Rebuilding America: Investing in the Future of U.S. Infrastructure

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• Tyler Duvall, CEO, SH 130 Concession Company and former Acting Under Secretary of the U.S. Department of Transportation
• DJ Gribbin, Founder and CEO, Madrus, LLC and former Special Assistant to the President for Infrastructure
• Jennifer Aument, President, North America, Transurban

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A video of this event is available: https://www.hudson.org/events/1807-video-event-rebuilding-america-investing-in-the-future-of-u-s-infrastructure52020

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David Horner:

Good afternoon everyone, and thank you for joining the broadcast of Hudson Institute’s panel discussion, Rebuilding America: Investing in the Future of US Infrastructure. I'm David Horner and I'll be moderating today’s conversation. I am an adjunct fellow at Hudson Institute and a partner with law firm of Hunton Andrews Kurth LLP. In recent weeks, President Trump has said he wants to tackle the nation's infrastructure challenges through a $2 trillion spending package that could be funded through long-term borrowing at 0% interest. The administration has also signaled that spending on large scale transportation projects in particular would help facilitate an economic recovery across the country.

But the suggestion of tying infrastructure to a coronavirus recovery bill has received swift pushback from some lawmakers. Amid the COVID-19 crisis, infrastructure spending is being considered from multiple perspectives, as long-term investment, as economic stimulus, and as emergency relief to state and local governments. But can a properly designed infrastructure spending program accomplish all of these objectives at once? What should be the main features of any federal program of infrastructure spending? And what non-spending measures should Congress enact to ensure that investment in our infrastructure networks is successful?

Joining us today to answer these and other questions are three thought leaders in the field of infrastructure developed, Tyler Duvall, Jennifer Aument, and DJ Gribbin. Tyler is the CEO of SH 130 Concession Company, the private entity that operates and maintains the southern section of Texas State Highway 130, a toll road outside of Austin. Tyler was previously a partner in the Washington DC office of McKinsey & Company where he led the firm's efforts in North America to advise owners of roads, airports, transit systems, and other infrastructure assets. Prior to joining McKinsey, Tyler served in multiple roles at the US Department of Transportation, advancing to acting undersecretary for policy. This is the third highest ranking position in the department. There, he led efforts to modernize transportation infrastructure through new procurement technology and financing approaches. He also was responsible for developing and implementing other major policy initiatives in the areas of regulatory efficiency, congestion reduction, and accelerated capital project delivery across all modes of transportation.

Jenn Aument is president for North America of the global infrastructure developer Transurban and a member of the company’s executive committee. Jenn has led the use of public-private partnerships for infrastructure funding in North America. She has pioneered a number of innovative financing and technology strategies in the development of major transportation projects, including the advancement of more than $4 billion in transportation improvements in Virginia on the 495, 95, 395 express lanes. Prior to joining Transurban, Jenn worked for Bechtel Infrastructure to develop the Washington MetroRail Silver Line. She has also served as a commissioner under three governors for the Virginia Port Authority, which oversees one of the largest shipping enterprises in the United States.

DJ Gribbin is the founder and CEO of Madrus, LLC and is a senior operating partner with Stonepeak Infrastructure Partners. He recently served at the White House as the first ever special assistant to the president for infrastructure. At the White House, he led the development of the administration's $1 trillion infrastructure plan. Prior to his time in the administration, DJ was confirmed by the US Senate to serve as general counsel at the US Department of Transportation during the administration of President George W. Bush. Before that, he was the chief counsel of the Federal Highway Administration. In the private sector, DJ has served as
national director for strategic consulting with the engineering company, HDR, and as the
managing director and head of government advisory in the United States for Macquarie Capital.

Tyler, let's start with your thoughts. Given your roles at USDOT and McKinsey, and now as the
CEO of a toll road company, you've probably considered infrastructure issues from multiple
angles. Broadly speaking, what key points should policy makers bear in mind when developing
the next federal program for infrastructure renewal?

Tyler Duvall:

Thanks, David. I think one of the problems with the infrastructure debate generally, at least in
the United States and pretty much true around the world, is that we don't really identify what
problem we're trying to solve. Then secondly, we don't really identify who's best positioned to
solve the problem. In the US you step back and say, "What is infrastructure?" You effectively
have three categories. You've got what you call purely economic infrastructure, where the
private sector owns and operates all of the core assets that's energy, telecom, all the digital
activity we keep hearing about in the US today, those are assets owned and operated by the
private sector subject to a variety of regulations, federal, state and local. But at the end of the
day, the investment decisions, the revenue streams, all of the organizational structure around
those asset classes are done in the private sector. The question there is, "Okay, do we have a
problem and who's best positioned to solve it?" And the is going to be different even within that
category one.

Category two is what we call these hybrid assets, which are transportation, water and
wastewater. Obviously Jenn's here, she owns a major private toll road enterprise in the United
States. Most of the assets in her asset class are owned and operated by government, so road
assets are primarily owned by the government of the United States. Even within that category,
we obviously have hybrid relationships where you've got standalone entities that fund and
finance their own activities across transportation. We see airports that have completely different
ownership structures within the United States, very different profitability metrics, et cetera. Then
within the water and wastewater sector we see an entirely different set of enterprises that own
and operate those, including quasi-governmental entities, purely private entities, et cetera. I
think one of the challenges has been, within that asset class, which I think is the one that people
tend to rely on when they use the term infrastructure, we don't really know what the problem is
so we don't have a unified problem statement.

Then you have the third category that is getting increasing attention, particularly in the COVID
environment, which is social infrastructure. Hospitals, schools, prisons, all of these assets, by
some definition, are included within the infrastructure debate. All of those are also owned and
operated in very different structures. I think the challenge we've had in the US is, when people
use the term infrastructure they're not using a common set of assets and enterprises
underneath that. I think for the federal government really defining that and then effectively
saying, "Look, within these we have different problems." We don't have a capital investment
problem today in the energy sector of the United States. Many would argue that we've actually
over-invested in that. We may have a capital investment problem in the water and wastewater
sector. Some will say that we've got obviously major wastewater needs in the United States.
Okay, so maybe funding is a challenge there.
And other areas we've over-invested. You could see a huge hospital build up in a variety of places in the US. Do we need more capital investment there? Probably not. Maybe we just need better efficiency and operations and technology. I think for the federal government, step back, define it. Then frankly, once you define what are the problem areas within these categories, the next question is who's best to solve it. I think, unfortunately, today we have a further problem where the federal government's role in any of these areas is poorly defined and in fact evolved through a variety of different interventions over the last 100 years that were not planned, organized, or structured in any way. Now we're sitting here with, okay, the federal government funds the majority of highway investments, but state and local governments fund a huge chunk of that too. Or the federal government funds the majority of capital investments in transit but doesn't find any of the operations associated with that. Or the federal government doesn't do anything to fund oil and gas investments but is subsidizing renewable projects all over the place. We have this complete hodgepodge of policies in place and I think it all stems from this primary problem, which is we don't really know what we're trying to fix today.

**David Horner:**

That's a very helpful overview Tyler, and a great framework for the discussion. D.J, what are your thoughts on that, and how would you account for some of the issues Tyler's raised in the context of federal surface transportation infrastructure programs?

**DJ Gribbin:**

David that's a great question. Thank you for having us on this webinar and thank you for pulling it all together. It's great to be here with Jenn and Tyler, obviously we all know each other for years and years and years. Just so listeners appreciate what Jenn and Tyler bring to the party, both of them have an unusual amount of experience in the private sector, in the public sector, and, as you mentioned in your introduction, in terms of operating facilities currently. This is the perfect time to have this conversation.

Not surprisingly, as Tyler and I have worked together for years. I agree with everything he just said, and my remarks will, also not surprisingly, mirror his remarks. I'll touch on three things quickly. First of all, exactly Tyler's point, what is it we're trying to fix? Secondly, what is the federal government's role and how can the federal government play in implementing a fix? Third, because Hudson is a think tank, I thought I'd leave the group with a few things we should think about -- we could talk about during the Q&A session as well.

In terms of what we're trying to accomplish, I think it's really three things, jobs, economic stimulus, and better infrastructure policy. On the jobs front, as we learned from the Recovery Act, infrastructure is not particularly well suited to quickly stimulate jobs because it takes so long to get a project through the permitting process and ready to go, as Jenn has lived through multiple times. The challenge then is how do we manage the public's expectations because, good news/bad news, we have a huge maintenance backlog right now. While the Obama stimulus package got a lot of criticism for being used for guardrail repair and overlays and maintenance, that actually is not a bad short-term use of funding if you want to stimulate job growth. In terms of economic growth overall, it's going to be hard to build bigger projects because of the timing aspect.
But I do think there’s a huge opportunity to create better infrastructure policy, mainly in terms of shortening the permitting process and then allowing projects to move forward more quickly. I was talking to the White House team on Friday about ways they can use experimental authority in the NEPA regs, ways they can use that authority coupled with the experimental program that Tyler and I helped set up when we were at USDOT, a program called SEP-15.

There are tools out there where, yes, we need to focus on the short-term immediate crisis that we're undergoing, but I think we can do that in a thoughtful way. As we do it in a thoughtful way, to Tyler's point, it's important to understand what the federal government's role is, what the federal government can do and what it can't do because, as Tyler noted, the federal government's role in infrastructure... I'm going to focus on governmental infrastructure. Tyler had three baskets, I'm just going to have two, governmental infrastructure, which is owned primarily by government and non-governmental infrastructure.

We're focused on governmental infrastructure. The key in thinking about governmental infrastructure is to keep in mind that the federal government owns a very small part of that infrastructure. Tyler, when he was at McKinsey, helped produce some data that we used at the White House that showed ownership by the federal government of infrastructure in the US is less than 10%. The federal government is really a funder and a regulator, but not so much a project owner. With that, it gets complicated because the federal government's involvement in projects can be highly market distortive. We'll talk a little bit about that in the Q&A session. Most people think the federal government involvement is all upside and like anything in life there's a bit of a balance here.

The third and final point I want to make is what are the bigger issues we should think about. In this time of crisis, it's especially important that we have clear economic thinking in terms of how infrastructure works and how money works. I read a lot about, "We should borrow this money because it's 0% interest," and they say 0% interest like it's a grant. There's a big difference between a loan, even when it's 0% interest you have to pay back, and a grant. You have a lot of responsibility when taking out a loan, even if that loan is at 0% interest.

In addition, there is this prevailing belief that federal funds are free and they don't come from state and local taxpayers. They are treated as supplemental. Yet, obviously, all funds come from taxpayers ultimately. Taxpayer funds either come to infrastructure through the state and local government spending or have to go to the federal government and back down to state and local governments. The source of those funds is always the same.

Just to wrap up, I think it's important, as Tyler mentioned, let's focus on the problem we're trying to fix. Let's understand what the federal government can and can't do, and then let's think about some other bigger thought pieces, ways we need to mentally approach these issues that we need to clarify in order to get the policy outcome we're looking for.

David Horner:

Jenn, as a senior executive of Transurban, what do you see as the role for the private sector in developing major transportation infrastructure projects? Should we not focus on role for the private sector when formulating a program of federal infrastructure spending?
Jennifer Aument:

Dave, I think the problem that DJ mentioned that we’re trying to fix just got bigger. We sure as heck better find a way to better leverage private capital and private innovation to help solve this problem moving forward. As we’ve looked at government spending over the last two months, as governments have sought to address health issues and monetary policies and fiscal policies to help address safety and the economy, we’ve seen obviously a sharp increase in government spending. To quantify that, we expect that that's going to reach more than 10% of global GDP in the coming months. It doesn't take an economist to predict that we think we're spending, and obviously you're going to see plummets in tax revenue and output during that same time, you're going to see these steep budget deficits. For government decision-makers, particularly those like US governors who often have a statutory requirement to balance their budgets, there's going to be some really tough decisions and some really tough prioritization that's happening in the coming months and years.

The irony of that is, many of these governors and many of these government decision makers are sitting on a tremendous amount of value in their existing public infrastructure assets, real estate, toll roads, airports, ports, but they're often unaware of this value and how it can be put to work as part of the solution. We know policy makers focus on natural resources all the time. How do you make sure taxpayers benefit from forestry, from minerals. But often because infrastructure assets are represented on the balance sheet and are often not properly accounted, government officials don’t see the capacity, the value, that they have sitting right in front of them. It can play a significant role in short-term recovery and obviously long-term competitiveness. Ironically, the International Monetary Fund estimates that, if they were to open their eyes to these kinds of assets, the value would be far more than the value of natural resources. In fact, it could be as much as twice global GDP in terms of the value that governments are sitting on.

Now, governments are returning to work, Congress is returning to work today to look at what kinds of things can policy makers do to be able to solve these problems. We see governors turning from the healthcare crisis to the recovery crisis. As DJ mentioned before, one of the criticisms for the Recovery Act, although we can accelerate maintenance activity on the ground, you're seeing small steps forward like guard rail projects and signage projects, and that's not going to meet the challenge that is COVID. I hope policy makers listened last weekend to our perennial optimist, Warren Buffet, when he said, "This is a decade's long recovery that we're looking at, guard rails and signage aren't going to do it." But unlocking billions of dollars of private capital of existing public toll-road assets could actually move the needle and help to meet our long-term transportation needs and help support the recovery.

Now, Transurban has some examples and our colleagues overseas and DJ and Tyler have been involved in these kinds of projects where we can see public-private partnerships and injecting private capital to help solve the problem really does work. It can quickly put private capital work to support infrastructure development. Equally important, these kinds of public-private partnerships on traditional public assets can actually improve service, which is an important part of the equation. That means improved safety, improved service, often lowering consumer costs. Despite what we may have experienced here in the US with a couple of these transactions, these projects aren't just politically palatable, we’ve learned in our work in other markets, there can be really political wins for government officials that champion this kind of approach.
I want to share with you two case studies close to my second home. I usually spend most of my May every year in Australia, a flight I know DJ has taken many, many times. A beautiful time to be in Sydney as it always is. If you go to Sydney, you'll recognize there's a tremendous amount of construction underway in Sydney, you can barely get around the city. It's because the government is moving forward with an $11 billion expansion, about a 26-mile expansion of its metro system. That project was almost entirely funded through private capital that the government was able to derive from entering partnerships through long-term leases through its existing port, they netted, more or less, more than 3.6, $3.8 billion. Then electricity distributor company, which netted much more than that, close to $5 billion.

Sydney has put that money to work to be able to rebuild their transit infrastructure. Of course we're seeing all kinds of commercial development come out of that. But you're also seeing Sydney and New South Wales celebrate the lowest unemployment rates, pre-COVID, for a number of years and continued budget surpluses of more than a billion dollars a year, year after year, because of the approach that they've taken of leveraging private capital to really fuel the construction of major transformational projects in the City of Sydney.

Now, our partners a little bit to the north in sunny Queensland have had a very similar experience with this model. Back in 2014, Transurban acquired a $7 billion public toll road network in the urban area of Brisbane. Once again, Queensland put that money to work to be able to build infrastructure. But again, an equally important part of the equation we look at solving this transportation challenge is, we're able to deliver significant improvements to the customer experience on these roadways. That means a 50% reduction in incidents. It means a 40% faster to get incidents cleared off the roadways. Most important, for customers, we were able to put technology solutions in place and business practices in place that are focused on the consumer and our customers are saving $80 million a year on fees for enforcement they would have paid under the existing government ownership. This is an example of how, yes, you can get that infusion of private capital to help fix this challenge but also provide a better experience for customers as well.

Now, how does this work here in the north? Can we bring this experience back into the US and put it to work here? Transurban estimates, in the toll road sector, and with DJ and Tyler on this video they will all agree with their experience that that's where all the glamorous activities happen in the toll road sector of the asset class. But if you take the toll road sector here in the US, if you take the top 10 largest public toll roads, we believe through taking this public-private partnership approach, you could generate about $300 billion of values, about $180 billion of which would be available to be able to support the construction of Greenfield transportation projects.

Now, as policy makers are looking, how do you make this work? What the federal government did in Australia that was a real benefit, is they put a match program or incentive program in place to be able to encourage states to give this a try, because it can be intimidating, it's new in some markets. How do you make sure this will work and that politically it will be a win? Either will solve both the private sectors commercial objectives and policy objectives. They put a match in place, the federal government agreed to match up to 10% of the transaction value to be able to bring additional federal funding to the state. That worked well and brought about, in the case of New South Wales, $1.7 billion of funding.
It could work in the US. It's not mission critical for these transactions, but it could be helpful in stimulating interest in this kind of approach. Our federal government can also expand the use that has been proven, and everyone here on this panel has used private activity bonds, by lifting the existing cap, or making other means available to be able to maintain the taxes and status on existing public toll-road assets, which really is going to maximize that value for taxpayers.

Finally, to DJ's point earlier, the best thing the federal government can do in a transaction like, in a partnership like this, is to stay out of the way. We've just commenced tolling on the 395 Express Lanes project, a construction project that was delivered after more than 13 years of development, environmental, and permitting. A transaction like what we talked about in Queensland, from initiation of the process to actual financial close and money in the bank that could be starting to put to work to drive the economy, you could do a transaction like that in about a nine-month period of time. Making sure we incentivize states to look at this kind of option. Did we structure these partnerships correctly so that we're focused not just on the big check, not just the financial outcomes, but the customer outcomes? Then ensuring the Feds stay out of the way, let states do their thing, put these assets out to form these partnerships and be able to put billions of dollars to work to be able to help address the fix that DJ and Tyler addressed.

David Horner:

To follow up, Jenn, on that point, do you envision the federal government playing the role of lender to any of these projects to lighten the load for the localities that procure them?

Jennifer Aument:

Well, thanks to the work that DJ did and Tyler did in their former lives, we do have some federal loan programs that can continue to play a role to be able to promote the use of public-private partnerships. Most notably, and I borrowed about a billion dollars through the Transportation Infrastructure Finance and Innovation Act program, which is the TIFIA program. But actually there's a proposal on Capitol Hill now which is really interesting. TIFIA has always been a great tool to be able to support and unburden the best of the private sector and public sector, but it's not really focused on, really, an economic stimulus kind of mission. But there's a unique opportunity now with more than a dozen years of experience with the program.

If you look across TIFIA's portfolio, a $30 billion portfolio, the average interest rate on a TIFIA loan is about 4%. The TIFIA program you have enough, which they thought at the time, and we closed the transaction in 2008, they felt that was pretty good. But in today's interest rate environment, it's about 1.38% interest. What the federal government could do in the immediate short-term is give the secretary of transportation the authority to reset that portfolio to existing interest rates. That could open up about $5.4 billion worth of value that then private sector borrowers could put back into the system to shore up assets which have been affected by COVID, but also to support the construction of new infrastructure projects. TIFIA always plays a long-term role. The program needs some tweaking and with these guys on the panel we can talk a little bit about that, to be able to ensure they continue to play a role. But they have a very unique opportunity here and a lot of the state DOTs and trade associations have gotten behind this concept to use TIFIA as a short-term stimulus as well.
David Horner:

One of the other virtues of loans instead of grants is that they don't contribute meaningfully to the deficit. DJ, speaking of spending, what's your takeaway from the stimulus package of 2009. I mean, is it really the case that transportation spending has affected that stimulus?

DJ Gribbin:

Yeah, I mean, I think as we talked about before, transportation, in the short-term, is not a particularly effective stimulus because, to Jenn's point, in this country it takes forever to get a project permitted and up and going. I think also when you're thinking about federal government spending for non-federal projects, and this is in box number two of Tyler's three boxes for the highway projects, there are four problems with federal government spending.

The first problem is a coupon effect where, because most of the spending for infrastructure that we're talking about comes to the state and local level, if there is potential federal spending available for that project, what happens is the state and local governments are incentivized then to take a step back and wait to see if the federal government is going to step in and spend money on that program so they don't have to. That's the first problem.

The second problem is one of substitution, and this we saw during ARRA, where the federal government stepped forward, put money into infrastructure, and then states took out what they were going to spend and spend it on other policy priorities. The net new spending was not nearly as much as if you had federal government added to non-federal revenue.

The third challenge is that federal government is really expensive. I love Jenn's point about, one of the best things the federal government can do is, on occasion, stay out of the way. That's a policy option that's exercised too infrequently currently. But if you're spending federal funds in a highway context, that federal funds come with, literally, 99 restrictions that attach to those dollars. Those dollars become less impactful, you lose a lot of spending value, and now because you're wrapped into the federal permitting process, your project's delayed as well.

Then the fourth and final challenge is, it creates a potential moral hazard. If the federal government steps in and provides funding in circumstances where states have mismanaged their assets and it helps fill that gap, it creates a moral hazard going forward into the future. Should we as a state spend money on this or should we delay money on it in the hope that if it gets bad enough the feds will pick up the tab? When Tyler and I were at DOT, someone told me the story about park roads. If you have a park road in a national park, the maintenance of that facility is the responsibility of the Department of Interior. But if it degrades to the point it has to be reconstructed, then the Department of Transportation will pay for that. I'm not saying that Interior is acting on those incentives, but that's a perverse incentive to put in place to say, "If you let this degrade all the way to the point where it's non-usable, someone else will pay for a new one." That type of moral hazard is embedded in federal funding as well.

David Horner:

Here's a question for everyone, but really I'll start with first with Tyler. Now, the status quo is so entrenched. Where does reform begin, and does it necessarily entail spending? Are there any non-spending measures that Congress can enact in order to rationalize a federal infrastructure program. D.J has mentioned the remediation of regulatory clearance of projects? I mean, is
there something at a higher level that we can do, cost-benefit analysis for example, lowering the amount of the federal share, et cetera, that can sort of accelerate, a renewal or revamping of these programs so that they’re right footed and working well.

**Tyler Duvall:**

Yeah. Look, I mean, obviously people have been trying to reform these programs off and on for a long time. As we said, we set in place this policy apparatus without a lot of thought, it was always just responding to the previous issue. We built this architecture now on the transportation side where we don’t have clearly defined roles, responsibilities, et cetera, and the funding allocation mechanisms are not tied to achieving outcomes or returns as both Jenn and DJ referenced. Look, I think to be successful in reform you've got to start small and you've got to experiment. I mean, maybe this is the time where a big bang massive reform comes to fruition. Reading the political tea leaves, if we don't have a political consensus around the problem statement, it’s hard to see how we have a political consensus around the reform to do something associated with 50 different problem statements.

What I would do is pick the areas where we have the most opportunity for alignment politically, and to me that's metropolitan areas where the problems are the most acute. You had disintegration of rail, bus, and road networks that are not working correctly. You've got these sporadic transactions to save or support each of these asset classes. To me, I think the biggest opportunities to unleash metropolitan experiments. You have the technology sector finally playing in transportation in ways that it did not before. The big technology companies are into transportation now, mostly on the autonomous vehicle side, the intelligent transportation systems side, but I think increasingly on the assets side as well.

What I would do is to find a experimental program for eligibility for up to five metropolitan areas. If we want to make funding part of it, we could put in place, for the amount of money we're spending in all these other programs, this would be decimal dust. Maybe it's 10 billion, maybe it's 5 billion, whatever the number is, but it's got to be substantial enough to attract interest and force a consensus in these metro areas. Then I would define a set of outcomes and projects that we think will lead to those outcomes in those areas.

Then the toolkit that you referenced beyond funding could include what Jenn referenced as accelerated financing associated with these projects. The other opportunity, as you said, is obviously accelerated permitting and review. I think one big observation, when I was at McKinsey, we observed was that, the ways in which these projects were getting built was highly inefficient in the US as well. We could unlock much more productivity in the construction process itself with technologies now available to do that. I mean, I would effectively identify a suite of innovations and outcomes associated with those, four, five, six, something like that, and then have the federal government basically just go tell the states and local governments to go do it. I think that if you look at the problems, it's congestion, it's funding, it's obviously environmental performance, it's safety.

The truth is, there is a common set of solutions that actually solve multiple of those problems. The more efficient the roadway network performs, the better transit systems perform, the more safe they are, the more revenue streams they generate. I mean, there is a cycle here around a common idea, which is basically technology and pricing that's rational, and that will actually solve four or five of your core big problems. But you need an owner in the metropolitan area.
Obviously New York City was on a path to do congestion pricing pre-COVID. We were joking with some colleagues recently talking about congestion in New York City, now is probably not a good thing to be talking about, but it will return.

You've seen that already. If you look at Beijing, you look at some of the cities in Germany, already in Munich, you're seeing congestion spiking. Stockholm, which has done this light closure that everyone's talked about, we studied that. That's basically, you're seeing afternoon peaks in Stockholm they're equivalent to where they saw it before, but definitely some different spreads of traffic. Anyway, bottom line is, now's a great time to actually do these experiments, but we've got to get the federal government deciding that it wants to do it.

David Horner:

It strikes me as a bold but heavy lift. Incrementalism may be the way to proceed. But again, in how the policy makers have already proceeded today, for example, in the context of the federal highway program and the special experimental program number 15, that DJ mentioned. But you touched, Tyler, on another topic I want to explore with the group and that is the escalation of construction costs. There isn't a lot of transparency into the cost of construction of large-scale infrastructure projects. In addition to spending and regulatory relief, is there not a way in which we could also reduce the cost of delivery of these projects? DJ, for example, do you have any thoughts on that question?

DJ Gribbin:

Oh, I have so many thoughts on that, because essentially our current infrastructure market is just broken. We did a bunch of research, we looked at every state's capital program in terms of highways, and in some states you can't even figure out what they spent on a project because you have just the initial bid costs. Especially in a design, bid, build environment costs can change along the way so that the cost of the project escalates. In some states, you can't even figure out what that escalation was. What we're trying to do is find a like-for-like comparison of projects across the state, across the country. For example, what does a mile of highway cost in Texas versus New Hampshire? What does a mile of subway cost?

Frequently we're reminded that, well, every project is different and every project is unique. While that's true, US News and World Report is able to rank universities based on highly subjective criteria, and yet we literally have no fundamental information in terms of what it costs to build basic infrastructure. That opaqueness, that lack of transparency, I think, directly contributes to the problem that you mentioned, David, which is the unusually high cost of delivering infrastructure in this country.

Jennifer Aument:

DJ I think I agree with you. The last public number that you often see is whatever that number was that was bid during the bid process, and if delivery takes years and years and years you don't see that transparency. You have a government decision makers who are designing procurements around, what's that, the number that I opened on that initial RFP and they're not incentivizing the kinds of technologies or approaches that Tyler mentioned that McKinsey has been studying and recommending, and not really putting these projects in a position where they're positioned to be delivered successfully. I'm really concerned.
I always say, if Congress did decide to finally address infrastructure and we had $2 trillion to put to work, I think we have two issues. I agree with you that part of the process is broken, domestic design builders are moving away from large transformational projects, the risk profile has gone up, the procurements are focused on the wrong things, and the other issue obviously is workforce, which I know everyone on this call deals with on how do you make sure you have sufficient workforce to be able to actually address these issues.

David Horner:

We have a few minutes left in this conversation, so I thought I would throw you a curve ball, and it's about the repurposing or additional use of transportation assets to improve digital infrastructure in the United States. All of you will be aware that recently the Federal Communications Commission is preparing to roll out a multi-billion dollar fund to support the extension of 5G networks to rural communities. We have seen multiple state departments of transportation undertake projects to use highway right of way as a corridor for installation of backbone networks. We're seeing that occur not only for commercial reasons, but for reasons of a long-term nature, which is to enable owners of highway assets and transit assets to account for innovations in mobility in the context of highways, for example, autonomous vehicles or vehicles to vehicle communication. Do you think enough attention is being given today to surface transportation networks as a backbone or skeleton or route map for installation of digital infrastructure? I'll perhaps start with Tyler. I mean, what are your thoughts on that?

Tyler Duvall:

Yeah, it's a great point, David. I mean, I think we had, obviously, a huge build out of fiber in this country, in many ways an overbuild out. We've caught up to that. I think, given what's happening with COVID and basically generally the development of metropolitan areas into exurban areas across the US, the need for more digital infrastructure is pretty much unquestioned at this point. Now it's just how do we do it and what are the economic models we use to do it. State DOTs, if I was running a state DOT today, I would step back and ask a pretty basic question which is, "What do I own and what is it worth, and what could we do with it?" I think the truth is, they're sitting on a bunch of stranded assets which has already been referenced. This is the most obvious category, but it doesn't even need to be 5G for now. I mean, we did an assessment of our roadway in Texas and significant underpenetration of just basic cell towers. There's all this dark fiber now that could be activated. I do think we're going to see a shift in work patterns. I don't know if it's going to be as dramatic as some 50, 60% forecasts that I've seen, but it's going to be, I think, a meaningful shift. In Austin, where I spend a lot of time, it's already 10% of the workforce pre-COVID was telecommuting, maybe that triples, which implies you've got an entire base of people that's going to need much better infrastructure. Yeah, I mean, it's a classic win-win. You've got the marketplace ready to go.

I don't know why the politics would be negative on it. I mean, maybe somebody could come up with reason why it wouldn't work. I think it's just more institutionally these entities, these state DOTs, have not really had a revenue function or a development function which they could create in the matter of months frankly and get going on it is my bet.
David Horner:
Jenn, do you have any thoughts on that topic?

Jennifer Aument:
Yeah, Dave, when you talk about surface transportation being the foundation of that future that Tyler talks about. There is dark fiber and ITS and all these technologies, but I think one of the things that policy makers are overlooking is the role that concrete, asphalt, and steel are going to play in that foundation. We've turned to Google autonomous vehicles, the technology showcases of what the future of transportation is going to look like. In almost every single case, whether it's autonomous vehicles, whether it's mobility as a service, the trends that we're seeing all lead to one thing and that is a sharp increase in vehicle miles traveled. If you assume FHWA is 1% increased in VMT between now and 2040, give or take, add 10 or even 15% on top of that with the entrance of autonomous vehicles.

We have to make sure when we look at the federal reauthorization and we look at these policies, we do things, like Tyler suggested, that will open up innovative programs and look at some of these solutions. But we also need to take care of our basic road network in terms of maintaining and modernizing that network so it can play a role in supporting what's going to be the future of transportation. So many policymakers makers have said to me, "Well, don't worry about roads anymore. We've got technology." Those autonomous vehicles are going to drive on our major interstate highways, I promise you that, and at the moment they're crumbling, so that needs to be a big part of the equation.

David Horner:
That's a good point, DJ. What do you think about the promise of digital infrastructure based on surface transportation infrastructure?

DJ Gribbin:
I think the promise obviously is strong because the need is so great. One of the things we've realized in this crisis is, having adequate broadband connection is absolutely integral to our being able to function. I'd like to tie together two things that Jenn said and Tyler said. On the Jenn front, she mentioned earlier on that we are in this crisis. We need to be innovative, we need to be creative, we need to think outside of the box. I think, as horrific as this crisis is, one of the benefits that's likely to come out of it is, it is going to force us into a new way of thinking.

I really liked Tyler's comment in terms of DOTs thinking about revenue. I've worked with a lot of DOTs over the years, and I can't think of any DOT that has a revenue report as part of its regular operations, because traditionally that's not what they did. I mean, they got revenue in terms of government spending, but thinking of other forms of revenue is not really what they did. Maybe DOTs need to think differently about opportunities that are created by technology as a way, not only to utilize technology to serve the communities better, but also be able to take benefit of the commercial aspect of that technology to provide revenue for their core functions.
David Horner:
That's exactly right. Last question to the group before we adjourn relates to the role of international capital in development of US infrastructure, and in particular government-owned US infrastructure. We have seen, over the last few years, that the development of infrastructure in the United States as well as abroad has become a theater of geopolitical rivalry among state actors (and among their proxies in the form of companies that invest in infrastructure globally). We've also seen the rise of China's Belt and Road program and the organization within the United States to meet the challenge of Belt and Road, for example, through the International Finance Development Corporation being reconstituted and the like.

I mean, to what extent do you see opportunities for collaboration between friendly governments to develop their respective infrastructure networks going forward? Jenn, I know that Transurban is headquartered in Australia if I'm not mistaken. There has been a great deal of policy conversation over the years at high levels within government, between leadership of Australian government and US officials concerning the Australian experience of infrastructure renewal. Am I reading into things or is there, in the background, a geopolitical tailwind that is bringing together capital from all points of the globe to the United States and elsewhere?

Jennifer Aument:
I wouldn't describe it as the new trend. I think if you look at the better part of the last 20 years you've seen international leaders that have come from countries like Australia and Spain, the UK and others, who have played real leadership roles in being able to advance public-private partnerships in the US. The eccentric American, I think there are things like the TIFIA program and others that we've brought to the table that have been critical to the advancement of P3s here and will be critical in the future. But I really would have to give governors, particularly, a lot of credit who are actually seeking, wherever they come from, the world's best when looking at putting these kinds of partnerships together.

We're working on a procurement right now with Governor Hogan, and one of the specific criteria is they want to go way beyond their region to look globally at who are the best to bring that expertise and that capital. Right now there's probably... DJ's alma mater Macquarie would estimate about $200 billion of dry powder out there ready to get to work and we should encourage the people that are accustomed to putting projects together that meet commercial and policy outcomes to be able to do that. Increasingly, we are seeing policy makers look way beyond borders and being able to share best practices to be able to move these project forward.

David Horner:
DJ, since you were responsible for deploying some of that dry powder while at Macquarie, what are your thoughts? Do you see the friendly governments of the world supporting the formation of cross-investment in their respective infrastructure networks in particularly by means of public-private partnerships?

DJ Gribbin:
I think that is an excellent question, and I'll agree with Jenn. I think, to a large degree, that has been occurring. While you see a resistance to non-US investors in the US, that has not caused any transactions to fall over just because it's a non-US investment. I think there is a bigger
policy matter. There is a question as to whether or not this crisis is going to encourage globalism or discouraged globalism. I think there are concerns being raised. We've read in the paper today about access to personal protection equipment, access to key technology, what should we have in our country versus what we outsource from other nations. I think that is going to trickle into infrastructure potentially.

That though is, I think, a little different than the question you asked about the geopolitical impact of creating entities that lend to projects as part of a country's ability, namely China, to project power overseas. My guess would be, I'm not an expert in this area, that gets tamped down a little bit as nations look inward and try to ensure that they're adequately responding to the current crisis.

David Horner:

It'll be interesting. Tyler, I'd like to hear your thoughts on this, whether the United States' market is giving itself enough credit these days, the public can get so many approaches used around the world to deliver a new infrastructure or to realize value from existing infrastructure. Have we ourselves actually become a fountainhead of best practice? I mean, you were at McKinsey, you literally crossed the United States and the globe speaking with people about infrastructure. Is the world actually beginning to turn to us for thought leadership or is it too soon to say?

Tyler Duvall:

Yeah, well, I think on infrastructure, no. Nobody's turning to us for our leadership.

DJ Gribbin:

Except for TIFIA.

Tyler Duvall:

Yeah. Part of that is, I think, because... just to step back, coming out of World War II, the United States made a policy decision to spend more money than had ever been spend on these kinds of assets. I mean, people refer to China's infrastructure development, the United States did that times two or three over a 25-year period and was able to get all this stuff done. The federal government rained money on states, states developed their own funds, and we built out more airports and more road miles than anyone in the world, still have all these assets. From an installed base, we've got the best assets in the world, the performance of those assets is where our problem is. I think if we can really pivot...

Actually when you look at Australia, the UK and Canada, which are, call it, our western democratic partners, they effectively did not have that blowout period after World War Two, and through that scarcity problem they innovated. They came up with models. Jenn is obviously running one of the companies that was one of the beneficiaries of that model, but others obviously did the same. I think for the US now the question is, we've got all of these assets, how do we make them perform better? This is where our tech sector, to me... I mean, Jenn's point is absolutely right about, just wishing technology out is not the answer. But we do have the world's leading technology firms and I do think if we effectively deploy them along with, call it, the construction industry, which, in the US, has stepped out of the civil markets in many ways, and get them engaged, I think you could see the United States re-emerge as a national leader.
It would take less than a decade for the US to become a national leader, and you would see more capital invested in the US than any country in the world by a wide margin if policy makers got the conditions right. But yeah, look, I mean, one idea for an international alliance is, call it Metropolitan Transportation Efficiency Group. I mean, you look at the major cities around the world, you look at Sydney, you look at London, Toronto and these cities, and you could imagine a very common playbook with capital technology, construction efficiency, et cetera, solving a suite of problems. Whether the US leads that, I don't know, they could if they wanted to.

David Horner:

Well, thanks for pointing the way, Tyler. I think on that note, we'll adjourn. I wish to thank all of you for participating and our audience for listening. Have a good day.