THE BROOKINGS INSTITUTION

THE FUTURE IS NOW: WHAT'S NEXT IN AMERICAN INFRASTRUCTURE

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Welcome:

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The Brookings Institution

Framing Presentation:

ROB PUENTES
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Public Sector Keynote:

HONORABLE JOHN DELANEY (D-MD)
U.S. House of Representatives

Presentations:

DAN KINKEAD
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Private Sector Keynote:

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Closing Remarks:

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P R O C E E D I N G S

MR. KATZ: Okay. Good morning everyone. My name is Bruce Katz; I'm a Vice President at the Brookings Institution, Founding Director of the Metropolitan Policy Program here. I want to welcome you to Brookings, both for people in the room, who are watching on C-Span, and via webcast to the closing event of Infrastructure Week. So a lot of folks, public, private, civic have been involved in designing Infrastructure Week and pulling it off; and to all of you from Brookings, thank you. And also thank you to the foundations and corporations that really have made our work possible, the Ford Foundation, the Surdna Foundation, Hitachi, AIG, GE, RBC, KKR, and all the members of our Metropolitan Leadership Council. They really have made our research possible.

Now the timing of this week could not better. And I know Congressman Delaney is going to talk about this. There are clearly short term federal actions involving the gas tax and the highway trust fund that are critical and really a new way of the National government engaging, but there really are META issues that are forming this week. Does the United States have what it takes to build and retrofit a new generation of infrastructure for today's pressing and disruptive challenges? This is a pivotal decade because of supersized economic, social and environmental challenges facing the country. We need more jobs. We still need 7.1 million jobs to make up the jobs we lost during the downturn, keep pace with labor dynamics, population growth. We need better jobs because we went from 81 million people living in poverty and near poverty in this country in 2000 to 107 million. And we need to build communities that are resilient and sustainable in the face of economic restructuring and environmental challenges.

So infrastructure can play an enormous role in addressing these super challenges, both at the national scale and frankly at the city and metropolitan scale which drive most of the economy if we think differently and innovate continuously. So what we've tried to do at Brookings -- and this really is a set up for this forum and a set up for Congressmen Delaney -- we've really tried to do four things. We tried to redefine infrastructure for a new era. We've defined it essentially as seven sectors of infrastructure that really have all their own methods by how we design them, how we finance them, how we deliver them, and how we govern them. From roads and transit, to trade and logistics, to energy and water, and so forth. For a modern, sophisticated economy an infrastructure means a variety of things as we all know and we can understand that, we can basically not just come up with ideas for solutions but actually execute them. Second, we've redefined the impact of infrastructure, right. This is 14.2 million jobs in this country, 11 percent of our jobs. And the incredible thing about the infrastructure super sector is that these are good jobs. They pay better wages than many other sectors of the economy. So when you invest in infrastructure you're a platform for broader growth, but the jobs in that super sector are very good. Third, we've tried to redefine by what we mean by innovation in infrastructure. You know, you cannot build 20th century infrastructure for 21 century economy, particularly how disruptive this economy is, particularly given the potential to use the technology, to deploy it, to apply it in ways where we get better results. And finally, and this really I think will get to Congressman Delaney's thoughts is we're trying to redefine how invest in infrastructure. Because at the end of the day you need to invest for the future and frankly the entire system is a public-private exercise in the United States and its federalist in design and execution. We're not a country like many of our competitors that really just have a central government that basically has a national plan and then does the bulk of the investment. We are a federal republic and we are a public-private enterprise.

And so as we go forward today we have some excellent innovators from around the country who are really doing the hard work of putting forth a vision for what infrastructure can look like in this decade and in the next century. We really need to think differently about this and align it to what is a disruptive and pivotal moment, but also align it to how we operate as a nation and as a society.

With that I want to introduce I think one of the most innovating members of Congress, John Delaney, Congressman from Maryland 6 District -- right-- hometown, right -- Washington, D.C. But also someone who comes into the national government from the private sector, CEO of a company listed on the New York Stock Exchange. This is really someone coming in not just with private sector expertise in the abstract but with ideas that could be deployed for again a very different kind of moment where the national government needs to be a stable and reliable partner, a platform, a foundation for investing in the kind of infrastructure that moves our country forward. So, Congressman Delaney, on the critical committees that really deal with so much of what we're going to talk about today, thank you for coming here; looking forward to your remarks. (Applause)

CONGRESSMAN DELANEY: Thank you, Bruce, for that very nice introduction and for all the work you do. And I want to thank everyone for being here and for your significant participation in Infrastructure Week. It's obviously a topic near and dear to my heart. And I also want to thank Brookings for hosting this and for all of your contributions to this topic and generally your contributions to public policy in this country which in many ways is singular. So it's great to be here and it's great to be part of a Brookings event. So in my judgment increasing the infrastructure investment in the United States should be our top domestic economic priority by any measure. And I say this for really three reasons. The first reason relates to some of the things that Bruce touched on which is that it's an incredibly important jobs program to some extent and it particularly focuses on creating middle skill jobs which is exactly what this country needs. If you look at the data around job creation in this country we're actually doing a pretty good job creating high skill jobs and we're doing a very good job creating low skill jobs because high skill jobs kind of directly and indirectly drive the creation of low skill jobs. But what we're really lacking is these middle skill jobs, the kind of jobs where people can have one job, have a decent standard of living and raise their family. That's really where the shortage is. That's the part of the market that's been hollowed out by the macro trends of globalization and technology. And infrastructure is such a perfect way --

investing in our infrastructure is such a perfect way to create those jobs because it creates them directly through the people who actually build the infrastructure and indirectly around all the manufacturing that goes with infrastructure. Because if you think about our ability to compete in manufacturing you realize that the kind of things you have to manufacture for infrastructure, you know, to simplify it, are big and heavy and the United States has a competitive advantage on building big and heavy things. And so it will be incredibly stimulative to our manufacturing sector.

So the first reason we need to invest in infrastructure is because it creates jobs. And I actually think this point really needs to be emphasized because I come from the financial services industry and people often ask me what do I think the chances of another financial crisis in the near term. I actually thing the chances of another financial crisis in the near term are almost zero. But when people ask me what are the chances of another jobs crisis, where the effects of globalization and technology continue to accelerate and hollow out the middle class of this country at a much more rapid rate than we anticipate, I put the chances of that at pretty high. And so to think that we don't need potentially a big jobs program in this country I think is very shortsighted. So that's the first thing infrastructure does.

The second thing it does is it makes us competitive. And I care deeply about the United States' ability to compete in this new global and technology enabled world which we all know we're living in. And having world class infrastructure is critically important as you all know to doing that. So it creates jobs, it makes up more competitive in the long term and it also pencils out. If you look over time for every dollar we spend on infrastructure in this country we get almost $2.00 of economic return; it's $1.92 to be precise. So it's rare from a domestic public policy perspective that you can do things, do all three of those things, create jobs in the short term, make you more competitive in the long term and pencil out, which is why I think this should be our top priority.

And everyone knows about the challenges we face in infrastructure, but it's also a huge opportunity. I mean the numbers are very significant. I mean you hear numbers $3 trillion, $4 trillion, some people even say $5 trillion of an investment we need in this country to bring our infrastructure up to a world class level. To handle an investment of that size we have to some extent deconstruct how we create infrastructure in this country and make sure we have good public policy initiatives around all of them. And so it seems to me the way we create infrastructure in this country falls into one of four categories. We either create infrastructure by having the government grant money to do it, so the federal money grants money, states governments provide grants, a whole variety of governments provide grants to build infrastructure and most of that infrastructure is stuff that's really related to the common good, right. So that's the first way we build infrastructure. The second way we build infrastructure is by charging user fees. And there's a whole variety of projects around this country as we all know that are really based on some kind of a user fee scenario to pay for the infrastructure. The third way we build infrastructure in this country is the private sector does it through good public-private partnerships where the private sector is building the infrastructure, owning the infrastructure, operating the infrastructure, and it's being used by the public. And then the fourth way we create infrastructure in this country is we finance it. In other words someone borrows money, typically a local government, to build something and they have to pay it back across the long term. So if we ever want to close this $3, $4, $5 trillion gap in the infrastructure investment in this country we need to be doing things in all four of those buckets. And we shouldn't think of these things as mutually exclusive because some people say well that's a good idea but it doesn't do this, or that's a good idea but it doesn't do this. That's the wrong answer. We need multiple tools in our tool kit if we really want to have a meaningful improvement in the infrastructure in this country and to make a significant investment in the infrastructure in this country we have to do it in a lot of different ways because it's a very complicated and sophisticate landscape. So that's the other think I like to tell people, have an open mind. All of the tools are virtuous because we have such a big need.

And so the main piece of legislation that I've been working on for the last year around this challenge really fits into that financing category. So again we grant money, we charge user fees, we do public-private partnerships, and we finance it. What we've tried to create, for lack of a better term, is the category killer of financing; in other words the big 800 pound gorilla that will take care of a lot of the financing needs that this country has in the long term. And that's what we've created with something call the Partnership to Build America Act which was a Bill that I introduced in the House of Representatives almost a year ago and it had a companion Bill introduced in the Senate a few months ago. And right now this Bill is the most significant piece of bipartisan economic legislation in the whole of the Congress. We have 31 House Republicans on the Bill and 31 House Democrats, and we have a half a dozen Senate Republicans and a half a dozen Senate Democrats. So it's completely bipartisan and in a meaningful way. In other words we're deeply penetrating the Congress and we're adding members every week. What the Bill does is pretty simple. It's complicated the way it lays out but it's actually pretty simple. We launch a large scale infrastructure financing entity called The American Infrastructure Fund which is designed to be a large scale bank, bond guarantor to be used by states and local governments around the country to finance any type of infrastructure.

I love the way Bruce framed the different categories of infrastructure. I call them the food groups of infrastructure, right. This entity allows states and local governments to use this money for transportation, for water, for energy, for communications, even for education. To think in the world that we're going to live in the next 20 or 30 years from now that we don't think of education facilities as core infrastructure to a competitive United States I think is crazy. So all of those categories are eligible for financing. The American Infrastructure Fund is capitalized up front with $50 billion that goes in day one and creates the capital bed for this financing entity and it stays in there for 50 years. We believe the American Infrastructure Fund can leverage itself 10-15-1 in the private markets. So it takes that $50 billion of capital and potentially leverages it up to $750 billion. And it will exist for 50 years so that money can revolve up and down for 50 years, potentially financing $2 trillion dollars of infrastructure over 50 years. And if you do the math on that that would create 3 million jobs in this country which is more jobs than exist in my home state of Maryland just to put it in perspective.

So that's what the American Infrastructure Fund does. The way it's capitalized is very unique. The government does not put the $50 billion into the entity. It's put in by private companies who buy bonds, very cheap, not government guaranteed long term bonds, 50 year, 1 percent, not government guaranteed. They would never make this investment in a normal kind of free market system. But to create an incentive for them to do this we say that for every dollar a U.S. corporation invests in the American Infrastructure Fund they get the right to repatriate a certain amount of their overseas earnings back to the United States tax free. We all know, and it's come into sharp focus in the last couple of weeks, that we've got an international tax law problem in this country, right. And it's causing almost half of U.S. cash to sit overseas of our largest corporations. And the cash overseas is growing at a faster rate than it is in the United States. So pretty soon U.S. companies will have more cash overseas than they do in the United States. And they're not bringing it back because we have a system and this system is unique in the world where we require our companies to pay tax locally where they earn money and then when they bring it back to the United States they have to pay U.S. tax. So it's effectively a double tax scheme that we have. No other country has this. What the other countries do is you pay your tax locally and when you bring your money back to the homeland if you will you don't have to pay any tax. And so that's why this cash is accumulating overseas which is why Pfizer for example is doing one of these tax inversions. The real driver of this tax inversion is the fact that they have $60 billion of cash overseas. If they bring it back to the United States they've got to pay $20 billion in

Federal taxes. So they might as well use it to potentially even overpay for a company that allows them to redown this aisle overseas.

And so what we're doing is we're creating a path for some of that money to come back to the United States tax free. But it's not a free lunch. They have to put some money in this American Infrastructure Fund. We make them buy bonds if they want to bring it back tax free that they would never buy, that are probably only worth $.20 on the dollar. The good news for them is they get to bring back money, right. The effective tax rate is about 10-12 percent. The good news for us is we get capitalized without a penny of government spending, a massive infrastructure financing vehicle that will be around for 50 years and will make a material difference against this challenge and opportunity we have around infrastructure. And the reason this bill is so bipartisan is because it brings together two pieces of public policy that each party has been spot on right about. We Democrats -- I'm a Democrat -- we've been advocating for an increased investment in infrastructure in this country for a long time for all the reasons we've talked about. And we've been 100 percent right about that. My Republican colleagues have been pointing out for some time that we need to fix this international tax system, that it's a problem, it's making us not competitive, it's reducing investments in the United States among our largest companies. And guess what? They've been 100 percent spot on right about that. And so this Bill fuses together those two pieces of good public policy and it as a result has garnered such significant bipartisan support. As I said it's the most significant piece of bipartisan legislation in the Congress. It's a big idea, it's an innovative idea, and it's being done in a completely bipartisan way. In fact we won't even add members unless we have a companion from the underside to keep that march of bipartisanship going down the field. We're going to have 100 members on each side of the aisle pretty soon with this Bill.

And recently in light of the Highway Trust Fund situation -- now I'm going to pivot to how this -- the momentum on our Bill can be used to potentially do something even bigger. We've thought about how we take this groundswell of support we have around the Partnership to Build America Act and we introduce it into the discussions around the Highway Trust Fund. Because as most of you know we in Congress need forcing functions sometimes to do things. And the Highway Trust Fund which is obviously a disaster in the making, its pending insolvency if you will, could also become a huge opportunity if positioned right. So what we've said is this, why don't we take the fact that there is bipartisan support around increasing our investment in infrastructure and fixing the international tax system and not only do the Partnership to Build America Act but let's do something bigger and let's deal with the Highway Trust Fund at the same time. So what we've proposed -- because if you think about what we're doing with our bill, we're raising $50 billion of capital from corporations and allowing them to bring back $200 billion from overseas, because the ratio is four to one. For every dollar of bonds they buy in the American Infrastructure Fund they can bring back four dollars from overseas. So we're bringing back $200 billion from overseas. There's a lot more money over there. Let's bring back all of that money, or let's put in place a mechanism for more of that money to come back and let's take additional revenues that can be generated off that and use it to capitalize or prefund the Highway Trust Fund for several years to get its insolvency off the table which will give us time to figure out how to fix it in the long term. Because in truth the Highway Trust Fund should be funded with a flow source of funds, right. Using kind of capital, in other words putting it and prefunding it is suboptimal. But in a crisis mode it's what we should do to give us time because we all know the long term fixes of the Highway Trust Fund are complicated, right. How do we deal with gas tax, how do we deal with vehicle miles driven, how do we deal with the fact that the country is becoming increasingly urbanized. And a lot of the urban dwellers don't drive but they use the roads because all their goods and services come in from these roads. How do we deal with is complicated. We're not going to figure that out in a couple of months.

So last week I laid out in *The Washington Post* an idea that has gotten a lot of momentum ever since we started talking about it which builds on the Partnership to Build America Act bipartisanship but takes it bigger. It's doing something bigger. We say let's take all the money that's sitting overseas, right, and do a mandatory tax on it of 10 percent, give companies 10 years to pay the money in, but then they can bring their money back freely. So we create a path for the almost $2 trillion sitting overseas to come back to the United States which is what most of U.S. corporate America wants to do. That money, the money that's raised from that can be used for two things. The first thing it can be used for is to prefund the Highway Trust Fund for six years, in other words the shortfall, and so that we could have a measured and meaningful conversation about how to fix it in the long term and not have to worry about it for the next several years. Take 60 percent of the money and do that. Take 40 percent of the money and create the American Infrastructure Fund that we lay out in the Partnership to Build America Act. And at the same time let's change our international tax system to move to a modified territorial system which is what most of the world does. Which means you pay tax locally on your earnings and if you want to bring it back to your home country you can bring it back tax free unless where you paid tax has a particularly low tax rate, then you have to gross it up to a minimum. So if someone sets up a zero tax haven, you're still going to have to pay tax to bring the money back but if you earn the money in a place that charges 20-25 percent tax like most of our competitors you can bring it back tax free. So that's our framing. Let's lift up, let's take this bipartisan support around the Partnership to Build America Act and potentially let's do something bigger. Let's take the Highway Trust Fund insolvency off the table for six years, give us time to fix it. Let's take some of the money and create the American Infrastructure Fund. This way we'll walk away with a clear net increase in the amount of money we'll spend on infrastructure in this country. And so we'll create the jobs, we'll make ourselves more competitive. And at the same time let's fix this international tax system so that money can flow. This would be so transformative, so utterly transformative to that short term job creation opportunities in this country and to the long term competitiveness of this country. I think it would be a singular and historic move for us to do as a nation. And the good news is we're coming to this debate already from a bipartisan perspective. In other words the momentum on the Partnership to Build America Act proves that both parties want to do this. Both parties want to increase our investment in infrastructure. Both parties want to fix our international tax system. So one of the things we're going to focus on is how do we take that momentum and not just do the Partnership to Build America Act which we should do, but potentially do something bigger.

So that's where my focus is on infrastructure. And it's so great to have your support. Bruce, it's really great to be here and to have this opportunity to talk. I know you have many other experts that are going to opine on this subject. Again, I want to thank all of Brookings, the whole of Brookings. It is a singular institution and it makes an incredible contribution to the public policy debate in this country. And I want to thank all of our individual supporters in this room who have been so helpful on the momentum we've created on the Partnership to Build America Act. You've been there with us from the beginning. You've been constant supports and it's really helped our efforts immensely. And I want to thank everyone for taking your time to listen to what I have to say today. And again I'm an optimist. I think we can fix all of these problems and I think what we're laying out here is a good first step to make this country more competitive, create jobs and hopefully in 10 or 15 years when we have Infrastructure Week we're celebrating all the success we've had. So thank you. (Applause)

MR. PUENTES: Good morning, everybody. Well, I think you can see why we wanted to have Congressman Delaney provide these remarks for us today. Obviously a very thoughtful proposal that he has discussed there in Congress. Bipartisan, we always like it when it's bipartisan. It's a really elegant solution, definitely something that's creative and boy, we really like the optimism. And I think that that's a really important thing particularly as this, you know, for this close of Infrastructure Week.

So my name is Robert Puentes. I'm a Senior Fellow here at the Brookings Institution. I manage our Metropolitan Infrastructure Initiative and want to welcome you all again to the closing event here of Infrastructure Week 2014. So for those of you who are following on the webcast or following on the TV we wanted to invite you to join the conversation. Go ahead and Tweet; RebuildRenew is the hashtag and join the very robust Twitter conversation that's been happening really all throughout the entire week.

So we have an excellent panel lined up but before I get into that I want to quickly just recap some of the key themes and discussion points that we heard all during this week starting back on Monday. Because even though I think that we were certainly successful at our initial goal which was to amp up this issue of infrastructure, to push it to the front burner of the national policy discourse. As Bruce and the Congressman talked about it's obviously something that we think is very critical but we've really got to start talking about it. We've got to move the conversation to action. And having the President, having the Vice President talking about it earlier this week, you know, was certainly helpful in doing that but we also want to make sure that this isn't just a conversation that's reverberating throughout the echo chamber here in Washington. It obviously matters for all the reasons that we've talked about. It matters what's going on in Congress, it matters that we fix the Highway Trust Fund, it matters what's going to happen in the midterms and all these things are important, but this is not the only conversation about infrastructure in America today. It's just not the whole entire story. It's really not even reflective frankly of the Washington conversations you heard from the Congressman. There are lots of these ideas that are out there. We need to start talking more optimistically, we need to start getting down to brass tacks and really figure out what's possible, what we can do here in America today.

But it's also not reflective I think of the conversation because infrastructure as Bruce mentioned is so very broad and multifaceted. It's not just about roads and bridges. Obviously that matters for all the reasons that we know it matters, and particularly after this horrible winter that we've had. There's going to be potholes and that kind of stuff is going on. We know that transportation matters, but by limiting the discussion of infrastructure to just that narrow band, particularly narrowing it to just roads and bridges we're failing to recognize the multifaceted way that we're delivering, designing, governing, and financing a range of infrastructure projects here in this country.

So I was encouraged to hear this week -- and we did talk about a lot of different areas of infrastructure, and so as Bruce mentioned, here at the Metro program we think about infrastructure in these seven different ways. We do talk about transportation, both intra and inter metropolitan area transportation. But it's also train logistics, it's energy, it's water, it's telecommunications, it's public works and public buildings. The Congressman talked about education as one. Folks like Governor Rendell talk about other things like green infrastructure. But we think that these seven areas really capture the essence of the infrastructure debate in the United States today. And we know that all these things work together. It's clearly a system of systems. Water, transport, energy -- all these things are fundamentally connected. When it comes down to what we need to do today which is how do you deliver projects in the era of real fiscal constraint and political gridlock in many places, we've got to deal with these different sectors. And the other important part is that the federal role in each of these sectors of infrastructure varies dramatically. What the federal government is doing in telecommunications is not the same thing they're doing on public transit, it's not the same thing they're doing on freight rail, water, and other areas.

Some other important themes that we heard throughout the week, one is obviously that infrastructure matters to the American economy. This was a big drum beat that we heard right from the very beginning with the big event with the Chamber of Commerce and the Council on Competitiveness where they brought in business leaders to talk fundamentally about infrastructure not just what it's doing on the ground but how it enables them to do their businesses and to compete locally. As Bruce mentioned a very major focus on jobs. Clearly we need to create more jobs in this country. As we put out a report earlier this week, Joe Kane and I at Brookings showing that 11 percent of U.S. jobs are in one of these different sectors of infrastructure. Not just -- not even the indirect jobs, not the guy who's cutting the hair of the guy who's doing this work but direct jobs in these seven sectors, eleven percent of the American work force. This was a theme that was echoed by PolicyLink this week, by the AFL-CIO, and a whole bunch of others. The direct connect between infrastructure and the American workforce.

But we also heard a lot about some major disruptions that are affecting the conversation about infrastructure in America today. Clearly the Washington political conversation is a major disruption, there's no doubt about it. But another is demographics. At the Building America's Future event earlier this week where Secretary Fox talked about the demographic changes that we're experiencing in this county and the growth that we're expecting. This is not like parts of Western Asia or Europe. We're a growing country. How we accommodate that growth, how we make sure that people are enabled to get the jobs through thinks like public transit and how preferences are changing. All of that is very important and very disruptive. Several events discussed the role of trade and logistics in boosting U.S. exports and given the disruptive changes that are happening broadly around the global economy and given disruptions around climate change. Also a big theme this week, how do we design water infrastructure so it's sustainable and it's resilient. And it's obviously flooding conditions here in Washington today. Water infrastructure is really near and dear to our hearts obviously on this day.

But I think the main preoccupation that we heard and the main disruption that kept coming up was around funding and finance of infrastructure. This was a steady drum beat and really a common theme all throughout the week. How do we get things done today in this difficult era? But it's also where I think we heard the most about solutions. Not silver bullet style solutions but real -- like the Congressman mentioned, tools in the tool box. What are new ideas that are out there, who's thinking differently, how are they getting things done and how can we learn from one another. I think first it's clear that for some areas of transportation or some areas of infrastructure like transportation we're going to have to fund them in traditional ways. We talked about states that are raising the gasoline taxes as diverse as Wyoming and Maryland. We talked about things like tolling on the interstates, we talked about thinks like ballot measures and transportation for America and the Center for Transportation Excellence has a great workshop, helping states get ready to do campaigns around ballot measures, to go to the voters and see if they're willing to raise money for transportation infrastructure. We know that they're doing this already and it's something we're going to see probably emerging in 2015.

Second we heard a lot about new partnerships for getting things done. Combinations between the public and the private, philanthropic, the non-profit sector. Not simplistic notions about privatization or selling off public assets for purely private profit, but trying to figure out ways that we can get things done. Leveraging private sector expertise, leveraging private sector capital and connecting that with maybe traditional areas of infrastructure so we can get things done in the unique way. So the Bipartisan Policy Center's event highlighted a lot of these ideas along with the West Coast Infrastructure Exchange and what they're doing in Washington, California, Oregon, and British Columbia to develop standardization, transparency, and to develop a real pipeline of projects that works for both the public and the private sector.

Now it's true that none of the ideas and innovations are going to solve all of our infrastructure problems. We know that. And again there's no real silver bullet solution to what we're facing today. But it is clear that in addition to the priority of fixing the Trust Fund as the Congressman has mentioned, it has been steady common theme throughout the week that true partnerships of government entities, private financiers, firms, and philanthropies are going to have to do the hard work in the United States to get this stuff done. It's not going to be easy. I don't think anybody is saying it's going to be easy, but I am encouraged with all the stuff that we heard this week about these innovators, new generation of ideas, new generation of activities that are working to fill that gap.

So with that as a backdrop I think that leads into the discussion that we want to have today and for this great panel that we're going to set up now. So I'm going to introduce the panelists quickly. I know their bios are in the back so you can read the details about them. They're going to be providing framing remarks, highlighting innovations in which they're engaged and also their general thoughts as experts about the larger infrastructure conversations going on now. First up we're going to have Dan Kinkead who is the Director of Projects in the Detroit Future City's Implementation Office. I love the fact you call it the Implementation Office, action oriented and optimistic. As the name suggests Dan is going to talk about the range of engagements that are underway to catalyze Detroit's transformation, not just for city services like water, lighting, energy, waste, and transportation, but how all that relates to economic growth and how that relates to neighborhood stability. Dan was trained as an architect and recently became the father of twins. So good luck with that. It's probably going to be harder than fixing Detroit I think in some ways.

After Dan will be Shalini Vajjhala, the Founder and CEO of re:focus partners. Shalini and her group are leading the Rockefeller Foundation funded Re.invest Initiative, a collaboration among eight cities and private firms working to create new public-private partnerships for resilient infrastructure across water, energy, and transportation. And I think she may be the only person up here today that actually has a patent given her work on interactive climate change adaptation tools.

Next will be Shin-pei Tsay, the Director of Research and Development at TransitCenter which is a new organization working to catalyze innovations all across infrastructure, I think with an emphasis on transit and transportation. Shin-pei has broad range of expertise in making the built environment more accessible, equitable, and sustainable both from the policy side and also from the practice side. Real work on the ground in real places. She was most recently the Director of Cities and Transportation at the Carnegie Endowment for International Peace, which is literally I think on the other side of this wall here.

And then finally we're going to have Eric Shaw, the Director of Community and Economic Development in Salt Lake City where as these things go he's responsible for an impossibly wide range of activities in the City including planning, economic development, transportation, engineering, building services, housing, neighborhood development, and even the arts council. So I have no idea what he does in his spare time or even if he has any spare time but we're going to hear from Eric in just a bit.

So what may be kind of an unnatural act for us here at the Metro Program, we don't have any kind of formal, you know, big fat presentations, we don't have any comfy chairs this time. But given this week, given the excitement I think we had around this week we did want to make this be more active, more interactive. We're going to go to the audience relatively quickly for questions. And again for those of you following on the webcast or on TV go ahead and use the #RebuildRenew. We'll try to get some of those into the conversation if not today certainly as we follow up throughout the week.

So with that please join me in welcoming the panel and let me bring up Dan Kinkead. (Applause)

MR. KINKEAD: Thank you very much. Thank you all for allowing me to speak with you this morning. The image that you see on the screen is one that you've probably seen before of Detroit, right. It's one that tends to illustrate disinvestment, depopulation, and some conventional thinking that may have led to both of those things. But for us within Detroit Future City and Implementation Office and a group that actually implements with a host of partners, public, private, philanthropic and otherwise, we think it's something different. We think it actually may be the site of an incredible opportunity for transformative innovation. Particularly transformative innovation within infrastructure and looking at things a little bit differently than the way we may have looked at them in the past. We have a real opportunity to begin to stabilize our city as a whole, minimize costs, increase revenue and ensure that we can improve the health of all Detroiters and arguable those within the southeast Michigan region to ensure that we can establish 21st century systems that begin to mitigate the impacts of some of our older 19th century systems, begin to drive up employment actually as we do them, ensure equity along the way and lastly provide a lasting resilience to a city and a region that really doesn't have it but certainly needs it. And as we do this as an Implementation Office and we've begun a few projects on this and I'm going to talk to you about that this morning, we think that there are lessons for everyone here, not just for legacy cities like Detroit throughout the United States or North American but also for those cities that are rapidly urbanizing across the globe. The issues that Detroit is facing today could be lessons for those in Lagos, right, for Johannesburg, for Mumbai. These things matter. They matter globally and we together as a network can begin to deal with those. In many cases the expansive polarization of a legacy city in the U.S. and an urbanizing city somewhere else may be seen as a kind of line. In fact it's a circle, right, and it comes back. And so the proximity between these two realities is quite close.

So some of the things that we're beginning to work on right now that we should talk about and the first is green infrastructure. The idea that we have the ability to clean our air here, to clean our water, to begin to use these bases to actually bring in carbon buffers. In Detroit we have extensive amounts of freeway as you might imagine and many of these freeways sit directly next to neighborhoods. We have three times the rate of childhood asthma in Detroit compared to the national average. That's not by chance. How might we use our available vacant land to actually plant specific species of trees to soak up C02 output and block diesel particulate matter from getting into our neighborhoods? We're in the middle of developing these projects right now with a host of partners in the city as well as those within the EPA. How might we begin to deploy blue infrastructure systems? This is particularly important and I think some folks are going to talk about this this morning given the deluge that we're experiencing outside in D.C. right now. You know, in Detroit we have over 20 square miles of vacant land, perfectly vacant land, right. That's not a structure on it and that's occupiable land. That's not the road right away and things like that. That's roughly equivalent to the size of Manhattan. How might we use the size of Manhattan to deal with a bigger issue which storm water runoff in a city like Detroit, especially given the fact that Detroit sits on 22 percent of the world's fresh water supply, 84 percent of the U.S. fresh water. We need to be better stewards here because in Detroit every time we get a little over a half an inch of rain, right, and the storm water goes to the catch basin, combines with the sanitary waste site of a building like this we overwhelm our combined sewer overflow system when we do a direct discharge into the river and ultimately into the Great Lakes. We are taking raw human waste and putting it out there. We need to do better than that, right. This is an important asset that Detroit sits on, it's a global asset and we think we can begin to make those changes here by deploying very soft systems, new 21st century blue infrastructure systems that actually use the land to soak up this water, manage the hydrology, and remove the grey 19th century system that actually costs us copious amounts of money, money that we do not have as a city and I'm sure the federal government would not like to fund either.

At the same time we can use all this land for food and for energy, right. We can begin to actually think about how food production in a city can work to actually satisfy the needs of the city as a whole. This is starting in Detroit. We're actually seeing a dramatic revolution here in a city that has typically been defined by food deserts with really poor access to nutritious foods. We are now seeing many small scale urban agricultural projects start up. We think these things can go to a larger scale and can be occupied across all this land providing jobs as we do it, providing food, but then also providing energy through biomass and switch grass and a whole host of other things. Detroit can lead in this regard.

And lastly in many of these areas where you can tell it's not as if nothing's there, right. There's a house here and there's probably a house around the corner. People -- in fact in the 20 square miles that I'm showing you here, 90,000 people live there. These folks have needs of course and many cases folks here are older, people of color, people with poor access to mobility. They have -- with poor mobility -- excuse me -- and poor access to health amenities and services. These folks are isolated. We have to begin to rethink how they can move around in the city. The idea is no one is getting dislocated here. How do we begin to then develop on call para transit networks that can actually allow people to get around more easily without requiring a dedicated fixed route bus to come down their street five times a day when one person only needs to go to the doctor on a Tuesday. These are things that we can begin thinking about. A whole kind of platform of opportunity around areas that in the past have indicated are a failure, right. And so for Detroit it's all about flipping these liabilities into assets and we're going to continue doing that as we move forward. Thank you. (Applause)

MS. VAJJHALA: Good morning everyone. My name is Shalini Vajjhala and I'm here as the CEO of re:focus partners. Thanks to all of you who braved the rain that all of us have mentioned as we've gotten up here on stage. I was going to ask you to start picturing your city in the rain and this is not at all a stretch of the imagination for those of you who are here in D.C. But I want you to imagine what happens to all that water after it hits your roads. So we've walked by puddles; there are flash flood warnings in the city today. But picture that water rushing off underneath your streets through large pipes and headed into water treatment plants or as Dan described straight into our lakes and rivers. When the system works well it's designed to keep our water clean, to protect us from floods. But on days like today when the system fails us what you see are basements that flood, sewers that back up into communities and into our water bodies. We need to be able to think about these challenges in different ways. Cities across the country are dealing with this problem; this is not just Washington, D.C. today. Many cities have infrastructure systems that are 100 or 150 or even older, 150 years old. They weren't designed for the ways we're using them today.

So my firm leads an initiative called the Re.invest Initiative which is a partnership among eight cities across the U.S. and leading engineering, legal, and finance firms to rethink how we both design and finance our systems, like our water system. So think back on that water system with all the rain that's come in today and imagine how it works. It works like a giant funnel. Our cities are built to catch this water and rush it out underneath our streets and carry it out to lakes and rivers. Now I want you to picture that city working more like a sponge. Imagine our roads could absorb water. Imagine we could plant street trees or put in wetlands that actually hold that water in place instead of having it all rush out at the same time. That's a very different type of infrastructure. You're talking about replacing pipes under your streets and old water mains and creaky water treatment plants with tens of thousands of small pieces and parts. Trees, pavement that absorbs water, places to catch and hold water. So think urban bathtubs. What Re.invest does is we work with cities directly as SWAT teams to redesign these systems and create financeable portfolios of infrastructure. We have eight city partners across the country from Miami Beach to Hoboken, New Jersey, out to Milwaukee and El Paso. These cities are not like each other but they all face the same challenges which is they need to build infrastructure for the next 100 years and to find ways to pay for it with increasingly strained public budgets.

So how do we do this? I'm going to give two examples, one from Miami and one from Hoboken. The City of Miami Beach is a City that's been featured in the news frequently. When you hear about resilience often you'll find an article in the papers on Miami Beach. Miami Beach on a sunny day has flooding sometimes that gets up to two feet high. This is surreal for anyone who hasn't experience this. Our team went out there and we couldn't believe it until City officials drove us to different places where there was just water in the roads. Miami Beach's problem isn't just flooding, it's not because of rain. The problem is that their sea walls are so old they have sea water pushing underneath the City under high tides and coming up through their sewer systems. They're coping well now and they're really leading the charge but they know this can't last forever. So we're working with them to redesign their sea walls to think about how you hold up the City differently, but also pay for it differently, and rethinking property taxes and insurance rates in one of the most expensive insurance markets in the country. Hoboken which faces strangely similar challenges was on the front page of the news for weeks after Hurricane Sandy hit. The City at one point had 14 feet of standing water. So Hoboken is one square mile, teeny tiny with 55,000 people, and it's shaped like a bowl. It was built for a different time. And the City knows that they need to do different things. We're working with Hoboken on some of their empty industrial parcels of land to think through how do we combine types of infrastructure across sectors, so not just thinking about water but looking at where can we build cisterns underground to hold water when the sewers overflow when it rains but also to combine that with things like parking garages that can serve as flood overflow spaces during period of really intense rain like Hurricane Sandy. And then building on that put things on the surface that create recreational spaces and parks for a City that's incredibly dense. To picture this I want you to think about a layer cake of infrastructure. It's not just about building one thing that's important it's about building whole systems. When you think about a whole system sort of counter intuitively in order to finance infrastructure we're interested in finding multiple ways to pay for the same project, where you can combine parking fees with water system user fees with attracting corporations to demonstrate technologies in innovation parks. So I want you to now picture your favorite science museum and imagine being able to showcase for communities, for kids what resilience looks like for the next hundred years in a public park; to work with companies to showcase here's how we can generate electricity from our wastewater systems or what it looks like to turn waste into energy. A lot of our challenges associated with infrastructure -- and especially with green and resilient infrastructure -- is when we're successful in building these systems it's a politician's worst nightmare because success is something that doesn't happen. Right. So a storm hit but the community wasn't flooded. That's fantastic for exactly one year. And the next year you're fired. What we're doing is finding new ways to not just combine these systems to pay for them differently but we're working to make sure that those successes are clear and visible for the public entities, for the government that are working hard to make these changes. The slide that I have up here is an illustration of our process and all of you will find this familiar. On the left hand side here you see a collection of what a city needs. Cities know their needs incredibly well. They know they need new water systems, new electricity systems, to repave roads at regular intervals, to rethink how to provide broadband to underserved communities. And each part of a city has different needs. City governments tend to be organized in silos. You have the transportation office, the broadband office, the education office. And more interestingly banks tend to think in layers. They want projects where they're not the only ones investing and you can stack up capital and investors to be able to pay for a single thing. What we are doing at re:focus and what our partners at Re.invest do is work to realign systems design with financing. And our goal is to be able to take what a city needs, so imagine your idea of a dream house, turn that into a blueprint consistent with the city's priorities and also help make the leap to a mortgage document. We have a lot of cities with a lot of projects and they're going into banks with their equivalent of a dream house. And we need help translating those ideas into investable projects. This is not a problem of not enough money, it's certainly a problem of not enough need as you've heard from Detroit. Our challenge is to be able to combine these things to get from ideas to action in a way that's clear and replicable.

So what we do is a little bit like doing an Olympics for what a city needs every day. And we work not just on the systems design, so thinking about what the green infrastructure looks like or how to build a sponge, but we also connect that to working with legal experts on how do you design a public-private partnership can deliver 10,000 pieces of infrastructure and not just one water treatment plant. And then what are the different ways that you can bring together revenue streams as Congressman Delaney mentioned with user fees, but also with savings -- those successes that don't happen. So when my basement doesn't flood and I didn't collect from the insurance company how do I catch that money and redirect it to the projects I need?

So in short what we do is help cities not just rebuild what they had for the last 100 years, we aim to get them to what they need for the next 100. Thank you. (Applause)

MS. TSAY: Hi. I'm getting away with showing a painting or a collage because I am part of a new civic philanthropy and we are just getting started. So it's really exciting to talk to you a little bit about what's going on with us. But this is a beautiful piece by an artist named Val Britton and basically she works with the concept of maps, to map the unknown, to trace our past, and she, you know, you can say that she makes the unknown quite beautiful. And I just wanted to use it as a starting point for how we're thinking about infrastructure and the role we can play as a civic philanthropy and making a change. We just got started and when we did a scan of the field and there are so many wonderful, amazing experts out there, you know, banging on the door trying to make this change. But change is really scary for so many people. And what is scary is the unknown. What we want to do is try to bring together all the people, the partners, the organizations, the cities, the private sector, in making the unknown more legible, to explore this are and to figure out what are the steps that we could take, how can we partner together to make these thing happen.

So one of the things that we started to look into was improving the rider experience; the general citizen's experience of getting around the city. We all know what it's like to be unable to hail a cab, to wait for the bus that never shows up, to actually never know when the bus is going to show up. We all understand this and in fact this is one of the greatest inhibitors of people getting to jobs. So we're talking about infrastructure creating jobs. Infrastructure is an enabler of labor markets and people accessing jobs. So it's a huge underpinning of our economy but it's one of those things that it's sort of overlooked by conventional transportation as usual. Usually we serve it up and to serve it up with these big agencies we have to really organize it. Well, frankly, that's just no longer going to work anymore and, you know, people have really unusual schedules. You have people in Detroit who just need to go to the doctor once a month on a Tuesday in the middle of the afternoon. You have other people who are working from home part time. So these schedules are no longer routinized and as predictable as usual. So what's going on now though is that there's this huge number of participation from the private sector and the public that's really creating this sharing economy. And I know that's sort of a buzzword. But what's really amazing about this is that people are participating, you know, this really has been enabled by technology and smart phones. And there is an equity issue with smart phones but honestly there is also new emerging evidence that of the 72 percent of Americans who have smart phones many of them also rely on smart phones as their only access to the internet; they don't have wifi, they use a smart phone network to access the internet. So we're just seeing the glimmer of what could happen. And what's going on is it's on the demand, it's no longer the top down supply side way of looking at things, it's the demand side. How do you reduce friction in the market to make these things happen? How do you get people to be able to move around? How do you create a platform of options? And what's going on is the private sector is taking the lead on making this happen.

What's really amazing about this is they're doing this in spite of all the constraints. In fact you've all probably heard about the companies are being banned, Uber, Lyft, Sidecar, Karma. I mean you name it they're being banned from cities. I really think that this is the wrong approach. How can you figure this out? They are providing a service, a public infrastructure, a public service to your citizens and the way that, yes, challenges everything we know but is actually making people able to get around the city. And I think that, you know, that is an area where we have to be courageous, we have to explore the unknown. I don't think it's a terribly negative thing to do, I think there's a lot that we can figure out together. But with leaving them out of the conversation that will never happen.

So some of the things that we're doing is to kind of create the environment for those conversations to take place, one of the things is we want our work to be rooted in evidence. So we're actually sponsoring a major study, 12,000 person sample size on public attitudes on transit. We will be releasing results from that survey throughout the course of this year. The second thing we're doing, it's really interested in what does it take -- what kind of leadership does it take to make these changes happen? Over the last 10 years we've seen cities across the country really have -- be able to lead in innovation. And they've been doing it without a big federal policy push. They've been doing it on the ground with the mayors, the commissions. They've been able to figure out and rewrite the playbook of how our cities work. And so what does it take? Does it take a great civic sector? Does it take a visionary leader? We are really interested in figuring that out.

We want to create situations where these different sectors can come together and actually talk about things. Right now it's the wild west in a way. It's the pioneers who are going out and staking a claim. And when that happens and they're also being restrained there's a lot competition that actually is negative. They are being confined by outdated policy and unable to make progress on updating that policy. And we want to create the situation where people can actually come together and talk about these things. So actually on June 10th and 11th we're holding a summit in Washington on shared use mobilities. So the sharing, the operators who are working on this, the municipal leaders, the policy makers, they're coming together to talk about the new solutions that could be working. We're also taking a look at the, you know, what does exist, governance. But how can we update this? How can we make regions stronger through governance? How can we define new relationships between the private sector that's taking this leadership path and the existing governance structures? What kind of relationship do we need to make? And I think that's something that will be also releasing in partnership with Chicago later this year.

Finally we're really, really interested on changing practice. And so I had mentioned earlier that the leaders are rewriting the playbook on these efforts. We think that partnerships with cities, with the civic sector, with the private sector and actually going and trying to demonstrate, implement these new ideas is the way to go. We think that right now the pioneers are out there, they're figuring it out on their own and it takes a civic organization to kind of bring people together, combine the public benefit with the private interests and to maximize, you know, overall benefit. So I hope you'll join us in our journey. We're just getting started. And thank you for letting me explain TransitCenter to you. (Applause)

MR. SHAW: Hello. My name is Eric Shaw. I'm the bureaucrat of this bunch. In my spare time I think about infrastructure which is why I'm here. I'm really excited to talk to you about our transit rail infrastructure in the Salt Lake City region which has been the manifestation of a significant amount of coordination and collaboration between cities, counties and the state. This was not an easy feat given the fact that Salt Lake City is an island of blue in the sea of red. But we all came together to work on a common goal which was improved air quality -- we have some of the worst air quality in the Salt Lake region in the country -- and then increasing the economic development potential for the region. There's lasting impact for this in the fact that 80 percent of the people who live in Utah live in the 100 mile stretch between Ogden and Provo with Salt Lake City being the largest City in the middle at 180,000. Our population balloons at 370,000 during the day though.

And a lot of this success was realized by having strong regional partners. Our Salt Lake Chamber was an advocate for a transportation choice. Our Wasatch Regional Council, our MPO, has done an amazing regional transportation plan that's been fully accepted and implemented by our partners, and then the Utah Transit Authority which has constructed and operates an amazing and efficient regional transportation system. We've estimated the economic impact of our regional transportation system is about $7 billion which is amazing.

So I want to talk to you about three different systems that we have within our region. The top which is our tracks line, our light rail line required some similar collaboration within the City realize its success. As was mentioned I have housing, transportation, economic development, and planning in my department. And we were able to collaborate looking at changing our zoning, looking at housing policy, and working with stakeholders and developers to map out the development potential of our light rail corridors. Our first line opened up in 1999 and connected our downtown to the University of Utah. It cost about $200 million and to date now has created $1.6 billion in investment and about 50 projects. And it's still ongoing.

But I want to talk about one of our other lines that just opened up last year that connects our downtown the airport. And it goes along North Temple which is our main street that goes through the west side which is one of our communities that has some of the lower performance in our economic indicators. And so when we thought about this it wasn't just about connecting a nice place to the University, but how do we catalyze a main street and one of our communities in need and how do we focus on supporting small businesses but also connecting our major job centers. This line goes from our downtown to our airport and includes some major private employers but also focuses on small business. If you guys can't see there this light rail is front of the Red Iguana. The Red Iguana has the best Chile Colorado in the country according to Diners, Drive Ins and Dives. I can attest to that. But it's a family owned business that's been around for 55 years and it's one of the fastest growing small businesses in the country that's located in the CBD. They're growing at 17 percent a year. It's amazing. And the Chile Colorado is really good by the way. But the notion is in creating this rail it allowed a whole new market to come in and for us to connect tourists and residents to really enjoy the outstanding Chile Colorado (inaudible) know that. But for our other small businesses it created the same opportunities in the fact that we were connecting not only job centers but also creating these small opportunities for these small businesses. Right now since that line is fairly new, it was a $200 million cost as well and we propose 1,000 new housing units which 550 are under construction.

Also on this little line in the middle is our new street car lines. So under the leadership of Mayor Becker and our City Council and the South Salt Lake City Council and the UTA we're rebuilding our street car system within Salt Lake City. So this was a $50 million project that came from TIGER money and from a match. And apparently it happened pretty quickly. So we identified the right of way in 2009, we secured the TIGER grant in 2011, and we had revenue service in 2013. So we know how to get things done in Salt Lake City; I just want to say that. And so it's transformed this community. So the S line stands for street car line, it also stands for South Salt Lake line, it also stands for Sugar House. Sugar House was our bohemian community where all the teenagers hung out and now it's actually an economic hub, the second economic hub in our region. We've had $400 million in private investment, 400,000 square feet of new retail, 300,000 square feet of new office, and 1,000 new housing units being created in the past for years since we've comprised this.

So finally in the end for our commuter rail which is the frontrunner which is at the bottom, that commuter rail was a $600 million project that opened up in 2013 and it really changed how we thought about -- how our suburbs thought about economic development and thought about rail. One of the sweet spots now between Salt Lake City and Provo has now become the home to a new campus for Adobe, a new campus for eBay, and in one project alone 700,000 square feet of new office. So our suburbs right now are thinking about increased density, thinking about transit oriented development, and it really is changing how our cities develop, how our region's developing. But it's also had the catalytic effect of thinking about our downtown hubs in both Salt Lake City and in Ogden and revitalized them to think about how they could better transform our downtowns and our hubs.

And then in the end I just want to say that all this investment in infrastructure also has to include people. And so what we've done in Salt Lake City, we did a study and found that while we have a great regional system the majority of the residents in Salt Lake City make shorter trips and we make more frequent trips but our -- what -- we're priced at a regional rate. So we were able to put in as a City $200,000 partnered with the Utah Transit Authority and create an annual pass specifically for Salt Lake residents at the price of $360 a year. At the price of $360 a year. I'm so amazed and I'm so proud about this project. And we put a significant amount of staff time into it, most that was in what the name should be called -- the Hive Pass -- is what it is. But it's created this goal of reducing the trips, of increasing ridership, of being responsive to how local functions versus regional functions and is really -- we're seeing some environmental targets. Thus far we've sold 1,500 of them and we have a target of about 7,000. So we're going to see this happen. We're specifically outreaching to renters and to low income communities to make sure they can do this.

Which brings me to my just final point in the end is that it's great to talk about economic development and show how it's creating jobs and how it's creating housing, but in the end all of this is moot if we're not creating economic opportunity. And so one of the best things we've seen -- and I'll just tell it real quickly -- is we have a guy that was recently got out of homelessness but was able to secure the funds of $360 a year for a transit pass that was able to connect him from his new house in North Temple to his new job at Sugar House. And so that's what this work is about. And thank you very much. And I look forward to talking to you guys. (Applause)

MR. PUENTES: Well, that was great. That's exactly I think the kind of conversation that we were hoping to tee up. Again following the Congressman, following the discussion that we've already had here this afternoon although we intentionally wanted a mix of folks, we definitely wanted to have a mix of public and private actors because I think that was one of the common themes that we heard, you know, throughout the remarks that it does take a bunch of different people to get these things done. Because infrastructure is getting more complex, because it's multifaceted, because we have different motivations and different end games, it does require a bunch of different people working together to make things happen. But we also really appreciated the fact we were talking about specific places. And, you know, the national conversation is very helpful but once we get down to we have to be talking about what this means on the ground in U.S. cities, metropolitan areas and other places. So I really appreciated that part of it as well.

But one thing I want to do just to start then. I need this, a very optimistic conversation so far which is good, particularly the gloomy weather. But I want to take it another way. I just want to -- because I think it's going to help us understand where the challenges are. I want to ask each of you given all you've talked about what are your biggest headaches? What is the one thing where you wake up every day and you're just like -- that -- I know I've got to deal with that one thing, or if I could just break through this one area my life would be easier and you'd be able to see more successes.

So I'm going to start with you just because you finished, Eric. What's the biggest headache? What could you change if you could with what you're doing now?

MR. SHAW: Just building things faster. We build things fast but building things faster. And a lot of that has been -- when we've been really great to our federal partners about how to streamline our approval processes and what we're trying to do right now is bundle as much as possible so that when the money shows up we're able to build it faster and not wait, plan, get approval, build. So how can we lay out the full system now so that when the investment comes up we're able to capitalize on it quickly.

MS. TSAY: I think the biggest challenge is in creating a new culture of working. I think that the sharing aspect really calls for a collaboration, cross-sector collaboration of civic, private, public sector collaboration. And that's really unusual in the last, you know, the decades that we've had of top down supply side provision of transportation. So often I find myself in conversations where I just think this is not a transaction, we need to work together. I have nothing to give you; I want to work with you. So I think that really is like -- it's engendering a new culture of working.

MR. KINKEAD: I think for us in Detroit there are probably two things to hit on. One is a bit more transactional and the other one is at a higher level. You know, first off of course gaining access to capital to do many of the things that we're describing can be a challenge on a good day. As we know, you know, things in Detroit are not as good as we'd like them to be. But we also recognize that there are opportunities to draw funding and we're seeking that through a host of partners but it is always difficult to illustrate the value propositions to potential investors when you're describing things through the slide that I showed, that investment in massive vacancy areas, right, that we know will undergird opportunities for economic development and growth and stability down the road, but are certainly indirect to those things.

The second is I think a broader issue of the kind of open narrative, because in Detroit -- I took the time to articulate a story that's not typically told on the positive side of how we might utilize these vacant spaces. But we think those spaces and what we do there are highly relatable to the efforts that are underway in areas like our central business district, in our midtown district. These are areas actually where we're seeing incredibly robust growth, 14,000 new jobs in the last two years in greater downtown, significant investment overall. Transportation initiatives with the M1 rail line coming into play. So it's hard. What we want to do is not bring everybody down and challenge them with the narrative that I'm typically talking about here. We want to put that in relationship to these other more conventional investments that are necessary and illustrate how these two things actually support one another.

MS. VAJJHALA: So the greatest challenges. I have two. I'm going to take the liberty of putting in two that I'd like to switch to. I find that when talking about infrastructure we're able to do incredible things when you get groups of people trying to solve an actual problem. I find that nothing gets done when it's a discussion about an issue. And so the more I think we can shift from issues to problem solving I think we'll see greater success on the ground.

The other wish list item that I have is to drop a lot of the jargon that dominates the space. And I come out of the federal government and so I can hold my own on acronyms (laughter), but the bottom line with infrastructure is we need to build things that pay for themselves and create multiple types of value. We do not need to bludgeon a community member with a debt and equity instrument discussion. We need to understand where the money is coming from and how we pay for this.

MR. PUENTES: And that's actually a grand -- I'm glad you mentioned that because this is something that we've been testing out here and as Bruce mentioned at the beginning we're trying to redefine what we mean by infrastructure. We're trying to -- because the word doesn't really -- we don't think the word really means anything. There's not infrastructure, right, there's water, there's transport, there's all these other things. When you get down to it they are designed and built and everything differently but clearly showing your comments -- what you're trying to do in your firm is to marry these things up intentionally. Is that a bigger challenge? I mean is that because that's just how it's done? Is it just because it's new innovation? Or -- and then by extension is the way that we're trying to break it down and disaggregating infrastructure, I mean does that make any sense? Do you see where I'm going with that?

MS. VAJJHALA: I think the opportunities are at the seams of infrastructure system. We've sort of experienced the 50 years where we can't build the freestanding systems that we originally built 100 years ago or 50 years ago. So I think disaggregating the discussions actually puts cities at a disadvantage because it doesn't give them the chance to solve win-win problems. So when you repave your roads it's much easier to put in an empty pipe to lay broadband than have that company come in and tear up the street a second time. It's cheaper for the company and cheaper for the city.

MR. PUENTES: You see that here on Massachusetts Avenue all the time. (Laughter)

MS. VAJJHALA: So I think aggregation is important but we spend a huge amount of our time in bureaucratic jujitsu. So we're minding people but something just because it hasn't been done doesn't mean it's now allowed, and the simultaneous translations. So we've learned to speak government and law and engineering and finance. And a big part of it is just making the ideas accessible.

MR. PUENTES: Others on that one? I mean so when you're working with folks, and for all of you you're trying to solve other problems, trying to create access to opportunity, you're trying to -- so the infrastructure isn't the driver of what you're trying -- it's enabling you to do what you're trying to do at the end of the day, right?

SPEAKER: Yeah.

MR. PUENTES: Maybe you want to expand on that?

MS. TSAY: Well, yeah, actually I think that, you know, we're thinking about the growing economy and the -- you know, planning for the future the new people will be coming and using this infrastructure, will be stewarding this infrastructure and I think that the ways that we're going -- you know, our firm, the way that we're thinking about doing it is actually this culture change as you were saying. Like not getting into the jargon, creating greater legibility, creating greater literacy, actually creating leadership capabilities so that you can handle the double discussions without dumbing everything down.

MR. KINKEAD: Yeah, I mean I think for us in, you know, in Detroit what we're trying to do is make sure that the investments that we put in place today -- and many of them are not terribly sexy, you know, as sexy as Detroit might be of course-- they will yield significant results down the road for generations in fact. And so these are big plays that we're trying to make, you know. These are five, ten, fifteen year efforts to move things forward. But what it --

MR. PUENTES: Does that message resonate in the long term? Kind of the long term? Because folks here I guess are looking for immediate relief. And if you're looking at long term does that --

MR. KINKEAD: Yeah. Yeah. Well, we deal with the -- we kind of mediate between this world of immediacy and then the long term realities of these things all the time. Everybody wants everything tomorrow, particularly in a very hyper local way. Look, there are a lot of folks in Detroit that are in extreme need, right. There are also people in Detroit who have extreme expectations, who don't actually live in that need which is also interesting to balance. But people understand that the issues we're facing there and I think in many other cities across the U.S., these are issues that can be dealt with over time; they're going to take generations. And one thing we ask ourselves in Detroit to think of is thing beyond our own, you know, our own block, our own neighborhood, to think of the City at large. It's not just about what makes the most sense for you on the ground. And you have to think about your own time here, that this isn't -- these things are actually going to bear fruit for our children, not perhaps for ourselves overall. And it's just something that people need to wrap their minds around.

I would add just one other piece to this, what we see as an opportunity down the road given the infrastructure efforts we work on today we see that in sharp contrast based on past issues, right. In the mid 1970s Detroit actually submitted a major federal play for a regional light rail system. This system was going to come into place and be fully operational by 1992, the year I graduated from high school. So that never happened because we had -- we were -- of course we had to seek a regional cooperation there, we had one county opt out. Everything fell through in the federal dollars. We had to state match. It deployed a small little kind of circus train that goes around our downtown actually; doesn't actually many folks to anything to be honest. And so what we see is where Detroit is today and then we look at Salt Lake city, right, we look at Denver, we look at all these other Cities in which those investments were made at that point, what that's made for them from a regional perspective, from prosperity to equity and we know how far we've kind of fallen behind and now we've got to surge forward.

MR. SHAW: And it's funny because I look at Detroit and I say 50 years from now if our economy changes will we have built our infrastructure in a way that creates a resilient city. Can we think about vacant property rules right now or think about infrastructure right now and change those processes so that we can be dynamic. And so it's interesting we're looking at each other.

MS. VAJJHALA: Just to respond to what both Eric and Dan said on the long term. There's a deep, dark secret with most governments and cities and it's that we lose money today and when we have long term problems it just means we'll lose more money in the long term. It's not that we're not losing money today. And so part of helping communities find solutions is figuring out what they're spending money on today that they don't want to be spending money on. A lot of cities have a basement cleanup fund every time the sewers back up. And they're not allowed to use that money to pay to repair the water main. So it's not about thinking about uncertain things 50 years from now. Start with where you're failing now and I can guarantee that's where you'll fail worse in the future.

MR. PUENTES: I wish I had a basement cleanup fund.

MS. VAJJHALA: So much for optimism, right? (Laughter)

MR. PUENTES: Especially today, right. The one common theme I think that I'd heard from each of you in very different ways though was about partnerships. I think each of you actually mentioned that and it's become so clear to us in our work that -- again and it's this -- it's not the thing we're talking -- that I think -- when we think about public-private partnerships it's leasing the Indiana toll road or the parking meter deal in this one place or something like that, but it's about these different ways that public and private and government and non-profit leaders are coming together to actually solve problems. And the infrastructure stuff is almost derivative of that. I mean is that -- can you -- anybody want to echo kind of some of that? You know, how important are the partnerships to delivering things and how different is that from what you used to do?

MR. SHAW: I think the partnerships are imperative and I think the idea is to stick to the project. And I think that everyone wants the project for different reasons and that's okay, that we don't need to have one common outcome or one common message. The idea in the end is if the chamber wants it for economic development and the mayor of Salt Lake City wants it for air quality, who cares, it got built, you know what I mean? And everyone is able to use it. So I think that that's one of the things that is successful about partnership in Utah is that we all just wanted to see it built.

MR. KINKEAD: Yeah. And I think for us in Detroit there is a sense that over the last few years people have moved beyond the kind of pride of ownership or authorship in something when it's their own. So, you know, I don't think anything or anything much of substance would occur if it weren't through partnerships in Detroit. You're talking about private and public arrangements; you're talking about local and federal plays and things like that. But you're also talking about connections out to philanthropy and connections to community groups to have access maybe not to financial capital but certainly to human capital. And we're finding those moments of greatest success are when all of those things are brought together.

MR. PUENTES: I like that. Nothing would happen in infrastructure without partnerships. I'm going to remember that. It's good.

MR. TSAY: I was just thinking about the partnerships even on an atomized level. You know, one person, the peer-to-peer sharing that's happening now. People are really being able to share risk and they're able to reap the rewards for doing that. And in fact on the philanthropy side one of the things that we decided to do was to be an operating philanthropy because we wanted to help direct and have input on the design of these projects so that people didn't fall back to the way they usually did things. We wanted to be able to keep them on track on taking risks and being brave. And so these kinds of partnerships I feel are really necessary for the new dynamism that's happening out there.

MS. VAJJHALA: It's essential. There's no one right now who can solve these problems alone and so we have to do things together.

MR. PUENTES: As obvious as I think that is to you and I'm sure it is, I don't think that's quite broken through yet so we're going to keep talking about those partnershipsbecause I think it is important. And I'm so interested and I'm going to violate my rule and I keep -- I'm doing all the talking, but I did want to throw it open for folks to ask questions in the time that we have left. So go ahead and identify yourself, your affiliation, and as a question, as Strobe Talbott here, the President, likes to say has to end in a question mark. Your voice may go up at the end so it's a question (laughter).

MR. ZUMWALT: Fair enough. My name is James Abram Zumwalt. I'm with the National Association of Railroad Passengers. And I'd like to know how do you succinctly show the importance? I mean often times economically existential importance of these kinds of problems and showing that they're not simply a nice thing to have, not simply an important thing to have, but something that if we don't invest in the economy, I mean well, what will exist of it without it really, you know?

MR. PUENTES: Yeah, this came about to how we make infrastructure not about infrastructure's sake? How do you break through? Is it communications, is it the partnerships? I mean what's the most important?

MS. VAJJHALA: I think it's finding catalysts, finding those places that understand the problem in its absence. As devastating as Hurricane Sandy was it woke up a lot of communities to what happens when they don't do something. And there are a lot of different catalysts out there; you don't have to wait for a disaster. But pick those moments where a resource is stretched to be able to have a conversation with a community about what their lives would look like in the absence of investment.

MR. PUENTES: Has Sandy changed that conversation fundamentally on the ground or is this something like the Minneapolis bridge collapse that we got all excited about it and then it kind of fell off the radar? Has that really remained -- it seems like it stuck around.

MS. VAJJHALA: Yeah, it's definitely stuck. And I think we have to applaud Cities like Hoboken that have taken an all hands on deck approach to their -- they're reworking everything. They're working with the Department of Energy on their electricity networks, they're working with HUD on rebuild by design as a competition to rework the entire city's water and flood management systems, they're working with us. So I think it has stuck and it's changed both the urgency but also the sense of what is involved. It's not just a one sector problem.

MR. SHAW: And I think you just have to sell the wins. So every time we had a station open up the governor came out, the mayor came out, we all cheered. When that first person bought a Hive Pass we all cheered. So the idea in the end is someone can't say oh, well the system doesn't work in its total because it's an iterative process and you have to celebrate and articulate and show that every iteration is a win.

MR. PUENTES: And what was the action forcing the event then -- what -- to the question, what got that done? Your work in Salt Lake City? Was it --

MR. SHAW: Really smart people and amazing staff. I mean that's my shout out to them. I told them I had to do that. Which is also true. (Laughter)

MR. PUENTES: Other questions? Let's go right down here.

MR. FRANKEL: Emil Frankel. Rob, actually I want to direct this probably to you and maybe to Shin-pei. And I don't know-- I've sampled some of these events this week so I don't know how much this has been talked about. We have a -- we're in a situation of enormous needs, some opportunities and scarce public resources. We have to be able to prioritize, to choose sometimes within sectors, sometimes across sectors. We have needs been alluded to here, resilience, you know. How do we -- not -- wasn't even on our radar maybe five or ten years ago the fact that we have to prepare for three and four foot increases in sea levels in the next few decades which is a whole other set of needs. As you know I've been struck by the fact we do not have in this messy federal republic of ours, we do not have a really good analytical transportation -- infrastructure planning or capital programming process in place. How do we make decisions better in which some needs are viewed as more important than others and some opportunities more beneficial than others? And what's the role of the federal government in driving states and localities and metropolitan regions to establish these systems? We know there are very few places that have effective analytical and decision making processes about infrastructure investments. How do we change and improve that situation?

MS. TSAY: So I want to take a crack at the non federal level. I think that I'll let Rob deal with that. But on the local side, on how do you prioritize on a local level, I think one of the things that's really fascinating that's going on is the openness in sharing information and data from the city government to the public. And this has catalyzed amazing analysis by just the public. They have an interest in functioning transportation; they want to be able to get around. So for example Citi Bike in New York City recently released a set of data and the Rudin Center did an analysis on this and showed that during a subway delay there were more trips taken near those subway stations immediately as soon as the MTA released that notice of delay over text, there were more trips of bikes being taken around those transit stations than in other places. And it was only during that time. It was not a reoccurring trip so you knew it wasn't a commuter trip; it was just in response to this delay. You can also see that bikes are being picked up closer to transit stations in general. Does that mean that we now know where those transit hubs are and where people are making that last mile effort? Where they actually could use a boost in getting connected to the major transit hubs? Those are under-examined areas and, you know, with open data I think there's better potential, more potential to understand where we should be putting our dollars.

MR. SHAW: And it doesn't have to be a formal process. It up to the mayors and leadership to say how does your plan tie into the other plan. And I don't think that question happens a lot. And I'm very fortunate in having all those divisions under me and we're having about 12 planning efforts happening right now from bicycles to trains to housing that I'm constantly asking where they connect, how they overlap, are you using the same language, are you using the same data. So instead of it being one big launch of infrastructure planning effort how do you align the existing efforts and make sure they're saying the same thing, representing things the same way, and having aligned time horizons which I don't see in a lot of cities I've worked at before.

MR. PUENTES: And then just so -- just to follow up I think that -- I mean this is exactly what we're trying to get forward is that despite the handering that's going on in Washington we think there actually is really good stuff that's going on out there and there is a very much more optimistic message. And these are the folks that are doing things. This is happening all across the country. I don't want to be pollyannaish about the challenges. You're exactly right, Emil, that we've got supersized challenges, things that we couldn't have predicted and massive things we have to wrestle with. But it's going to come from the bottom up. And we're just not seeing that -- it's not going to be a top down kind of thing, it's not going to be done by passing, you know, another piece of legislation on the federal level. It's going to come from the bottom up. And then once we start to see all this action is going on the federal government will respond at some point. We don't think that the federal government should be doing anything, right? I mean there's obviously things like a national freight program. We're one of the only industrialized countries on the planet that doesn't have one which we probably should. That's a perfect thing the federal government should be doing and directing its resources to. But at a time of severe fiscal constraint, at a time when there are these massive challenges, you're right, we have to focus and prioritize and it's got to come I think from the bottom up.

So question here?

MR. WOODLAND: Thank you. I'm John Woodland. I'm a retired government engineer. I've done critical infrastructure mostly overseas for about 35 years and now I'm retired. Question is one of the biggest returns on investment that I see in critical infrastructure is continuity of operations, ability to do those things day to day that we have to do and to keep the society moving forward. As I think about it two cities, New York and London, very old infrastructure but very critical to the financial stability of the planet. And have we taken any lessons from those cities, things to learn, are there lessons to learn? As inefficient as they are they seem to be very effective. That's my question

MR. KINKEAD: I would lead off on that and just to say particularly in the case of New York following Sandy I think the dimension and the resilience conversation obviously kind of blossomed nationally and it definitely landed hard for us in Detroit. Perhaps for issues not similar to those in New York, right, which was that this is the kind of world financial center and so on and so forth. In Detroit it really kind of rotated into an issue of equity and a tremendous challenge to develop a truly resilient city that also has some of the greatest need for it, right. Forty-two percent of the population are below the poverty line in Detroit. You have a number of other needs as you can imagine that go along with that; I won't list them off. But here you have a challenge where just slight disruptions can begin to actually undermine a lot of the existing systems. Many of them are kind of informal in Detroit. And ultimately you can have loss of life, you can have significant challenges along the way. And so what we're trying to see is the ways in which -- there was a kind of a comment earlier about bundling infrastructure and how you bring these things together. How can we as we move forward, whether it's soft or hard systems, grey, green, whatever it is, how can we begin to bring these things together succinctly so that those investments are being made to launch new businesses but at the same time, you know, support community action, right, so that everything that happens along the way develops a much stronger network to keep things going in a time of challenge knowing that there are some folks who will never have the means to escape something like that, right. So.

MR. PUENTES: Shin-pei? Oh, I'm sorry.

MS. VAJJHALA: Go ahead, Shin-pei.

MS. TSAY: Oh, I was just going to say quickly on learning from New York or London this transferability of lessons I think you're a great example of being able to translate it within context and having leadership to do it in a really astute and sensitive way that reflects the community assets. And I think that is actually the imperative. It's really interesting to always be looking for what are the common challenges, but in the solution building that these -- that they're very contextual.

MS. VAJJHALA: Just to give a very specific example, Rob, you know this well from the Rockefeller Foundation led a process after Hurricane Sandy on working with Governor Cuomo to plan for the next 100 years, so it was the NYS 2100 process. And within that there was an anecdote that I loved and it was from someone at a cable company who was describing that the cable companies knew where the power was out faster than the power companies (laughter). Because set top boxes blink when the power is interrupted and they started picking up the phone and calling and it speeded up operations and restoration of power tremendously. So I think when we talk about partnerships and open data it's not just public to private, it's private to private in some cases because industries also live in silos. And we need to be able to find those opportunities to create a continuity of operations across sectors when it's private industry that really is underpinning most of the need and the resource.

MR. PUENTES: We've just barely started to scratch the surface. I'm such a terrible moderator because I just want to keep this conversation going. I just want to keep it -- our time -- but I know we have to move on. Again I think we've asked more questions or we've raised more questions than we've answered here which is not a bad thing. We're going to keep the conversation going, but please join me in thanking our great panelists. (Applause)

And then while they're getting off the stage I just wanted to introduce then our final speaker for the morning who is going to be Greg Kelly, the Global Chief Operating Officer at Parsons Brinckerhoff, a position he's held there since 2012. As you may know PB is a multinational engineering and infrastructure firm with approximately 14,000 employees. What you may not know is how this all fits in then to this conversation we want to have here today about future and innovation and all that. So what we think the firm is doing deploying new technologies, importing lessons from metros around the world, connecting up different areas of infrastructure, really the themes that we just had here on this panel is exactly the right way to close out this week. So with that please join me in welcoming Greg Kelly. (Applause)

MR. KELLY: Good morning. Well, as Rob mentioned this is the closing session for Infrastructure Week. And I think I just want to take a moment to acknowledge all the individuals and organizations, our host here today at Brookings for putting together a terrific week. I think the speakers we just heard from this morning from Congressman Delaney to our last panel really underscore the importance of this topic. So let's just give them a quick round of applause. (Applause)

When I first spoke with Rob and Patrick and John Bechara and myself talked about this opportunity to come here and speak at Brookings at the conclusion of Infrastructure Week it was probably the easiest decision I had to make in a long time. To talk about infrastructure, something that we at Parsons Brinckerhoff have been doing for close to 130 years, we take great pride in reshaping cities and regions across the globe. And to come in here and try to advance the conversation about that and offer some perspective in that regard was just a great opportunity. So thank you, Rob, for that invite.

As you heard a moment ago we plan and design infrastructure across the globe. And in the past year I've personally spent time in Canada, U.K., throughout Europe, Asia, the Middle East, Australia, New Zealand, in major cities across the globe. And I'm going to use that perspective to talk about what we do well here and perhaps where some of those differences are in the U.S. I'm going to frame that conversation around three key things or four things. The first is technology, second is generational attitudes, the third is delivery and financing, and fourth, I'm going to bring it back to the role of government.

First is something we all face, the on rush of changing technology. Traditionally our business, infrastructure, has not been a hotbed for technological change The Romans invented concrete after all which was only slightly a latecomer to the -- compared to the wheel. But today new technologies are becoming more and more common in our business. Advanced materials, affordable solar power, and electric vehicles, just a few of the innovations that have the potential to change how we do business. But two new technologies stand above the rest in the magnitude of their potential effects. One is already with us and the other is not too distance horizon. They will not change how we built infrastructure so much as how we use it. The smart phone and the autonomous vehicle. Each by itself is revolutionary and the interaction of the two could be a game changer. Today the smart phone is ubiquitous in much of the world.

I'm fairly certain every person in this room has at least one smart phone on them right now. This little device, who knew, is already changing how we use infrastructure. We are adjusting our driving routes based on real time traffic information, we purchase a rail ticket on our smart phone, we pay for parking, we summon a taxi. All on the fly. We could accomplish all these things before but the sheer ease is upsetting established markets. Just ask anyone in the taxi business. But more than this the smart phone puts the world in your hand and those now spare bits of time which were always inefficient we now have time to be efficient, whether we're waiting for an elevator or riding the metro. We can use those bits of time in new ways. One of the benefits of transit has always been the chance to do something productive with that time spent commuting. But the quality of that time has always been low, hasn't it? The smart phone has changed how people use this time. And some argue it's one factor behind the trend from driving towards transit. Consider this, total vehicle miles travelled in the United States peaked in 2007, a year known for something else, the introduction of the iPhone. You be the judge. But transit is not yet a viable choice for many Americans. So let's fast forward to that horizon I just referenced, to a time when we're on the cusp of opening up roads to autonomous vehicles. This technology could take the most unproductive hour of the day, our commute, and make it an hour to read email, watch a movie, go shopping, all on your smart phone. I think you'll agree society is going to have a tough time saying no to that.

Technology is not the only thing changing. So are attitudes. We've all heard the evidence. Fewer young people are getting driver's licenses, VMT is stagnant, cities are cool again, transit use keeps growing. This wave is been building for years and shows no signs of slowing down. These changes are happening overseas as well. In Germany one half the men under 25 used to own a car. Now it's less than a third. Rates of driving for people in their 20s have fallen in Japan, the U.K., France, and Australia. And car sharing is bigger in Europe than it is here in the U.S. Leading the way are the so called millenials who are also a major force behind what people are calling the sharing economy which is everything from Zipcar to Airbnb to bike sharing. These services turned underutilized assets from a spare bedroom to a riderless bike into marketable commodities. Who knew? Here is where changing technology and changing attitudes may converge. What major capital investment sits unused 90 percent of the time? The car of course. It's not hard to imagine a transportation future that looks rather different than today. Using an app on my iPhone 10 I summon an autonomous vehicle to take me to my next meeting. It might be my car, it might be someone else's, but it happens to be close by. Once it drops me off it parks itself or maybe picks up another passenger. This may be 15 years off but I bet the people at Uber are already thinking about it. The consequences for our industry are not yet clear. When everyone has their own chauffer will it tempt people to move further from the city or will people deemphasize car ownership in favor of an on demand model? Will this lead to other lifestyle choices that go with lower rates of car ownership like living in denser, walkable neighborhoods? If so the infrastructure we invest in will need to change.

But before we get to that it's important to recognize that many things will not change. Our existing stock of infrastructure will always need to be maintained, from interstate highways, to water systems, to the power grid, to the communication links. We've fallen behind on this score and technology is not going to save us. To my knowledge -- and I'm in this business -- there's no app out there to fix a bridge. But the new infrastructure we build in the 21st century may in fact look different than what we built in the 20th century. The next wave of investments could focus on supporting a denser, more urban pattern of living. Not so many new highways and more public transit, fewer single family homes and more vertical construction, water and power infrastructure to help us grow inward and upward instead of outward. Sustainability will be a non negotiable objective. And no matter what we build it will have to handle a world of higher sea levels and more powerful storms. It's interesting, other countries look at our decentralized system of infrastructure planning and wonder how can it ever work. It has its challenges but it also has its strengths. And we heard some of that this morning. Different places can try different things. Each city is its own little petri dish of experimentation. As one place experiments the other places look and learn. As an example we never adopted a national policy on light rail but a few cities tried it and other cities like what they saw. Bike sharing worked here in Washington, D.C. and other cities are following suit.

So as Rob was talking about earlier, how do we finance and deliver infrastructure of the future? Innovative things are happening and we're all encouraged by what Congressman Delaney had to say, but they're mostly happening someplace else. A generation ago there was not a big gap in how infrastructure was financed, built, and operated here in the U.S. versus other industrialized nations. It's actually a rather quite simple model, government collected taxes and allocated funding. Private firms bid and designed and built the next project and the government was the operator. Pretty standard. In the U.S. this is still mostly how it's done, except of course we're doing fewer projects every year. And I'll editorialize here for a moment. Okay. What once existed at all levels of government in terms of consensus doesn't exist anymore in both parties. To support a reasonable level of infrastructure investment has broken down without anything to replace it. These consequences are serious. I know everybody here understands that and they're getting worse every year. I'm not going to belabor the point, you've heard it all too many times before. But financing infrastructure purely with taxes had also been on the decline in other countries. But they've been willing to build a new financing system in its place. We have yet to adopt that. User financing through tolls or fares or rates is increasingly seen not only as acceptable but preferable from Mexico to China to Europe to Australia. Most new high speed roadways are built as toll roads. It is the new normal. User financing has the advantages. And it goes beyond just raising money. It helps allocate resources in a rational way. If a project serves a real demand the market will fund it. If however the market is not interested maybe that tells us something about the project. Look at the decline or retrenchment in the construction of greenfield toll roads recently. We all hate congestion but that's different from how much we're willing to pay to avoid it. User financing should be encouraged but it's not a panacea. In particular it's not well suited to the task of restoring and maintaining the infrastructure we already have. This bread and butter work costs many tens of billions annually and it cannot realistically be financed with tolls. Broad based funding like we have with the gas tax, and we've heard this throughout the week is and always will be a necessity. It remains the big wrench in our tool box.

But whether we're talking about building new facilities or repairing old ones new methods of project delivery can make a big difference. Unfortunately we still lag a bit behind in this country. The dominant practice here is what we call design, bid, build where one team designs a project, a different one is selected later to build it, and the project sponsors operate at the end of the day. Okay. We talked earlier about silos. This is a perfect case where the traditional methods in this country are very much silo driven. But what is happening is a move toward design, build. This is an incremental step that started about 10 years ago where you marry a contractor and a designer and they develop the project in concert. And you eliminate some of that frictional cost and that frictional time that occurs in developing it in silos. That improves schedule, that improves costs, and that can improve the risk side of it.

Beyond design, build another approach that goes further in delivery innovation is around public-private partnerships. And again we've heard a bit about that throughout the week. Here's where one team could possibly do everything, from raising the financing to planning it, designing it, getting it permitted, building it, and operating for a period of time. Government's role in this case is to set standards for performance and then pays over time as people use the facility. But let's be honest, some agencies, some governments throughout the country are still skeptical of these new practices. They're afraid to give up control. I believe this fear is not warranted, but it is true that these methods call upon government to exercise control but in a new way. Under the old system the project sponsor could dictate every design choice, however small. It's very hands on and it can add a lot of time to the delivery process. With new methods the project sponsor still retains control but that control is expressed through performance standards with the private sector left to figure out all the details. This allows government to focus its energy on true matters of public policy, setting objectives, establishing a budget, demanding performance and enforcing rules that get the most out of the competitive market place. Once these decisions are made the delivery process becomes less inherently governmental and more amenable to efficiency driven by the private sector. I firmly believe that if our public agencies could adopt the contracting practices that we increasingly see as commonplace overseas from London to Australia and elsewhere, we could get more infrastructure built for our money here at home.

Let me conclude with a couple of thoughts. By themselves these reforms will not solve our infrastructure deficit, but if they can get us more bang for the buck perhaps this can lead to greater public confidence that every dollar we invest will return the benefit expected and be managed with the utmost care. This could be a key element in convincing our elected leaders at whatever level of government that infrastructure spending is vital and it needs to be paid for by all of us.

Given the ways our society will change in the future and the challenges we see in building infrastructure that's vital to keep us growing and thriving as a country the time to act is now. Thank you. (Applause)

MR. PUENTES: That's great, Greg, thank you. Thank you very, very much. I think a lot of themes that you may not expect to hear from a large engineering firm. So thank you very much for reinforcing that.

Before I close I want to just say a quick thank you to the team at Brookings who did an awful lot of work on -- not just on the event today but on the whole week so Adi Tomer, Joe Kane, Taylor Stewart, Amelia Schuster, and especially Pat

Sabol. If you've done anything in Infrastructure Week you've probably seen him running around. I really don't think he's slept since Sunday night so if you see him pick him up because he's probably falling down. And thank you all for coming out here today on a rainy Friday.

I really thought this was really the conversation that we wanted to get into. I think we've just started to scratch the surface as I mentioned. But just one more comment before we adjourn the program. We highlighted a bunch of projects here today, a lot of things that were very specific, particularly here with the panel and we did it all throughout the week. And I think that we're going to keep doing this. This is what we're going to spend a lot of time on at the Brookings Metro Program over the next year, maybe leading up to, you know, Infrastructure Week 2015.

Because as we travel around the country, as we talk to public, private, philanthropic, non-profit, political leaders, corporate leaders all across the country this is the stuff that they're looking from us.

They want to know who is doing what. Tell me exactly what are the innovations that are out there, what can we learn from these people, who did they talk to to get that done, give me the specifics on how things got done, because nobody is waiting anymore for the silver bullet for things to happen. We see a lot of energy, a lot of vitality. We heard from folks here today who are reinforcing that. This is a time to get things done and we're seeing that from a lot of folks around the country.

So we heard a few examples today. We're going to spend the next bunch of months soliciting more of these examples. So if you have ideas send them to us. We're going to go around the country, we're going to start to build this real clearinghouse of project ideas so those lessons can be shared so that we can do this network approach, this partnership approach that we talked about so people can learn from one another.

We do believe that American's infrastructure needs are daunting as was said, but I don't think that there insurmountable. Nor is Washington's drift and dysfunction an excuse for inaction. We firmly believe that our states, our cities, our metropolitan areas and the private, public, and civic institutions that lead them do have the talent and as we've seen have the creativity to move this country forward in this area and in others. And we absolutely believe that now is the time to do so so that we can start building for the next 100 years.

Thank you all very much for coming here today. Appreciate it.

(Applause)

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CERTIFICATE OF NOTARY PUBLIC

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

Carleton J. Anderson, III

(Signature and Seal on File)

Notary Public in and for the Commonwealth of Virginia

Commission No. 351998

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