

THE BROOKINGS INSTITUTION

FALK AUDITORIUM

EXPANDING OPPORTUNITY AT STATE AND LOCAL LEVELS
THROUGH EVIDENCE-BASED POLICYMAKING

A HAMILTON PROJECT POLICY FORUM

Washington, D.C.

Thursday, January 31, 2019

ANDERSON COURT REPORTING
1800 Diagonal Road, Suite 600
Alexandria, VA 22314
Phone (703) 519-7180 Fax (703) 519-7190

PARTICIPANTS:

Welcoming Remarks:

ROBERT E. RUBIN
Former U.S. Treasury Secretary
Co-Chair Emeritus, Council on Foreign Relations

Fireside Chat:

JOHN W. HICKENLOOPER
Former Governor
State of Colorado

SUDEEP REDDY
Managing Editor
POLITICO

**Roundtable Discussion: Improving State and Local Policy
Outcomes With More Efficient and Effective Analysis:**

Moderator:

JAY SHAMBAUGH
Director, The Hamilton Project
Senior Fellow, Economic Studies, The Brookings
Institution

Panelists:

JUSTINE HASTINGS
Professor of Economics and International and
Public Affairs, Brown University
Founding Director, Research Improving People's
Lives (RIPL)

JEFFREY LIEBMAN
Director, Government Performance Lab
Professor of Public Policy, Harvard Kennedy
School

ANDERSON COURT REPORTING
1800 Diagonal Road, Suite 600
Alexandria, VA 22314
Phone (703) 519-7180 Fax (703) 519-7190

PARTICIPANTS (CONT'D):

MICHAEL NUTTER
Former Mayor of Philadelphia
David N. Dinkins Professor of Professional
Practice in Urban and Public Affairs,
Columbia School of International and Public
Affairs

**Roundtable Discussion: Utilizing Transportation and
Housing Policy to Increase Economic Opportunity:**

Moderator:

JASON FURMAN
Professor of the Practice of Economic Policy
Harvard Kennedy School

Panelists:

MONICA TIBBITS-NUTT
Executive Director
128 Business Council

DANIEL SHOAG
Associate Professor
Harvard Kennedy School

MATTHEW TURNER
Professor, Department of Economics
Brown University

* * * * *

P R O C E E D I N G S

MR. RUBIN: Good morning. I'm Bob Rubin and on behalf of my colleagues at the Hamilton Project welcome to today's forum which, as you know, is Expanding Opportunities at the State and Local Level Through Evidence-Based Decision-Making. What I'm going to do is very briefly set the stage for today's program and then we will turn right into our program.

We have, as all of us know, a federal system and that, I think, gives us many advantages. States and cities can take different approaches to common problems and as a consequence, best practices can develop which then all can benefit from. States and cities are closer to their citizens than the national government would be and I think in many cases that enables states and cities to make decisions that are better suited to the local circumstances. In a time when the federal government, unfortunately, is, in large measure dysfunctional states and cities can act.

I think there's also another point which seldom gets discussed but I think is very important, and that is if states and cities recognize their local and

state comparative advantages and build around those that can be not only very good for the states and cities, but can be very important for our overall economy. And I think at least that the idea of building around state and local comparative advantages should be a significant part of our nation's economic strategy.

Having said all that, it is obviously very important that states and cities in their policymaking make sound, sensible, and effective decisions. The potential if we have evidence-based approaches, effective discipline, and rigorous evidence-based approaches for better decision making at the state and local level is very substantial. And Brookings, of course, has had a long standing focus on the issues of states, cities, and some cases regions to the Metropolitan Project.

But there's a lot more that can be done, at least in our view, in that area. The purpose of today's program is to focus on how to make state and city decision making more effective, and also to focus on some specific policies. Policy organizations, for the most part, as we all know, tend to focus primarily on

federal policy making and we at least think that this should be far more focus on the state and local as well. So while part of today's purpose is to contribute to intellectual work product with regard to states and cities, another part is to hopefully encourage others to increase their focus in these same areas.

We'll begin our program with a fireside chat with the former Governor of Colorado, John Hickenlooper. That'll be conducted by Sudeep Reddy who's the managing editor of Politico and had been former economics editor of the Wall Street Journal. Governor Hickenlooper is widely respected and widely recognized for bringing analytic and evidence-based rigor to decision making in the State of Colorado, and also for the sound and sensible programs that he's implemented on many fronts. We are extremely fortunate to have the governor with us and we thank him for being here.

The fireside chat will be followed by two panels. The first will address improving policy analysis and outcomes at the state and local level. Our second will focus on transportation and housing policy to increase economic opportunity. Let me just say on a

personal note, I don't know how many of you remember this, but many decades ago there was a book by Jane Jacobs, The Death and Life of Great American Cities. I, myself, am a great fan of that book.

And the idea was to nurture the vibrant character, street like, and neighborhoods of great cities. And hopefully that will be part of the discussion that focused on the complexities and competing considerations around urban development, including housing, access to jobs, and gentrification. In keeping with the practices in the Hamilton Project I won't recite from the resumes of our authors and discussants, but as you can see, it's an extraordinarily distinguished and experienced group and we are grateful to all of them for being with us.

The author and members of each panel will be introduced by the moderators, panel number one will be moderated by Jay Shambaugh the director of the Hamilton Project and former member of the Council of Economic Advisors. Panel two will be moderated by Jason Furman. Also a former member of the Obama Council of Economic Advisors and its Chairman. And then we will proceed --

and that we will proceed to the panels after the fireside chat.

Let me close by recognizing the outstanding leadership of the Hamilton Project. I've mentioned Jay and Jason already. Kriston McIntosh our managing director, and Ryan Nunn our policy director are all extraordinarily capable and thoughtful in helping us accomplish the mission to which we are committed. We also have an outstanding and hardworking staff without which we would not accomplish any of what we do.

With that, I will turn the program over to Governor Hickenlooper and Sudeep. Where is John? There we are, okay.

MR. REDDY: Governor, you are an expert in beer. You are reluctant expert in weed from your experience in Colorado. You, obviously, have some expertise in purple state politics, so I want to talk about all of that, including a little bit about 2020 in a couple minutes.

But first, I want to just discuss your experience as governor. If you could take us back eight years to when you took over and you were trying to

figure out how to work within agencies and deal with a lot of obviously different constituencies in the state. How did you think about this issue of bringing evidence to the decision making process at the very outset of what you were doing, given the strong ideologies that I'm sure exist in the state?

MR. HICKENLOOPER: Absolutely. And, first, I want to just thank Brookings and the Hamilton Project, Mr. Rubin, the entire board. Because I think this is near and dear to my heart. I'm a little disappointed. I was kind of promised a fireside chat. It's a little cold. I don't really feel any fire yet, but I'm sure we'll create that ourselves.

MR. REDDY: We'll work on that. We'll work on that.

MR. HICKENLOOPER: I had been Mayor of Denver for eight years and trying to create policy that works, but also policy that is embraced by the public so they'll support it, you know, in meaningful ways really required that you be able to talk about initiatives with facts, and be able to demonstrate we've tried this. We've looked at that. Here's where we're coming at

this.

And I got elected in 2010 as governor. We were coming out of this gigantic economic collapse and were, I think, disproportionately harmed compared to many other economies. We were 40th in job created in 2010, and my goal was to, A, lift up economically the entire state, not just the urban areas, but I made a commitment to the rural areas of Colorado as well. But I also said that we would continue to take data and information and use that as ways to attract a diverse economy to our state and expand the economy that was already there.

And that allowed us and really informed us around almost -- I mean, in a funny way when you're trying to use innovation and new ideas to make real change people have to believe in government to a certain extent and that was kind of at the root of everything was an attempt to use lean six sigma type process improvement systems in every agency of the state government. So every cabinet senior official that I hired had to sign onto that. And we now have -- I think we've done over 1,000 lean process improvement programs

over the last eight years. We, I think really, created an institute and funded it so that we will continue doing that for, you know, for hopefully many years to come.

MR. REDDY: So tell me about the resistance, if any, to this. There's, obviously, there are state and local officials who take signals from their federal leaders, from their parties who might have ideologies that are conflict with whatever policy you're pursuing. Did everyone embrace evidence-based policy making in the beginning?

MR. HICKENLOOPER: No, of course not. Yeah, there's an orthodoxy that a number of established biases in politics feel threatened, and by, you know, an open board, non-partisan, and once the election was over we didn't care whether people were Republicans or Democrats. We tried to hire, A, the most diverse, but also the most talented cabinet and senior staff that we possibly could, and look at solutions that weren't tied in.

One of the things that we wanted to do is that we wanted to attract young entrepreneurs to Colorado

which we thought was part of the solution we had to be, you know, create an environment that was receptive and embracing of young entrepreneurs. So one of the things we did was we decided we'd go through, it turns out there are 25,000 rules and regulations in Colorado. Buried within that, because it hadn't really been looked at in detail are, you know, are boatloads of red tape and bureaucracy.

So we had some really smart team go through that and I think in the end we either simplified or eliminated about 11,000. So almost half of all those rules and regulations. Some people accused us of playing into the hands of real estate developers or private industry. Obviously, we were very careful to make sure that our regulatory framework still protected the citizens of Colorado and allowed people that were trying to build something or build a business to, you know, have a little less bureaucracy to deal with.

That's always a balancing act, and some people just have a knee jerk reaction that bureaucracy's good. That the red tape is beneficial. I think most American people don't agree with that and we had to push back a

little bit but, you know, ultimately, if you look at where -- how people talk about business and starting a business and how difficult it is. I mean, right now we're seeing some of the lowest levels of startup businesses in the countries that we've seen probably in 50 or 60 years.

Part of that is just the red tape regulation and bureaucracy of just -- the people that start businesses are the ones, generally, who are successfully working in somebody else's business and they've got to be lured into making a jump and going and taking a risk and starting their own business. And if it just feels like there's burden after burden, hill after hill I believe that there -- and certainly we've had many discussions that that is a disincentive for many of them.

MR. REDDY: So when you launched Wine Coup, the brewing company, you were, obviously, dealing with government and regulations to some extent. Did you -- how did you deal with the local officials, with the state officials? Were you a frustrated business owner? Were you embracing the regulations? What was your

experience at that point?

MR. HICKENLOOPER: Well, when I was building my business I was frustrated just because there were all these seemingly incomprehensible rules that I couldn't see the purpose in many cases. That being said, I think Denver, specifically, is a pretty good city in which to -- it's not corrupt. The weekend before I was going to open the Wine Coup the final building inspector came through for the final checkup and the handrail coming up from the basement which is just where employees would come out was two inches to low.

He said, well, I can't give you a temporary certificate of occupancy. You know, Mr. Hickenlooper. I'm awful sorry. And I started saying, well, do I have to -- you know, I grew up outside Philadelphia. I'm not trying to irritate anybody, but I said is there a building inspector retirement program, something I haven't heard about. And he stopped and he looked at me and he goes, Mr. Hickenlooper, just for your record, I'm on my way. Because it was, like, 4:30. All the carpenters had left. He said I'm on my way out to my car to get my screw gun and you and I are going to get

this railing to the right height.

But, you know, I don't want to hear any cracks like that anymore. Denver is a very honest city. But, you know, one of the things that compelled me to run for mayor in 2003, and I, you know, I'd never run for student council. I had no experience whatsoever. But there was a recession after the dot com bust and city revenues went down dramatically and they were worried about having to lay people off, and what that led to was they decided well, we haven't raised parking meter rates for eight years. And we could actually go up 50 percent and that would give us this much money.

And I mean, well, a bunch of us went down to the mayor's office and said, hey, you know, usually when your revenues go down it's not when you raise your prices. Right, historically that is a bad idea to address a change in your business. And they listened to us for about a day. Well, they listened to us for about an hour and then waited two days and then raised the parking meter rates. And I called that when I ran for mayor the fundamental nonsense of government.

Because I hear about it from business owners

not downtown, but in the periphery where they didn't have to pay for parking saying, god, that was the craziest thing I've ever heard of, but we're sure glad they did it cause it pushes all this business back out to the neighborhoods outside the downtown area. And I think that's, you know, emblematic of, often times, government makes decisions for its own benefit, its own self-interest at the expense of the people they're supposed to serve.

MR. REDDY: So you took Office of Governor just after a recession and there was, obviously, quite a bit of money flowing from the federal government into state and local coffers to deal with that. There was a urgent feeling, for anyone who remembers it, about the state of affairs of the nation, how to get past that. Were people using terms like cost benefit analysis at that moment? Is that something that there was much appetite for?

MR. HICKENLOOPER: The difficulty around the stimulus program was that there wasn't time. And there was a pretty broad-based consensus. People forget that the initiative for having a stimulus program of real

scale came before Obama, came from the Bush Administration. And I think pretty much everyone shared that sense of urgency.

People still looked it which people tried to prioritize it, but you had to have the term of use them was shovel ready. You had to be ready to come out of the ground and build something immediately. I was -- if we could have had a couple years, and I think it's fair to debate that, but in the end I respect the decisions that were made probably were the right decisions to -- you had to get that money into the system immediately.

But there were -- I had been Chari of the Transportation Committee for six years at the U.S. Conference of Mayors and I called all these metropolitan areas and, you know, we had done a transit system in Denver. In 2004 we went to the votes with 122 miles of new track. It was called Fast Tracks. And we'd done the work to go and get all 34 mayors, two thirds of them either Republicans or conservative independents. We got all 34 mayors to unanimously support a significant tax increase to build this transit system.

And I had over the process of working with the

U.S. Conference of Mayors talked to the Chambers of Commerce in the 20 largest metropolitan areas and 19 out of the 20 were ready and willing to embrace a tax increase in their communities to mitigate congestion. I mean, that seemed to me the perfect way to bring Republicans and Democrats together, but all those programs would have taken too much time. Ray LaHood and I spent a better part of an afternoon trying to figure out was there a way to do it as aggressively and rapidly to make the money well spent and there just wasn't. We ended up putting up, you know, spending a lot of money on things that were not as essential. Right, guardrails on mountain highways.

MR. REDDY: So when you got into permitting issues, I'm sure you dealt with this quite a bit as a mayor and, certainly, came up from local officials as a governor. How do you work through something like that? There's obviously been a long-standing, not in my backyard, feeling and maybe moving to a yes in my backyard for some people, but how do you work through that kind of issue when there's obviously a public interest and a public need there?

MR. HICKENLOOPER: Well, that's the great thing about having been a mayor. You see how important it has to have a granular response to, you know, the issues that affect neighborhoods. When a road gets widened, when you need another exit lane. You know, any of those changes to someone's neighborhood affect the quality of their life. And I don't think there's a responsible way to do it without bringing people together and allowing them a platform for open discussion, and to really talk about the gives and takes and, you know, are these decisions the right way.

We actually downscaled zoning in a couple of the neighborhoods when I was mayor and, you know, that's taking away some peoples' rights to build a bigger home on their block, and it was getting gentrified and a lot of people were really feeling intimidated and feeling that their neighborhood was losing everything that they loved about it. But we set a high bar to do those new zonings. They needed not just 50 percent, but they needed 60 percent of the vote. And we made sure that the downzoning was very carefully structured to still maintain as much property value as possible.

So, again, any of these situations the key is how do you get both sides heard? You know, when I was governor we decided we were going to address methane. And methane is, by any measure, one of the worst climate pollutants there is. It's 40 to 60 times worse the CO2. And so I sat down with the oil and gas industry and I said you need to come to the table about methane and fugitive emissions. That's what they call it, fugitive emissions. I've got a Master's in geology. I didn't know what fugitive emissions were.

Anyway, the CEO of one of the largest operators, oil and gas companies looked at me and he says, well, you know, we do that, but your friends in the environmental industry and going to create red tape and bureaucracy. We'll waste a lot of money. We won't get any credit. And I said, are those the only reasons? And we spent a half an hour really thinking what the reasons were, and we went to a number of the environment organizations, the Environmental Defense Fund, the Colorado Environmental Coalition and said, hey, are you willing to do this on a lean process approach and make it as lean as process, make sure money isn't wasted, are

you willing to share credit? That was discussed a little longer.

I mean, the environmental community and the oil and gas industry it's like the Hatfields and McCoys. It's like Coke and Pepsi. I mean, they really don't like each other. They don't trust each other. But in the end we got them to come together, but their scientists in the same room. We didn't start with a draft, you know, state government did not say, well, here's a work plan. Here's your timeline for you. We let them all create that themselves in that first meeting so they could feel sure there was no bias.

And it took them two months to fight over the science. And, again, as a -- I think I'm the only geologist that's ever been elected governor. I'm not sure what that says. But as someone who understands science, for the first two months they debated what the scientific literature was actually saying in terms of what were the costs, the causes and the costs of correcting the pollution that was coming out of the pumps and tanks, and you know, methane escaping or being flared or vented.

Then they spent another 12 months once they agreed on the science to create methane regulations that, in the end, the oil and gas industry agreed to spend \$60 million to check every single possible spot of pollution, and I mean, \$60 million real money and in the end we believe the Environmental Defense Fund's estimate was it was the equivalent of taking 320,000 automobiles a year off our roads. But the key to it was getting both sides together, create a process where no one felt that they were, you know, being, you know, taken down.

MR. REDDY: So a case like that there were clearly people on the left who think that you caved to the oil and gas industry, people in the right in the public who think you caved to environmentalists. No one's ever happy when you work through a compromise like that.

MR. HICKENLOOPER: It's a great system, right.

MR. REDDY: How do you work through that? In actually explaining your factual basis for some of these decisions that you've worked through like this does the public ever actually care about that when you talk through it?

MR. HICKENLOOPER: Oh, my. Yes, they care. But I think the key, for me, and this is years in the restaurant business, right. You learn the restaurant business basic truths of like, right. That when you're in the weeds, when there's a big rush comes in the restaurant doesn't matter whether someone's tall or short or straight or gay you're all one team, one family. You also learn if there's no profit, there's no margin in having enemies, unlike politicians who, I think these days, often define themselves by who their enemies are and how they treat them. That's not the case.

The other thing you learn in the restaurant business is that, and this is I think true going back most of my life that you never persuade someone to change their mind about something that's important by telling them why they're wrong and you're right. The only way you ever persuade anyone to change their perspective on something is by listening and then listening harder. So what we tried to do with the oil and gas and the methane regulations was to -- well, to listen harder.

We had public forums. I went up to Boulder which is a hotbed of anti, I mean, they think any kind of hydrocarbon combustion is just, you know, worse than anything. I won't even try and create the right metaphor because I'll myself in trouble. But, you know, there were a lot of protestors. We went in. We had 450 people there and I tried to listen to them. You know, in the restaurant business when someone's really angry if you use their exact words back to them it somehow validates them in a way and they generally calm down. I think that's true in public service as well that you listen, you repeat back.

And when you use someone else's words yourself you hear the words in a different sense. In other words, they're processing through a different part of your brain and it makes you more willing to look at a different perspective. You almost always change a little bit every time you have these kinds of discussions. And, you know, that process of going back out to the public, giving them, you know, an opportunity to declare their full throated displeasure somehow calms things down a little bit.

And I think many people and I mean, there's a lot of, I mean, not a lot, but a number of people that think that you shouldn't be allowed to have any hydrocarbons come out of the ground. Again, we have -- this is America. We're not Russia or China. We can't take away peoples' private property. We'd have to, you know, look at through environmental regulations and air regulations which in time might come to pass.

But the real point of listening to these people was allowing them to express their displeasure even if in the end we were going to disagree that, you know, I felt that, you know, banning fracking would be taking away someone's private property. And the key, the way that we won many people over was demonstrating that maybe -- I think for the last eight years Colorado is going to be, if not the most, but very close to the top in terms of reducing harmful emissions of all kinds on a per capita basis.

And when you sit down with people and say, hey, this is about, you know, really combating climate change head on at full speed. I mean, methane, one thing that we should be doing right now. They're taking

our regulations and rolling them out in Canada as national policy. They're talking about doing it in Mexico. Methane regulations is at the heart of what we all should be doing, not just in this country, but around the world in real time.

MR. REDDY: We've got good questions coming in from the notecards. So if you're got a question just raise your notecard and it'll make its way up to me. You were in Iowa last weekend. You've obviously said that you're exploring a run for president. Did you make a decision in Iowa?

MR. HICKENLOOPER: You're looking to make news, Sudeep. You know, and Iowa is almost as cold as it is here. Just kidding. Just kidding. It was colder.

MR. REDDY: It's a lot colder here.

MR. HICKENLOOPER: No, we haven't made a decision. We spent the last year, maybe even a year and a half, my wife and I and I my son have had many discussions, many old friends. We've also gone to places like Iowa and Georgia, and New Hampshire, and Florida and New Mexico to see if there is a place, I

look at my -- what I bring to the table many other people are putting forward their ardent beliefs that we have to do this or do that.

I think there might be an appetite, and I think we've seen this in most of those states for someone who's actually done, who's actually taken progressive principles and policies and put them in place and figured out a way to get things done. And the dysfunction in Washington, everywhere I've gone people are most upset about the overall dysfunction, even, than they are -- well, maybe they're not more upset than they are about the President, but that would be the exception. I think the dysfunction in Washington has become a point of frustration for almost everyone.

MR. REDDY: One of the issues you've raised is empowering state and local governments. There aren't a whole lot of people in the 2020 lineup in the Democratic Party talking about handing power to the state and local government versus the federal government. Do you think there's room for that?

MR. HICKENLOOPER: Well, there's got to be a balance and I think certain things like air quality.

We've got to have national standards, and we've got to have a way of enforcing national standards around air quality. I do believe, as, you know, Justice Brandeis so famously said that states and the laboratories of democracy, and certainly within states bringing communities together.

When I first ran for mayor in 2003 and I ran on a platform that we were going to -- you know, I said that we would never be a great city without great suburbs, and if I got elected mayor I would do everything I could to make the suburbs the best suburbs in America. And all the political consultants looked at me like I was, you know, crazy. They said you understand you're talking about sharing some of the great treasures of the City of Denver. Denver's 20 percent of the metro area and you were talking about trying to do intense water conservation to make sure more water was available to the suburbs. They said, don't you know that the city hates the suburbs, and the suburbs hate the city.

But I don't think they do. It turned out when I ran I ran against five talented lifetime political

leaders. It turns out the politicians hate the suburbs from Denver and the suburban politicians hated the Denver politicians. But I got 65 percent of the vote of the Denver voters. They saw that us working together, you know, that if one of our suburbs, Aurora to the east if they ran out of water and had to suspend building permits for a couple of years and that got into Time or Newsweek or Politico that would affect the value of every person's home in Denver as well and that we already were united at the hip.

I think that approach of recognizing the strength of collaborating on a local effort. The federal government can be a partner and can provide incentives, and facilitate through regulatory reforms in various ways, but in the end that's got to be local communities realizing that they are going to be far more successful by working together than going at each other, as too often is the case.

MR. REDDY: A couple good questions have already come up. One goes to the fact that a lot of our political debate operates in a fact freeze zone. And as this questioner says, facts are often disputed. How do

we establish trust around facts and even what the definition of facts would be in each of these policy cases? And let me tack one more on to this. Are political time horizons too short for making truly evidence-based policy?

MR. HICKENLOOPER: Wow. Good questions. You know, facts, and we've gone through cycles of this in this country, and when people don't trust facts. When there is uncertainty around what is truth is when, you know, totalitarian regimes rise up. I think it's one of the critical imperatives that we reestablish who is trustworthy in our community. I think local and state governments have a responsibility there. I think the media has a responsibility there. And certainly business, especially our social media companies have a responsibility there.

Anytime you go through a cataclysmic change in how people get information there's opportunity for, you know, for the dissemination of some people call them mistruths. I call them lies. And we have to recognize that and push back against it. It's probably the single thing about President Trump's Administration that is

most troubling is that we're creating, whether intentionally or inadvertently, a system where truth is disrespected and marginalized. We do that at our own risk.

In terms of do we have enough time to use evidence-based decisions there is, I call it the tyranny of the now. I mean, political decisions are made and the media is part of this. The media is so rapid and information spreads so rapidly that so many people feel there's a greater pressure to make a decision, to have an opinion, to do something in that moment.

As most people learn in their lives haste makes waste. I mean, Aesop had what, about 70 fables that are all about, you know, step back. Take a moment. It doesn't mean you need a month, but take a moment before you address a sudden issue. But beyond that, to really do fact-based decision making in terms of policy you need more than a month, and somehow our leadership has to come together and build those relationships and trust.

You know, you don't get any compromises without building some sort of a foundation of trust.

And, you know, I tease my staff that we collaborate at the speed of trust because trust is an essential ingredient and that will allow us, if we can begin to find pathways to achieve that that will allow us the ability to plan on a longer horizon and say, alright, these are decisions that we need to make now for what we want things to look like in five years or ten years.

And I've been trying, you know, for the last several years when people ask me a question about something that's immediate I say, well, I give the answer to that question and then I also say we should also be looking at where do we want to be in ten years in terms of this issue. And kind of trying to length out peoples' perspective. But it's, again, we're in a time of instant gratification in many ways, and people are -- their appetite is intense for immediate responses and decisions. And they are in no way hesitant about changes decisions that the country's already made.

If you're going to really be able to have long time, good decisions based on facts somehow you need to be able to recognize that you might change something, but you can't throw out the window things that you

worked very hard to build with a collaborative process with a great number of people.

MR. REDDY: So you clearly learned something during the debate over marijuana legalization. It sounds like you were not all that much in favor of this in the beginning.

MR. HICKENLOOPER: I wondered if we'd get to marijuana.

MR. REDDY: The voters gave you a direction to follow. What did you learn about the evidence in that process and what have you found in the intervening years about that?

MR. HICKENLOOPER: So and I was famously against it. And I recognized that it would take a while to create a regulatory framework. Actually, on election night I think I said don't break out the goldfish and Cheetos yet. Probably something I could have avoided saying. My staff probably think I should have avoided saying it again.

I think that I was against it because, A, you don't want to be in conflict with federal law if you're a governor. It's no joy ride. Second, we were very

concerned about the fact of creating something from scratch. Even Amsterdam had only decriminalized it. No one had ever really legalized it and regulated it. And to do something the first time is always a steeper hill.

Most importantly, we were concerned about a spike in teenage consumption. If they thought the adults thought it was okay they would think it was okay. And every scientist I talked to said that we are looking at, you know, when brains are growing very rapidly up to the age of 23, 24, 25 this high THC marijuana has a high probability of eliminating slivers of your long term memory permanently. So that was a very big concern and we worried about people driving while high. You know, all the social consequences of legalizing something like this.

But, in fact, you know, once the voters passed it and it was in our Constitution, as governor I took a oath to protect and serve our Constitution. I felt that it was my job to do the best job we can to see if we could make it work. And we made mistakes. We still have real challenges. There's still a black market there. But I think more and more the evidence is in

that the old system -- I mean, we sent tens of millions of young people to prison, made them felons, made the rest of their lives immeasurably more difficult for what real purpose?

We have not seen a spike in teenage consumption. We're pretty confident by looking at other states that didn't legalize marijuana, we're pretty confident that we don't have an increase in driving while high. We do a poll, a healthcare poll in Colorado every two years. We talk to over 20,000 people. So those statistics are pretty firm.

Again, we've still got a lot of work to do, but I am increasingly, and when other governors talk to me I say, well, you know, I'm still very worried about unintended consequences we haven't seen yet. But our worst fears have not happened yet and, you know, more importantly I think that we're seeing evidence that the new system is intrinsically better.

Would I rather have the federal government let us to do banking so that -- I mean, right now there are several banks in Colorado and most of these states that do some banking, but they're doing so at their own risk.

And many of the marijuana growers and retailers don't use banks because it puts them at risk. If you wanted to insure that a new industry was going to be corrupt and filled with racketeering one good way to start is make it all cash, right. So I mean, that would be my first prerequisite even that the federal government could do immediately is allow these laboratories, these States to continue their experiment.

MR. REDDY: Governor, I'm sure you're going to bring beer and Cheetos to Iowa and other states you're visiting. We're out of time. Thank you very much.

MR. HICKENLOOPER: Thank you.

MR. SHAMBAUGH: Good morning. I'm Jay Shambaugh. I'm the director of the Hamilton Project. Thanks very much for being here with us today. We're going to now move into our first panel which is improving state and local policy outcomes with more efficient and effective analysis.

Just a quick reminder, as with the Fireside Chat, we'll have staff going around taking any questions you have on notecards and they'll bring those up to me; and that's how we'll do the audience Q&A at the end of

the session.

I want to also just echo Rob Rubin's thanks to a few people on our team. To Kriston McIntosh, our managing director, without whom nothing happens here pretty much; to Melanie Gilarsky, who is probably not in the room because she's our events and outreach specialist and makes sure all of this actually functions today; and Ryan Nunn, our policy director; but also to the entire Hamilton Project team because we try to get a lot done and that requires a real team effort.

We have a terrific panel today; and starting off with -- directly to my left, Mayor Michael Nutter, who is the David N. Dinkins professor of professional practice in urban and public affairs at Columbia and recently mayor of Philadelphia. Immediately to his left -- Justine Hastings, professor of economics and international and public affairs at Brown; and the founding director of research, improving people's lives, or RIPL, which is a group that we'll talk quite a bit about in just a minute. Justine was the author of the proposal that you probably saw outside about bringing better data and analysis into state and local public

policymaking; and then last, Jeff Liebman, the director of the government performance lab and professor of public policy at the Harvard Kennedy School.

So, we're here in Washington, D.C. It's a time where many people are somewhat despondent about what the Federal Government is or is not doing -- it's open now, it may or may not be later. We often get very focused on the Federal Government. In some ways, the Federal Government budget is bigger; we think it's setting a lot of the rules of the road and spending a lot of money; but in many ways a lot of what the government is spending -- the Federal Government is spending -- are transfers either to individuals or to the states and localities; and so, a lot of where money is actually being spent and where programs are actually being run and implemented, are at the state and local level -- whether it's public welfare, education, health -- a lot of those policies and programs are being run at the state or a local level, and getting them run efficiently and effectively is really a state and local problem, often.

In addition, many of the rules that the entire

economy runs by, whether it's transportation, housing, labor market rules are often being set at the state and local level; and so, why it's incredibly important, we also see this huge variation both in the policies that are being chosen but also in the amount of data and analysis that's actually going behind state and local policy. And so while the wide variation is sometimes great -- you get the best practices and laboratories of democracy side of things, it's especially important that we're bringing good analysis into what's being done. And they're real challenges there, whether it's data or resources, or talent, but there're also some really exciting things happening at the state and local levels where real evidence is being brought to bear on policy and that's what we're here to talk about today.

So, I want to start, Justine, with you. So, you've done this fascinating work at RIPL; and I wonder if you'd just tell us a little bit about your experiences there and the proposal that you put forward today.

MS. HASTINGS: Sure; thanks Jay. So, I'm a professor of economics and international public affairs,

and happen to be located in the great State of Rhode Island, headed by Gina Raimondo who is a wonderful visionary leader, in my opinion and experience; and over the course of, you know, just kind of looking around, state and local policymakers -- as Jay said -- really are facing some of the toughest challenges. Some of these challenges are new -- increased medical spending; increased pension costs, looming large now, and immediately in the future -- some of them are old, such as closing the achievement gap and ensuring equal educational opportunities for people from all backgrounds.

And one of the questions that I have always been interested in as an economist -- I got into economics because I saw it as a great framework for figuring out and thinking about how to make the world a better place, believe it or not. It's not very dismal; I'm an optimistic economist rather than a dismal scientist. And one of the things that -- you look around and you ask well, how do we make policy more effective, how do we enable policy to deliver more impact per dollar spent to deliver value. And when you

look around the world today, you see that computing -- the falling cost of computing and science -- has really transformed private sector, both for profit and non-for-profit; essentially allowing the private sector to deliver products and services that work better and meet more needs at lower costs. I think -- I'm using the phone version of notes to look at -- there is also the paper version; but every time I look at my smartphone, I think about how much things have changed in such a short period of time and how it makes my life really easier.

And one question we can think about is how do we join data, policy, and science to achieve that kind of impact in value in public sector. The public sector is so important, and meets so many needs; and it seems like we could also achieve that.

So, I set out, a few years ago, to develop a prototype model with Gina Raimondo, the Governor of Rhode Island, to think carefully about past experiences with research partnerships and government, and with research partnerships with private partners, what I've learned from that and what we might be able to do to develop a prototype model to use data and science

effectively at the speed of policy to make policy more efficient and effective.

And so that is what RIPL framework is. We, essentially, developed a process for partnering scientists, and building effective data resources which is called a data lake -- is the technical term. To say briefly what a data lake is, you want to think of it as raw administrative data, which is mostly unusable, but then transformed into things that are super easy to use so that somebody can go in and grab an insight really quickly.

For example, a table that has anonymized individuals in Rhode Island and has every social program they're enrolled in -- and maybe their child's test score in school, and whether they're incarcerated and on what charge; and what type of firm they work at or how large it is; is that you could quickly answer a question, in a minute, about how many third graders in low-income schools have parents that are currently incarcerated. That's a magic thing to be able to produce, but so important for so many things we might need to be able to think about in policy.

So, developing that data resource, and then developing a framework for partnering scientists and engineers with policymakers to be able to ask those big policy questions; hone them into something that's actually actionable; and deliver scientific grade, robust, and reliable insights using the data resource that we built.

And so, the paper that I wrote, and that is available, puts forward kind of what were the challenges, and how did we overcome those challenges; and how did we build this prototype model that is scalable for states and localities around the country.

MR. SHAMBAUGH: Great; thanks; and I know we'll come back and talk more about some of the challenges and the kind of operationalizing that. Mayor Nutter, I want to turn to you now, and talk a little bit about your experience in Philadelphia in terms of how you were able to bring fact and evidence-based policy into the local policymaking; and how you see the importance of data analysis in actually getting good policy.

MR. NUTTER: Sure; thank you, Jay; and to the

panelist, certainly Secretary Rubin -- always a pleasure to be here at The Brookings Institution.

One of the examples I use is one of the earliest things we did. This is way back in 2008 -- seems like a long time ago. We had, unfortunately, a rising crime problem in the City of Philadelphia in the early 2000s. Our murder rate was going up; most other cities, at that time, were actually going down. We had a brand new police commissioner -- I'm the new mayor -- former commissioner here, or the chief here, Charles Ramsey -- and when we looked at the data, it told us that in our 23 -- at the time, police districts -- they might be precincts here or in other jurisdictions, but you get the point -- of the 23, 65 percent of our homicides took place in nine of those 23 districts, and pretty much comparable in shootings.

And so -- I mean this is not a stroke of genius, but the data bore out that maybe we should reallocate our police officers instead of taking the number of officers of pretty much divide by 23 -- everybody gets pretty much the same amount -- and using more data drilled down to even within a police district.

So, I live -- generally, the 19th district has, historically, been about the third most violent district in the city, but even parts of it were much more safe; and so, why do we have officers generally over there. We don't people to be less safe to make someone else more safe; but it's how you use your resources and how you allocate personnel.

And that first year, we had a 15 percent reduction in homicides in the City of Philadelphia. Not just because of reallocation, but a number of other strategies. But, again, it was about the data, and using it in ways that, you know, quite frankly, we hadn't used before.

So, I took some of that same approach to a variety of other departments and agencies; increased, you know, recycling or trash pickup; or, again, where are people; what are we doing; how do we drive performance; and so, for us that was the early-on efforts to try to use data to make better decisions; but, ultimately, it's about better outcomes for the citizens and public service delivery. We're a large service organization; that's why we exist; it's what

people call us for.

And, you know, you mentioned -- of course, jokingly -- that the Federal Government is open -- I know we have -- I've got some friends here and former partners from the Federal Government -- it is just astounding to me. I mean I think about a city or even a state government -- the idea that in a dispute, for instance, if I was in a dispute with my city council, legislative body, that somehow we would shut down part of Philadelphia government; or I would not fund the police department. The citizens would go berserk; they would be at my house; I mean it would be over. So, part of this -- I mean that's the absurdity of that -- but the flip side of that is the importance of local and state government.

You wake up in the morning, you have a reasonable expectation that clean water will come out of the faucet. You walked outside, you know, it's cold, you know that the streets will be decently paved; that the street lights, traffic signals will work; street lights will work. If I put my trash can out on Monday -- my trash day -- I have a pretty decent expectation

that somewhere in the course of that eight-hour day, magically, that can is going to be emptied; and I will come home and the trash is gone.

So, local government, every day, operating 24-hours a day; doing 50 different things at a time; pretty much efficiently; and making things happen, for which we mostly kind of take for granted. But I can assure you that if the city or the state government shut down, people would actually notice.

MR. SHAMBAUGH: Thank you.

MR. NUTTER: (Laughter) I dropped the mic --

MR. SHAMBAUGH: Yeah; no; I understand. So, Jeff, you run the Government Performance Lab; and so you're out there actually trying to help governments improve their results every day; and I was wondering if you could just give us some examples of the work that you and your group have done where you can talk about how the better access to data and evidence you've been able to improve policymaking and help governments provide these services more efficiently.

MR. LIEBMAN: Thank you. So, our mission is to make progress on difficult social problems by

improving how cities, and states, and counties minister their social programs; and the way we do this is by embedding fellows full time in government agencies around the country. We have about 42 full-time employees, almost all of whom are out somewhere in the country embedded in a government agency working, primarily, on social service issues.

And the way in which data and analysis translates into progress on social problems, I think is, primarily, in three ways; and let me say what they are, and then I'll give you concrete examples of each. One is in fixing the mix of services being delivered; the second is in making sure the person who you're trying to get to services actually get to the services; and the third is in improving the service delivery itself.

So, let me be more concrete. Suppose your job is to run a workforce development agency and you have a bunch of money flowing from the Federal Government in lots of different narrow funding streams. There're a lot of different things you need to contract with the providers to provide. You may need -- you know, one part of your population, the reason why they don't have

jobs right now is that they have substance abuse problems, or maybe they have unstable housing situations; and you can't even begin to address the job need until you address those fundamental issues.

Another part of the population may need to be put into a three month program to get a totally different credential or skill to be able to do a different kind of job. Some other people may need English language skills on the way to getting jobs. Other people may need much lighter touch resume connection to job type of skills; and there's various other kind of things.

So, it's sort of a hard question. What mix of that stuff do you want to buy; and it's even harder because if you're in the workforce agency in a state, there's also the TANF agency and the snap agency which are also running workforce programs and probably you're not coordinating with them on this; and so they're contracting with the same social service providers for the same things, and you sort of hope it all comes out well.

And so, in practice, the way they make

ANDERSON COURT REPORTING
1800 Diagonal Road, Suite 600
Alexandria, VA 22314
Phone (703) 519-7180 Fax (703) 519-7190

decisions in most governments about what to buy in this mix of services is whatever they bought last year; and that's what actually happens. And the reason that happens is that the people who are running the programs, no one's job is find the population we care about; measure it's outcome; and improve that outcome. Everyone's job is -- you're the person who is administering the contracts for that housing support services; get those dollars out the door; and comply with all the federal regulations; and that's your job. And you're using a lot of data to make sure you're compliant with the regulations but you're not measuring outcomes; and you're not asking the question about how to improve outcomes. So, that's one part of the problem.

The other part of the problem is you go to purchase services -- it's the beginning of the year -- and you go to purchase services, and in the past year there were a bunch of instances where you tried to refer a client to something but there were no slots available; so you refer that client to the fifth-choice service. So, now you come to buy new services this year, but you

have no data that says to you, what were the first-choice services? All you can pull is the data on what you bought last year. So, you buy the same thing you bought last year and you don't rebalance to fix the service mix.

So, coming in and simply asking the question, first of all, what are we trying to buy; getting the agencies to work together figuring out, cumulatively, what they're buying; and then using analysis of the population you're trying to serve to figure out what you need, can lead to big changes in outcomes.

And just as an example -- and we actually have done some outwork with Governor Raimondo as well -- and in Rhode Island their child welfare department was first or second in the nation in all of the things you'd like to be 50th in the nation in. When Governor Raimondo came into office, they were, I think, second in the nation in the number of children removed from their families; they were, I think, third in the nation in the length of time that children who were removed from families before they got back to a stable situation; and when we went in and tried to figure out what was going

on, it turned out they were buying almost no services for intact families to try to keep them intact.

Instead, they had a contracting set up where the person who was making decisions about referrals was also running the congregate care facility and getting paid more the longer they kept the people away from the kids in government care. And so, by going in and helping them buy a lot more foster care services and a lot more family preservation services, Rhode Island has reduced by a third the number of children who were in the congregate care for an extended period of time. So, that's the service mix.

Can I do the other two, or have I used up my time?

MR. SHAMBAUGH: The quick version; sure.

MR. LIEBMAN: The quick version. So, the second thing is making sure that people who need services actually get referred to them. And so, let me give you an example from a project we're doing right now in Tampa. You have a child welfare agency, and about half of the families where the child is being abused and neglected, the fundamental problem is that the parent or

their caregiver has a substance abuse problem. So, the solution here is substance abuse treatment for the caregiver. So, if you're the child welfare agency and you make a referral to the substance abuse treatment agency, you hope the families are going to get treatment; but they have this perception that wasn't happening much and asked us to come figure out what was going on.

And so, we pulled the data; and they were right; and it looked like about 10 percent of the families that were supposed to get substance abuse treatment that were getting referred were actually getting it. And the reason there was a problem was from the perspective of the substance abuse agency. They get a referral and often the person who'd been referred didn't show up; and their view was well, if someone's not ready to treat their addiction, they're not worth us serving, and they'd close the case. But from the child welfare agency's standpoint well, the substance abuse haven't been treated; this is very much an open case.

And so, we got these two agencies to meet, you know, around the list of people needing services, you

know; every week look at the people who'd been referred and try to figure out why they weren't actually making it to services. And already in three or four months of doing this, the percentage of people making it to services is up 15 or 20 percentage points and, I think, they'll get up further.

Third thing you need to do, and that requires data, is to work with the service providers to actually improve the outcomes that they're accomplishing. So many people -- they made a contract with a service provider and they think they're done and they'll check-in with them a year later. But if you, instead, pull data on performance and meet collaboratively with them every two to three weeks and say hey, look, you know, in theory, when we refer a family to you, you're supposed to get there within five days, but the minimum in the data is eight days -- what's going on; and you start having conversations, especially if you have multiple providers and some are doing better than the others, and there's a little competition, a little sharing of ideas; you can very quickly get big performance improvements.

So, those are sort of three examples of

dimensions in which if you actually have access to the kind of data that Justine is trying to make governments have access to, you can actually drive real change that carries through to how social services are delivered.

MR. SHAMBAUGH: Great; thanks. I want to bring a question to all of you, and it came up at the very end of the conversation with Governor Hickenlooper which is this question of evaluation of policy; and, in particular, on the timeline that policymakers actually need to deal with it, right. So, I think, economists have just about figured out how they feel about policy during the great depression, roughly. It's not that helpful in terms of real-time analysis; but, maybe, 20 years from now, we'll have consensus about the 2009 stimulus bill.

So, for policymakers who, obviously, need to know things immediately, and on a much shorter timeline; and so, Justine, I know this is something you've struggled with. So, I'd love to start with you and really bring it to all of you of how do you get kind of as good analysis as you can in terms of thinking about improving implementation and figuring out what's working

and what's not; but also improving things in real time.

MS. HASTINGS: Great. So, that's exactly what we wanted to set out to do with the model that we developed at RIPL; and, I guess, I would say it in a few ways. So, first, I could name some other things that Jeff said. Data are so important; and integrated data are so important. So, agencies all touch the same families. Many have the outcomes the agencies are interested in understanding live outside of their agency. So, a great example might be parent's health, a mother's health, might be a good predictor of whether or not there's going to be founded child abuse and neglect in the future. Health impacts child abuse and neglect; that might also impact a parent's employment; that might then impact education. All of these things impact each other. So, having a data resource that's integrated can help you deliver insights much more quickly, and also that are more reliable and robust because you're not just focusing on one thing.

What we found was that by combining -- taking, basically, a page out of how insights labs are developed at top companies; combining the policymakers and

practitioners with scientists; and scientists with engineers -- so, in like computer engineering -- with computing and with data helped us to, one, develop a data resource that answers the questions you need answered really quickly; and I'll give you an example of that in a couple of seconds -- helps you answer reliably and robustly, which means that your results, you can believe them; and you can reproduce them; and you can add back into your knowledge base so that your next insights are generated more quickly.

And this kind of developing this resource allows you to answer questions at the speed of policy, as opposed to before having this type of partnership resource and this data resource when you don't have a developed data lake what often happens is policymaker has a question. They might reach out to every researcher or scientist. The scientist then has to figure out what's in data that have never been used before; they have to do all of the data cleaning, and reorganization, and building to make it usable; they have to sign data-sharing agreements. The government may have to put data somewhere where they're not going

to know -- I mean you can sign an agreement, but it's hard to know what happens to it at the end of the day, as opposed to using a modern cloud-computing system where the government still owns the data and allows secure access.

Then the researcher at this point, you know, maybe -- we had a great project on student loan reform with the Government of Chile and, I think, there were three different education ministers that came and went during the course of the project. Now, that project actually happened quickly enough to change policy, but it was still a three-year time frame; and in a sensitive topic like student loan reform, you know, ministers may be kind of -- there may be a bit of a revolving door as the country struggles to tackle that crisis.

So, how do we make this happen quickly? So, we developed a data lake as I described for Rhode Island; and that data lake, basically, combined all of the administrative records from across agencies in Rhode Island in a highly secure way -- it anonymized it so that you don't know who each individual is; and it created -- as I described it before -- important derived

tables so that we can quickly get insights.

So, for example, if we wanted to know how many children were in a family that was deemed being abusive or neglectful in an investigation, how many of them did the mother have, you know, challenges with or diagnoses for drug or alcohol abuse, or showed up with contusions in an emergency department. How often does that happen? What do we know before we actually have to intervene; and how can we act on that? So, that's an insight that we can develop with the data lake in a matter of a month instead of three years -- which is amazing, using modern data, science, and computing.

And, I was recently -- I have to give credit for this, but I love this thought -- so Michael Schwartz, he's the chief economist at Microsoft right now. We were having a discussion about RIPL; and he has a new way of thinking about the measure of efficiency for a company -- I think this is true for anything.

So, the measure of efficiency is how long does it take you to know what you know you know? And we can all like really relate to that, right. I know, as the government, I know if the mother had an ED admission --

an emergency department admission -- I know if the child is subject to abuse and neglect. How long does it take me to know what I know I know so that I can develop a better policy?

And before a data resource lake -- what we built in Rhode Island -- that might take you infinity. (Laughter) And it gave two or three years. Even with a great resource, it could take you years. And we brought that down to a matter of days or months; and that's how you can develop things at the speed, develop insights at the speed of policy.

And, you know, on the notes that Jeff Liebman brought up with integrated data helping policy, some of the very practical things we were able to do helped the department of labor and training make better use of federal resources by using data to identify dislocated workers for federal retraining funds as opposed to very long paper surveys, which people have a hard time filling out. You can, actually -- then identify them immediately as opposed to having to go through a long survey process, data entry process, data analysis process.

The other thing that I think is really important for helping to have science impact policy quickly is that one thing data, in fact, do -- and, I think former Governor Hickenlooper said this as well -- is that data and facts bring people together around a table. So, we've had, you know, requests come in, for example, from the director of DCYF who's an amazing woman and leader, Trista Piccola in Rhode Island. Can I even know what are the outcomes for children who go through my system? Can I even know whether children who go through incarceration versus probation, versus temporary care placement in homes; what are their outcomes; and what's my best guess at which of those avenues is more helpful versus more harmful?

And the answer to that, we were able to deliver, is yes, you can know that, actually very quickly. And maybe the answers might surprise you, but what's amazing is that we can then bring together law enforcement and child protection, and community groups around a table to look at facts and science and say wow, this is really interesting; now, what do we do next; as opposed to coming in with their own points of view. And

I find that when people come in with their own points of view, it kind of sets the situation up for argument; whereas, if you come in with some facts, it brings people together because now they can think about them, and explain them, and figure out a way to go forward.

So, I think, having the integrated data resource with the science and technology component, coupled with policymakers, I think, has been really effective in both delivering those robust and reliable insights at the rate of policy; and also bringing people together so that you can actually make that policy change more quickly and more effectively.

MR. SHAMBAUGH: Mayor Nutter, I'd love to turn to you. So, as you said, people noticed if you weren't doing your job; people notice --

MR. NUTTER: Every day.

MR. SHAMBAUGH: when the city's not doing something; and so, when you've got that kind of pressure but you're making the types of changes you were talking about; how are you able to kind of quickly figure out if it's working? Because, presumably, not everything you do works magically the first time you make a change.

MR. NUTTER: Well, first I would say, listening to Justine, it reminds me that running a city, and filling potholes, and picking up trash is so much easier than the work that you do; and I'm really glad that you're doing it; because I was always excited when I could just get my computer to turn on every day. So, I mean I thought that was like a major achievement.

Well, again, the thing about -- especially local government -- you know, it's a constant; it's a daily level of feedback. You know, I mean maybe if you're running for re-election, you know, you might take a poll; but, you know, in local government, I mean it's pretty much a poll every day; and especially now with the onslaught of social media which, you know, Twitter and Facebook were about two years old when I came into office back in '08; so, we kind of grew up with that and it's a constant level of feedback; and then -- you know, I don't know about the residents of Washington, D.C. -- Philadelphians are pretty expressive (laughter); they have a lot of things on their mind; and they never mind sharing them. So, you know, I mean you really do kind of know every day, you know, how you're doing; but,

again, data and information is, again, critically important. You try to vet policy -- facts do matter, data is important; you talk to people. I mean you're not going to focus group everything, and you're certainly not going to poll everything, but, I mean some common sense and good instinct and, you know, how do we make -- whatever it is we do -- how do we do it better; how do we do it more efficiently. You know, setting standards, setting goals. If you want, you know, a 98 percent on-time trash pickup, which is important, you could explain to the public (a) not only are we doing it better, but we're saving money; and we're putting that money into after-school programs, or education, or whatever the case may be.

So, I mean part of this is really about setting standards; having a vision. I often advise new mayors, you know, like have a plan; and then work your plan; and stick to the plan. I mean stuff will happen, and as we all know -- you know, by the great philosopher king, Mike Tyson, you know, everybody's got a plan until you get punched in the face. (Laughter) We got punched in the face in 2008.

You know, I won in 2007; come into office, things were great, everybody's happy; reform, change, blah, blah, blah; and then, you know, eight months later, you know, I got my finance director and the chief of staff telling me that it seems like we're running out of money. We just got here; we just passed a budget three months ago; what are you talking about. You know, the great recession had not yet been declared.

Your comment earlier kind of stuck with me. I mean for anyone who is wondering whether the economic recovery program from 2009 was effective, you should ask a mayor. I mean we were on the verge of bankruptcy; we stopped paying our bills to every vendor because we were literally concerned about cash conservation. We said we were doing debt service, payroll, and emergencies -- that's it. I mean I publicly announced that we would stop paying everyone that we owed money to.

But for that program, we would be talking about the second great depression. And so, I mean, you know, others can continue to debate that, but if you'd been in that circumstance and situation -- it's not a debate. It's not theoretical; it's not, you know, sit

around and have a conversation about it. When you don't know if you can make payroll, it's not a theory.

MR. SHAMBAUGH: Jeff, I want to come to you on this same question of just like how do you quickly figure out -- you know, you're doing, as an academic, you're often interested in the longer-term answers -- but how do you try to optimize quickly and improve implementation, not just this kind of binary, does the program work or not work?

MR. LIEBMAN: Thanks for asking it that way. So, having spent a couple of years here at OMB and then spent the last seven years or so working on state and local government, I do think the way that we talk about using evidence here in Washington is a little too narrow because it's all about what works; and let's fund the things that work, and stop funding the things that don't work; and treating it like it's a binary budget decision. But in almost any program, you can make it work better; and if -- you know, what I see time and time again is if you actually measure outcomes and make a purposeful effort; and you really say how are we doing better this week than last week; and this month than

last month -- in six months or so, you can make almost anything 30 percent better; and maybe even better than that.

And, you know, there really is high-frequency data available for almost everything you're doing, especially, you know, if you're a mayor now, you have these 311 systems. We did a project with Wichita, Kansas around improving their park maintenance contracts -- part of the What Works Cities program -- and we can see that before we fixed the (inaudible) in the contract, they were getting a certain number of complaints about trash in the parks and other things; and then you fix the contract, and now they're getting no complaints. You can see that. Data is everywhere now, and so, as long as you're actually -- as the Major said -- you have a strategy; and you know what it is; and you're trying to measure whether you're accomplishing it; you can do it.

But it doesn't work if your goal is reduce poverty in a city over the next 10 years, that's not a goal you can manage to. You need things where there is something you can observe change in at a much higher

frequency and use the data to change what you're doing at that frequency, if it's actually going to drive change.

MR. SHAMBAUGH: Great; thanks. So, we've got a lot of great questions here; so, I'm going to maybe ask for kind of some quick answers to them; and one -- I think about five of them -- are on a very similar topic which is with all this great data -- and in particular, when partnering with outside groups, right -- and so, Justine and Jeff you both run these outside groups; Mayor Nutter you now work with one -- with What Works Cities -- what are the challenges around privacy when you're bringing in both all this data and bringing in people from the outside; how do you deal with the challenges around privacy and what are they? I don't know, Justine, I know you've had to deal with this a lot, if you want to start.

MS. HASTINGS: Yep; so, I think that a key principle, I think, just to keep in mind in everything that you do is that you only keep data that you need. So, for most insights -- and this would be true inside a company or inside of government -- actually, I don't

need to know who a person is -- you know it's all about aggregates. It's about rates of complaints, not who complained. It's about, you know, the correlation between ED visits and child outcomes; or the correlation or causation between an early life intervention and children's later outcomes.

But none of those things require actually identifying an individual. And with modern computing, and machine learning, and data science techniques, we can very easily match data and anonymize it so that you really protect security. Most secure Gov-club platforms are hosting data that's much more sensitive in many people's view than test scores -- I'm sure that test scores are very sensitive. You know, some of them are sensitive data that exist; and there are, you know, large companies that work at securing things from the outside; but even, you know, on the inside, there's no need to keep identifiers.

So, I think, following best practices -- you know, not sending data away, but instead keeping it on your own platform and allowing access, and being able to monitor the access. I think you mentioned, you know,

not all of us know how to do cloud computing, but the great thing is that computing and data has, to many extents, been democratized in recent years. You no longer need to have a secure enclave, you know, at a university or at NASA as the only place you can get computing power, but any company can purchase portions of computing power from a shared resource. And that really enables you -- governments and firms alike -- to harness that power, harness that security, and not have to be in the position of sending their data somewhere else.

And, again, anonymization is super important. You know, if you have this type of secure system, you can have automatic tamper proof logs that show you every single thing every single user did; you can have permissions that allow access to one data field and not another that can be set; and also, I think, in security I'll just mention one more thing. In the process that we developed, it's really important that, you know, all of these data re the government's data and they're protected by privacy and security laws -- privacy laws that dictate that they need to be used for advancing the

mission of the agency.

And so, when you partner with government, you can write out what is the mission of this agency; how does this use and project advance it; and through that agreement ensure that the data are used for the purposes that are jointly working together, harnessing diverse talents and data to make policy more impactful, efficient, and effective.

MR. NUTTER: Slightly different example, but in the same realm. Justine talked about the challenges of making these data agreements; and our health department was particularly focused on a couple different conditions with our children -- overweight and obese circumstances, as well as STDs. And we spent probably 3+ years working on an agreement between the City of Philadelphia health department and the school district of Philadelphia; and in some of those instances, you actually do need the individual data, and you want to notify folks of certain circumstances or conditions. But we were able to get that agreement; and the end result was a pretty significant reduction in overweight and obese conditions, as well as instances of

STDs with our children in Philadelphia.

There were many points where it looked like that was going to fall apart, not happen; but we stuck to it and this was a part of our goal with our young people in Philadelphia and, ultimately, got it done.

MR. SHAMBAUGH: Great. Jeff, do you want to add anything on the privacy or the challenge with working with an outside (inaudible)?

MR. LIEBMAN: I'm very curious where the rest of this (inaudible). Let's keep going.

MR. SHAMBAUGH: So, Mayor Nutter, this is pretty, specifically, for you but if anyone else wants to chime in, please do.

MR. NUTTER: Is my mom here?

MR. SHAMBAUGH: No, no; well, I don't know. But it's a question of you expose yourself a lot when you're doing data and analysis, and evidence-based policy making in a sense that you're not just necessarily doing what you think is popular but you're trying to do what you think works.

MR. NUTTER: Yep.

MR. SHAMBAUGH: How does it resonate with --

in a political level -- and with the public when you're trying to do things where you're focusing on effectiveness and evidence-based policy?

MR. NUTTER: Yeah, you know, I mean a lot of political people are not, particularly, interested in data and evidence; they're interested in politics, and their own circumstance. You know, I think you just have to do your best to fight and resist the efforts to unnecessarily politicize use of data, what you're doing. But you also have internal battles. When we got into the whole, you know, releasing data, it was tremendous consternation and concern inside the government about what we were about to release, and certainly privacy and a bunch of other issues; but, you know, I mean I was in one meeting and all this debate, going back and forth, and the legal team; and finally, I said so, let me ask a question -- if we got -- maybe the terminology is different -- we got right-to-know or FOIA request for this information, would we have to give it up. And they said well, yeah. And I said what are we having this meeting for; why are we having this discussion? If it's automatically public information take out the names;

take out social security numbers; all the other identifiers and let's release the data. And a controversy turned into -- people were like oh, okay; oh they're doing another data release -- wow, that's really interesting. (Laughter)

They already released like a hundred sets of data. I mean the more you hold it; the more you keep the mystery of what it is -- and suddenly people were oh, okay. People made apps; and they had business leaders use it for a variety of purposes, nothing nefarious; and so, you have to get through.

Jeff talked about 311. I mean that was like, you know, the biggest controversy when I came in. The city council was concerned that people were going to stop calling them and that's going to interfere with their politics; and I said look, it's one phone number, people are still going to call you. You don't have to memorize 100 numbers to get service anymore. People still call council, and a million people in the first year called 311 too, and took all that pressure off of the 911 system. So, I mean, look, somebody's complaining it's too cold, it's too hot; it's too sunny;

just keep moving, go forward try to do the best you can.

MR. SHAMBAUGH: Great. We've just got about a minute left. Since -- well, today, we're trying to emphasize the importance of state and local policymaking -- given that we are here in D.C. -- one of these questions -- which, I think, is a good one -- is what policy should be changed at the federal level that would make this easier; that would make bringing evidence to bear on policy at the state and local level easier?
Jeff.

MR. LIEBMAN: I think I have at least a framework on that which is -- and I sort of feel guilty having been at OMB and created some of these polices and then having to go and work with state and local governments and see the consequences. (Laughter)

But, I think, there needs to be a deal, basically, where the Federal Government gives the states, and the cities, and the counties much more flexibility to be able to innovate in exchange for much more consistent measure of performance so that we can actually learn from the different things the different jurisdictions are doing; less things that can be brought

forward.

Let me just give you one example of a crazy federal thing. So, I'm working with a southern state and they're very interested in the problem of disconnected youth -- you know, youth who are neither in school, nor on a path to work; and there's a big new federal grant for this. And the particular jurisdiction wants to do a program for high school students who are on the verge of becoming disconnected youth when they drop out to prevent that from happening.

But the federal funding stream can only be used for people who are already disconnected youth; and they can't use it to fund their program to prevent people from being disconnected youth. If we would just give the money to the state and say do something smart, they would have, you know, used this money to probably taught us something that we could all be copying around the country about how to prevent this problem but, instead, they can't do it; and so, that's the kind of lack of flexibility that the Federal Government imposes on jurisdictions.

But there needs to be -- you know, if we just

give money and don't learn from it, that doesn't work either. So, that's the deal that has to be cut.

MR. NUTTER: I just wish members of Congress would have a much better understanding of the programs of the various federal agencies; how they work; what they do; and what happens on the ground. And, I think, if they better understood their own programs, they would not make as many of the dumb-ass decisions that they make.

MR. SHAMBAUGH: Justine, you want to add anything to that.

MS. HASTINGS: I don't know. That was --

MR. SHAMBAUGH: A good place to stop?

MS. HASTINGS: -- that was a pretty good last line.

MR. LIEBMAN: Another mic drop there.

(Laughter)

MR. SHAMBAUGH: With that, I want to thank the panel; thank the audience for all of these great questions and, I think, all of you -- we're going take a very quick break, I believe, in about 10 minutes and then we'll be back with the next panel. Thank you.

MR. FURMAN: Well, we are going to get started with our last panel so if people could just have a seat. This is going to be a great discussion of transportation and housing. Those are two issues I don't think anyone who is still here needs to be sold on the importance of them. I am really excited for both of these conversations.

Transportation is one that, you know, economists are really, really excited about. And if you're a macroeconomist, your idea is that you should just have more of it and that you shouldn't actually ever listen to any economists who study it because the answer is you just need more of it. And then there are these people that actually study it and know something about it and it turns out the answer at least according to them is somewhat more subtle than just needing more of it. And so we are going to hear some of that from Matt Turner who is from Brown University.

Now over the course of the Obama Administration, one of the issues I became increasingly interested in is another and I should say that Monica Tibbits-Nutt who is on the board of the MBTA and the

board of Mass DOT and the executive director of 1278 Business Council will be joining in on the conversation on the transportation issues.

An issue that I became increasingly focused on in the Obama administration was housing. And, you know, partly this was trying to get at an understanding that there has been some reduction in dynamism in the U.S. economy, reduction in people moving from place to place. And also, you know, after a century and a half of convergence of, you know, poor states growing faster, poorer cities growing faster and catching up with the leaders, you see divergence now and you see a couple cities that have been super successful pulling away from the others and, you know, in many respects leaving them behind.

And the causes of all of this are quite complicated. The solutions to this are quite complicated but it became clear to us that at least part of the problem was that people were more productive in certain of these places, San Francisco, New York and the like. They could be paid higher wages in those places but those places were incredibly expensive and they were

incredibly expensive in part for natural reasons, bays, and the like. And in part for manmade reasons and policy choices about where things could be built. And so that was something we were trying to figure out, you know, what we could do about as an administration but of course most of what can be done is at the federal and -- is at the state and local level.

So on that, and to lead us off in the conversation, Danny Shoag has figured out actually what we are supposed to do. He is at Case Western and the Kennedy School and is going to share his proposal with all of you. What?

MR. SHOAG: Who goes first?

MR. FURMAN: Oh, Danny, why don't you go first?

MR. SHOAG: Oh, okay. Sure. So my policy is on housing affordability and for a long time, we have known that lower income people struggle, are cost burdened, even in relatively cheap places but more recently as you have talked about even mid-wage people have found some very high productivity, high wage places have become unaffordable, even the middle of the income

distribution. And, you know, like you said there are many factors that lead into it but one of the key factors is -- are the -- have become the regulatory constraints or the regulatory costs. It's not that we sort of have hit some sort of technological limit and we no longer know how to add supply in those places and it's not that is unprofitable to develop housing there but that we have hit in -- we have created regulatory barriers that have made this problem worse. And that's led as you described to a whole bunch of macroeconomic problems.

It used to be the case that Americans would move to the richest, highest wage parts of the country and that's not happening anymore. In fact especially for workers with less education, they are moving to mid wage or lower wage places that are cheaper and that redirection causes a whole bunch of problems including like you said poorer places are no longer catching up to rich ones. That is something that has been true for most of American history. The poorer parts of the country are catching up and that's really stopped. And that kind of segregate -- partially because of this

segregation of who can afford to live there. And it causes, you know, in addition to the productivity losses and inequality, it's also an environmental problem in that we know that living in denser cities are more environmentally efficient.

And so my proposal, my policy proposal talks about strategies that different levels of government can pursue to sort of address this problem, you know, not, you know, which works in concert with the lower income people but the fact that some of these very high productivity places have become so expensive. And so I provide some case studies of cities at the local level that have been successful at increasing supply either by relaxing some of the form and use constraints that have grown up or by simplifying the process that is needed for development.

Some places have been very effective and may provide examples for local policy makers. I also talk about things that state governments can do and there is a lot of room for action there either in providing incentives to local governments or overriding or limiting some of the local restrictions and we have seen

a lot of recent policy movement on that front. And then there is also room that state governments can take in eliminating sort of this second layer or multi-layer check, regulatory check on development. And this is what the great Phil Fishel calls the double veto that, you know, oftentimes even if you have approval to develop at a local level, you can be blocked at regional or state level.

And then lastly and like you said, this is, you know, a challenge for the federal government but the federal government can provide incentives and we have seen recently a bunch of proposals to provide incentives for local levels of government to relax some of these constraints. The federal government does also have managed land in some circumstances and also through the tax code creates incentives that reward some of these limits on behaviors or creates incentives for, you know, less dense housing or more expensive housing that and you see a lot of, some of these provisions sort of disproportionately benefit places that where these constraints are binding most tightly.

And so I really do think that there's a, you

know, an opportunity for many, for policy makers at many different levels of government, you know, and there is room for the federal government to sort of help to structure some of the individual incentives that lead to these restrictions.

MR. FURMAN: Great. Thanks so much for that and I, people have been here long enough that you know that we will eventually get to questions so there should be cards for that. And we had someone else on the panel who was going to discuss housing so I'll need the special help on that topic for your questions.

But now we will turn to Matt who spent his whole career as one of the leading transportation researchers in this country to tell us what we all have wrong in our thinking but also what we can get right in our policy.

MR. TURNER: Thank you. Thank you. Can you all hear me? All right. Transportation policy and economic opportunity. Let me make four proposals. First, beware of the trillion dollar infrastructure policy. Two, find out what is wrong with public transit buses and try to fix it. Three, raise the gas tax or

reduce the federal contribution to the interstate highway fund, to interstate highway maintenance. Four, experiment with congestion pricing to management traffic congestion on the highways. Okay. That's basically the 30 second version of the paper that is sitting out there beautifully formatted (laughter) and so let me take my remaining four minutes and 30 seconds and try to expand on that.

The federal government buys a lot of our transportation infrastructure and they keep track, they keep inventories. The federal -- in the interstate highway system, every segment of the interstate highway system, every year has its roughness measured. You drive, the state highway administration drive a truck over it and measure how rough it is. So you can figure out how bumpy is an average segment of the interstate highway system every single year from 1992 on. Who wants to guess what has happened? It's gotten smoother. Every single year from 1992 on the federal interstate highway system has gotten smoother than the year before.

They also buy a lot of buses and urban rail cars. The average age of a federal -- of a public

transit bus in 2015, eight years. Its eight years old. The average age of a public transit bus in 1992, eight years old. All right. Same thing for urban rail cars. 22 years old now, 22 years old in 1992. On average, we are -- our investments in transportation infrastructure are meeting or exceeding depreciation on those three classes of assets. The idea that all of our transportation infrastructure is crumbling is false. Some of it may be crumbling, not all of it.

Second, if you build big transportation infrastructures, infrastructure projects, highways, subways and so on, you will find economic development occurs in their service areas. People build, start businesses, build houses where there is access to subways or interstate highways. For the most part, that economic activity is not new, it is stolen from someplace else, usually nearby. So if you think that transportation infrastructure is creating a lot of economic growth, that's probably false. All right.

To the extent that we can measure, the increment in aggregate economic growth that results from

transportation infrastructure is not large compared to the cost of those projects. Okay. So beware of the trillion dollar infrastructure project that is \$10,000 a household. If you want to take \$10,000 a household to spend on transportation infrastructure projects that only make sense if you think everything is falling apart or if you think it will induce a lot of economic growth than beware. That's two.

Fix public transit buses, all right. In 2015 the average public transit bus served the same number of people than an average bus served in 1992. All right. There has been no increase in the intensity with which those assets are used. The average lane mile of interstate highway served twice as many cars in 2015 as in 1992. The average urban railcar, subway or light rail car served twice as many riders in 2015 as in 1992. So buses are failing, okay. They are in an environment where the demand for mobility is increasing a lot. People are fleeing buses, okay.

Buses disproportionately serve the poor so if we are interested in the outcomes that the poor have in their lives and in the labor market, we should try to

understand why they are not providing a service that poor people want to use. Okay. I don't know why but that is something we should do.

Congestion pricing, okay. There is -- traffic congestion is a big problem for this country, particularly on urban interstates, all right. It is a problem of peak load capacity. All right. Very few highways are busy at 8 pm. They are busy at 5:30, they are busy at 6:30. They are not busy at 8, they are not busy at 9. There is wasted capacity on these roads. It is wasted. There is lane capacity that is not being used. We can -- 30 seconds. All right.

MR. FURMAN: And I'll get to the, I'll do the gas tax in the Q and A so why don't you finish the congestion now.

MR. TURNER: Okay. (Laughter) By making people pay \$1 to use the highway at peak hours, we provide them an incentive to use the off peak wasted capacity. Okay. We also change the relative prices of cars and buses, okay. That makes it easier to fill up the buses, okay. That means the buses pay for themselves and it means that you can run the buses more

often and faster. The roads are less busy and with more demand you can fill up buses and run them on shorter headways that is good for poor people. Highway tax we will get to later.

MR. FURMAN: Excellent. So, Monica, would, you know, just from being in the thick of it in Massachusetts would love to hear your perspective on Matt's ideas as well as, you know, what we should be doing going forward. And I'm particularly interested in, you know, all economists love congestion pricing. The substantive arguments for it I think are overwhelming but would love to hear, you know, what you think it is like in reality in a political context for that.

MS. TIBBITS-NUTT: I mean, honestly I can't disagree with anything you've said. Our bus infrastructure has not changed at least in Boston for 50 plus years. We are a legacy system. We were the nation's first light rail so our system is about 127 years old. We are using a lot of the same infrastructure we did 120 years ago. And people always laugh about that and it is one of those things where it

is completely serious. Our signals are older than every single person working at the MBTA. All 6900 of them. And our highway system has not been updated in probably about the same time as the buses. 40 plus years. Our congestion is unreal. It gets worse every single year -

-

MR. FURMAN: I'm not going to disagree with that.

MS. TIBBITS-NUTT: Yes, I mean, for the people in here, yes. And our rush hour runs from about 6 a.m. to 10:30. Our evening starts around 2:30 and can run till about 7 or 8 p.m. It is brutal. We are an incredibly wealthy state with an infrastructure that does not meet any of our resident's needs.

So with that said, there has to be a shift in the way we approach transportation policy and I think that that is something as a policy maker that has been very, very hard to get a lot of my colleagues and a lot of our elected officials on board with. So we serve the commonwealth. The transit system operates within 182 municipalities. We have 351 municipalities in the commonwealth and we do not have county governments. So

let that settle in for a second. It makes planning very, very difficult for the commonwealth.

Housing is also a huge, huge issue that we have. We have run out of housing. The housing that we do have is ridiculously expensive. About I would say around the average rent especially around the transit stations you are looking between \$3500 and \$5,000 a month. Yes. And people in Massachusetts do make higher salaries than the majority of the country but the problem is that is still insanely expensive and from a transportation standpoint we are to blame for a lot to these issues. Every time we expand the station, many politicians are like this for economic development. It very rarely ever actually is. What it is it's for gentrification. And gentrification for a city that is already ridiculously segregated.

And speaking of the bus system, bus is probably one of the hot button issues that we hear about every day. I think the previous panel had talked about Twitter. This is now the way that the constituents communicate with us and the amount of emoji's I get every commuting hour are pretty unreal. My mother gets

very embarrassed about it but they're angry. We carry 1.5 million people a day and the majority of that 1.5 million people are unhappy with the product that we are providing. One third of those people are bus riders. Majority low income neighborhoods. And we are near capacity on some of our more popular routes but those routes haven't changed in a very long time. They do not match where we are with employment. We don't match where we are with housing.

So for us it's breaking down the silos of government. Housing, economic development and transportation have to start working together or our state can fail. Our transit system did in 2015. We closed for the first time in 100 years and we closed because we failed because the infrastructure could not be cleared quickly enough for our winter storms. And by the third blizzard, the entire commonwealth came to a standstill. The mayor had mentioned earlier, you know, you have these expectations. Well, our trash wasn't picked up for a month. You know, the grocery store started to run out of food and the system could not move anyone which means our entire economy came to a

standstill.

Transportation is very simple. It really is. We are there to provide access to education, access to employment and we are failing on both of those. And for the business community this is impacting them. Most companies will have hundreds of employee vacancies and our unemployment is really, really low. Around 2. I think 3 percent but we don't have enough people. And the reason we don't have enough people is because those people cannot afford to live where near they work. And the problem with that is we do not have a transportation system that makes that reasonable connection. So we are failing in all three counts right now.

And I think for us it's really retraining our elected officials to understand that these things are important, to be flexible about the way we handle the infrastructures that we have which means taking parts of the right of way and giving it to buses. The reason I have the most faith in the bus system, it is the easiest thing we can change. The days of subway projects especially of the scale we did in the 80's are over. We are extending our light rail system for the first time

in a very long time to the tune of \$2 billion to connect communities that were previously unconnected.

The problem with that is we then gentrified every single one of the neighborhoods. Now people in the middle class cannot afford homes in these beautiful neighborhoods with beautiful public school systems and that was on us. We did that because of the lack of coordination across the districts, across the state agencies and that from a transportation policy standpoint is what has to change. Because if it doesn't, I think that the way we operate our cities especially those with legacy transit systems we will fail. And we will continue to shrink our services down to the core which is going to provide less and less service especially to those who are dependent on our transit system.

So at the end of the day, those three areas if we do not fix them and fix them within the next five years, the commonwealth will look very, very different than it does now and I think that our economy won't be near as strong as it is now.

MR. FURMAN: So, Monica, how much of that is

you need new money versus this isn't about money at all. Buses in fact are quite cheap and it's about being smarter about how you do everything?

MS. TIBBITS-NUTT: It's a tough question because this is probably the biggest argument we have with the public. Many in the public think that we need more money and the honest truth is we really don't. Do we need more innovative revenue streams? Absolutely. Currently we get \$187 million from the commonwealth and that is not guaranteed every year and they argue it out in the legislature. So we have to build our budget on the presumption that something is going to happen.

But the issue with that funding stream is we serve the legislature. Which means that we are doing these long distance commuter rail projects because some senator lives in that neighborhood.

I love the idea of congestion pricing. Our congestion is making it to where you cannot move within the city. And I think that we have been very slow to make progressive policies like that. We also tried to pass the gas tax as a ballot initiative. It failed miserably. Mainly because no one understood what the

impact is going to be to their daily life. We did not communicate with the public. We just didn't. We didn't tell them what the benefits were going to be. We also didn't tell them how little it was going to be for every single household for better infrastructure within our communities. And for us it's not a focus on rail, it has to be a focus on bus and not the cost of the bus, not that capital but the communication and partnership with the communities to give up their rights of way that it would take to actually run a bus system that works for everyone no matter the type of community and no matter the economic status of that individual.

MR. FURMAN: All right. Matt, you know, we hear all these things about how resources are allocated within the transportation system. You gave some things you thought, you know, too much smoothing roads, you know, too little on buses or we don't use the buses well enough. Is there any institutional change that could create incentives to get this, you know, more right? Change how we spend the money, how we distributed the money? Because surely there is a lot of stuff that we are spending too little on even as you point out areas

we are spending maybe too much on.

MR. TURNER: I think that's a great question. I don't know the answer but let me tell you why I think it is a great question. I used to live in Toronto.

MR. FURMAN: Strategy.

MR. TURNER: I used to live in Toronto and I would sometimes take the subway to go to the movies. Okay. In order to do that on -- every time I did that I stood at a counter and bought a token twice. All right. Once to get on the subway and once to get in the movie. Yes, you guys are smiling because you have done this too. Think how different those experiences are. Right.

So somehow the institutions that are running subways are much less effective at providing services than the institutions that are providing movie tickets. And I don't know how to run a subway system or a transit district better but that experience suggests to me that there is room for improvement.

We did a lot of the, the economics profession did a lot of work on how to regulate another important public utility, electric power in the 70's and 80's and I think that an important agenda going forward is to see

what lessons we can take from public utilities which we don't complain about very much and apply it to transit districts. I don't know what is going to come out of that but I think that that is an important thing to do going forward.

MR. FURMAN: So, Danny, first of all I want to say is there anything on the transportation discussion you want to come in on and its intersection with some of the housing proposals you have?

MR. SHOAG: Sure. I think that actually, you know, sort of the bigger national picture of maybe the infrastructure being adequate with certain, in certain place having real capacity constraints could -- reflects well with or mirrors what we see with the zoning requirements or the housing requirement. It's not that nationally we have some sort of shortage of housing but that certain markets have become constrained and in those, the pricing out of people and those markets have caused a problem.

And I obviously transportation expansions open up new areas in those constrained cities for -- that where people can live and still make it into work and so

there, it may be that there's, you know, some bottlenecks in the system that where the capacity really is constrained and the resources could be either allocated thee more efficiently or need increased resources.

MR. FURMAN: And then I just want to get you to sort of address, Governor Hickenlooper talked about, you know, the process around zoning and just how, you know, intensive it was with the community that people have there, you know, their expectations, their rights, their historic things. Bob was talking about Jane Jacobs and the death and life of American cities.

How would you deal with people who, you know, you are taking something away from a lot of people and they're not just sort of renters, they're, you know, neighborhoods we like the look of that work in some ways and, you know, how do you address that? How much do you think there are winners and losers here? How do you think about the rights that different people have to those wins and losses?

MR. SHOAG: Yes, no, I mean, and this is I think the big problem. It is funny writing a policy

paper is, there is lots of great ideas for how to increase supply. The problem is what is politically feasible and it makes sense that there is a lot of, you know, opposition to policies that expand development at the local level. People have a lot of their money, you know, most cases, you know, that is the biggest asset or a huge chunk of peoples wealth tied up on your home and you're very sensitive to home prices and so obviously I think it's natural that there will be opposition.

What we have seen recently is a bit of a political movement aimed at loosening some of these restrictions that has had some political success and I think we can draw some lessons from that movement which is to sort of build bridges across different communities to sort of recognize the problem. I think a lot of, you know, we were speaking earlier about gentrification and that's a real fear and I think the, you know, the important thing to keep in mind is that's the, you know, these richer place that are, that's the problem. The places that are blocking development, that don't, right, that have the restrictions in place.

And so I think there are bridges to be built

and we are seeing political movement and, you know, I think the task now is to sort of figure out in what cases have they succeeded and what are the lessons to draw from that. So there has also been plenty of efforts that have failed and so learning what works.

MR. FURMAN: Yes, I mean, because my sense is, you know, we have talked about two politically difficult things. One is expanding land -- reducing land use restrictions, the other is congestion pricing. I think on congestion pricing and gas tax, I think a lot of the objectives -- objections come actually from people who don't understand it well enough. And to Monica's point if they understood it better, they understood how we would all benefit. Now not entirely, some people drive a lot and it would hurt them more but I think a lot of it is people who don't understand their own interests. With land use, how much is it people who don't understand their own interest that's the problem or people that do?

MR. SHOAG: Yes, no, I mean, it's challenging. This is one of the few things where if you look at the research, you know, home owners its bipartisan

opposition to low development near their house, the things that would lower their house prices and so, you know, at least there is, can be a consensus on supporting the problem.

But no, the -- I think there are some principles that we can learn from the successes that have been in place about how you make things politically feasible and so one is I think they've been a little bit more successful at higher levels of government so we can take a little bit bigger view on the problem as opposed to going through local. Another principle is broad based reform so it's not, you know, my neighbor got some variance to do something that will lower my house price but it doesn't apply to my land so it's sort of these broader reforms and let people share in the benefits as well as open up development.

And so, you know, I don't think I can solve the problem in the short run by saying people won't be sensitive to their house prices but I do think there are things we can do in the long run at the federal level to weaken some of the tax incentives that support those things and then there are ways about of going reform and

improve more politically successful.

MR. FURMAN: All right. Matt, I know you were dying to talk about the gas tax but rather than making it a softball for you, why don't you explain to us in the year 2019 as electric vehicles are making their way across our country you're still talking about this ancient technology as a basis for funding our highways.

(Laughter) You could have done it in your first five minutes and you wouldn't have had to deal with that.

(Laughter)

MR. TURNER: So that's clearly a problem, right. Part of the reason gas tax revenue is going down is because cars are getting more efficient. That's just going to get worse. Right. So funding the interstate highway system from a gas tax, the long run view on that is that that is going to be a fail, right.

Following up on the question you just asked, one natural, one thing you might do is think about tying highway funding to housing startups. Right. There you, when you do that you are creating a big constituency of people who want to build highways and pitting them against the people who don't want stuff built and so I

think that that might focus attention on the housing creation problem.

The -- how do you have a user tax -- the gas tax is a user tax. The people who use the highways pay the gas tax and that -- and so it's a nice way to link usage of the gas ax. With electric vehicles, how do you make that happen? I don't know who you would do that. A tax on lithium batteries. Like what is the user tax that matches a gas tax for --

MR. FURMAN: Well, vehicle miles traveled.

MR. TURNER: Yes.

MR. FURMAN: And we have the technology for such a thing now.

MR. TURNER: Yes. If you have, if you are able to measure people's mileage than you can just toll them per mile, right.

MR. FURMAN: Right.

MR. TURNER: So yes, moving -- obviously you are going to have to move away from the gas tax over the 20 or 30 year horizon but the notion of a user tax is one that I think we want to try to preserve whatever is the technological basis for moving cars around.

GMR. FURMAN: So this, for you, Monica, Matt, anyone who knows the answer because I don't. It's just much more expensive doing any of this infrastructure stuff here in the United States that it is in a lot of other countries and that expense is just going up enormously. The poster child of this of course is the Second Avenue Subway in New York which cost, you know, way more than it did when Paris expanded its subway line and that's an expensive city too.

Do we understand why this is? You know, why you see so little productivity growth, so much cost growth, so much higher costs here than other places? Is there something we can do about that or that's just sort of hopeless. That's that it costs and we have to optimize subject to that cost?

MS. TIBBITS-NUTT: I mean, I think there is a couple issues. It is something every time I talk to my colleagues at transport for London I'm just like why. Why am I planning in the United States? And I think, I mean, and I think its --

MR. FURMAN: Because we need you, Monica.

(Laughter)

MS. TIBBITS-NUTT: But I think especially Boston it is ridiculously expensive. Every time we set out to build a project, we put it out for procurement, that number that comes back never matches our internal estimate. Ever. And I think honestly it goes back to the previous panel talking about KPI's.

You know, when you look at an agency like Transport for London they have a very clear idea of what they're trying to achieve. It's not tied to net new riders, it's not tied to estimates from models saying oh, this many people will be impacted, it's actually this is our strategic plan, this is how we are going to meet it. And they have KPI's that actually measure whether they are successful or not. We end up spending so much money in the United States from changing plans mid project. Expanding the plan, oh, we didn't think about this so now we have to go here and that is the major difference I think between working here and working anywhere else in the world.

And I think the other thing is the infrastructure for manufacturing of the vehicles we buy. It is very hard to buy trains in the United States, you

know, and with the federal buy America it does make it difficult because we don't actually have those factors in the U.S. Massachusetts had to build a train factory in Springfield so we could actually buy our own trains. It's insane and the amount that we spent to buy things. We spent a ton of money so we would spend more money and it continues to be an issue. And the same with buses. It is not easy to buy a good, efficient bus, especially an electric bus in the United States. So you'll try and build a factory on the Canadian border and just have them give us the parts and then we will assemble them.

It is such a broken system and I think until we get a more strategic system like you see in the more successful international agencies, we are going to continue to do this. And that's where it is like no matter how much money you raise can we actually spend it efficiently. That is the big question mark.

MR. FURMAN: Yes, no I, that was one of the answers I was fishing for so I'm happy you gave it. Because I think it is really easy to, you know, buy American, something like that does sound great but if you are running a city, you're running a transportation

system, you have tax payers and you are trying to deliver benefits for them, deliver them in the best possible way and I think as we think about these types of policies, thinking about that end of the process, you know, and what Monica is going through is worth it. Matt, do you have anything to add on this particular question?

MR. TURNER: I have a question.

MR. FURMAN: Sure. Which is what --

MR. FURMAN: Not for me I hope.

MR. TURNER: No, no, no. For Monica. One of the complaints I often hear is is that construction of public transit in the U.S. is expensive because of unionization.

MS. TIBBITS-NUTT: Labor is tough. As a transit agency, 94 percent of our 6900 employees are unionized, including executives. The amount of money we spend on overtime by trying to lower our budgets on the operating side end up costing us millions and millions and millions of dollars a year and the other thing is we get stuck in arbitration probably once every year. We've never won in arbitration. And then when it comes

to the construction companies is they bid for these projects, we will pick usually the most financially positive choice and then be sued by the other two.

And so I am a big, big, big proponent of unions with that said, it makes it so hard to run a transportation system because you are constantly going to have to deal with the wants and needs of each of our 27 unions. 27 unions. It makes it impossible to build something. It really does.

MR. FURMAN: So I have one quick question on a slightly different topic for all three of you. Why don't you try to do quick answers and then we will get to the, all the great questions we have accumulated here which is we haven't talked anything about climate, climate change, green, a lot of progressive democratic enthusiasm for green new deal.

You know, just briefly how does that fit in with contract, effect, you know, the ideas you have been talking about? Danny first and then we will work our way down.

MR. SHOAG: Sure. So I tried to mention this little bit at the beginning.

MR. FURMAN: Oh, sorry.

MR. SHOAG: Perhaps I did a bad job but there is a lot of research looking at, you know, where people emit carbon, where are people polluting and it turns out that moving people out of some of these highly productive, dense places into, you know, places like Phoenix or, you know, Las Vegas. That generates so much more carbon so you take someone from a temperate climate like San Francisco and they move to Phoenix and that's just terrible for the environment.

And so a lot of the restrictions that are in place are in place or come about via environmental review and this environmental review often focuses on the local impact. So if I, you know, if we allow this development in this town, what is going to be the consequence for the very local environment? And they don't often take into account the larger, you know, global effects where ah, so if we, you know, prevented these people from moving to a temperate place like San Francisco and they move to Phoenix, what will that do to pollution globally, right? And where it actually matters not, you know, where we think about the effects,

you know, really having an impact.

So I do think that perspective from, you know, that -- the reforms, you know, and that's one of the things I talk about a bit in the proposal is shifting the perspective towards this more, this broader sense of environmental impact so that you are not just worried about, you know, what is it doing to this particular wetland but you are thinking about, you know, well, what is the broader consequence of blocking this kind of development.

MR. FURMAN: Great. Just fast, so we can get to all these great questions.

MR. TURNER: People who live in cities tend to make higher wages than people who don't and have smaller environmental footprints. The ideas that we have been talking about are ways to make cities work more efficiently which means you can pack more people into them. That's a win on all of these counts.

MS. TIBBITS-NUTT: Yes, I mean, I think for my industry specifically we are very dirty. We need to start thinking about additional propulsion systems. The big hang ups on that is actually being able to buy them

within the United States and I would say the other thing is really thinking about the impact to the unions by changing the way that we operate the system fundamentally. We will get a significant amount of pushback from them.

MR. FURMAN: Okay, great. So now I would love to make this more of a lightning round with answers. Crisp answers just exactly like that. And, Danny, we will start with you. Somebody is asking about Microsoft gave the \$500 million or is going to be giving for affordable housing in the Seattle area. You know, what do we think of private efforts on affordable housing?

MR. SHOAG: So, you know, certainly that's a, you know, that's a good thing I guess but, you know, I think that those kind of efforts hat specifically target affordable housing or these kind of grants work best when they're paired with some of the loosening of supply. And so if you have a place where supply is really restricted, you wind up with some of these efforts displacing other kinds of development or, you know, displacing other units.

And so really I think some of the things we

have seen for those at the national level have tried to pair both efforts on the affordable end along with easing supply restrictions so that you really can make sure that those are, you know, increase queue instead of just shifting things around. You should be increasing quantity instead of just shifting things around.

MR. FURMAN: Matt, someone wants to know, you know, that a lot of other countries around the world seem to have a lot more high speed rail than the United States. Isn't that one way in which our infrastructure is deficient is the question?

MR. TURNER: True, other countries have more high speed rail. High speed rail is super expensive. In order for any of these things to pay for themselves you need to be able to run it -- Rhode Island, the RI DOT, Rhode Island transport -- Department of Transportation, our bus network carries a million riders a year, generates \$2 million in fare box revenue, costs \$20 million to run. It is getting a 90 percent subsidy. Okay.

Capital intensives things like high speed rail are worse. All right. So if you want those programs,

you have to be ready to pay for them and you pay for them out of general revenue. All right. So they have those programs, they cost the tax payer an enormous amount of money. So don't go into these programs with the idea that they are going to pay for themselves, right. There are transportation innovations out there that will pay for themselves. Buses, congestion pricing, high speed rail is not one of them.

MR. FURMAN: Is it worth the money though?

What would be your advice to --

MR. TURNER: No.

MR. FURMAN: -- the next part of the question. Okay. That was a crisp answer. Monica, we have gotten a couple of questions along the lines of how we need to rethink transportation in a world of ride sharing and then looking forward a world of autonomous vehicles.

MS. TIBBITS-NUTT: I mean, we are not ready. We haven't been ready for ride sharing. We don't know what to do with ride sharing. We knew what to do with taxis, you know. We would set up a system for decades we kind of knew how to understand that but I think especially in Boston we have such limited parking, we

have such congestion on our roads and what we are finding is it's not people who got out of a single occupancy vehicle and got into like an Uber pool. It is someone who didn't own a car who now is using Uber, Lyft as a single occupancy vehicle and they are not paying their share. They're not paying anything and they're using our roadways and our infrastructure and causing a significant amount of impact on moving our buses through the streets that already have a ridiculous fight.

We are not ready. We need to start thinking and working with these companies to actually develop policies and we haven't and autonomous vehicle, if we can't deal with TNC's I have no idea who we are going to deal with them.

MR. FURMAN: Getting sort of worried.

(Laughter) is there like another city I could live in?

(Laughter)

MS. TIBBITS-NUTT: There are some really nice international cities. (Laughter)

MR. FURMAN: Okay. We will talk later.

MS. TIBBITS-NUTT: Oh, San Francisco actually. They are taking on not only TNC's but bike share and car

share and using that data from tracking them to inform land use policies and where they're putting more transportation infrastructure. So that is actually a very interesting city right now.

MR. FURMAN: The problem is no one can afford to move there. (Laughter).

MS. TIBBITS-NUTT: There is that little issue. (Laughter).

MR. FURMAN: Danny, the question about this, there is a lot of cities in the country that have a lot of housing, that have a lot of transpiration but don't have a lot of economic activity and dynamism, you know, something we should be doing to keep people in those cities, get people to move to those cities, revitalize them rather than, you know, ruin Bob Rueben's neighborhood in New York and have everyone swarm in there.

MR. SHOAG: Well, you know, I -- certainly the problem of declining cities, you know, that's a major economic issue and, you know, that requires a whole suite of solutions that aren't necessarily tied to directly the things that I'm talking about. But I would

want to caution that a bit and say it's not -- Americans do still move, right. They are just moving to places that aren't high wage like they used to. So, you know, people are still moving to, you know, Phoenix or central Florida or places like that. They're just not the high wage places.

And so, you know, even if your concern is, you know, I don't know, people are leaving Buffalo or Cleveland, you know, the question is for this where do we want to give them the opportunity to go? And it used to be the places that give you high wage hopefully it can be again.

MR. FURMAN: Now for this says Monica so we would like to start with you. Matt if you have anything to add feel free. Which is somebody asked in your opening comments you emphasized the expansion of light rail and metro stations in the past caused gentrification. Is there any way to improve in that area that doesn't cause gentrification or it means we just, you know, need to sort of stop doing that and start doing buses which don't cause the problem? Is that your sort of full answer?

MS. TIBBITS-NUTT: Yes, I mean, we have to be much more progressive about our land use and communities have to hold the developers responsible for a certain percentage of those developments have to be affordable. And not just affordable but then also having work force housing. We need both of them. If you can do that and if those projects are tied to policies around that, yes, you could get around that. Politically it's tough. But I think we are in so much of a crisis that we have to start thinking differently because we have run out of other options.

MR. TURNER: If you don't like gentrification do you like the opposite? Right. So every time I hear someone complain about gentrification I worry because I know I don't want the opposite of gentrification. Right. Now beyond that, I think that with that said, that's a little bit of being smart aleck, that there are real costs on low income people who are displaced when high income people move in for sure. But beware of stopping gentrification because that doesn't look so good either, right.

MR. FURMAN: Monica, do you want to have your

30 second rebuttal?

MS. TIBBITS-NUTT: I can only speak for the Boston metro region. We have created so much gentrification, we have divided our schools into segregated school systems that we have to think about gentrification because quite honestly, for the last 200 years no one cared. And so now once again if you cannot give people a place to live where -- what are -- who are businesses going to hire? It will destroy our economy.

MR. FURMAN: So, Danny, we have a question on how big cities outside the U.S. generate sufficient housing. I know you looked at Montreal but I don't know if you want to talk about them or any other?

MR. SHOAG: Yes, sure. So Montreal is a great example in that they have a lot of this mid-level zoning so you have, you know, three or four -- three plex, four plex housing which something Minneapolis is actually just very recently pushed for. Tokyo is, you know, was classically one of these super expensive places but they're, they've permitted some very dense development, very tall buildings and Tokyo prices have stayed flat. And so we can look to international examples to learn a

lot in their success and I think like you might see with Minneapolis there is seem room for bringing those models here.

MR. FURMAN: Matt, equity implications of congestion pricing.

MR. TURNER: Congestion pricing is likely regressive. Congestion pricing is likely regressive. Cars are a bigger share of income for poorer people than for rich people. Gas taxes are regressive, congestion pricing is probably regressive.

Two, you want to worry about that. Two ways you might do that is you take the money and you use it for public transit which is something, buses in particular, which is attractive to poor people. You can help offset it.

The other thing you can do right is this all runs through transponders and so people have accounts and so you can have for example an income qualified congestion dollars allowance. Like so everybody who is on SNAP gets their account, gets \$50 free to be on their transponder every month, all right. Which you can fund out of the revenue everybody else pays. It doesn't --

that doesn't affect the incentive properties of these congestion pricing and you can completely address the equity concerns in that way.

MR. FURMAN: Okay. I want to give you each a chance to say, you know, very quickly something we didn't get to over the course of this panel before we end. Is there anything really important that we want to make sure everyone knows and takes away from this discussion?

MS. TIBBITS-NUTT: I would say as far as transportation beyond having urban planners, architects and engineers we need more social scientists. We don't understand the communities we are serving, we don't understand the levers of how we improve those communities. We don't understand how to build a better product and I think it is from a lack of academic thought and a lack of expertise.

MR. FURMAN: You're not going to disagree with that.

MR. TURNER: I just, can I just double down on that? (Laughter)

MR. FURMAN: Yes.

MR. TURNER: All right.

MR. FURMAN: Danny, do you also agree?

MR. SHOAG: Sure. And yes. (Laughter) I would just say this is something that you talked about before is the real challenge is at least in the problems that I'm talking about is mustering the political will and so, you know, I'm hoping that the people out there who are working in policy positions, you know, can kind of take some of the severity of the problems to heart.

MR. FURMAN: Great. So I think this has been a great discussion and I think, you know, what you need is more discussions between people who do social science and people who are, you know, really involved in these issues day in and day out on the ground. I'm glad we could at least contribute partially to that with all of this. So thank you. (Applause)

* * * * *

CERTIFICATE OF NOTARY PUBLIC

I, Carleton J. Anderson, III do hereby certify that the forgoing electronic file when originally transmitted was reduced to text at my direction; that said transcript is a true record of the proceedings therein referenced; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and, furthermore, that I am neither a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

Carleton J. Anderson, III

(Signature and Seal on File)

Notary Public in and for the Commonwealth of Virginia

Commission No. 351998

Expires: November 30, 2020

ANDERSON COURT REPORTING
1800 Diagonal Road, Suite 600
Alexandria, VA 22314
Phone (703) 519-7180 Fax (703) 519-7190