THE BROOKINGS INSTITUTION

MOVING TO ACCESS:
IS THE CURRENT TRANSPORT MODEL BROKEN?

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Welcoming Speaker:

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Executive Vice President, The Brookings Institution

Opening Presentation:

ADIE TOMER
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The Brookings Institution

Moderator:

KATHERINE SIERRA
Nonresident Senior Fellow, Global Economy and Development
The Brookings Institution

Panelists:

STEPHANIE POLLACK
Secretary and Chief Executive Officer
Massachusetts Department of Transportation

GILLES DURANTON
Dean's Chair in Real Estate Professor
University of Pennsylvania

JUAN JOSÉ MÉNDEZ
Secretary of Transportation, City of Buenos Aires

Keynote Dialogue:

AMY LIU, Moderator
Vice President and Director, Metropolitan Policy Program
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HONORABLE ANTHONY FOXX
Secretary, U.S. Department of Transportation

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P R O C E E D I N G S

MR. INDYK: Good morning and welcome to Brookings. Thanks for joining us so early in the morning. I am Martin Indyk, the Executive Vice President of the Brookings Institution. It's my pleasure to welcome you all today to this program on moving to access and the initiative we're undertaking here at Brookings in that regard. I'm particularly grateful to Secretary Méndez, the Secretary of Transportation from Buenos Aires, and Secretary Pollack, Secretary of Transportation and CEO of the Department of Transportation for Massachusetts, for joining us this morning. Later on in the day, we'll have the pleasure of hosting Secretary Foxx, the Secretary of Transportation of the United States.

The Moving to Access Initiative aims to inform and promote a more socially focused access first approach to urban transportation policy, planning, investment, and services. I want to talk first a little bit about how we at Brookings are executing this project because it is a flagship effort in terms of the approach that we are trying to promote in Brookings' second century, which officially begins this month, in which we are seeking to promote collaboration across our different research programs.

A few of you will be aware that we have 106 fulltime scholars at Brookings that cover every imaginable issue of policy, starting, of course, with urban policy but going all the way across to global economic development and foreign policy. The research programs have tended to develop as stovepipes, as all large organizations tend to do. And so as part of our second century initiatives, we are seeking to promote collaboration across our research programs. And I'm delighted that the Metropolitan Policy Program, led by Amy Liu, is coming together with our Global Economy and Development Program, led by Kemal Dervis, to promote this cross-program initiative on moving to access.

This is, from our perspective, the way to promote the best of Brookings, combining unique scholarly specialties in both urban and global development issues.

And this is, I think, a unique collaboration which I hope you will see in action today and the benefits it can bring.

This initiative also brings together two of our common challenges: urbanization and growth and opportunity. We identified five big bits that our scholars would focus on over the next coming years, and urbanization and growth and opportunity were two of them. This kind of multi-disciplinary work is important to developing and advancing understanding about policy issues in our hyper-connected world.

As you'll hear throughout this morning's events, cities and metropolitan areas all across the world understand the challenges that come from trying to get the residents to where they need to go on a daily basis. This can't just be a playground for the rich, we need our built environment to work for all people, regardless of income, race, or local geography. So, you'll be hearing from a panel of experts, many of whom are actively working in different parts of the world but facing these same challenges every day.

To introduce the Moving to Access Initiative, I want to introduce you to Adie Tomer. Adie Tomer is one of our rising star scholars, a fellow in our Metropolitan Policy Program where he serves as the co-director of this initiative. So, Adie, thank you for your work in this regard and please come and explain to us what it's all about. (Applause)

MR. TOMER: Good morning, everyone, and thank you, Martin for that really kind introduction. I want to thank everyone for taking the time to make it down here today to the Brookings Institution.

It's a really, really busy week here in Washington. I think anyone who loads a newspaper from any geography is hearing about what's happening further down Massachusetts Avenue, or you could say Pennsylvania Avenue, too, for hearings on Capitol Hill. But for many of us in the transportation industry it's actually a busy week that we knew was coming anyway because it's the Transportation Research Board meetings.

For those of you who may not be in the know, this is why whenever you've travelled around Mt. Vernon Square for the past week or so you see a ridiculously long line of taxis. And it's busier than normal when you try to travel through that little underpass on L Street. In a town that is really built around hosting conventions, this is actually pretty much one of the biggest, if not the biggest, we have all year.

And what it is, is actually the single biggest global convention, if you want to use that word, of transportation professionals from a huge range of disciplines. In that, by bringing those people together, what you see is a huge array of different topics that people are covering. In one room you can find chemical engineers talking about pavement quality and how to make sure that porousness -- well, you know, I'm not going to keep talking about it because I'm not a chemical engineer and I really don't understand what they're talking about.

Second, in another room, you can find lawyers talking about tort reform. Or, in the case of how our financing models are being built up -- and we'll talk about that a little later -- most likely talking about what are the legal dimensions to public/private partnerships. In a totally different room you can find urban planners talking about the future economies of the places where we all live.

Now, there is one thing though that brings these people together, and that's actually just people, right. So, when it comes to what we do on a daily basis, so much of our daily activities take place outside the home. From students studying in school, to workers cramming into their offices or the factory floors, to household shopping for their daily needs, to residents just finding time for a little bit of exercise. So many things that we do, again, take place outside the home.

So, if we want to accomplish our personal daily goals, then we need to get moving. And to make all this uncoordinated valet possible, we need transportation networks that connect people to opportunity. Now, this requires a mix of transportation modes, it depends on the geography of place of where you live and where you're trying to

go, the distances travelled, the time that you have available to do all of those daily activities. And we also need those systems to be equitable, right? We need those systems to work for all people and make sure they can all get where they need to go irrespective of income or skin color.

Yet while every year we see new roads and transit lines built, new housing structures take shape, we need to ask ourselves really important questions. Are we building communities that work for all people? I want you to take a second and think about your hometown, or for most of us, especially those of us who live in Washington, our adopted hometowns. When you think about all the neighborhoods where you live, do they all connect people to opportunity? Do they all move -- can people always move as easily in each of those places? Are we building those communities with the right purpose and do our systems reflect the kind of broader objectives we want to achieve?

Our Moving to Access Initiative is an applied research project to attempt to answer those very questions. Along with my co-director, Jeff Gutman, a senior fellow in the Brookings Global Economy and Development Program, our absolutely tireless staff here at Brookings, and a truly impressive network of co-authors and advisors, this project represents our efforts to put people at the center of how we design, deliver, govern, and finance urban transportation.

Now, doing so isn't going to be easy. And as we're going to discuss throughout the morning there are significant path dependencies that stand in our way. Current investment models unintentionally favor the wealthy, and outright favor the automobile in most cases. Too often cities and regions get built without broader objectives in mind. And the very disciplines that all have a hand in how we plan and build our communities too often prefer to operate in silos, rather than coordinate up, down, and across agency divisions. But the opportunities here couldn't be greater to tilt those paths.

So, today I want to talk about our project and the concept of accessibility in three phases. First, we need to take the time to better understand exactly how we're

physically building communities today. What does that look like on the ground? What's guiding those decisions? And what are some of the obvious blocks to our path forward? Second, the (inaudible) of accessibility offers a new way forward, but that path won't be easy and there are many blocks in addition just if we try to go along that path. And then finally, I'll conclude with what we all can do, not just this team in this initiative, to advance this theory into practice a bit more.

But let's go back to where we stand today. So, the last time I actually spoke up here which was a few months back I made a confession. So, I'm now going to make another confession. I don't know why I treat this a little bit like my religious house, speaking on this stage. But I'm a Floridian. And sometimes that's actually really embarrassing to say to people. You can make up all the tropes in your mind. If you don't follow Florida Man on Twitter it's a really important part of the internet, in a corner, to learn about really funny stories. And I'm not just saying that, really you should follow Florida Man on Twitter.

But actually, to be honest, when I think about why I'm a bit embarrassed to be a Floridian is because I didn't really like the community that I grew up in. We always felt like we were stuck in cars. It took forever to get everywhere. And in many ways, that's because Florida is a symbol of what it's like to develop in an era where there is air conditioning, first of all, at least for us, but more importantly, the automobile was here and we could build communities around it.

I want you to make sure for the next few slides that you put your eyes a little bit on the upper right corner at first to see what we're talking about. Obviously, we're talking about Miami here, not my corner of Florida, but certainly our global symbol, and the year below it. And we'll often be starting in the 1980s.

I think what you can find is that we've often developed our communities very fast in an outward manner. In the case of Miami, we've encroached upon our most valuable natural treasure, the everglades. And you can see superblocks that only filled

up with time. But here's the thing. We oftentimes, especially in the United States, think are development patterns are unique to us but they're not.

This is the desert palace known as Dubai. And you can see outward growth dramatically into the desert. New land taken up, new opportunities to move around, and of course, in the case of Dubai, new land created from scratch.

Now, let's take this onto an actual supersize level. This is Bangkok, one of the world's truly great megacities. You can actually see Bangkok in the east start to eat up all of the land in its little corner of Thailand. Now, that's a dramatic change in development patterns from what was there before. And, again, I want to make a case and point. This was already a megacity in 1984, effectively. And all it's doing is gobbling up more land.

Now, it's not just the biggest cities of the world with names you already know. Whether it's Cairo to the forests of Alberta, we are constantly eating up land to put more people in more places. For a whole range of reasons from wanting more space to oftentimes wanting to stretch out distances between where we live.

Now, I think what we really are seeing at play is the visualization of the current model we use to help people get around our cities. Too often we are focused exclusively on moving vehicles quickly. We're too much focused, including inside our investment and engineering models, on solving congestion above everything else. And meanwhile, we've overlooked some of the unintended consequences from what this model means on the ground. So, you saw it in play in seven communities across the world, but, again, you could put almost any of those stunning growth images on the screen and you would see similar development patterns.

So, most notably, for many of us that work in the urban/economic and policy analysis fields, it's creating what we know as spatial mismatch. Now, that's kind of a fancy way of just saying something that you experience in your daily life, which feels like, and in fact is in place, that the distances between where people live and where they

want to grow are growing longer.

So, the question is what have been our responses as households in how we choose to live our lives. Well, number one is people are addicted to cars. And in many ways, they're not to blame, right? How else could you get around. So, you'll see on the left portion of the chart more developed economies. And you're seeing car ownership rates at the household level that are almost near ubiquity. But look further to the right for some of the countries you may not expect where vehicle owner rates are similarly high, including around 50 percent in many of the largest Latin American countries. Now, you may say this isn't surprising, but these are places with lower household per capita incomes that are choosing to dedicate higher values that you might expect to vehicle ownership.

But here is the thing: personal motorized transportation comes in two forms. And in many of those same countries where you see lower car ownership rates, in fact motorbike rates are increasingly high. So, think back to that picture of Bangkok. So many of those residents are choosing to get around by motorbike. And while it may take up less engineering space on the road, it similarly requires fuel consumption and also exacerbates those kinds of distances, unlocking for an individual, further distances that they can go, but only stretches our communities out further and further.

Now, at the same time as all those vehicles are being owned, you can imagine that it ends up leading to higher household expenses. Now, it's really hard to find international comparisons on these numbers, but many folks are surprised to hear about just how much we're all spending just to get around. In many countries, you actually spend more on transportation than you do on food.

Now, of course, vehicles are only contributing at the same time to a dirtier planet. By one measure, from 2014, the transportation sector now represents 23 percent of all carbon emissions. While other sectors like energy production in an industry and building stock are getting more efficient, transportation is actually getting dirtier. And

you can see that if by 2050 we don't solve our emissions problems that relate to all that driving, all those long distances, it will be impossible to mitigate the negative effects of climate change.

Now, finally, here is the other issue but also something that we can use as a pivot. We need to invest more in infrastructure. Based on a major McKenzie report, they estimate that just on transportation infrastructure alone we need to invest globally $1.3 trillion in new infrastructure. Now, this includes new capacity, it also includes maintenance. And this raises a big question: where is this investment going to happen?

Well, I want to push you to look at the same chart that we've reproduced here from them, but if you put up a chart that similarly looked at population growth rates, it would look really similar. Because, in fact, it's in the emerging parts of the world where population growth is fastest that we're going to need to make the biggest investments in transportation infrastructure.

Now, folks can quibble with these numbers and exactly how big they should be, but here is what I want you to focus on for the rest of this conversation today: the question of what are we going to build. Are we going to build the transportation and other related investments that led to those animated maps that you saw before? Or are we going to build something different? Even recognizing the transformative industrial power we have along our transportation networks, but still get more efficient in how people choose to get around and what they can reach.

So, that leads to the second part of the conversation: how can we plan around accessibility? So, let's be honest, though, and I really do appreciate all of you coming here, but how many of you knew what the term accessibility was before you walked in the room? That was so many more hands than I was expecting to see and I was kind of hoping you wouldn't raise them. (Laughter) But for those of you who maybe are streaming, or those of you who just don't know, it's a term of art that's kind of difficult to fully understand, right?

So, first and foremost in the transportation sector, we already used the word for something else, right? Now, what do we mean about access in this concept? So, whether it's a regional highway network or a local sidewalk, the goal of our systems, as Martin said in the introduction, is to get people where we need to go. An accessibility approach to transportation captures this overarching pursuit. When academics and practitioners use the term accessibility, and this is the key, kind of exact definition, they're referencing how many value destinations, whether it's jobs, schools, parks, shopping, individuals can reach in a given period of time.

In a way, access reflects how each one of us thinks about travel on a daily basis. When you plan your commute to work are you going to have time to stop at a drycleaner? How about at the end of your day? Who is going to have time to pick up the kids? And based on that combination of time, and especially for those of us in large metropolitan areas across the world, it leads to the choices of what transportation modes we're going to take.

Do we have to drive today? Because it feels like time is so tight, there are no options. And we feel confident we're going to find parking where we're going to go. Is time better and you want to get a quick walk in so you're going to take your local bus or rail network. That's what accessibility is really all about.

Now, these decisions truly define our day. But they do more than just define our day. They actually define our more permanent choices too. Think about where you choose to live and all the mapping you did to determine the best neighborhood for you, and, of course, probably your household budget as well. But then also think about when you're looking for a new job. Don't you look at where that zip code is of that employer? How long is it going to take to get to work? Access is part of how you think about life.

What truly separates accessibility from other applied theories in transportation is that it's inherent multi-disciplinary. Accessibility requires a recognition of

how different policy disciplines and their respective actors inside and outside government all have a role to play when it comes to connecting people to opportunity. So, on the transportation side, access doesn't discriminate based on a particular transportation mode, nor does it look solely at isolated transportation corridors.

Access also recognizes how much land-use patterns affect how far people need to travel. One of the most important aspects for Jeff and I as we move on this initiative, is that it also needs to consider pricing. It can't just be transportation and land use because both in terms of time taken and money spent, connecting people and places is not free. All these components interact in an urban mixing bowl that defines the places that we live but also reflects long-term planning decisions.

I want to take a second and put this in a real-world example for a moment, not just the development maps we saw, but how access can actually change what we do. So, this is Liverpool, England. This is the original and continued site, as I'm giving away the story a little bit, of the Royal Liverpool Hospital. Now, Liverpool was considering moving their hospital. It's a conversation you've probably heard in so many different communities that you live in. So, here was the site of the new hospital. It doesn't seem that far, although this scale is actually fairly large for a local urban area.

Now, here is the catch. If we think about things in an accessibility way -- so, this is a heat map -- by moving the new location those who lived around the new hospital would be able to get there easier. The parts you see in the red and yellow would have actually lost access to vital healthcare services. Not only can you see that the heat map that is yellow and red is bigger, here is the other way to note it. So many of those people who live in those yellow and red areas, they're transit-dependent populations. They were going to move the hospital further away from where the people who needed it most lived.

Now, here is the other part of the issue. The proposed hospital was going to be cheaper to build, but the net cost on society were going to be higher. And

because the United Kingdom at the time had accessibility practices on the books, you know what they did? They rebuilt the Royal Liverpool Hospital on the original location. It was better for the economy even if it looked a little bit worse on their accounting books.

Now, in the case of this Liverpool healthcare story a better decision was made. But in most parts of the world access isn't a formal part of the planning process. In fact, accessibility has long been a popular theory among academics, but we haven't seen it in practice. So, this raises a major question: what stopped it from being adopted? Today, we are really excited to release a set of four papers that kind of get this conversation started for a more practitioner audience to define accessibility from three different perspectives in particular.

Christo Venter who is in town to join us for TRB today and conferences later in the week authored a paper from the transportation perspective. Gilles Duranton and his co-author Erick Guerra, and you will hear from Gilles and the panel to follow this conversation, talked about it from an urban planning perspective. And third, Shahid Yusuf talked about it from a fiscal and finance perspective.

Jeff Gutman and I then synthesized these documents -- and there is I think a pun intended here -- in the most accessible way we could. And a short ten-page document for those of you who maybe didn't raise your hands, about what does access mean and what are some of the common challenges that are blocking it if it's an idea that makes sense for moving into practice.

What these authors found, and what Jeff and my own work in our teams found, is that there are four common themes that seem to separate and block accessibility theory from moving into practice. So, number one, there is an extreme lack of conceptual clarity here. Start with just the definition. It already has an alternative meaning within transportation and even for those who know it, they can struggle with imagining what it looks like in practice. There are measurement issues. Christo talks about the wide range of different measurement types that you can use to put accessibility

into practice, all of which are valid depending on the goals that you're trying to achieve.

Similarly, it's expensive. You need new data; you need new software. And we'll have another paper just on that in the next two months coming out about how governments can move forward on putting accessibility data and software into play.

Finally, there is no gold standard for what accessibility measures. How do we compare different neighborhoods? How do we compare different markets? And you might hear the panel after this talk about this a little bit from their different perspectives.

Next, we have something known as legacy issues. I highly recommend if this part resonates with you to check Gilles' paper. What we've built in the past is often permanent. It's near impossible to up and replace. For those of you who live in Washington, D.C., think about the expenses we're paying or spending out in Tysons Corner right now to try to remake a major neighborhood and regional job center.

It also reflects, though, these past efforts, the economic ideals of the day. A downtown rail corridor looks a lot different than a suburban area, even in the picture you're seeing on the right, Melbourne, Australia, known as the most livable city in the world. It's also the interaction between them that matters. Different areas of construction collide together on a daily basis in different ways.

Third, who is going to pay for all this stuff? Too often in urban development planning, we overlook major questions about who would pay and who should pay. How can we share subsidies? How can we think about what services you pay for relative to the value that you get from the places either that you're living in or the property that you own? All of this needs to move into a major bowl of decision-making to come together to make better investments in the future.

Of course, our governments' frameworks are not necessarily evolved enough to advance an accessibility platform. Accessibility requires real coordination. We are so excited to have three different government officials with us throughout this

program today. You're going to hear about how tough coordination is. And yet, as it stands, agencies operate formally in silos and oftentimes, even worse, they prefer it that way. How can we break through?

So, moving forward is obviously not going to be easy, but we're passionate about trying to advance that ball. And there are money efforts outside of Brookings that are, of course, already underway. Our colleagues at the University of Minnesota put out some recent research just last week building on a real legacy of work both there, here at Brookings, and throughout the academic literature about measures to understand what does accessibility look like in your community. In the case of the University of Minnesota, the 50 biggest markets in the United States, I highly recommend you check out that research online. Again, the same pun, it's very accessible.

The UN sustainable development goals, or think about new ways to implement ideas about how we get around and who pays. And in the case of Bogota, but you can also say Lima, they're playing with new ideas around subsidies, on how we can connect people to opportunity. In the case of Bogota, through their public transportation system.

Now, in our future work we're pledging to do the following. Number one, we're going to keep advancing empirical work. There is so much more to understand about what are the actual economic benefits from accessibility. That research which was done in the past needs to be communicated out to more people. We can advance thinking around measurement. We can test new ideas in cities and regions that are willing to experiment.

We outlined so much of this potential work in the overview document that we published today. But here is really the thought I want to leave you with: that laundry list of work that needs to be done, it's much more than Jeff and I could ever get to on our own. So, for those of you in the research community, or who work inside government, take a second to read that paper and look at the ideas for future work. There are so

many opportunities to advance the literature here and to make sure that we better understand how to build communities for the future.

We have a really exciting program for you for the rest of the day, building on the messages from President Obama's speech last night, one that included an explicit focus on how we can help people reach better opportunity. U.S. Secretary of Transportation, Anthony Foxx, will be here to have a conversation with the RVP, Amy Liu, about the work he's championing in office around this very topic. But before we get to Secretary Foxx and Amy, we have a panel that's going to explore more of the themes I've introduced today.

I'll now turn the stage over to Kathy Sierra, a non-resident senior fellow here with the Brookings Institution and our moderator of the panel. We're all in extremely capable hands. So, thank you. And Kathy, the stage is yours. (Applause)

MS. SIERRA: Thank you very much. Adie, thank you so much for that presentation. It reminded me of my work in the '90s. I was in charge of Urban Development and Transportation in the World Bank, working in China. We basically, in our group, put in place the 2nd and 3rd Ring roads in Beijing and in Shanghai. And I remember at the time thinking, I don't think this is the right thing to do. The momentum was just there, it's what the Chinese government wanted, there was clearly what seemed to be the state of the art at the time, but we didn't have the kind of conversations that we could build on, but we knew that we needed to have these conversations. So, I think we were maybe a little too late for some of the legacies that were built at the time when I was working in transportation, but certainly not too late for some of the challenges we have today.

So, I'm really excited to introduce this panel because we have on the panel people that are today worrying about these issues, worrying about how to build strong transportation systems that not only bring together mobility for people but also access to opportunity to the social dimensions, but seeing some of the barriers to that.

So, what we want to do is explore those barriers, see what's actually happened in real life, and see what the recommendations are going forward.

On the panel today we have Secretary of Transportation from Buenos Aires, Juan José Méndez. Secretary Méndez brings five or six years of experience in the public sector. Before that he was an entrepreneur and a consultant working on these issues. He and his team put together a sustainable mobility program in Buenos Aires which won accolades, and he'll be sharing with us some real-world experiences of some triumphs but also some of the concerns that he brings to the table.

We also have Secretary Pollack who is the Secretary and CEO of the Massachusetts Department of Transportation. She brings to us a very deep knowledge of policy issues as a researcher, as a strategic consultant before moving into government. Again, she will bring to the conversation both what she knows about what's happening in real world research, in the world of practitioners, but also what is actually happening in the world of politics in this state which faces many of the same legacy issues that Adie spoke about.

Finally, we have Professor Gilles Duranton with the Wharton School of Business at the University of Pennsylvania. He is the Director of the Real Estate Department, the Chair of Real Estate there, who brings to the conversation research on land issues, and will particularly focus on how those bring to bear on the issues of transportation but also to talk about silos and about governance issues as we go forward.

So, with that, I think we're all miked, correct? And I have a cold, so excuse me for that. I want to -- and I hope I'm not giving it to you. I'm going to start with Secretary Méndez. We heard a very compelling presentation about how the world needs to shift towards accessibility. You've been trying to do this in Buenos Aires. Can you give us some sense of what the goals have been in Buenos Aires, what have been some of the successes, but in particular what have been some of the challenges and barriers to it?

SECRETARY MÉNDEZ: I don't know how many of you are familiar with the city of Buenos Aires. The city is part of a metropolitan area of 14.5 million inhabitants with 2.5 thousand square kilometers of area. There are 22 million trips per day where it's historically based on mass transit mainly. The city has a long standing tradition of mass transit, commuter rails with an over 850 kilometer network, bus routes, over 200 bus routes with 18,000 busses running all around the metropolitan area, subway network which is not very big but with 65 kilometers and over 1.2 million riders per day.

But in the past 30 years, what we've seen in the city of Buenos Aires, in the metropolitan area, was first of all, there was no coordination at all between the different government levels. The federal government, the Buenos Aires city government, the Buenos Aires Estate government, and 42 municipalities members of this metropolitan area. They weren't coordinating any kind of effort. In the past 80 years, when we start running the city of Buenos Aires with Mayor Macri, who is nowadays the president of Argentina, and now with Mayor Larreta who is from the same party, we accepted the challenge with the visions to increase again the service level of mass transit in the city of Buenos Aires, because we've been seeing how the mass transit was losing passengers for car riders and how the cars used in the city of Buenos Aires was increasing year after year.

So, our first challenge was to stop that and to start changing that trend again. Hopefully we were very successful doing that in the city of Buenos Aires in our space of governance, these 200 square kilometers, which is the city center of the metropolitan area. But, we still need the interjurisdictional coordination. We couldn't achieve any type of coordination with the federal government. It was just very recently that we could set up a metropolitan transportation that was institutionally created four years ago. But it was December 2015 when Mayor Macri started his presidency with the goal to create and strengthen metropolitan agencies.

We started the new period with the metropolitan agency. And for the first

time we started coordinating basic things, for example, mass transit fares. We acknowledged also one of the biggest challenges in the city of Buenos Aires, our low income communities, we introduced the social fare which is a special discounted fare for low income populations. And right now, in the coming months, we are launching the inter-model fare which is also going to help low income communities.

So, when we talk about taxes, what we see is that we have a huge transportation network that used to be very disconnected, it was not integrated in any way physically nor in terms of fares, and many of our citizens and neighbors in the metropolitan area were making very inefficient decisions when they were trying to reach their destinations, whatever their reason. And what we are trying to do, our biggest challenge right now, is to make those decisions more efficient.

I'm going to draw it with a quick example. We have some people in the metropolitan area that every day they choose to use one bus route that takes you from home to work, and it takes them 1 hour or 70 minutes every day for each trip on this one bus they took every day. Probably in many cases they have other opportunities like using a bus for a short trip and then a train trip that will take them to their destination in half of the time or maybe 45 minutes, which looks more efficient but they don't do it because they have to pay two fares every time they jump from one mode to another they bear an additional fare. Usually people that live farther away, they are the lower income communities, and so we are inducing them to very inefficient decisions in terms of mobility and wasting more time because they are not allowed to spend more money.

So, this is the type of behavior we want to change, the discoordination between these three government levels.

MS. SIERRA: Thank you. So, what I hear is using the legacy systems, trying to integrate them, but also using as an important lever pricing, both in terms of subsidies as well as just cleaning up some of the anomalies to be able to provide poor people access to opportunity.

SECRETARY MÉNDEZ: Yes.

MS. SIERRA: Let me move to Secretary Pollack. We had a conversation before this and you gave me some skepticism about what you had written about and others in this room had written about in terms of accessibility as being a major driver for the future and what the reality is in the state of Massachusetts. Can you compare and contrast really the conversation we're having today with what you find on the ground in Massachusetts?

SECRETARY POLLACK: I think that in academia, which is where I was until two years ago, when I became Secretary, it is widely accepted that accessibility is a better framework for thinking about the role of transportation in achieving objectives. But transportation agencies are mobility agencies. And they don't wake up every morning and say I'm a mobility agency, but that's what they're set up to do. So, there are at least four reasons why it will be difficult to get transportation agencies to reinvent themselves in the way that this conversation sort of presupposes needs to happen.

The first I would categorize as culture. Quite frankly, transportation agencies know surprisingly little about the people and places they serve; you don't need to in order to do the work that we are asked to do. To really live in an accessibility-centric world, you actually have to know -- think about this presentation -- where people live, where people work, where they get their healthcare. Most transportation agencies don't know that. And honestly some people -- and I'm not just talking about the folks who work for me -- have startlingly little interest in that piece of information, or startlingly little access to that piece of information. So, there is sort of a culture change that you are presupposing that people who came to an agency to do one thing are going to suddenly get interested in a second thing.

The second issue you have is what is referred to in the papers as governance. I would call it a span of control issue. If you're serious about accessibility, then the question you ask changes. The question is not how to move people, the

question is how to support people in gaining access to opportunity.

I don't control where the hospital goes in Liverpool. I don't control where affordable housing gets built. I don't control the hours of operation that companies or community colleges or job training programs choose to start earlier in the morning or end later at night than the transit services that my agencies provide. So, there is a serious question about whether if you are serious about accessibility the transportation department is actually the right part of government to start with.

The third thing I would mention briefly is the issue of tools. Transportation agencies do two things: they operate, they provide service to customers, and they invest, they figure out which things to build or fix. There are a very limited range of tools that help understand accessibility for both of those things, although I'm happy to talk about examples where folks are starting to use accessibility tools and metrics in both of those areas.

The fundamental tool around which most U.S. -- not just transportation agencies, but our key planning transportation agencies, which are called metropolitan planning organizations, are built, are regional travel modes. And just to maybe help you understand how deeply that tool is a mobility tool and not an accessibility tool is to think of it this way. In a regional travel model, the output of the tool, the social utility of the thing you are planning for, is actually travel. It spits out numbers in trips and miles and movements that inputs to those models everything that we care about in this room. The inputs are land use and jobs and housing and healthcare and recreational opportunities. If you are serious about accessibility, we have to invert that. The output of the tools we use actually need to be information about access and where healthcare and jobs and housing are or should be in the future, and the input in transportation is just an input.

So, the tools issue is a big issue and that leads to another issue which the papers do talk about, which is I live, we live, my compatriots in the other 49 states and the District of Columbia, since the second to last major federal transportation bill live

in a world driven by performance measurements. That is what the federal government expects us to do. We have to report to them about how we are going to reduce the number -- the percentage of our bridge decks that are structurally deficient and improve the condition of our pavement on the interstate highways. If there is no metric there is no way for me to direct resources to things that are easy, that the pavers themselves can see that it's clear that it isn't a great singular accessibility metric and there may never be.

So, if you want performance driven, data driven agencies to change what they do, you have to give them a measurable target to aim toward. And we don't have that for accessibility.

MS. SIERRA: So, I think you correctly say this is a major culture barrier and maybe a governance barrier because of what departments of transportation actually set up to do. So, that leads me to the question of where should the leadership come from. Is it mayors, is it a vision that comes at the state level? Are you seeing at least a demand for that culture change and a demand to open up the conversation beyond the Department of Transportation in the state of Massachusetts?

SECRETARY POLLACK: I think there are a couple issues. The demand, I believe, will come from outside the agencies. The demand will come from advocates for people to make sure that their needs are met. There is a question about where that demand should be aimed. So, a big one is the city level, the metropolitan level, the state level. Those are very different.

Mayors, quite frankly, have a lot more tools at their disposal because they have more of a role in the education system, the healthcare system, the land use system, at least in my state, but I think in many U.S. states, than governors do. So, I think that that is an issue, sort of how much of the effort -- I also though think for there to be a conversation that leads to a set of demands that in turn leads to change, we have to find a way to have the conversation because, as I said, when I lived in academia and spent my time talking to other academics and went to conferences it was easy to talk

about accessibility, but the way we talk about accessibility, the terminology we use even in the papers, is not a comfortable terminology.

To me, accessibility is a very, very powerful frame for all the things we're trying to achieve but we actually haven't found the words yet to do that. And the example that I often give is it's really a conversation about redefining what the social utility of transportation is. So, when I was working on energy issues in the 1970s that happened, and it happened because a guy named Amory Lovins at the Rocky Mountain Institute was able to explain in a very simple way that people do not care about energy because they care about kilowatts. He said people care about energy because they care about heat, light, and power. And that became the mantra. If you could get heat, light, and power by using less energy or by conserving energy or by tapping the sun, no one cared. The things they wanted were heat, light, and power; give them heat, light, and power differently. And it really reframed the energy conversation in this country.

We talk about transportation. Even people who believe in accessibility, when you actually listen to the words they use in terms of mobility, we assume that movement is actually the social utility provided by the transportation system. The way that you know that this is false, as false as the belief that the kilowatt is the social utility of the energy system is how many people do you know who wake up every morning and say I would like to travel 83.2 miles today? You know none. How many people do you know that wake up and say I need to get the kids to school, I need to get to work, pick up groceries, and I'd love to go for a run after work. Everyone. The problem is we haven't figured out how to talk about that second thing in a way that is as succinct, as compelling as heat, light, and power.

MS. SIERRA: Thank you. Now, Gilles, we've heard from people that are in the day to day work of transportation. You bring to us the point of view of real estate development, of land use development, of urban development, among others. You have a wide-ranging background. You've worked in Columbia as an advisor, you've looked to

many other areas. Does this resonate in terms of some of the barriers? Are we asking the right questions? How do we get the pressure or perhaps the momentum to make those culture changes if it's not going to come from the transportation sector, per say? What are the other levers that we might want to use?

MR. DURANTON: Thank you very much. When we started writing this paper with Erick we started making the silo argument and we were afraid that we were just from academia, we didn't really live in those agencies, and we didn't really live in city management, so we were very afraid of being or making what would be a caricature. Then I heard that Stephanie was even way worse in her assessments. (Laughter)

SECRETARY POLLACK: Sorry. Really.

MR. DURANTON: Let me start first, Adie said very rightly that we spend 17 percent of our disposable incomes on transportation, 95 percent of which is road transportation. American households also spend an hour to an hour thirty each and every day going places. So, this is 5 to 10 percent of our time awake. These are extraordinary amounts of resources.

And, yes, people dealing with that come in two different groups. We have the transportation planners who, indeed, their main objective is about going faster. And this is at some level a very (inaudible) goal. I mean, we'd like to be able to go faster, getting to your destination faster is important. It matters. At the same time, what is somewhat accessory which was a plot in their mind, is the fact that when we go places, when we travel, we create all sorts of external effects. We create congestion, we unfortunately create accidents, we pollute, and so on and so forth. This is to the tune of about, whatever, 10 cents per mile. These are the best estimates. Which means that if you applied that to the whole country this is about $1 billion per day. This is a very large amount of money and resources that we actually lose. This is sort of secondary to the plot for the transportation planners.

The other thing that is really important to realize is if you actually make

travel faster you lower the price. And when the price goes down American economists expect the consumers to be willing to consume more of it. So, at some level this is a good problem to have, but there is a self-defeating aspect here as you actually improve as you provide more infrastructure people will drive more. I think I wrote some interesting things here, I saw some interesting things here within the data where basically the amount of traffic on the main roads within this country, highways and principle arterials, is basically proportional to the amount of roads, of lanes, kilometers of roads. So, this is a self-defeating element here.

The other group are urban planners. That's an interesting group, that is culturally, indeed, a very well different group. Where the first group were mostly transportation engineers, the others are urban planners, architects; it's a very different sort of culture. I think they understand, indeed, that there are some problems with transportation, that it pollutes, that it congests, that it creates accidents, and of this. What they've also realized over the years is that there is no silver bullet. So, I think the direction they took which I don't really like is let's make transportation unnecessary by brining stuff close to people. I like this idea, the problem is that very often we take it to extremes, and the extreme of that vision is very, whatever, middle aged sort of vision where people will be working on the first floor and live on the second floor. This is just not how we live. This is not just how we live, so this is not going to work.

Though I like the idea of making stuff closer because going faster is one idea but making stuff closer is another idea. The problem is that they never do that together so there is no coordination. Whenever I go to a policy discussion, there is always a smart person who will say, oh, but we need a more holistic approach. I really hate that word. I really hate that word. (Laughter) Because then we quickly go into some mumbo jumbo and we're losing both the discipline of transportation planners and the discipline of urban planners, and we enter in some world where it's not working very well and people will not do great things. So, indeed, we need to recognize that this is about

both distances and speed and ease of transportation.

So, do I have a plan of action? I think there are some low hanging fruit here. A lot of this country is zoned in what we call in the jargon Eucledia, i.e., one big area, one use. Pure residential, pure commercial, pure retail. Yes, we don't want noxious land use in residential areas. I don't want a chemical factory next to my house. But beyond that there is a big argument about mixed use, or at least maybe not always try to rapidly (inaudible) it like some people like to do, but at least making sure that if we want to have mixed use we can actually have it.

Then there is another thing that makes us travel long distances in this country, it's minimum lot size. A lot of the suburbs in this country are on half an acre, quarter of an acre, three-quarter, one full acre, and sometimes even more. And individually we may not want to consume that much land. We actually make that zoning for all sorts of reasons that have nothing to do with transportation. That's going to be really hard to get rid of that one because this is what actually will govern the way we choose locations so our kids can go to good schools. We don't want the riff-raff to come to nice places. So, that's the way we actually exclude people by forcing them to consume very large amounts of land, but in terms of transportation this is self-defeating, this is making us travel way more than we should.

The third thing I want to talk about is, indeed, we need more science. That was sort of transparent in your speech. I know this is not the right place to talk about more science and certainly not the right week, as the (inaudible) are going to take over, but we still need actually to do more science. Accessibility, I think in simple words, is about where people choose to go relative to where they could have chosen to go. So, it needs the wrong questions before this one which is their chose of motorization, whether or not to buy a car, their residential choices, and so on and so forth. But this is really, again, where people choose to go given where they could have gone given the opportunities that they face.

So, the Department of Transportation has a nice survey. I think where the next wave is coming (inaudible) very soon, where we observe where people go to. We have now the technology that allows us to also understand where they could have gone to. So, we know that so-and-so on that day decided to go to the restaurant at 7:00 p.m., whatever, six miles away from home, he or she could have gone to a restaurant only two miles or seven miles. We actually now have the data to be able to actually analyze the choices and make progress on that.

So, it's going to be hard, it's going to be difficult, but I think we can make progress. So, despite what the (inaudible) says, yes, it moves, indeed. Somebody said that many centuries ago and moving, indeed, is not utility in itself but it's actually what allows us to live reasonable and interesting lives.

MS. SIERRA: So, let me turn to Secretary Méndez to pose this question. We talk about these new ways of thinking about land use and the like. We also see the sort of negative underbelly which is gentrification, which is an increased access to transportation, increasing land values which are then pushing people out further away from access to transportation. You have some interesting work going on, or at least have seen some of thig going on in the south side of Buenos Aires where you've got low income communities that are increasingly being pushed out of the city and pushed out from transportation networks, access to the goods and services that they need. What are the dynamics that are working there? Not just on the transportation side but on the land use side and the real estate side. And what's the city doing about it?

SECRETARY MÉNDEZ: Well, the situation of the southern neighborhood of the city of Buenos Aires, it took a holistic approach from the city government in terms that we had to join efforts of our department, transport planning with urban planning and economic development at the city government. For example, when we introduced the southern corridor of the BRT, the metrobus, in the southern neighborhoods of the city we didn't face the difficult capacity problem that usually arises

and the response to the BRT. But the BRT addressed other issues like accessibility to mass transit, the bus routes were operating in terms of speed and capacity very well, but the quality of service was very poor. So, introducing the BRT stations with the renewal of the public space, the reclaiming of the public space, for better uses and higher quality improved the quality of the neighborhoods.

Also, the Urban Planning Department and the Economic Development Department introduced the creation of a specific development area for IT companies reducing taxes and inducing those companies to move to the southern neighborhoods of Buenos Aires and start mixing activities. It used to be only a residential neighborhood with some businesses related to logistic practices. We create a logistic center to move those isolated practices around the neighborhood into a logistic facility and then those spaces are now being reconverted into offices or new houses for these new businesses that are coming to the neighborhood, which are also better connected than it used to be in the past.

This approach was very helpful but it didn't fulfill all of our requirements in terms of integrating low income communities. We have slums in Buenos Aires, very big slums, and regulated settlements of low income neighbors that we're now addressing in terms of integrating them to the city. And the process of integration also requires a very holistic approach. It's not only opening roads and getting transportation into these new neighborhoods, but also the redevelopment in terms of land use and the quality of infrastructure that they really deserve to be a neighborhood and to have the same standards as the rest of the city.

Right now, neighbors of these slums are spending more money in real terms than the rest of the neighbors of the city because usually the last 1 mile or 1.25 kilometers through the regular or mass transit system is served by some type of private unregulated transportation supply. It is very expensive. It is sometimes unsafe because it's not regulated. It's performing very poorly. And in order to access the city and what

the city has to offer they have to spend more money. So, we had to address that situation also in order to connect these neighborhoods with the system mass transit network.

MS. SIERRA: Wonderful to see that actually not withstanding holistic, there is actually an example where the city has come together from the various points of view. It gives us a little bit of hope that this can happen.

I haven't been able to ask questions on finances, on fiscal, on public/private partnerships, on metrics. There are so many things we didn't cover because now it's time for the audience. So, we have about ten minutes for audience questions. I'd ask you to please keep it very short, to please introduce yourself. If there is a specific person you're addressing the question to please let us know otherwise we'll open up to the panel. I'm going to take a few questions and then we'll round it through. So, please raise your hands. This gentleman right in front here.

MR. CATHLIN: Hi, Steve Cathlin. Am I right, the Buenos Aires bus system is largely or uses private bus companies in its mass transit? My question is, is there a place for private ownership and management of mass transit in urban environments?

MS. SIERRA: We'll take a few more questions. Other questions? Way in the back.

QUESTIONER: We are community of intellectuals and thinkers here so --

SPEAKER: Introduce yourself please.

QUESTIONER: My name is Maureen. I'm taking my doctorate in nursing at Rutgers University and I do FMCA --certified Federal Motor Carrier Safety Administration medical exam there.

My question is we're a group of intellectuals here. The bottom line is when you talk to the public the first question is traffic. George Washington Bridge,

Garden State Parkway, Atlantic City Expressway. So, how do we fix traffic because it affects our quality of life? If we go to Vienna, Austria, Germany, they have excellent transport systems. What is wrong with the United States and can we fix it?

MS. SIERRA: Thank you very much. Yes?

MS. COLAWEL: Hi, my name is Emmy Colawel and I run a human center design consultancy called Design, LLC. I was wondering, is it a storytelling problem that is happening here? I hear a lot about needing data collection, we need more data, more data, more data, but it also sounds like the story about transportation is being told badly, if it's even being told at all. And I'm wondering, is this a storytelling problem or a data problem. Or is it a combination of both and which one comes first?

MS. SIERRA: One more question here.

MS. SHAL: Ming Shal from the Inter-American Development Bank. My question is about the discounted fare for poor populations. How does that work? How do you identify the poor? How does the targeting work and how can we do that in other cities and developing countries? Because often it's hard to figure out who are the poor because there aren't easy ways to target. So, I'm wondering how the discount works.

MS. SIERRA: Thank you so much. Let's turn back to our panelists. Secretary Méndez, I'll ask you to perhaps reflect on the issue of privatization, private ownership of mass transit, but particularly does it help or not help? Does it make your life more complicated or less complicated when you're trying to have an accessibility-led transportation system?

SECRETARY MÉNDEZ: In this long-standing tradition of mass transit in the city of Buenos Aires, the private sector always played a key role in the development of the system. Subway lines, they were promoted by private companies at the beginning and the same happens with the bus routes. We've been having private operators for many years now. And even though we change the first (inaudible) until the end of the '90s, the first workover 100 percent by passengers, now they are subsidized by the

federal government. But if you sent the right incentives private operators tend to be very efficient and tend to be a very important part of the equation. So, for us it was very useful to have them although we had so many issues and discussions along the way, but it was very helpful. This is a system of 18,000 busses and almost 200 bus routes which is very broad and hard to manage.

In terms of how we recognize or we work to offer a social fare to low income communities, the federal government administration for social benefits like pensions, they have specific programs for assistance to low income communities. And in those programs, they already, in the past 12-13 years, they've been working very hard identifying these communities in order to grant them assistance. So, we have one for collection system that is called a SUBE, and it's available for the entire mass transit system. What we did in the past year was to introduce into the SUBE card the social fare program and they only have to link the SUBE card with their tax identification number and they automatically receive the social fare discount. It was very easy for the mass transit system because this administration was working very properly in the past ten years identifying the low income communities.

MS. SIERRA: Thank you. I'm going to ask Secretary Pollack and Professor Duranton to tell us about the storytelling. We read in the papers -- I refer you to one of the excellent papers in the series -- talked about how difficult it is to find metrics and to find common denominators and common definitions and the like, so that's a little bit of the data piece. Is that really a fundamental problem or is a problem that Secretary Pollack raised, which is we're not telling the story right, we're not capturing people's -- we don't have a narrative. It's probably a bit of both. Secretary Pollack?

SECRETARY POLLACK: I do think it is a bit of both, and I think that -- so, in public policy we tend to call telling a story framing. So, what we're talking about is moving from a frame called mobility to a frame called accessibility. So, words matter. When we make the statement -- the way I describe to my staff, what do we do, what does

my agency do, I say we help people get where they need to go safely and reliably. Now, that's not a bad frame, but it's a mobility frame. And you know that it is because you use the words get, go, and where. In an accessibility frame what we actually should be in the business of doing is helping people get what they need. It's not a where, it's not a move, it's a get what they need.

Now, that doesn't take mobility out of the picture, because honestly, even in an accessibility world the number one tool for achieving accessibility is still going to be movement. You go to your job. You go to your children's school. But what reframing it and sort of changing the narrative and, again, using words that make sense to people not academics is it opens up a set of tools. I'll very briefly just mention this. And this actually goes to the privatization question. For the mobility piece of accessibility, for those things that people need access to that require movement, we live in a wonderful time in the transportation world because there are so many more mobility options and many of them are privately provided. We did not have UBER, we did not have LYFT, we did not have bike-sharing, we did not have Cars to Go. Those are all mobility tools with the potential to increase accessibility and it is a good thing, not a bad thing that the private sector is providing some of them because it allows the public sector to focus on other things.

So, mobility still matters and the private sector can be a huge provider of mobility. In the field now it's being called mobility on demand, and that is a good thing, not a bad thing, we need more of it. But the interesting thing about accessibility is that mobility is -- you've done an ends and means shift. So, in a mobility world, the end is movement in an accessibility world, the end is getting what you need. And one way of doing that -- the easy example to think about which is an accessibility and social equity issue is there is a family with very little money that lives in a neighborhood where there is no fresh produce available to them to eat a healthy diet. In an accessibility world, you have at least three ways of helping that family. Again, a transportation agency telling them that that's part of their job, to figure out how to help that family get access to

affordable healthy food, comes as a surprise. But if you accept that that's actually an accessibility objective, the mobility answer is to subsidize travel so they can get to wherever the fresh groceries are. That's a mobility answer. Or to have a new provider, including a private provider, come in and provide a connection to the grocery store, or for the grocery store itself to realize that there is a market and move people. That's a mobility answer.

The moving stuff closer is usually referred to as a proximity answer. So, that -- putting grocery stores in food deserts -- again, not seen as a transportation function, but clearly an accessibility thing. So, that's proximity.

And then the third thing, and again, we live in an age where this is so possible, is you stay exactly where you are and things come to you. I don't know that we have a great name for that one yet, we need to tell that story. But in Boston it consists of a group of students at a college who graduated, bought a bus, outfitted it with racks, go and buy produce and they drive it around like what I remember from my childhood is the book mobile. So, in low income neighborhoods in Boston produce appears. So, the people stay but the thing they need moves to them. Not on a permanent basis, which is proximity by opening the store.

So, that's why, to me, telling the story differently is so exciting because as soon as you live in an accessibility world there are so many more solutions to the problems that we all care so much about.

MS. SIERRA: Final word to Professor Duranton. Metrics. Is it the storytelling or the metrics? We heard quite a bit about the storytelling side. Is there still room for metrics? And very quickly because we're about to move on to our next section.

MR. DURANTON: I'm going to be certainly biased because I believe in academia and I actually really enjoy working with the metrics. (Laughter) So, I'm going to be biased on that one. What I don't like about the storytelling is that it's presented more and more in this country and certainly in other advanced countries in terms of war on car,

where you have these two factions for and against, which actually goes back to the two silos that we talked about before. I don't think this debate is very productive so I'm trying to go beyond that. There are a lot more options but there are also new ideas and new things that are going on in other parts of the world that we should be looking at.

BRT, in Buenos Aires, which actually started in Brazil, was adopted massively in Bogota, this is an extraordinary system. So, I don't know -- I've been to Buenos Aires several times and I'll be back next month, but I know Bogota very well. So, this is a transportation system that is actually moving around more people than the London underground in terms of passenger miles. So, it's an extraordinary system. And all this is for the cost of five or six miles of subway at the current (inaudible). So, this is a system that is actually extraordinary when perceived. So, they can clock one bus, one large scale bus, for every minute or less. Here, the last time I have spoken to a transportation planner was in Vancouver and the guy was so proud that he could get to a bus every 90 seconds. And I thought, yeah, but in Borgata it's 50-55 seconds. (Laughter)

So, there are lots of ideas and practices that are actually elsewhere in the world. The big novelty here is that the developing world is making bigger ways for lots and lots of things.

MS. SIERRA: Maybe that answers a bit of our question on traffic and what's going on in other countries.

I want you all to join me in thanking our panelists Secretary Méndez, Secretary Pollack, Professor Duranton, for bringing some real-world examples and experience to the presentation that we heard earlier. It's now time for us to leave the stage and for me to welcome onstage Vice President of the Metropolitan Program, Amy Liu, who has the honor of introducing our next guest, the Honorable Anthony Foxx, U.S. Secretary of Transportation. Amy, thank you.

MS. LIU: Good morning. I don't think I need to introduce Secretary

Foxx. I think many of you know him very well, and he's also a former mayor of a large city, Charlotte, which makes us even bigger fans of his work. Secretary Foxx, welcome back to Brookings.

SECRETARY FOXX: Glad to be here. Thank you for having me.

MS. LIU: We've had a great discussion this morning about how we need to do a better job both here in the U.S. and around the world in making our transportation infrastructure-built environment policies more people-centric. And yet there are so many barriers for doing that. I want to explore some of those themes with you this morning.

But I want to start with a question about just your global experience because this is a global project, a project between our program and the global economic development here at Brookings. Have you done a lot of international travel?

SECRETARY FOXX: I've done quite a bit actually, Amy. Transportation is an international language. Whenever you go to another country and you see how they're using mobility, or practicing mobility is a better way to say it, you can actually learn a lot.

MS. LIU: Where have you been?

SECRETARY FOXX: We've gone to spend some time in Germany, the UK, India, Australia, Japan, Scandinavia. In South America, we've been to both Brazil and to Argentina. So, I've gotten a pretty good sample of what's around the world.

MS. LIU: And what have you observed from those travels about what makes the U.S. system and policy strong and what can we do better?

SECRETARY FOXX: Well, I think it's fair to say, just on a comparative basis, that our transportation system is more mature than a lot of other countries' systems are. On the one hand, that gives us certain advantages because we don't have to worry as much on a day to day basis about building it out, even though there are still things we need to do. On the other hand, the other countries have the advantage of learning from our mistakes. For example, in Amsterdam, which now has a great bicycle

culture, it wasn't always that way. Back in the '60s and before they were very auto-centric and they just made the decision to convert to a bicycle culture. People bought into it and now they're kind of known for it and you'd never know they had cars.

So, I think there is a lot that we can learn about mobility from other places because everyone is being challenged by population explosions in the urban regions and the need to move people around better.

MS. LIU: So, let's talk about the switch from mobility to accessibility. This program has been about the fact that our entire system is focused on movement, VMTs, cars, and less about the way people actually move about their day. You have made accessibility a priority for you at DOT. Tell us why and tell us a little bit about the work you've done. I think ladders of opportunity are sort of at the center of that.

SECRETARY FOXX: If you look at our system, we have, again, a very mature system but we also have stacked into our system certain prejudices about certain geographic areas and so forth. You can go to many cities and you can look at where the freeways are lined up and you can see the evidence of what people thought about those areas, and in most cases, not that much. You can look at our transit systems, and in transit a lot of times the challenges we have are the stops that didn't get put in place. It's more of an issue of omission usually than co-mission necessarily.

But these mobility challenges hit people every single day. If you live in an underserved area and your job is across town, like, for example, in Richmond, Virginia where between the hours of 7:30 and 9:30 something like 24 percent of the people on the west side of Richmond are not served by transit and most of the jobs are on the east side. So, people are trying to figure out how to get from one place to another. So, it affects -- if you're poor in this country -- it's an expensive thing to be poor. Transportation eats up the second highest amount of your wallet. Everything is an aggravation. You have to take multiple transfers to get from one place to another. If your kid gets sick you have to figure out a way to get to work but also deal with a sick kid. So, it's just a

miserable experience and it' doesn't have to be. As a country, if we build the intentionality around our system and try to help people more, than folks will have an easier time.

MS. LIU: So, then tell us about ladders of opportunity. What have you been doing to try to create now a much needed culture shift across the country?

SECRETARY FOXX: There is sort of an offense and a defense to it. On the offensive side, we try to do the things to help communities reimagine transportation as more accessible. So, for example, you and others have done studies that show the challenges of income mobility in certain areas. We picked seven of the cities that were lowest performing in terms of if you're poor how easy is it to get into the middle class. We picked seven of the lowest performers and we did a pilot called Ladders Step. We asked the mayors of these cities to come up with a transportation project that they thought could make a difference. And those cities were like Indianapolis, Baltimore, Baton Rouge, Atlanta, Phoenix, I'm going to miss somebody so I'm sorry.

Anyway, we picked seven projects and we're working on them. They're at various phases of coming into existence.

MS. LIU: Can you give us an example? Like what's an example of a really good project that can help us move closer to accessing people?

SECRETARY FOXX: One example is in Indianapolis there is a series of neighborhoods that are in the southern part of the city and the jobs are in the northern part of the region, not just the city, but even a little bit outside the city. So, the mayor had the idea of putting a bus rapid transit line that would connect folks from that part to the northern part of the city and that project is in development today.

So, we have lots of things like that that we're doing. Part of it is like seeing is believing. So, if we can get it on the ground, people see it, they become national examples. We've also done things like the Every Place Counts design challenge. We went to four areas. I loved that I got to go to Philadelphia to meet with

some folks whose neighborhood had been carved up by a freeway and they were sitting right next to the State Department of Transportation folks and they were actually talking about how to reimagine that community. So, I think those types of experiences then begin to help the planning process be more informed by the range of choices.

On the defensive side, Title 6 is one of our most important tools to ensure fairness in the use of federal dollars in transportation. Our guidance on Title 6 has not been updated for 50 years. We just updated it. And we're also trying to move to a more proactive position with our (inaudible) so that we're not encouraging DOTs to decide what they want to do and then have public input, but to have that public input before decisions are made. So, we're trying to engage the public and hopefully some of the offensive things we've done have created more of a conversation.

MS. LIU: One of the things that was raised today in the research is the importance of performance metrics, that the performance metrics in the system now make it really difficult to change our investment programs and approaches and who we collaborate with. It's focused on how well you're doing in terms of repairs or VMTs and speed. If we focus more on access, people, affordability, and opportunity -- have you started to experiment with metrics?

SECRETARY FOXX: Yes, we have. We actually are still trying to figure out how you do measure the people impact of projects. We can measure the number of cars that go through an interchange. We can measure cost-effectiveness of various projects using certain economic criteria. We tell engineers to build the system and make as many vehicles go through it as possible, but we also ought to be telling our engineers that you have to look as this project from a 360-degree perspective. How is it going to impact the communities that touch it? What are the plans to ensure good connectivity?

I'll give you one real concrete example from my neck of the woods. I-77 in the downtown area of Charlotte plowed through a historically African American community, right in the center of town. Today there is an overpass and the overpass is

like this dark, dim thing. And if you lived in the neighborhood you wouldn't want to walk under that underpass because you'd have no idea what would happen to you if you did. So, the city, working with the state, has now put in a light fixture in there and it looks more inviting. Sometimes it's simple things like that, sometimes it's more dramatic where you might tunnel something that's over the landscape, but we have to start thinking about these things more holistically because, frankly, for cities and communities land values have been depressed because of some of this building. Communities have been cut up because of this. It's, frankly, a little unnecessary.

I'll add one more thing to this since I've got like eight more days. (Laughter) I said this at TRB the other day, but one of the things that our country needs to think about in terms of performance metrics and economies and so forth is right now we are chronically underinvesting in our infrastructure whether it's repair or new capacity. Everybody says it, everybody knows it.

One thing we haven't had a real conversation about is what can we do without. And I happen to think that if we actually got rigorous about it and looked at our street grids, our east, west, north, south street grids in our cities, that there are some freeways that run in the interior of our cities where there is probably no traffic advantage to having the freeway there. And restoring the old street grid might actually be as efficient or more efficient than having that freeway running through it. And it has the added value of reconnecting communities.

MS. LIU: It's so interesting because we've had that same conversation on the housing side. We so much reward new housing starts, and yet we don't spend as much time talking about redevelopment and renovation and the power of reuse. So, I think it's very powerful to think about that.

Speaking of eight more days, let me transition and talk about your exit memo. I really enjoyed it. Not because you are exiting, by the way -- (laughter)

SECRETARY FOXX: I was wondering. (Laughter)

MS. LIU: -- there was really great progress and a lot of more challenges to come. And as President Obama said last night, this is a step in a really long journey. So, in your memo you talked about three priorities, or things that we need to keep an eye on: funding, technology, and really who benefits. The access question.

So, we've already talked about access to let me just talk about the other two. There is no doubt how we pay for things is a constant question, particularly in an environment where not only is it thin at the federal level but states and localities are really struggling. Tell me about, under your watch, what have you all been doing to help states and cities really find leverage or resources to pay for a wide array of infrastructure projects.

SECRETARY FOXX: The first and foremost thing that we did was something that's really hard to do, which was to build a national urgency behind getting a floor under us with transportation investment. And that was -- we did several things. We went on a national bus tour twice, we hit 100 communities in 43 states. We went to places that weren't just like Democratic centers of the universe, we went to Janesville, Wisconsin where Paul Ryan is from. We went to Kentucky, in Louisville, where Leader McConnell is from.

We wanted to make the case to everybody. I think that was part of why Congress came back and passed the FAST Act and President Obama signed it on December 4, 2015, which now provides us at least a floor for the next several years in transportation funding.

At the same time, both I and the President were interested in how we could leverage more public/private partnerships in transportation. There is a lot of conversation about that now, just to tell you without editorializing too much that I do think there is some room for more public/private partnerships in transportation. Do I think we can get 100 percent of the gap between where we are and where we need to be? No. But is it 10 percent, is it 15 percent? Maybe.

So, we have consolidated our credit programs within one roof. We've created a Build America Bureau that now has an executive director, and it is going to make the process of moving through the public/private partnership much easier without compromising some of the things that many of us care about, which are like environmental aspects and so forth. But this is going to be very effective. So, the infrastructure is there to do more.

But on the larger question of funding and what the future is, you know, we've got to deal with the political reality that people are paying for a bad transportation system today, and whether it's like having to buy new tires more frequently or using more fuel because the road systems are inefficient and you're stuck in traffic for a long time. Unfortunately, sometimes it gets cast as a choice between paying more taxes and nothing. But the reality is most people are paying something for the inefficiency of the system today.

The last thing I want to point out here is that you can put $5 trillion into the transportation system, but if we're buying the wrong stuff for the future that we're walking into, then we're still going to have a problem. I've been arguing more for a demand-driven approach to transportation where instead of presupposing that 80 cents on every highway trust fund dollar should go to roads. We ought to be much more flexible at the federal level and let states have more a say in how they split that. Put some of that money, or some of that additional money we find into regions and into cities so that they can do things that the states may be slower at doing but they need to do. So, I just think that we need to have a reset on the policy side, and hope that in the future the conversation isn't' just about how much money and where it's coming from.

MS. LIU: I marveled about this conversation earlier today about the fact that we do have a lot of infrastructure needs in our country. There is a huge conversation about financing and the form of it, but we don't talk enough about what is that funding for. And are we structuring the finance to reflect the built environment we want? And how do

we bridge those conversations more? Do you have advice about that? I think that's what you're saying, is how do we bring those two conversations together.

SECRETARY FOXX: And I want to be very careful because I've, again, get asked sometimes what would you like to continue doing if you had a few more years. And then somebody writes Foxx gives Chou advice or whatever. (Laughter) And that's not what I'm doing.

But I think you're asking a very important question, which is how do we have a broader conversation about the policy side. And, frankly, one of the things that I think needs to happen is that we need a coalition of mayors and governors thinking about this because they're the ones on whom the responsibility is ultimately going to lie to reshuffle the deck.

I also think that the transportation community as such is kind of splintered, and so there is a road lobby, there is a transit lobby, there is a rail lobby, but they almost always are arguing their own case and not the case for the system. And the problem with that is when the go to the Hill or they try to get something done, it's not going to be integrated. If our road systems are just being judged on roads and not being judged on overall mobility and access, then we probably won't get mobility and access. But if we actually -- getting to your point on metrics -- we start measuring the things that we want and we're more flexible about how we get there, then we have a chance to get the 21st century transportation system everybody wants.

MS. LIU: We've got five more minutes before we open up to questions, so please keep thinking about what you want to ask our secretary. Let's talk about the destructive nature of technology. I think sometimes people outside of maybe autonomous vehicles are truly prepared for what is to come. Tell this group what you see coming down in terms of the role of technology and its impact on infrastructure in the built environment.

SECRETARY FOXX: Well, I think -- when I was mayor I used to say

about water, which is another type of infrastructure, I used to say if the faucet comes on and no one thinks about me, then I've done my job. (Laughter) And I think that's the way people think about transportation. We have the advantage in a mature transportation system, as many holes that we have in it, potholes included, we do have the advantage of not thinking about it as much. Now, what's happening with technology is, I think, a wave of choices now coming in. And right now they're kind of like superficial choices like do I drive, do I get a rideshare, do I get a cab? You're thinking about it that way.

In the future though, we're going to have significant changes in personal mobility with the car. And it's going to have implications. Certainly, from our vantage point, safety is first and foremost. So, trying to put some shape around safety as a priority as this technology emerges is part of what we do, which is why we produces the first in the world national comprehensive autonomous vehicle policy that lays a framework for that.

And it starts to answer questions like, for example, today you and I drive cars, we have to go to DMV and everybody loves to go to DMV, I know. (Laughter). We go to DMV to get our license. Well, what if the software is driving the car? Who is going to license that? And what we've said is that to the extent the software is operating the vehicle, the federal government will evaluate that and states don't need to trouble themselves with that. But to the extent a human being is driving a car you still need a license. So, we do that.

I think beyond that, though, there are other questions. What are the future ownership of cars period? To what extent are we going to want to own a car versus owning a service that gets us where we're going. A lot of people quote the statistic that cars are like idle 95 percent of the time. So, do you want to put the investment into buying something that you're not using 95 percent of the time, or do you just want to buy what you use? That could transform things. And then the younger generation coupled with the boomers who are finding ways to live closer and have the

conveniences of being able to walk or bike places, how are they going to behave in this new world? And are their tastes going to change? I don't know that that necessarily means a net decrease in auto sales, although it probably does. But maybe those sales are business to business sales and not business to consumer as much as they have been.

So, I think there is going to be a lot of disruption around here. And I also think that if we're smart and we figure out how to do what I said which is to be more demand-driven, you're going to see much more transit activity in places like the southeast, where I'm from, and the western states where there is such population growth that is exploding. You should see more regional conversation about freight movements, and you're going to see trucks that are also taking advantage of autonomous technology.

So, there are a lot of things that I think are going to happen, that are going to really change things. And we need to also be focused on labor and the fact that this is also going to introduce some challenges with our workforce.

MS. LIU: One more question before we go to the audience. You all invested in the Smart City challenge and program. And Columbus was the lucky community for that initiative. What are you learning from Columbus? What are they doing to sort of be at the forefront of integrating this technology? And is access on their minds?

SECRETARY FOX: So, one thing that we did with the smart city challenge was we actually put access in as one of the criteria. That actually had some really important lessons that we drew just from the application process. Several cities, for example, including Columbus, came up with this idea of a single pay app or function where if you're trying to get from here to your doctor's office and you've got to take a bus and a train and then a rideshare to get door to door that you pay one time for that trip and it's all seamlessly put together for you. And I think you're going to see that happen in a lot of cities around the country and probably the world.

The other thing that they did in Columbus that I thought was really compelling, is Columbus has four times the national rate of infant mortality. It was an issue before the Smart City challenge and they were very aware of it. What they endeavor to do is to create an app where mom can get her doctor's appointment at the same time the trip is generated. And if the bus is late or something the app automatically contacts the doctor's office and gets the appointment rescheduled, but they're thinking about how to connect people.

And the last thing that Columbus did on the equity point is what if you don't have a cell phone, what if you don't have a bank account? A lot of people who are poor don't have either one. So, they are experimenting with kiosks in certain corridors where you know there is a high poverty population and those folks will have access to these same services through area kiosks.

So, those are just a few things on the equity point. I think the Smart City challenge was one of the coolest things we've done. Frankly, we got 78 applications from all over the country. And the whole point of it was to get the country to reimagine transportation. So, now you've got 78 cities that have come up with ideas and plans. And many of them are just going ahead with them. So, I like to say that we didn't have any losers in that competition.

MS. LIU: Great. Okay, it's your turn. Any questions for Secretary Foxx? I'm going to call on two. Please introduce yourselves and keep your questions tight.

MR. DURANTON: Gilles Duranton of the Wharton School. Let me ask a funding question because as a foreigner I'm always mesmerized by the way it works in this country. So, you have a gas tax that is very, very low, and we could argue over whether it should be higher. I mean, I think it should be higher. But then the pot goes to Capitol Hill and you have politicians that fight, basically, to get stuff back into their state, but they also essentially decide to fund particular projects. I view that as just bizarre. So, one is a completely different world than the country I'm coming from. The money actually

goes to your peer, over there, and essentially (inaudible) they decide, okay, we're going to allocate the money to do this, this, this, and that. Completely outside of the political process on the day to day decisions.

An alternative that might be way more suitable to this country would actually be let the gas tax and states do whatever they want, go to the states, and let the states decide what they want to do with that money. And if they want to invest a lot in transportation they can, if they want to invest it elsewhere as well they can.

MS. LIU: Let me let him ask his question and then we'll let you do both.

MR. VOCK: Thank you. My name is Dan Vock, I'm a reporter with *Governing*. Getting to your point about smart cities, I just talked to someone from Austin yesterday who said one of the greatest things about it was that here he was, a city official, talking to all the top people at USDOT. It seems you're a former mayor. There's been a lot of sort of elevation of cities and city departments of transportation. You've even talked about changing the funding on that. How do you sort of continue to get and keep cities in the conversation? I think that's been one of the big focuses of your tenure here.

SECRETARY FOXX: Thank you. So, on the first question, I can't fully explain our political system. (Laughter) Except to say that we released this report called beyond traffic and the final draft of it came out Monday. Part of what we're trying to do as an agency is to rationalize the data and the facts with decision-making. And that's painful in America because people are used to what they're used to. I think part of our challenge is that most of our policies and funding have grown up around getting the system built. They haven't grown up around trying to integrate the system.

That's where we are right now. We're kind of stuck in build, build, build mode as if it's 1956 instead of being in a mode of how do we optimize the freeways, the local streets, the sidewalks, the bike lanes, et cetera. So, we've tried to push people towards thinking about that more and it's an ongoing challenge.

On this question, we have worked hard to get local government more involved in what we do. And part of that is because, just from a macroeconomic standpoint, our cities are becoming more of the organizers of our economy. And the regions in which they sit are not just urban, they're suburban, they're rural. And if we can figure out mobility solutions in those regions, we will figure out the nation's transportation system.

So, although I didn't get a whole lot of like hearts for the MPO rule that we just put out there, there weren't a lot of love notes sent to us. (Laughter) Part of the reason we did that is because we're not, in my opinion, going to solve this so-called urban rule divide in Washington, D.C. We have to deal with that in a region by region way. And pushing neighbors together to problem solve together is not a bad thing. It's probably different than what we're used to, but we need to push our regions to plan more collaboratively, not just coordinate, but to plan together.

MS. LIU: Great. Other questions. Let's go to the two in the back of the room. The glasses and then this young man.

MR. STEWART: Hi, Ansen Stewart, I'm a doctoral candidate at MIT. First, thanks for mentioning the cost of doing nothing. I think that really ties into the accessibility point of views. Some of the things we've looked at in Boston include unreliable access to healthcare centers causing late arrivals to appointments, missed arrivals to appointments, like you mentioned. That has a huge cost from the social point of view.

On the previous panel, Secretary Pollack made the observation that given agency culture shifting to more of an accessibility paradigm may require a lot more advocacy, public participation, and organizing. So, given that, and given the fact that new private actors are in many cases starting to control the data that are needed to make some of those arguments, what role could government have in supporting open data standards and open APIs to help enable some of that organizing and participation from

the public. Thanks.

MS. LIU: I think the gentleman in the glasses, right there. No, behind him, sorry. In the back.

MR. BARTHOLOMEW: Hi Keith Bartholomew, University of Utah. I want to thank the Secretary for his comments this morning and joining us.

Referencing also to Secretary Pollack, she noted a linguistic problem, and others have referred to a narrative gap in shifting form mobility talk to accessibility talk. Secretary Pollack referenced Amory Lovins' excellent quip that people don't care about kilowatts, they care about hot pizza and cold beer. How do we talk about accessibility in something less than a paragraph?

SECRETARY FOXX: I learned something when I went to Copenhagen. We were there with a group, an architectural firm that gets involved in transportation planning, whose name escapes me. But they are using a public input model that I think is really interesting. And we're trying to put in place guidance that allows for this. But basically, today our public input process works like, okay, we're going to have a meeting at 4:00 o'clock at the government center and everybody show up and if you show up you can look at the maps and comment on them. Now, how well we use that input is really -- you can leave it to your imagination. (Laughter) But that's the way the public input process works today.

What they were showing us were some ways that you can actually go out to where people are already, whether it's a coffee shop or community meeting that has maybe nothing to do with transportation, and talk about transportation in a way that uses their language, not ours. I think that we will see in the near future, not too distant future, not only localities experimenting with more outward ways of seeking public input, but also hopefully some of the states trying to experiment with that. And we've tried to create room in our department to allow for that.

The public doesn't use the transportation vernacular. And it's really

important for us as transportation practitioners to talk to people in the language that they use, not ours. And I think that's an evolution that we're just on the front end of.

MS. LIU: One more. Karen tells me one more. A lot of great questions. Let me do this one.

MS. COLAWEL: Hi, Secretary, thank you so much for your time. My name is Emmy Colawel and I run a human center design consultancy. I was actually wondering if you might be able to speak a little bit to the issue of class as it relates to the evolution of transportation. Usually what ends up happening is everybody loves a great transportation system until suddenly it's in their backyard and they have a million-dollar house and they don't want anything to really change back there. I'm curious, how do we navigate the issue of financial influence as we're sort of going into this new phase of our politics and our society?

SECRETARY FOXX: That's, frankly, an age-old challenge. It's not just one in the U.S. I go across the world and I see the same thing happening in virtually every part of the world. So, I don't think it's an issue that anybody's really figured out, but let me try.

I think what I was just saying about public input and using more of an outwards inviting kind of public input rather than a closed come to me kind of public input is really important. I think we also have to arm people with the tools to engage because many communities don't feel as empowered to engage. The community where I'm from, a largely African American community in the northwest side of the city of Charlotte, every time the Transportation Department came to them it was always something bad. So, when folks come today, folks are sitting there thinking like what are you going to do to me now.

So, we have to be conscious of that and to help people get more comfortable with interfacing with us. And that's one of the reasons why we've actually built a toolkit, a community toolkit, to actually give citizens, regular people the entire

process of getting a project done, where they can engage, what language people are using so that we kind of demystify it.

So, that's the public input side. I think the other thing is we've got pay careful attention to who we elect. When you elect a governor, you're electing the chief transportation official of your state usually. And where that person's mindset is plays a lot of the role in terms of what happens. Who is on the transportation board, and making sure that there is adequate representation there, and that those voices are at the table is also critical. That also goes down to the MPOs and down to the local governing bodies as well. So, who is representing you is also part of it, too.

But largely I think we're a ground up system. And if there is low public input, not enough discussion, we're going to get projects that repeat that history. At the Department, I think our tools like Title 6 and NEPA need to continue to be robustly applied.

I'll say this, with Title 6, as I look back, I think there is a fair amount of -- I'm not sure that over the last 50 years we've thought about Title 6 as broadly as I think the writers of Title 6 meant it. For example, can a decision to not do a project be a violation of Title 6? A decision not to hire somebody based on some immutable characteristic can be a Title 7 violation. But can a Title 6 violation apply to a decision not to do something? In so many cases there were decisions not to do things. And I happen to believe that that can give rise to a Title 6 violation under certain circumstances.

So, we need to be thinking constantly in our agency about how to promote fairness and to ensure that we're doing the best job we can across the board to build the system our country needs.

MS. LIU: In closing, I want to say that I don't know what you have planned after January 20th, but I think I can speak on behalf of everyone here that we hope you stay in public service. Your thoughtfulness and passion and common sense approach is what we need. And we hope to see you here on the Brookings stage

sometime in the future. Please join me in thanking Secretary Foxx.

SECRETARY FOXX: Thank you. (Applause)

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