Local Climate Action Planning Transcript

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Description: Transcript of a podcast of the discussion of the book, *Local Climate Action Planning* between authors Michael Boswell and Adrianne Greve of city and regional planning as well as Tammy Seale who is the Sustainability and Climate Change Services Manager at P.M.C. Elizabeth Lowham of political science askes them questions.

[Music]

Karen Lauritsen (Moderator): [Background Music] Welcome to Kennedy Library Out Loud, a series that features podcast and videos of Cal Poly Library events and exhibits. This podcast captures Conversations with Cal Poly Authors on May 4th, 2012. Michael Boswell, Adrianne Greve and Tammy Seale wrote the book, *Local Climate Action Planning*, published by Island Press in 2011. Michael Boswell and Adrianne Greve are Cal Poly San Luis Obispo faculty with the City and Regional Planning Department. Tammy Seale is the Sustainability and Climate Change Services Manager at P.M.C. Together they discuss their book in the details of implementing climate action plans that fits specific communities. Later, Elizabeth Lowham, assistant professor with the Political Science Department at Cal Poly joins the conversation with her questions.

[Music]

MB: Let me start by talking about why we even bothered to write this book. All three of us have been working for several years on issues of climate action planning here in California. And one of the things we observed was that there was no book on climate action planning. It was sort of a clear set of instructions of how to do it. Most of the guidance that existed out there was either-- it's very technical, it was scattered about in a number of different documents. And, of course, there was a lot of just experience that had been accumulating in the field that nobody had ever really documented. So we felt like it was time to write a book, there was a need for a book. And we wanted to write a book that would speak certainly to planners and other professionals who had to work in this field, but we also wanted the book to be more broadly accessible to, particularly to elected officials who would be dealing with this quite a bit, but also to the public in, particularly people in communities who either wanted their community to address the problem of climate change or their community was doing it already and they wanted to understand more about how the community was doing that. So that was basic motivation behind the book. We hoped that it would be a value to all those audiences and we also had one other audience in mind which is students and particularly our students. And currently our department this quarter is teaching a class for students on climate action planning just sort of prepare that next generation of professionals. Let me turn to the substance of the book then. I'm just going to try to basically explain sort of three things which is; what is a climate action plan, who's doing them, and why are they doing them? What is it? At its most

basic level, it's a community's vision for itself of how it's going to do essentially two things. One it's how it's going to reduce what we call greenhouse gas emissions. This is carbon dioxide, methane and a number of other pollutants. How it's going to reduce those emissions that it puts into the atmosphere because that's what's contributing to global climate change and global warming. So how is it going to reduce those? And secondly, we know that climate change is already beginning to affect us, so the other issue we want to address is how communities could begin to prepare for the effects of climate change. The typical contents that you would find in a climate action plan and I have one, so I can show it, looks like this usually. And the typical contents would be a community would explain or identify what level of emissions it currently had in the community. In other words, how much of this greenhouse gas is it putting into the atmosphere? It would then establish how much it wanted to reduce the emissions. Get it down maybe 10, 20, 30%, but they would establish what's called a reduction target. And then ultimately the community would identify actions that would take to reduce those emissions. And Tammy is going to talk about that in a little while. Communities also might go to the process of identifying the impacts they were expecting from climate change, maybe sea level rise or increased heat waves and figure out how they're going to deal with and manage that. And that's what Adrianne is going to talk about today. In terms of who's doing climate action plans, we've—we have a database that we maintain and, or cut, sort of constantly evaluating the national scene. We believe there's around 160 cities and counties across the US that have actually done a standalone climate action plan at this point and probably about the same number, but another 150 or 60 so that are in progress currently. Beyond that, there's about another 700 communities that have signed something called the Mayor's Climate Protection Agreement which essentially says we will do one at some point. So we're talking maybe at this point about the potential for about a thousand communities across the U.S. So that's quite a few. It includes 10 of the 15 largest cities in the country have done them already places like New York and Boston and Los Angeles. And they're all over the U.S., but about 40% are in California. California is really the national leader in doing a climate action plan by—at the local level by far. At the state level as well, but we're going to talk mostly local. And if you look at the places that are doing it, Berkeley and Boulder, Colorado have done these things. No surprise there. But it might be surprising to hear that Homer, Alaska has done a climate action plan, quite good one in fact. Houston, Texas, the capital, world capital of oil and gas industry has done a climate action plan. Pittsburg, Pennsylvania and Chattanooga, Tennessee, here in California, places like Palmdale, California which you wouldn't expect to do it, a plan is done then. So there's a lot—it's a, really a broad set of communities that are doing a climate action plan. It's not what you might just sort of typically think of as the green or progressive communities. The last thing I want to mention is, you know, why do the—why do these, why do local climate action plans? Why try to deal with this issue at the local level? And there's a number of reasons. One is there's been a perception, probably more than a perception, that we simply have not had the leadership we need at the federal level. We've had, you know, failed attempts of cap and trade bills and that sort of thing. So the federal government has not done enough. State leadership varies although California has done quite well at the state level, that's not the same across the country. Many states aren't addressing the issue at all. And so, there's a need for local leadership in the absence of federal state leadership. A second issue is that what I always like to say is technology alone won't save us. And there's been quite a bit of very

sophisticated research into looking at the potential for technology change overtime, you know, things like electric cars and LED light bulbs and how much of an effect those will have on our emissions. And those are important and we have to have those, but we also know that we still have to do things at the local level in changing the way we use energy and how much we drive, for example. And then finally, we also know that the impacts of climate change although driven by global phenomenon will be felt most acutely by local communities. This is where we're really going to experience the impacts of climate change. And so, it impels us as a—have a more responsibility to address a problem, but it's also selfish in a sense. We're going to fill these impacts. So the things that we can do to ensure that we protect our quality of life and our community's necessitates that we act. Now, with that I'll turn over to Adrianne.

AG: All right. But moving on to further content in the book and I'm going to—there's generally two broad categories that policies can fit into in climate planning. And they're not immediately exclusive at all. But one is greenhouse gas emissions reduction, the other is adaptation. And I'm going to be talking about adaptation fairly briefly. And adaptation, part of doing adaptation is recognizing that it's now. A lot of times we think of climate policy as dealing with this future, you know, impacts and a problem that's many decades out. The reality is sea level is rising right now. It has been for several decades. And so, we're existing in a point where climate is changing. And so, there's a whole host of consequences, G.H.G. emission reduction is not going to solve. And so, it's often referred to as the unavoidable consequences of climate change. But that's the focus on adaptation. Adapting to climate change poses from pretty distinct and unique challenges to local jurisdictions. One is simply the challenge of allocating resources when the data you're using to back it up is science that, well, it's debated frequently in the political realm, but it's uncertain. There's a lot of different models, there's a lot of different scenarios, and so now, you're asking to allocate resources particularly in this economic climate to solve problems with very large error bars in many cases which is difficult. Further confounding or posing another challenge is the complexity of the consequences. It's different everywhere. There isn't one set of policies or strategies that's going to solve climate change or prepare you for climate change that will work everywhere. For example, a reduction in snowpack will have very different consequences for communities that rely in a ski industry in the Sierras, than for an agricultural community who's irrigation water is going to be reduced by reduced snowpack. And so, the right policy and the best way of adapting and preparing for climate change is going to vary by location, by jurisdiction type, by the demography value system, by the economic base and distinct communities. And so, building on what Mike was talking about. In many cases, it takes local action because the best policy for addressing the most effective policy for addressing climate change is going to have to be locally specific and contextually appropriate. And so, that's one of the challenges, but that means that action needs to be taken on a local level. To do that, the first step is vulnerability assessment which is at least loosely assessing what might climate change mean here, how much might—what's the range of possible temperature, what's the range of possible outcomes for precipitation and then evaluating what does mean or the potential consequences for that type of change locally? And then, are we prepared for that? So for example, sea level rise, if your community is a coastal community and you don't have anything within 5 miles of your coast, sea level rise might have some ecological changes, but it's not—you're not that worried about it. However, if you have a

port or an airport as they do in the Bay Area, there's three in the coastal zone, or wastewater treatment plant, all in the low lying coastal areas as many communities near us here on the coast do, sea level rise matters a lot. So part of vulnerability assessment is saying, "OK, what's the projected change?" "How much might that matter here?" "And how prepared are we?" So with our capacity for dealing with that change. And that will help you identify your adaptive needs. How quickly those changes may occur is also another factor in terms of then prioritizing, now what do we do? And one thing I think you'll hear, all three of us say is climate shouldn't be the separate category of policy development, particularly now in this economic climate. We don't have the resources that take resources away from other local needs and devote them to all climate changes to separate category, but rather you can actually accommodate and meet a lot of local needs if you incorporate some of the considerations of climate change within that policy development. Adaptation is often related to hazards and a lot of other things we already write policy for so that you can simply shore those up. And it ends up being pragmatic. If you have a roadway or a critical infrastructure at risk because of climate change or because of sea level rise, it makes sense if a road washes away, you're going to need to replace the road or take actions to make sure that whoever is connected with that road is still accommodated. And so, you can use basic tools, zoning, land-use to make sure that your future development is not in harm's way, it's not in areas projected for flooding, projected for fire. If your economy is projected to be impacted in the future, long term adaptive change can be simply diversifying your economy so that if tourism goes down because of erosion or because of snowpack, it won't hit your community at large as hard as it might. Or have strategies in place so that if heat which may victimize children or the elderly or people that work outside, construction workers, agricultural workers, heat waves may have dire consequences for those populations. Put measures in place so that buildings are more resilient with better insulation so that the impacts are felt less severely. Have cooling centers in place if it's something that you need short term. So you can start building on those needs. You already—we already have heat waves. They may get worse and you just simply shore those up. And so in a sense, improving your economy, maintaining public safety are all bound up in adaptation. And so, you're serving a whole host of other community needs rather than just being this very politicized climate change kind of policy development atmosphere.

TS: So, the other side of—Adrianne talked about the adaptation side, it's about improving your resiliency in a climate change. It's recognizing that climate change is occurring. The other side of what we do in *Local Climate Action Planning* is to look to reduce or mitigate green house gas emissions. And that is an equally big challenge, but also very much important to integrate into our other local policy activities. And actually as Adriane has indicated a little bit, we do this already when we look at land-use planning decisions or environment planning decisions when we prepare our long range planning documents. What we seek to do is to provide a bit more information, technical and quantitative information about greenhouse gas emissions, what they are, where they occur in a local environment, and how we might adjust our land-user environmental planning processes to more directly reduce greenhouse gas emissions in the short and long term. So again, I'll talk a little bit more about greenhouse gas emissions. It's a big word. It doesn't always, you know, we can talk about—it's carbon dioxide, it's methane. What it really means is what we do when we analyze greenhouse gas emissions is we're looking to the

day to day activities, the behaviors that each of us take in our communities that are largely dependent on the combustion of fossil fuels. So when we get up in the morning and we turn on our radios and we put on the coffee pot and we, you know, turn on the hot water heater and take our shower, that's all electricity, that's all release a greenhouse gas emissions. You know, getting in your car to drive to work, to go to the soccer game, to come here, that's burning gasoline or diesel in your car, that's greenhouse gas emission. So what we do is we prepare as a first step that inventory. We're looking to know, what is each person collectively? What are the emissions in a community? So it's a quantitative exercise. Primarily, as I mentioned, with the examples, we're looking at transportation and energy use. But also in our communities, we know that through our waste sector, we have methane emissions. We also—in each community, you have to get to know the community. In some cases, water and wastewater activities will have greenhouse gas emissions. If you have large industry, you're going to have what we call stationary sources of emissions. If you have agriculture, you have a lot of different types of greenhouse gas emissions. So when you do this work, you have to assume you're going to look at transportation energy and waste and then get to know the community to know those other potential sources of emissions. And so, once you know them, you have to not only know what's happening now, but you have to be able to project how does emissions are set to grow in the future based on a community's economic growth objectives. So what we know is that even though things have been a little challenging lately in the recession that we're all optimistic or forward thinking about where our communities are going to grow. And all of that is likely to increase greenhouse gas emissions unless we look to develop and kind of intervene with some public policy decisions. And largely behavior change to reduce those overtime. So, I'd like to give a couple examples of how we work with communities to, you know, look to—one of the things we want to do is be appropriate. Where is the right place for a local government, for a city or a county to get involved and to work with business owners and residents to reduce greenhouse gas emissions? So often, we're looking to look at those activities that—or programs or policies that can start in a voluntary, in a bit of a nudge towards some behavior change. So, we don't often recommend coming down with brand new government regulations and dictates, that it's best to find those behaviors that are pretty easy to accommodate in our day to day lives. And even though they might be simple activities, overtime, they all reduce greenhouse gas emissions. So, our public, our documents are a combination of voluntary and regulatory policies. On the transportation side, you know, we're looking to see what's going on in a community. Some communities are large and their land-use patterns are very distributed. And you can't just say, "We're going to put in a new bike path" because if someone lives in a rural community, 15 miles from the grocery store, bike path isn't going to do much for them. It might provide them some recreation activity, but it's going to be the right way for them to get to work. But on the flipside, if you're working in a community that's very high density like in the Bay Area where there's transit of all types, then what we're going to look to do is to increase development around those transit corridors to make sure that when you leave your house, you can walk to the train stop and then when you get off the train, you can walk or ride your bike easily to your business and also do all of your errands. So, I think that, you know, we have to look at those extra trips that people make on a day to day basis. So, we're looking to look across the kind of mobility spectrum, as we call it, to address how we use cars and how we can use transit and alternative modes to reduce emissions recognizing that people need to have some,

you know—they have to have some options from day to day. On the energy side, in California, we have one of the best building codes in the nation. So, many years ago in the '90s, our building code started looking at energy efficiency. And then they also started to evolve to look at actually green—what we call green building techniques. So when we work with cities and counties, one of the things that we have to do is assess how old the building stock is. So, you know, I happen to live in downtown San Luis Obispo. So my house is born—oh my house was born—my house was built in 1920. So, it certainly did not, you know—it wasn't built to today's green building code by any means. So when I'm working in a community and this is what we looked to provide a lot at the spectrum of options, when you—when you're a local government planner, you have to say, "OK, this—is the building stock in my community primarily older, you know, built around the early 1900s to 1950 or am I in newer community that's been recently incorporated or is having more development in the '80s and '90s?" And those are the things we look to assess when we go forward because the first thing you want to do is maximize energy efficiency in the community. So at the individual, at the residential level, at the commercial and industrial levels and then look to address renewable energy. As—at the—all through these, we're looking to reduce greenhouse gas emissions. And then the other concept we often talk about is to maximize co-benefits. So in maximizing energy efficiency, not only are we reducing greenhouse gas emissions, but pretty much every time, we're saving a resident and government money by doing that. And that's money that can go to your kid's college fund or it can go back into a community's general fund to build a bike path or to buy solar panels. And that's what we're always looking to do is optimize those savings and those benefits across the board. And then when we look long term, these co-benefits are, these are the things we want to achieve when we're thinking about our cities and counties in 2020 and 2050. We want to visualize clean air. We want to know that we're going to live longer so that we can enjoy all of these amenities and the great parts of our quality of life in our community. So, by working to reduce greenhouse gas emissions, we're going to save money in our pockets. We're going to improve our air quality which means reduce medical cost to government and to residents. We're going to improve our physical activity. We're going to be happier. We're going to enjoy being together more outside. And I think that that's one of the challenges or what I think is one of the great opportunities in thinking about something so technical and science based as climate change, is that we're really talking about how we live and what we can do to improve sustainability in the long term not just for ourselves, but for the future. One of our motivations wasn't just to write a book that put everything together, but it was also to make sure that we were, you know, able to look ahead and know that the nieces and nephews and the small people around us were going to have a better future rather than a grim one, which I think if you allow yourselves to be overwhelmed by all of the stories that come about climate change right now, it can be a bit bleak. But what we can do everyday is work to see the opportunity for a sustainability in the communities.

EL: OK. So now, I guess it's my turn which is--

TS: Yeah.

EL: First, I want to thank you. About a decade ago, I worked with a couple of cities in Colorado, Fort Collins and Boulder when they were working on their climate action plans. And we were just a group of graduate students and had no idea what we are doing. And we're sort of—we found similar to what you had found which is that there was advice, but it was scattered all of over the place and it was highly technical and it wasn't really amenable to consumption by people [laughs] and had your book been out, then it would have been much easier. It presents a very straightforward path to creating workable climate action plans for communities. And I think it's a great reference and resource for that purpose. So congratulations on—it's, it was a great read and it was good for me to go back and rethink through some of that process. So, I do, I do have a couple of questions. And I guess, maybe the first one is about the public participation aspect of it which seems to be often one of the places where there's a lot of opportunity for things to the climate action planning process to get derailed and to go in directions you didn't intend it to. So, I guess a couple of questions is best practices for working with people with a wide variety of beliefs about climate change including those who were skeptical to various degrees as well as those who are fervor supporters of climate change and also thinking along that line, can you sell climate action plans on the co-benefits of both? It seems there are co-benefits on, on the emission side and also on the adaptation side. Can you sell it on those co-benefits alone?

TS: Oh, I knew you were both going to like this.

AG: I—

MB: I can start.

AG: I can start if you want. I got asked this at [inaudible].

MB: Let Adrianne.

AG: It's fine.

MB: O.K. Go ahead.

AG: I'll start. I was recently asked this question at a conference and I've been working on a state adaptation guide. And the question was, "Can you change the name? If you took climate out of the name, this would work so much better where I live." And my answer was, "Yeah, change it." You know, "Who cares if you call it climate change if you're taking the actions." And so, part of me is like, "Yes." But, I think partly it’s knowing your community. And that's one of the benefits of doing it locally is recognizing what's going to gain attraction for your community and maybe in as such. There's a lot—I mean for greenhouse gasses as Tammy referred to, it saves you money. And so, there's some very conservative ranges of our political spectrum that if you're saving taxpayer dollars, they're all over it. For adaptation, it's often about reducing community risk. And so, I had communities ask, "Could we just call it an adaptation plan, a risk reduction plan?" And my answer is, "Absolutely." You can demonstrate that it makes you safe. You can

actually frame adaptation in particular in very pragmatic terms. It's for a long term economic liability, long term public health, long term public safety and many cases. And those are grounds that those aren't new. Those aren't necessarily related to climate change. And so, if you kind of get the conversation down to those terms, you often can get more attraction in what can be a very divisive kind of topic. But yes, sometimes you need to kind of—because climates become a political position rather than a scientific finding in many cases. And so, in that situation, perhaps you should kind of stop using the term.

TS: So, I've worked on a lot of climate action plans across California. And in about 25 to 30% of them, we have in fact changed the name after we got started. And so changing the name, that's really in responding to the local community. What really doesn't change too much is the content. So if their strategic plan is to identify greenhouse gas emissions and to reduce them over time—so in the examples, in San Luis Obispo County and the plan is called an energy wise plan, it turns out that often times the most climate action plans about 60% of the policies and programs are targeted toward energy, energy efficiency and renewal energies. So, calling them an energy action plan, energy and climate action plan is still fine. But what that gets back to is that you have to start early probably before—as soon as your community decides to do a climate action plan. And often it's through the decision of a city council through, you know, setting up a budget. That's kind of when you start. It's, you know, identifying your team who's going to do it and immediately identify your stakeholders, and recognizing that your stakeholders are across a spectrum, that you have people who have been dying for your community to do it, like they just cannot wait to come help you. So, those are a lot of your go-to community groups. Those are going to be your ambassadors. They're going to help you get the word out. Then you know that there's a group that's going to be highly skeptical. That they may either be skeptical because they don't believe the science or they just don't believe in government intervention whatever it is. There, you've got your two extremes. Often in the work that I do is I feel the challenges of the people who are in the middle, the people who, this issue hasn't even come up on their radar. And those often are the folks we seek to engage to get to come to our meetings and to work with us. The other thing is that we use strategies that don't look at all like a government meeting. So, the public hearing process that we're often accustomed to where you get to go say your three minutes, that doesn't work. That doesn't create policy in Local Climate Action Planning because that's not allowing us to really understand how people live in their community and how they want to either do things differently or continue to do the things that work. So we like to, you know, to roll up your sleeves so to speak. We're sitting down and talking with residents either in very interactive and engaging open house or workshop styles where they get to write the policy that we start from visioning process. Because although I have a very—I have a great team at least as an example of—on the company I work with and I know that we could go write a plan, but that plan would have no value if it had no stakeholder or community input into it. And that's what—why that matter is in climate action planning is because a lot of the policies there are grounded on behavior change or adaptive change. And if we put it on a shelf, nothing happens. So we have to have that buy in and believe that even before the plan is adapted, it's already been implemented because the community is so engaged in it. So, that's what we look to do. And also a lot of good things are happening already. And so, there's a lot of—you know, an example

here in San Luis Obispo County when we were working on the county's Energy Wise Plan is recognizing groups like the SLO County Bicycle Coalition were already working with the communities to do good things to increase, improve bike infrastructure and get people out on their bikes. And so, we will—we wanted to capture that in the plan as well. And there were many other examples. And the extreme position, their extreme activities is that we've had folks who are willing, you know, planners who lead the process to go sit in living rooms with people just to make sure that they really understand the, the resident's needs. So, I say you have to start early and you have to do engagement often and throughout the whole process.

MB: We've done a couple of the national studies where we've asked this, why they chose to undertake climate action planning because there's no mandate to do them. And, you know, the reasons were all across the board, but our survey data revealed to this that the most commonly cited reason was for energy efficiency and cost savings. And so, we sometimes were jokingly talk about that greenhouse gas emissions reduction is the co-benefit that the director, the immediate benefit, the big benefit is energy efficiency in cost savings. In many communities, we know from our survey and from interviewing, if you look what's in their plan, they pretty much only identified policies where they can say, "It's going to save us this amount of money to do it." Either us as the city government or a residence as, you know, ratepayers for electricity for example. So they almost see that as the benefit. And, oh yeah, it also will help us deal with greenhouse gas emissions. That's good too, so.

AG: I would add one other little thing as well is that the outreach and the behavior change ends up being something that has to be prolonged because a lot of the changes take a long time to experience. So in the book, we interviewed cities we saw as being model cities. So, of course, Portland is one of them. And if you look at their data, it took them over a decade to see G.H.G. reductions start to occur, meaning, actually having citywide mode shift towards bikes. For example, it took a really long time for that. Like a local culture to develop and behavior to slowly shift, it's a long process. They had engagement and outreach and education through the entire process. And so, they're now 20 plus years in and they've seen unbelievable reduction, but they didn't start to experience that reduction for over decade, but it took the sustained effort. So, outreach isn't just the development of the plan, but it's something that has to happen on an ongoing basis.

EL: Which I guess is actually great segway into my next questions which is—and this is really brought out in the Miami-Dade case study that this isn't iterative process and it can take a decade and it's not as it, it—sort of like any plan for change personally or on a larger scale, right? It's everyday changes and it takes a while to see the changes. And how do you sustain the momentum both from a government perspective and individual community member perspective particularly when there seem to be distractions that pop up every day? How do you maintain that momentum moving the climate action plan forward and then once you sort of adapt it, maintain the implementation part of it?

MB: We did quite a few interviews from the book. Miami-Dade was one of them. And we've done quite a few interviews since then as well with folks, you know, in communities that are

implementing these plans to sort of find out, you know, how it's going, what the issues are. And, you know, one of the things that we consistently hear is the need for a champion. And that champion in some community is the mayor. It was a mayor's initiative to do the plan and to move forward. And, you know, the mayor has the authority, the moral standing in the community to maintain that effort. In some cases, it was a city staff who had inspired the plan and were deeply committed to it and are obviously positioned in the institution to make implementation happen. And in many communities, it was champions out in the community whether in some cases it was individuals, but it was usually a community-based organizations or community-based non-profits. We saw this in—a good example is Evanston, Illinois, for example, where really the entire—not only that the initiative come, but this was a case where the municipal government didn't even write the plan, the community actually wrote the plan themselves and gave it to the municipal government in Evanston. And in effect, although they partnered, I mean they, they did this cooperatively. And there, that community group has continued to be the champion for the plan through the implementation phase. So, that was one of the keys that we heard was that, you've got to have a champion somewhere in the community. The other key that we heard was that, you know, the plan has to be locally tailored and it has to be realistic, right? It can't be, you know, we're all going to, you know, cut our driving in half tomorrow. And there are plans out there that are like that where they're, in my, at least in my opinion, they're just overly ambitious. They're asking too much. So the plans have to be based on a real sense of what's possible in the community and then sort of more at the nitty-gritty level, you know, the details of how you're going to, you know, enhance your bus program or start a car-share program or encourage homeowners to, you know, put more installation in. You know, there's some nitty-gritty work that has to be done there. Where is the money coming from? Who's going to do it? When will it be done? That has to be thought through very carefully in the planning process. So, I think champions and then that locally tailored, locally feasible planning efforts are the, are probably the two big pieces.

TS: Well, I mean, I could—so I absolutely agree. I would have to say that you might need more than one champion.

MB: Yeah.

TS: That you—I would often—I think that having all three across the, at the elected level, at the staff level and at the community level, you mean that's kind of, you know, in some ways it's group therapy and support as you go through. And then another way is that it's accountability, but it's also recognizing-- it's continuing that work that we're all on a journey together.

AG: Yep.

TS: And that, you know, we, when we have—and I think we have elaborated on this a little bit. One of the things, the components of the plan that we always include is what's called an implementation program. That's a little jargon-y, but what that really is is it's the plan to succeed. It takes all of the measures. It identifies the timing of them. How soon they need to start to achieve that? You know, often we're looking to reduce emissions by 2020 to 2030. So

on the quantitative side, we've said, "Well, you know, here's what you really need to do to—you have to have a plan. Maybe another code adapted by 2015. And you have to implement it by 2016. And you better have an education campaign, actually start at 2012." So there's a lot of scheduling that has to be done. And if you don't have staff dedicated to do that, you could already be setup to fail. So, one of the things that we work toward is to have that implementation program in the plan so that it's adapted and approved by the elected officials at that time and they, they're committed to it. And also in identifying who's responsible for it, when we recommend that you—it's not just, you know, the Public Works Department or the Planning Department, it's is there, you know, is there a group that plants trees already that we can get to help us reach that goal of planting 10,000 trees in five years? Well, sure there are. And so, one of the first steps is engaging that group and to help them recognize they're part of the plan forward. The other thing is monitoring and reporting. They only know how good you're doing if you check in like you said. So that makes it iterative. And you also have to have the flexibility to change. That a policy we write today, technology could change, the regulatory environment could change, some political environment could change, three years we may need to pull it out, have a plan or put in something else. So, I think that's what makes this slightly different than what we're often accustomed to as a public policy making process or components of planning processes. We want to keep accountable, we want to move forward and then have the ability to adapt over time.

AG: I mean, at, on the adaptation side, the added challenge is that there's often a lag between new science and it actually trickling down to being applied on a local level. And so, one of the challenges of climate change is shortening that feedback loop. And California has taken strides to do so. The E.P.A. now has some online tools to help, you know. And now, it has online tools that actually makes accessible to local jurisdictions, the latest and greatest in climate science, because local jurisdictions don't have staff climate scientists. So, a lot of times you need somehow to shorten that because it is improving. And so, trying to apply those results and translate what that means requires you to be iterative as well. And so, sometimes you may identify something that somewhat uncertain or a little ways off and think, "We'll study that issue for a little while longer." You know, in three years you may now need to take action, and maybe a better data or you've observed recent trends that say it's a bigger issue than you thought it was. But there's certainly a need just like checking with data but checking to see whether your initial assessment of impact, potential impact was accurate. Checking to see if there's better information to shore up and inform some of your policies for adaptation, but it is, it has to be iterative. And that implies the sustained engagement as well.

EL: And I—one of my other questions is about, thinking about how many cities or communities actually achieve their emissions target. So there are about thousand communities doing this, but I think about—and it's, it may be a bigger deal sort of the national or international level. So, there are some estimates that in the United Kingdom in order to achieve their emission reduction target they would have to construct something like 40 mid-sized nuclear power plants as a sort of substitute to get to where they want to be. And so, thinking about how many cities actually achieved their target or adopt their target. And then thinking about what the,

what that means for accountability in sort of the bigger picture about citizens holding their government accountable or government's accountability to their people.

MB: The, the, one thing to know is, this is a very new field. Most of the, the median age for a climate action plan in the US, a local climate action plan for the median adoption year is 2009. So, we're talking for the most part of that plans that are maybe two or three years old. So, we don't have a lot of experience yet with long term. Portland, places like Portland and a few others being the exception. Cities that have been doing climate planning for quite a while, most of them are reporting, either meeting their target or significantly on the way to their target. But most of the communities that we're talking about, their first targets are probably 2020 or maybe even 2030. So, we're not there yet, so we don't quite know yet. The other challenge of late is that the economic downturn in the U.S. has actually resulted in a reduced amount of emissions because we've got less economic activity, we're actually driving less. And so, there's a confounding factor that's hard to, it's hard to judge over any short-term period. This is—as, you know, we heard about Portland, we're really talking about, you know, 10 or 20 years to really begin to understand how well we're doing and how effective we're being. So, the jury is out a little bit at this point in terms of, you know, how successful communities are going to be, but there's lots and lots and stories now of success of particular implementation measures. And we know if it's, if that's working, then ultimately the plans themselves are going to be working. So again, in our interviews that we've done, we just heard all kinds of interesting stories. You know, communities that have cut their energy bills for their streetlights and traffic signals in half through the adoption of better light, lighting technology for example. Or, major cities like New York and Portland which have seen, you know, tremendous increases in bicycle road share or bicycling as a mode of transportation. So, it's a little too early to tell how we're doing. California met its 2010 target, but it possibly met its 2010 target because the economy collapsed. We don't know. We do know that our energy has—our electricity energy sector in California has become much cleaner and then if we were burning electricity or using electricity at the rates we were five years ago that there would be fewer G.H.G. emissions, we do know that. We just don't know how that is going to play out overtime given the growth of the state and the growth of the economy overtime.

AG: And I don't—I was expecting you to throw out the number because I don't remember what it was, but I know that at one point Mike took all the cities that have adopted a climate plan and looked at what percent of the U.S.'s emissions—

MB: Oh yeah.

AG: —those cities comprise. To ask doesn't matter—

MB: Yeah.

AG: —internationally or globally for cities to do this. And the reality is that most of the large metropolitan areas in the U.S. have adopted a climate plan.

MB: Yeah.

AG: If they meet their target, you're talking—I think it was 8% of the U.S.'s emissions were covered already just under the 150 or so cities that have adopted plans. They're—I mean, that's a very small sample of cities in the U.S. So you are talking about affecting a significant portion of the G.H.G. emissions in the U.S. So, it does have national kind of global relevance in terms of the city. I mean, whether or not they're successful in meeting their targets is another story and we don't know yet obviously. But, it is relevant in terms of having consequences globally.

MB: Yeah. And it—another piece of that is that, you know, if you said for example, all right, in the U.S. we've got to reduce emissions, you know, this much. This is not going to help the podcast folks. I'm holding my hands 50 departments. [Laughs] Yeah. You know, if you, if we got to reduce our emissions this much in the US, depending on sort of which study your look at, there's estimates that, anywhere from about 20 to 50% of that needs to come from local actions and 50 to 80% will come through federal and state initiatives and technology change. And, you know, electric vehicles are going to make a profound difference over time in our G.H.G. emissions potential, particularly in the west where we have relatively clean electricity compared to the eastern U.S. And so, local governments don't have to solve the entire problem. They have to solve their piece of it. And their piece of it might only be about 20% of the total emission in the U.S. or desired reduction in the U.S. I should say. And the rest of it might come through, eventual federal action and through technological change that we see occurring. And, but that's still also a little bit of an open question as to what share has to come—what share of the total reduction we need has to come from whom and when and where? But, that area of research has been advancing very rapidly in the last few years. And if you're interested, you can look at something called the Wedge Strategy or Wedges. And the author is Sokolow. And he has written a lot about trying to figure out, you know, if you think of it as a pie in essence, you know, which wedge—how much reduction do we need in each wedge so to speak?

EL: So I guess it's somewhat related to that. It seems like there's this balance then between setting a reasonable target and a target that's not—that is still challenging, right? And so, what advice—and this would be my last question so that we can get to the audience's questions. What advice would you give cities about how to set that reasonable target? I mean, taking into effect all of those contextual factors, but what's that reasonable target?

MB: You get this one.

TS: You get this one [laughs]. Well, it's a great question. In California, we kind of have an easier answer than we do outside of California that relates to—in California, we have—I think most voters are—may recall a couple of years—because this actually came to us on the ballot to validate it, AB32 or the Global Warming Solutions Act. So that was signed by the legislature, and it sets a statewide target to achieve 1990 emission levels by 2020. So at the state level, we have an inventory. We know, generally, you know, we have 1990 inventory, we have the forecast of emissions and we know that, oh that's, you know, some big activity to get down to that. After

the legislature approved that, that target, 1990 by 2020, there's was then what is called the Scoping Plan. Within that plan, there, that target was translated to local governments. So, what has been accepted as like the minimum target in California is to reduce your baseline emissions 15% by 2020. So, what we do is we do inventories where they generally for 2005 because that's when the AB32 was pretty much adopted, 2005 to 2008, we forecast them and we say, "What you need to do is to get 15% below baseline." What that can really mean though is that, real reduction, may be upwards to 48%. Because remember, we recognize growth will occur, and that we need to get so that, what Mike talked about is the wedge is that the important part here is we have to allow our communities to grow and achieve their objectives and also meet, you know, rollback our emissions, recognizing that first we have to stabilize and look, work toward an interim goal kind of a no net increase. And then, ratchet it up and drop them. And so, that's good because we need that slow start sometimes. And it may take technology in the middle or back end to get us below. So, in California, starting that conversation and based on the work that I've done so far, 15% below your baseline are approximately a 1990 equivalent is rather ambitious enough. And you have to consider the cost of doing that because we're looking at a planning timeframe of about eight years. So, you have to also be willing to anticipate a lot of the benefits are going to come on the cost side a little further past that planning horizon. So that gets into the political issue as well. So, I would say that that's a good target. There are communities in California obviously where that's not good enough. And so, you have to show them what a 20% below baseline or 25% below baseline means not just in the policy, but the cost side. And so that's what is the kind of—the burden of the planning team is to understand the quantitative component as that informs policy and then also, how to make that tangible to the public. Because these targets, they don't mean much to many of us, it's—well, how many, you know, how many more miles I need to ride on my bike? You know, that kind is what it translates to or how much more energy efficiency improvement do I need to maximize in my house to be part of the solution? So, that's what I try to do is, is that, there is that overall target, but I think what we keep coming back to is translating, you know, the national down to the state, down to the local, down to the individual. So, what an ultimate target means to each of us is it's important to have as you go through the planning process.

MB: We don't have formal national target. And only about, I think, it's about 30 or so states have state targets. So, usually in those states, communities are choosing to be consistent with the states, with their state targets. But in those other states, we've seen just sort of all kinds of targets and a whole variety of reasons for why communities chose them. And it usually follows whether they're trying to be very realistic as to what they could achieve through some relatively easy actions, you know, to communities that feel it's their job to save the world and they're going to do it all. So, and some of them almost are, so I'll give them their credit for that.

AG: We just had a community in California adopt the target to get net zero energy use by 2020, I believe.

MB: Right.

AG: As Lancaster, California. And, they're aiming to do that largely through renewable energy.

MB: Yeah.

AG: And that will have a greenhouse gas emissions reduction benefit. So, the other side of that is finding how to present the target that's appropriate for your community as well. Is it about energy efficiency, renewable energy, greenhouse gas emissions? You have to find the right context?

MB: Yeah. And in that case, that's directly aligned with their economic development objectives for the community. They see this as a jobs, an economic development strategy as well as a G.H.G. reduction strategy.

[Music]

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