the deadliest since 1947 and the most damaging single tornado on record. Yet an additional outbreak in June, a derecho. We had fires, floods, hurricanes, all sorts of events. But really, these tornado events, the outbreak, are what stand out.

LU: Yup.

GR: So that led to these national conversations. And that's really -- you've said that that's really when Weather-Ready Nation started gaining some traction. Talk to us about that.

LU: The 2011 tornado season was unbelievable, actually, when you look at it. And I remember more clearly the April tornado outbreak. I remember there was a North Carolina one before it, but, you know, that one really did get overwhelmed by what happened in April of 2011. And what I was -- you know, it took a couple days for me to finally understand the full magnitude that the storm not only had on the nation but had on our workforce. Because, I'm the head of NCEP. Our original reaction to the 2011 outbreak was, wow ... SPC was outtooking this, six days in advance. They were providing information the day before with the highest -- this risk assessment based on ensemble approaches, with the high risk being issued the day before. That had never been done before. The morning of, they were putting out statements for Mississippi and Alabama. The watches that were put out were just tremendous in terms -- I think they had a probability of detection of 95 percent for an outbreak that covered not only the Southeast but extended up towards the Ohio Valley and Northeast. A very big area. Warning lead times in 20-plus minutes. There were some tornadoes that had close to 30 to 40 minutes [of lead time]. It was like this was a culmination of the modernization working, with all the advances we put into the modeling that allowed us to see this coming earlier ... the potential for it anyway. And SPC working their magic and collaboration with other centers and working with the forecast offices.

And then the realization -- I had in the back of my head, by the way, even at this point, that this was very similar to the 1974 tornado outbreak, the April 3rd and 4th '74 tornado outbreak that made [Theodore “Ted”] Fujita famous for the way he mapped that all. But that tornado outbreak -- I was a student at Wisconsin on the northern fringe of it and wondering, wow. What a massive outbreak. But, you know, we didn't even know how massive it was until the day after. And then, of course, you waited for these two hourly radar maps to sort of -- or special statements coming over the teletype to try to figure out what the hell was going on. You didn't have the media coverage that you had in 2011. But anyway, they were very similar. To find out there were over 300 people killed in this 2011 outbreak really, really stopped us cold in

terms of the celebration or the, hey, we forecasted this really well. I could tell you now, after our interaction with people who are in the local forecast offices, Christina [Crowe] being one of them, what their reaction was even during the event. All these people that were killed in their county warning areas, in Alabama especially, really left a sobering impact. This was sort of festering amongst us, we're doing a great job forecasting but what's going wrong? And you have the commenting. We told them it was going to happen, right? And then you start hearing, people were confused between watch - warnings and the warning lead times. They couldn't -- they weren't staying in the shelter for 30 minutes. People were leaving the shelters. It was just too long to be in the shelters. You're hearing all of this -- all of this sort of floating around.

Then Joplin happened on a Sunday evening (in May 2011). It was really a disaster. I mean, you just can't -- you can't define it any other way. It was a disaster from the point of view of the destruction of where that tornado hit, but also a disaster with respect to the process. People -- there were false alarms before that particular tornado. So people waited, as we found out later, they waited to actually be able to visualize that the tornado was actually coming. Well, unfortunately, there was a rain shield -- that the rain was falling over Joplin. They saw that tornado when it emerged out of the rain shield. We found out later that the sirens were blown twice. The operator blew it once and then hit it the second time when he saw the size of the tornado that emerged out of that rain shield and was heading right for Joplin. So he hit it a second time. Some people interpreted that as the all clear. The second one is the all clear. Found out about that later. So this was a just -- I forget the amount of people killed. There were 140, 150, something like that. Maybe even more than that. It was just an enormous death toll with that. People being killed in their cars as they were driving from the north side of the city back home. There were graduation ceremonies. There were some other major events. People got killed in their cars. It was just a stunning disaster.

It was after that tornado outbreak that Kathryn Sullivan, who was now the acting -- the acting administrator of NOAA -- let me take that back. She wasn't. She was the chief scientist. Sorry. She was the chief scientist. Jane Lubchenco was still there. She went to Joplin. Jane Lubchenco went to Alabama. And then Kathryn Sullivan went to Joplin. Kathryn Sullivan came back from Joplin a different person. I mean, she saw stuff there and heard stories there that -- I mean, different in the sense that she's known as being very serious; she was even more serious, even more introspective. So she decided she was going to -- that we needed to hear -- there were enough stories she was hearing about the communication not really working, people hearing what we were doing differently than what we thought we were projecting out. She was hearing enough of this that she said we have to have a conversation about this. We need a "national conversation". And she called me in as the NCEP director to organize the national conversation. And at that moment I realized that she meant a conversation not just amongst the meteorologists, but social scientists, first responders. You find out who has to be there.

So one of the first things I did was I got hold of Mike Morgan, who at the time -- Michael is back at the University of Wisconsin, but at the time was at NSF (National Science Foundation). He was working the atmospheric part of their NSF portfolio. We started meeting at Starbucks

halfway between NSF and NCEP. So we met right there at the Metro Center Starbucks. We started mapping out what we thought. And I said, Look, you know, from an emergency management perspective, there are things I can do, but you're going to have to help me out with this decision-making and stuff, the physical scientists who should be there but also the social scientists. So we started mapping out that we needed a cadre of social scientists, physical scientists, and then the first responders right there at those meetings.

We also decided to hold the meeting in Oklahoma, in-between Joplin and -- you know, like, not in one area or the other area because we wanted -- we were going to focus on two of the outbreaks. The Alabama one and Joplin. But the meeting was not going to be held in those communities because it would get too political too fast. Press and all that. So we held it in Oklahoma. So we got hold of Berrien Moore, who I knew from my days being on ESSAC which was an advisory committee for NASA back in the mid to late '90s. That's where I met Berrien Moore [and] Michael Freilich for the first time. They were on that committee. I was the NOAA representative on that because I wrote the paper on the [Space Shuttle] Challenger (published in BAMS 1986). The wind shear that may have affected the Challenger disaster. So we got into that meeting, and by the time we got there, got to the point of that meeting in December of 2011, I remember I had Russ Schneider involved. I had other folks from that strategic team involved. But I sat in the back because I wanted to get the view of the room at that meeting -- you know, how people reacted. Kathryn Sullivan was there. Jane Lubchenco was there. Jane opened up the meeting. And then of course, you know, as the administrator of NOAA she had tons of things to do, so she was there for a little bit and then left. But Kathryn Sullivan stayed the entire meeting, right in the front row. And we had program managers from NSF there, social scientists from all over the country, and the first responders. NIST was there because part of the damage question was -- it was because did people actually build to code? It was an incredible, incredible meeting.

I came out of that -- I remember very clearly coming out of that conversation;I thought that the issue might be something like people were confused with the watches, but we really nailed it on the warnings. So it had to be something from there. Man, we confused people with watches and warnings. It's a double down on that, by the way. We put it on a WAWA chart. You know, W-A-W-A. Watch, warning. So people are like, what's a watch? What's a warning? When you look at the WAWA chart even. So I thought I understood the response to the way people would respond to a long warning. That if these warnings were 30 to 40 minutes long you'd get more people into shelter. They get claustrophobic. They wanted to get the hell out of there. They don't want to stay in a shelter. And people -- if we gave them 30 or 40 minutes, if they could clock out that they had that much time they'd get in their cars and go to wherever their kids were in school, or where their wife was working or whatever. Or they're at work and their family is -- they got to -- whatever. People were killed in cars. In other words, the longer warnings doesn't mean people are going to stay in the shelter for a longer period of time.

It was very clear that the federal, state, and local emergency management enterprise, however you want to call it -- what we call now the intragovernmental response -- was broken. That there really wasn't -- as much as FEMA would try, and FEMA was making advances, but it was

still -- I mean, Craig Fugate was the head of FEMA at the time, and he was doing great things. Where he had a pre-positioned asset is where he had to support the states. But are the states linked to the locals? So you could see that. But the main thing was we did not understand people's basis for making decisions. The whole thing about the whole -- about the decision process and how a risk assessment would drive how people would act. I can get to my kid in 40 minutes. So their risk assessment was, I get in a car and drive. I'm not going to stay where I am. We didn't understand that. We didn't understand that, how you message something out at day six is viewed as a low-risk environment. Well, the risk assessment is low, and that there's this -- it's not a steady increase in their realization of risk. It's very nonlinear. For some people it's when they saw the tornado coming out of the rain shield in Joplin. Their risk assessment changed at that moment. It was too late for many of them, but it changed at that moment. I'm not saying I even understand this now. But I -- in the sense of the social science behind it and this whole human factor and the way people process these things, but we understand it better now. But that was my first time. That was my first time exposed to it. And then I got to drive to the airport with the program manager from NSF, and he really hammered it home. And I'm sorry I'm forgetting his name, but, you know, that was part of the experience of that.

So when that national conversation came out -- and the write-up came out in 2012. And in 2012 now even you would think you got this strategic plan, let's make it work, because some of this would map right into it. The whole thing with the Weather Service was starting to implode with respect to the financial mismanagement. In a big way. In a really big way that really nothing was happening other than -- and in fact, I think Jack Hayes stepped down as the head of the Weather Service in May (2012). I think it was the Memorial Day Weekend. So that was 2012. And we were still -- that was just the beginning of it. There was still this churn of what are we going to do? What are we going to do? The whole corporate board was being looked at and interviewed in terms of what we knew and didn't know. It's pretty hard to keep yourself focused on what the strategic goal should be. But the fact is what was put on the shelf stayed on the shelf, even through all of this. But that national conversation certainly rocked me into believing that we needed to go beyond the forecast and warning to address our connections to the intragovernmental levels of decision-making to be able to make a difference. That's what that national conversation did for me.

GR: You have said -- you've described that last comment about going beyond the forecasts and warning as we need to get to the last mile. Where did that line come from, and --

LU: The national conversation.

GR: Yeah.

LU: A couple of -- a couple of sessions when they were summarizing it and they had scribes. You know, this is where Jen Sprague was -- I still remember her at the chart board. I was sitting in the back, and there's this walkway. And then she's off in the aisle. And she's one of the scribes, and there were a few others. And I just -- the last mile came up again, maybe the third or fourth time. Dave Caldwell was there with us, and he was saying that. And I remember

talking to Jen at one of the breaks and saying, Did you get that? The last mile? That's about maybe the fourth time we've heard it. And so that came from it because it really was categorizing it. The last mile is always the toughest in these types of long haul type of changes. The other thing that came about eventually is this need to internalize the change. That actually came later through Christina Crowe, that there's a book "Why?" You got to ask why change, right? And so that started really building in me during that national conversation, that last mile.

I was, during that period between April and May and June and having this meeting in December, reflecting on the comparisons with the 1974 case. I mentioned that. It was stunning how similar these cases were. The whole outbreak. The amount, the number of tornadoes, the area it had hit, the number of extreme tornados. Everything. The tornado lengths. A lot of big differences. Longer lead time. Watches. You know, 95 percent POD (Probability of Detection). Longer lead time on warnings. A whole different warning paradigm now with the modernized Weather Service and doppler radar. Yet the deaths were 316 for 1974, 314 for 2011. And I was thinking, almost exactly the same result. So that whole year and going through that whole process and interacting with Kathryn Sullivan during this process about the need, not knowing -- I mean, in 2012 I didn't know I was going to be the director of the Weather Service in 2013. Not a clue. The idea of how fundamentally profound the impact of that national conversation was reflected on our conversations that we had after that and the things that needed to be done. But it wasn't going to happen in 2012. It just -- there were too many things that had to be cleaned up with respect to the financial budget mismanagement.

GR: All right. So let's jump ahead, then, to 2013. But -- if you're okay with that. But to catch people up on where we are in the Louis Uccellini timeline. So at this point you're doing these conversations, you're still NCEP director. You are -- at the close of 2012, the new NCWCP building in College Park is nearing completion, if I recall correctly.

LU: No, it's done. We're in. We're in.

GR: It's done. Okay. That's right. Because you moved -- the grand opening celebration was in August 2012.

LU: Yeah. Well --

GR: So all of -- correct?

LU: I moved in 2012 into the building. We had the ceremony -- the ribbon-cutting ceremony in -- the end of 2012.

GR: That's right. That's right. Yeah. Okay. So you are -- you've reached that huge milestone. Okay? The issues with -- that you described with the financial issues have sort of bubbled up. And then you were named director of the National Weather Service in February 2013, in the wake of what the *Washington Post* called “recent controversies over NWS's budget and an

exodus in senior leadership." This wasn't the first time that you came into an organization that was reeling. So what were your priorities to right this ship? That's where we'll start. And then we'll head to -- kind of bring back to the focus a Weather-Ready Nation.

LU: Yeah. In 2012, I would say in the middle towards the end, I was also the president of the AMS getting ready for the conference in early 2013. And the theme of that conference was taking forecasts to the next level. I'm bringing this up because in my mind there was the enabling part. Enabling the other types of forecasts going beyond the atmosphere. You know, our weather domain space into the other. But because of this activity, by the time we got to the conference in early 2013 we've expanded that to also account for delivering the message, you know, affecting decision-making. We were in a sense dusting off that strategic plan that got put on the shelf in 2010. So as I was approaching that conference I was becoming more aware of -- let's put it this way -- reacquainted with the strategic planning from the 2009/10 timeframe, and thinking what we're really talking about here is a Weather-Ready Nation. Thinking to myself, right? The tactical aspects of the goals are different now because we got much more on that focus on the last mile, right? So we were cooking this for that conference. And some of the things that -- a lot of the stuff in those annual meetings that occurred in January was really tied in now with that strategic plan mapped into the national conversation in December 2011 that itself was sort of sitting there. How do we move out on this -- now all-weather enterprise perspective? All of this is cooking inside my head during that meeting, during that AMS meeting, preparing for it, leading up to it, and during.

So parallel to that, I apply for the Weather Service job. I didn't think I'd get it because I was on the corporate board. There were people not involved in the selection process that were asking me if I was going to apply during 2012, and I said, no, the job's passed me by. No, the job's passed me by. And then to one of those people, who was, again, not involved in the selection process at all, was not at the NOAA level -- in fact, several of these people were outside of the Weather Service. Outside of government. I thought maybe I should. With no expectations because I was actually ready to retire. I got the building, got NCEP on its feet. Got through the annual meeting, the presidency and all of that. So I went through the interview, and I actually found out in January right about the time of the meeting that I was selected. I was asked. I was called up -- by Jane -- if I would do it, and I said yes.

So I had about two weeks to think about it between that and the rollout. And I thought, I have certain things I want to say in my first all-hands meeting, that there's really two fundamental aspects of what we needed to move forward that went beyond just the cleaning up. At that time people were saying he'll clean up the mess, or he'll clean up the system. They didn't know that what I had in my head was to restructure the whole thing. But what was even more fundamental than that was, and what I put out in the very first sentences of the all-hands was I want people to realize two things. One, we're a science-based service organization. Something that I brought with me from the time I came from Goddard Space Flight Center and had, basically, sand kicked in my face by a lot of people that were in the Weather Service at the time saying, no, you're not here to write papers, Louis. And I said I know that, but we are

science. What we do should be based in science. So I had that mantra. Part of my genetic code. That was the number one thing I said.

The number two thing is that I had a strong belief in a vision, plan, follow-through mantra as a management -- as a management pillar that I always work from. Vision, plan, follow-through. So I said, we have a vision and a plan. It's called Weather-Ready Nation. Now, we did this two years ago, and there might be some adjustments that have to be made. I was thinking that DSS had to be IDSS. It had to be impact-based. We had a force. We had to force ourselves to understand the decision processes of our users across all levels of government. That's the only way you're going to have an impact. You're going to affect their key decision points in their process. So we had to understand that. We had to. So I really laid that out, those two things. And then talked about a few other things that I honestly at this point can't remember exactly what I told them.

I basically -- I think I knew I had to -- I was doing it from a field component, or I was doing this from Eastern Region Headquarters. Jackie Bray, one of the politicals supporting Renee Stone as the chief of staff of NOAA at the time, told me or told the people who were setting up my rollout that he will do this any place else but Silver Spring. You are not doing your first day at headquarters at headquarters. So I went up to Eastern Region Headquarters. I was going to visit the forecast office, but there was a big snowstorm that weekend, and it was, like, 30 inches of snow out there. We just barely got out to Eastern Region Headquarters from where I was the night before. Because I went to my hometown of Bethpage, stayed at my grandfather's house, the house that he built after immigrating from Italy. Laid there all night Sunday night thinking about what he was thinking when he was building this house, and probably not that one of his grandchildren would be a head of the Weather Service. And so it only took two generations, from an immigrant to being a director of one of the most visible service organizations of all of government. I was thinking about that. I remember that very clearly. But getting that message out I felt was extremely important, to let people know that it was going to be different.

And I did hear from John Gordon -- remember, his nickname is -- I think it still is Flash Gordon. I'd see him at NWA conferences when we were going back and forth there. But I heard from him, and I heard from Mark Jackson. Now, they are MICs, right? They are. John Gordon was at Louisville, like I said, and Mark was out at Oxnard. And they said they started cheering. It's about time. Because we all felt coming out of the strategic planning meeting -- I'm bringing it back now to that strategic planning -- the very first time that we were putting this down on paper that we could make this work.

And like I said, we had to refine. There was a couple things we had to refine. A DSS became IDSS, like I said. But we also felt very strongly about a more collaborative approach that would free up resources to allow this to happen within resources that -- so I had in my -- my planning one-pager at the time was we had to restructure headquarters. We had to restructure the budget. We had to develop a playbook for how we're going to manage the organization. We had our strategic goal and all that. But there was a lot of other things that came quickly but

came after that. The Collaborative Forecast Process. I introduced collaboration. We weren't calling it the “Coordination Forecast Process” but the Collaborative Forecast Process. People would say, well, what's -- people would correct me and say, you mean coordination. And I'd say, No, it's collaboration. And it's different. And the difference, I would say to them, is in the research world collaboration is co-authorship. You work with other scientists, you collaborate, they're co-authors. If somebody coordinates something with you, you acknowledge it, what they've contributed, but they're not on the front page. They're not signing the forecast with you. If you're collaborating, it's a collaborative effort.

So that -- that emerged from my visits to the field afterwards. The other thing that emerged was the “Whole Office cConcept”. This came from one of my first visits down to Slidell. I think Ken Graham was down there, and other MICs were there that came from the Southern Region. And the Whole Office Concept was just brought forward. You know, Birmingham, Peach Tree, Lake Charles, they all were talking “whole office”. You got to do this with the whole office. That lends itself to collaboration within the office, but it also says that it's not just one person that does the IDSS. To effectively do it, you have to have the whole office in there, including the El Techs and everybody who has to make sure everything is up and running and stays up and running. So that's where that started to emerge.

But right from my first day from that Eastern Region Headquarters perch, we said we had a plan. That strategic plan. I believe in follow-through, and that's what we're going to be able to do with the way we're going to structure ourselves and the way we operate. We're going to be able to meet that goal. So that planning process, really -- we go back to 2009 and '08 -- that planning process -- 2009 and '10, I mean -- was really so fundamentally important. Built on all my other experience, this was the most successful planning activity that I've ever been involved in. Because look at it today. You know, it's the whole enterprise. 11,000 plus Weather-Ready Nation ambassadors, organizations. I mean, just phenomenal.

GR: Well, let's end it there because I think that's a good lead in and segue to our next session where we'll talk at length about the headquarters restructuring process and the budget structure that you've alluded to. And I think that's -- you know, while that was a different focus, it was also very much in line with this strategic plan that you came out with. And that's going to be an extensive conversation, so we'll pick it up the next time on that.

LU: Okay.

GR: Sound good? All right.

LU: Yup. Sounds great. Thank you.

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