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# INDUSTRY EXPERT REPORT

## MAKING CITIES SMARTER FASTER



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# SMART MOBILITY 2018

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The contributors in this report will be speaking at the [Smart Mobility Summit](#) in San Jose, February 26-28. They discuss how smart mobility can solve a wide variety of transportation issues, its impact infrastructure, the roadblocks, the priorities, the future of smart mobility, and other key topics. At the Summit, they will go into much greater detail about their expertise and share their unique perspectives on mobility. We hope to see you there!

# SMART MOBILITY 2018

## What transportation issues does your state currently have that smart mobility will fix?



**Brulte**

The biggest issue California has is, and what California is notorious for, is traffic. As we move to full level five autonomy, traffic should hopefully be reduced. I'm really hoping that California will eventually adopt artificial intelligence like the city of Beverly Hills. One of the biggest causes of traffic today is light signals.

They're highly unoptimized and they don't really make sense for how they operate. If we can kind of transition towards full level five autonomy, we can have smart signal lights that can adapt actually based on real time traffic patterns. There are certain times of the day that we know from living here, "Ok you don't go on that road because that's a commuter road." And you go to sit in traffic, not timed or optimized. The long term really looks at full level five to reduce traffic. That's going to be, at least here in the state of California, the greatest thing. And then, in the city of Beverly Hills as it relates to a microcosm, full level five autonomous vehicles that will allow guests in the hotels to explore the city and really get a true understanding of the benefits the city has to offer.

Too many crashes. Too many cars. I guess it's the easy way to say it.



**Kornhauser**



**Montanez**



Several issues come to mind- however congestion is high especially when you are trying to create a healthy atmosphere for our children to grow in. Another issue is the flexibility for our ADA community and older residents so they will still be productive members of society. Overall safety is the next issue, as Philadelphia embarks on our Vision Zero mandate. Another issue is the reliability of the system in general and during emergencies or special events. I hope smart mobility will create an inclusion of all modes and create better choices for the traveler. Lastly, I hope smart mobility will help get the current network into a state of good repair.

Safety and congestion are among our top challenges in San Francisco. We are not using our public rights-of-way as efficiently and safely as we should be to support the quality of life and economic vitality that we want.



**Reiskin**



**Weatherford**

The biggest issue that any large city or metropolitan area has is growth and the volume of traffic. There is a potential for technologies to make things better but there is also a potential for technologies to make things worse. We would like to see it make things better, particularly from a safety standpoint. We know it may take x number of minutes to get to work consistently on a morning where traffic's flowing well. Once there is an accident, then you have secondary accidents and so on.



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**Weatherford**  
(continued)

If we can make the technology so we don't have those accidents, through AVs and a variety of different techniques, then maybe our times can be more consistent. We have all seen the people driving at 70 miles an hour, five feet off someone's bumper. That's not a particularly safe thing, at least not with a human driver. But with a computer driver, that may be ok because the cars are talking to each other. Connected autonomous vehicles may make the roads safer. If the roadways are safer, then all those incidents go away and you can move traffic more efficiently. Even at intersections, if the cars are talking to the signals, and the signals are talking to the cars, and the cars are talking to the cars, we potentially move more cars through an intersection than we are today.

The potential for technology is going to allow us to make things safer and move more effectively. Those are all the challenges associated with it but the potential there is from the safety aspect. Annually, we kill between 35,000 to 40,000 people a year on our roads. Some of the features that are starting to turn up today, even without them being completely autonomous cars, have such a potential to reduce those numbers. That by itself is just huge.

The technologies today, with the dynamic cruise controls, the automatic breaking, and the controls that warn you when you're straying from your lane are still accessories. But within a couple of years those are going to be the standards. How many accidents can we prevent with this type of thing? How many lives can we save? So that's really the big thing, how many people can we save each year? How many people can we keep from having crippling injuries each year?



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## How will smart mobility impact infrastructure? And what initiatives do you believe will have the greatest impact on current infrastructure?



**Brulte**

I think the hype around infrastructure is blown out of proportion. It's at the point now where there's a rush in the political realm of autonomy to do something. We want to look cool. We want to look innovative. We don't know today what the changes of the infrastructure will be. Is it great to put drop off and pick up zones? Yes, but that's just a policy change. There's the hyper deep thinking on "we can convert parking garages." But we truly don't know at this point how it's going to impact the infrastructure. What we do know is that it would be great to have roads with no potholes. You have this money burning a hole through pocket for lack of a better analogy.

Instead of saying, "I've got to do something. I've got to spend it on infrastructure." I would just say, "You know, let's have really good lane markings and no potholes." I just think it's too early to tell how it's going to change. Another idea that you could do is build drop-off and pick-up zones to kind of go off-street to allow traffic to continue to move with the indent on the curb.

But as far as radical overhauling changes to the infrastructure it is too early because we just don't know. And the other aspect is who is going to pay for the infrastructure? And that raises a big thing- if there is a rush to do something, when we really don't know what the benefits are or what the changes might be or not be.

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**Kornhauser**

From my point of view, it's automation. And how much automation is going to evolve or revolutionize the way we move around today. And so certainly on the front end of it, it's technology that basically addresses the safety issues and doesn't let us misbehave when we're operating a vehicle. And then the next one would be a comfort and convenience issue. Why do I need to do all this work to get from A to B? Why doesn't it do it for me? Why hit pedals and turn wheels? And therefore, that's probably going to do some things. And then eventually, why not just chauffeur me around and take me from A to B and everything would be great.

On infrastructure- The real reason why maybe any of this has any hope today is because it doesn't require a great deal of new infrastructure. Therefore you don't have a capitalization requirement that makes you have to go to Wall Street on your hands and knees and beg for an infinite amount of money that nobody's going to give you. You can start out of a garage and grow it into some great things. That, to me, is the greatest aspect of today's automation. It makes you focused on the vehicle, not the infrastructure, and you can start out with one vehicle, and then two, and then four, then eight, sixteen and let them go.



**Montanez**

Planning for the future has been a difficult task for us. As we try to manage our right of way and see ways on how technology can make our society safer, real estate has become a premium.

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**Reiskin**

Attracting people into more shared modes of transportation will reduce needs for on- and off-street parking and will enable us to further redesign our streets to better accommodate sustainable modes of transportation such as transit, bicycling, and walking. It could be a self-reinforcing cycle: improvements to sustainable modes of transportation reduce the need for infrastructure to support private automobiles, which in turn frees up space to better support sustainable modes of transportation.

Some of the challenges we just don't know, we're still trying to find out. Is there something we can start putting into our facilities today as we re-build, that will still be useful whenever the technology gets here? What does Houston need to do to get ready for autonomous vehicles? Well theoretically nothing. Autonomous means it drives like a person and I don't have to do anything to my system. What do we need to do for connected vehicles? Autonomous vehicles will have the ability to work autonomously, but the desire is actually have them connected. Whether it's connected, you're in one vehicle and it's connected to the car next it. Right now we know all about DSRC and how it works.



**Weatherford**

But we don't know some of the other things they're looking for, for example, is there going to be something that we would need to put with our speed limit signs to tell people the speed limit's changed? How's the stop sign going to communicate? How is the traffic signal going to communicate? What information is it going to give? What kind of information is going to be traded? We just don't know yet, and we're trying to get ready, but it's hard to do that without some guidance from manufacturers. The traffic manufacturers will tell you, but we want to hear it from the manufacturers of the vehicles and then we can figure out where to go.





# SMART MOBILITY 2018



**Weatherford**  
(continued)

The other part of it is infrastructure. Right now if you go to any downtown what do you see? A bunch of parking garages. You see a lot of skyscrapers but there's a lot of parking garages all over the place. Do we need that parking? It could be that if we can get to that shared vehicle economy, that instead of the 5 million vehicles we've only got a million, so those million vehicles are going to be busy all day so we don't have to have those parking spaces. Right now people spend a fortune on that parking and we just don't know what the needs are going to be in the future.

What are we going to do transit? Transit will probably be some of the first services that really truly go autonomous, but if we go to the shared society are people going to use transit anymore? Or is transit going to be the main, kind of like the airline between the different places, and that the personal AVs will be the first last mile type thing. The other day I went to Chicago, and I got off the airplane, took the train and then took an Uber.

How is all that going to work? That's what we don't know and that's what we've got to figure out. As to how and what will be impacted. Parking, technologies, what we do, how traffic signals work, etc.- but until we actually start getting feedback from the manufacturers, it'll still be hard to say.



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## What are the smart mobility roadblocks specifically impacting your sector? What changes and adaptations need to be made to accommodate?



**Brulte**

Well the biggest problems are consumer adoption and consumer perception. In the state of California, there are only 285 self-driving cars on the streets, according to the DMV. So if you multiply that, we have a state of millions of people with millions of cars and only 285 are self-driving on the public roads. Is that the public has not gone for a ride in the vehicle? It's a gold rush now. Everybody is trying to publish data on consumer sentiment. And they interview people "Do you find a self-driving car safe? Would you go for a ride in a self-driving car?" But they've never gone for a ride. So that's creating a false narrative in the media. 99.9999% of the public have never been for a ride in a self-driving car, let alone a full level five self-driving car. And that's causing this anxiety around it, which is a big issue.

That's the biggest hurdle facing us. For a while it was legislation. However, the AV Start Act passed by the United States Congress and it was passed by a Senate subcommittee. It's currently awaiting a vote on the full floor of the Senate. And if we have that, it will enable what is called preemption. Cities and states will no longer be able to set autonomous vehicle policy, it will be set at the federal level. In a nutshell, it would create a level playing field. It would allow autonomous vehicles to go over state lines, over county lines and over city lines. If we can achieve that, something really magical will happen because entrepreneurs will be unshackled from regulation and be able to innovate and drive us toward the future of autonomy.

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**Montanez**

Updating current infrastructure, as we embark on capital investment of our transportation infrastructure and planning the road network for the future. To accommodate, a road network that will still be useful in 50 years is important. As well as gaining trust from the users for the changes.

Well I think the beauty of what's happening, at least in the automated vehicle field, is the fundamental economic value associated with the investments the players in the field are making now. And in some sense, it's happening outside of government. It's happening in the private sector and not the public sector. It's not relying on government grants, government contracts, or government whatever. Basically, all the technology players are asking to be given an opportunity. Don't put roadblocks in front of us that hinder us. Put welcome signs out there.



**Kornhauser**

Our objective is to provide more affordable, safer mobility. And it needs to be a fundamental value to any smart city initiative. People will be able to get to jobs. People will be able to get to activities. People will be able to get to school. You can design a new living area in places in which people can go to and from the various activities they want to do. So in a sense, it's freeing the city to look at whole new opportunities and land use and so on. All without being burdened by having to provide the mobility systems to serve them.



**Reiskin**

Some current technology platforms are working in the wrong direction when it comes to safety, congestion, accessibility, equity, and other areas important to cities. A change in the regulatory environment to better align new modes of transportation are possible and necessary – the technology is already there.



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**Weatherford**

We just don't know enough yet about how the vehicles are going to communicate with the AV technologies right now. One of the things that cause problems with vehicles that are controlled by where they are based on the GPS is the accuracy of that location. For example, if you're in New York City and notice how your GPS is not necessarily particularly accurate. Basically your vehicle is trying to figure out where it's at. If it says that you're on Fifth Avenue and you're actually someplace half a mile away, that's not a good thing. So how do we rectify that? Some are talking about fixed route transit AVs and putting bread crumbs into the system. So basically, every 100 feet or so you put something in the pavement. Do we need to be doing that? Do we need to have sensors that sit on the ground level and send information to the vehicles? We don't know yet.

We're waiting for the vehicle manufacturers to come to us and tell us what they see as efficiencies, what they need help with, and what they need us to do. And I think that that's the biggest obstacle we have right now. Because we're ready to start doing some of this. It doesn't matter whether it's New York, Houston, or wherever. We're basically building roads every single day and every single time one of those roads is completed it means we're not going back to re-do it for probably somewhere between 30 to 40 years. So something I built today, I'm not looking to do anything major with until 2050, at the earliest.

So if AVs need for me to do something, I'm going to have to go back and retro fit it. How's that going to get paid for? How effective is it? If I actually have to go back and remove the pavement to put some wire underneath there, how do I do that? So the sooner we can get that information, the sooner we can start putting that into our infrastructure, even if it won't really be fully utilized for the next 10 years. We've just got to know what to build.



# SMART MOBILITY 2018

## What are your current priorities regarding smart technology initiatives?



**Brulte**

My current priorities are to get autonomous vehicles on the roads of Beverly Hills and then to build consumer trust and public perception. And then put real data in the market place that make people feel comfortable and then they will get in the vehicles. There is a false narrative that's being actively displayed in the media, to counter this we need to start getting individuals comfortable with the technology. We need to stop deterring the technology and eliminate the false narrative.

It's interesting-if you kind of look at the false narrative being displayed in the media, the public markets are displaying a complete other. They're actively looking for self-driving car stories. GM's stock is up over 32% this year because they've done an incredible job telling the story of the future of autonomy, where as the media is not ready yet. And it's kind of building the consumer trust and showing real world examples.

For example, how will this impact grandma's life? How can grandma go to Bingo night? Let's put her in a vehicle and explain it to her. And say, "Hey Grandma, you can have a gin and tonic and not worry about it. You can have two or three. Knock yourself out." That's one of the biggest issues; that when we do these autonomous vehicle tests, they're not in a real life situation that people can relate to it. Like taking a child to soccer practice, ballet, going to visit a friend or going to dinner. It's imperative to put the vehicle in situations where individuals can relate to them and can understand them.

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**Kornhauser**

The autonomous vehicles, or the drive to have driver-less vehicles to basically provide elevator-like mobility horizontally to cities is the fundamental here. If you look at the value of the elevator to a high-rise building, the land-value associated with the upper floors is zero until you put the elevator in. So all of a sudden, you have the elevator and you can rent out the fourth floor to the fiftieth floor. Otherwise nobody is going to take the steps. Having the freedom of 24/7 mobility is easy and automated. And in a sense the land-value that it returns, pays for itself so it doesn't even cost anything. When's the last time you paid for an elevator ride?

So in a sense, the vision is that true automation might be able to provide this horizontality. The attitude now of creating a smart city – is to basically operate for maximizing the quality of life for all its inhabitants. I mean what other objective is there?



**Montanez**

Learning as much as we can. The technology sector changes at a difference pace than the traditional brick and mortar industry we are used too. Making conscientious choices with the connections for Internet of Things is also a priority. As well as keeping up with the private industry.

Our main priority is to prepare our city for all emergency transportation services and technologies. We have established guiding principles, based on and supportive of existing city policy, to ensure smart technology initiatives work not just for the convenience of the individual but for the good of our city.



**Reiskin**



# SMART MOBILITY 2018



**Weatherford**

Right now, the biggest issue we have is effective communication systems. When we try communicating with our infrastructure, which will eventually communicate with these vehicles, how do we do that? What's the best way? Fiber gives us plenty of reliable bandwidth but there's not a back-hole operator that won't drive at least a quarter mile out of its way to cut a fiber cable so then that drives you into wireless. And wireless is also cheaper. Except for, we have issues with wireless. We've all had dropped calls on our cellphones and that kind of thing, so you know we will run into similar types of things with our technology.

Communication becomes a big issue that's a current priority. That, coupled with how we'd like to start putting some of these things out there that won't interface. We've done some things with our cabinets, where our signal cabinets now are more modular with extra space so that we will be able to sit here and expand. And we can put other things in there like the radios and such to talk to the cars. We know we've got the room for them, we know how they'll be configured to a certain extent, so we can get them powered but we just don't have the programming for them yet, because nobody's done that.

A lot of the signal software people are talking with and working with various different AV manufacturers or people that are looking at AVs. So we know some of the stuff's coming, it's just how to get ready before it. We'd like to get ready for it, we don't just want to sit here and take the aspect of, "Well with autonomous vehicles we don't have to do anything the autonomous vehicle would drive itself." We'd like to do more than just have the vehicle drive itself and have it make its own decisions. We'd like to be able to give it data.



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We're working with one of the universities here, we're getting ready and have talked to several transit AV providers. We think that they're actually more ready for prime time than they'd like to think. We're looking to do a proof of concept on one of college campuses and test it with pedestrians, on low volume roads, transit crossings, and on more high volume roads.



**Weatherford**  
(continued)

We need to get these things out there and we've got places where they can really benefit from AV shuttles and such. Whether it will take place at the Texas Medical Center, University of Houston, or THU. THU and University of Houston actually adjoin each other, so we're looking at maybe a joint one between them. We're looking at this from the aspect that we have a new BRT route that's going to be in protected lanes. I'm actually pushing this with the transit agency. We ought to see whether or not this is viable enough and instead of starting it up with regular BRT buses, just start it up with autonomous vehicles. So, we're looking to push to that future.





# SMART MOBILITY 2018

## Where do you see the future of smart mobility heading and what do you think will be the leading reason for the changes that transportation will see?



**Brulte**

Two-fold. One, I see multi-modal transportation. And two: point to point, on-demand autonomous mobility. I think the future is multi-modal and autonomy is just the glue that will hold it all together. I believe in the future that you're going to describe to a product, service, or brand, or a combination of all three. Where, for example, you're trying to go somewhere. So let's say you need to go from Los Angeles to San Francisco. You'll get picked up at your house by an autonomous vehicle. That will take you to a VTOL landing pad. That autonomous vertical take-off and landing zone will take you to Santa Barbara. You'll be picked up again in an autonomous vehicle that will take you to your destination. And that will all be under one subscription payment.

To take it a step even further, say I'm in Santa Barbara and I want to take a boat out for the afternoon. That autonomous vehicle then takes me to the harbor. I'll hop in an autonomous boat and I'll have that afternoon on the boat. And then the whole journey will then reverse itself and take me back home to Beverly Hills. I believe that's coming and I believe that's going to be under one subscription. And you're starting to see the elements of this happening today and it's going to happen in mostly a few brand licensing deals.

The car companies that are building autonomy will not do those. They don't do brand licensing deals where as of two weeks ago, Astor-Marine partnered with a wonderful gentleman name Bruce L. Jones, who is the owner of a company named Triton Submarines, based out of Florida.

# SMART MOBILITY 2018



**Brulte**

(continued)

There's an Astor-Marine submarine. You can order an Astor-Marine submarine. First deliveries are starting at 2018, in Miami. There's already Pre-orders. Bugatti is now building a yacht. Mercedes Benz is building boats. And all those are just licensing deals.

You'll have a different experience that will allow you to all of those different forms of multi-modal transportation, all wrapped in one monthly subscription. You'll like it because it's great and there is no friction for you as an individual consumer. The brands will like it because it will create a free cash flow. Because currently, the odds of the boats being utilized everyday for hours are highly unlikely and the asset will just sit there. And then now that asset will then be generating cash. You'll like it as a consumer because you're not going to think you'll have to do things on a whim.

When we get to that point, I think it will get really interesting, and that opens up discovery. When you have discovery, the whole world starts to change. It will start bringing everything closer to you and you'll be able to just go out on a whim and see things. So it'll get us out from behind our computers and behind our phones and get us out in the real world, in the same way we did prior to the computer. We're still relying on staring at a phone for everything, when we can have that phone connect everything. Then we can just go out and experience the world again. We're going to enter a golden age which will be really prosperous for the economy. And I think for individuals as a whole, it will be pretty magical.

Connected and automated vehicles and the need for additional safety. I think the future of smart mobility is heading towards electric vehicles and on the go charging. I think big data- who owns it, holds it, sells it, distributes it, or analyzes it- will also be one of the leading reasons for the changes transportation will see.



**Montanez**

# SMART MOBILITY 2018



**Kornhauser**

Well again every piece- I see a horizontal mobility that looks like elevators. Basically you walk less than five minutes to the corner and hop in a vehicle. Maybe somebody else pops in with you and it just takes you to where you want to go. You get out. You forget about it. You go about your businesses. You go on with life. You go to work. You go to school. You go to the ballgame. You do whatever you need to do. It's probably going to be electric powered. Of course at this particular point in time, how that electricity is generated-of course it will be cleaner. Less pollution. And all those other very good things associated with it. And because you don't have a labor cost associated with it and for some of them, you're just going to share it, it's going to be really very affordable.

So in a sense, mobility is no longer a hindrance in terms of providing attractive options for a city. And so it is just that. You don't have to worry about washing your car, insuring it, owning it, parking it, or, if you crash- fixing it. These things really aren't going to crash. They'll still crash a couple of times but certainly not at the rate we're crashing now. That's the good news that I see in the mobility sector.



**Reiskin**

Smart mobility is heading towards a future where people have good options for how they get around, good information about those options, and easy ability to access and pay for them, seamlessly. Leading reasons are that technologies exist today to enable this future to some extent; with the right policy framework, coordination, integration, and collaboration, that future can be achieved, all of which will be necessary for our city to grow sustainably and our residents, workers, and visitors to thrive. Current conditions with respect to congestion, safety, inequities, along with growing threats of climate change create the imperative for smart mobility done right.



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**Weatherford**

Safety is probably the biggest thing. I mentioned previously that annually, we kill between 35 and 40 thousand people a year on our roads. The last number I saw specifically for Texas was last year and it was up around 2,500. But you think about if we had 2,500 people in Texas die because of bad water, people would be outraged. If Houston itself had something like 250 people die on the highways, I'd guarantee if we had 250 people die from food poisoning, people would be screaming bloody murder.

We just accept that that 40,000 people a year across the US is acceptable. And it's not. Then in that 40 thousand people that died, we don't even talk about those that are now on a wheel chair, or lost an arm, are now severely brain damaged, or any other things. Automobile crashes are a public health epidemic and again going back to that 40 thousand people, but I have a feeling that if 40 thousand people died in the US of the flu this year and everybody knew it, people will be screaming bloody murder again.

This is really a public health epidemic and how do we prevent this? How do we stop it? I think that the technologies have the ability to do that. We've talked about if we could find a way to keep accidents due to running red lights from happening. One way to do that is to have the car drive and have the traffic signal tell the car it's changing the signal and that it needs to stop now. You take the human equation out of it.

From the perspective of red light camera enforcement programs and the traffic engineering perspective, they're more effective from an efficiency stand point than they are from a safety stand point. This is because most red light running crashes are catastrophic.



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Nobody sits and says - hey wow look that light's red. I wonder if I can make it across all that traffic. Let me floor it and see what happens. It's when we're not paying attention. Red light cameras don't cure that. The people that are intentionally running the red light are running it at the change intervals; basically as the lights go in from green to red and we all sit there. You know the leading factor involved in all these fatalities is consistently high speeds. And generally the high speeds that are above the speed limit.



**Weatherford**  
(continued)

So the question becomes - how do we stop cars from speeding? Well if the environment tells the car that the speed limit is 55 and the car won't do more than 55, we prevented the guy that's doing 90 miles an hour out there. So, all those things are where I think they're headed and the big drive is just the overall safety. Perhaps we can gain some efficiency, but the FSWA values the human life at about 9 million dollars today. I like to think mine's worth more than that, but when you use their 9 million dollars and you multiply that times 40 thousand, we're talking about an economic benefit here from this. I mean it's just huge. To me, the whole thing really comes down to the safety aspects.

# SMART MOBILITY 2018

## What is one thing you hope someone who attends your speaking sessions will learn?



**Brulte**

Don't be afraid of the future. Embrace the future with open arms so that it's bright and autonomous. This is going to change every aspect of society and every aspect of our life. And we're just beginning to scratch the surface of how this will change our lives. Hopefully you'll walk out and ask yourself a million questions. If they end up walking out of there asking a million questions, we know we did a good job.



**Kornhauser**

Well I think they'll learn that in fact, putting intelligence in vehicles will then provide us the mobility that we would like. It is really something that they should be applauding and trying to make it happen. It's not something to be afraid of. And then be able to take advantage of it now because once one has the mobility opportunity, what attractions do you want to create? What activities would you like for people to sort of mix and integrate themselves into? So again, we improve the quality of life for everyone.



**Montanez**

An understanding of the possibilities for smart mobility and a general realization of the herculean task for a city like Philadelphia with aging infrastructure, challenging political environment, and limited funds.



**Reiskin**

I want people to be mindful about the need to establish good ground rules to ensure that smart mobility works for cities and all of the people who live in them, especially those that are and have historically been disadvantaged. Just because something is innovative doesn't mean it is good; we need to be deliberate in how we embrace, support, and advance smart mobility to ensure it does indeed work for the greater good.



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**Weatherford**

I'd like for them to start thinking about the future and what we need to do with the infrastructure to tie in with the vehicles. How do they need to be connected? What types of information do we need to be putting out there? Are there certain technologies that we need to be putting out there? Whether they're bread crumbs or whether they're GPS targets for them to fix on. What do we need to be doing? What can we do to get ready for it? And also, I want them to start thinking about the policy question. And again getting back to safety.

For example if you've ever seen *I, Robot* with Will Smith. In the really cool autonomous Audis, that he didn't trust so he drove himself, at what point do we sit here and say you can't drive? And that the car has to drive? At what point do I tell you, that's a really cool 1967 Mustang, but you're going to have to basically rip out all the basic electronics and everything else and turn that thing into an AV vehicle if you really want to drive on the road. Are we going to get there? Are we going to do that? How do we sit there and make that work, particularly in America, with people who will say you can't tell them to do this kind of stuff. But if their vehicle is really hazardous, at what point do we start doing those things?

I want for people to start thinking about these issues. It's amazing when you talk to people in the various industries and everything, they're not thinking about them. Everybody talks about the shared vehicle concept but that they're not recognizing that the manufacturers are going to say that we want everybody to have their own. We really need to be thinking how it all works together and I don't think that there are enough people doing that.

# SMART MOBILITY 2018

## About the Speakers:

### Grayson Brulte



Influential in Beverly Hills, Grayson Brulte serves as the Co-Chair of the City of Beverly Hills Mayor's Autonomous Vehicle Task Force. He is also an active member of the city's Smart City / Technology Committee which advises the Beverly Hills City Council on technology. In 2015, the City of Beverly Hills was chosen by Google as one of America's digital capitals. Grayson is the Co-Founder / President of Brulte & Company, a consulting firm that specializes in designing innovation and technology strategies for a global marketplace. Grayson is also the Co-Founder of Autonomous Tomorrow. His comments have appeared in numerous publications, including The Financial Times, The Los Angeles Times, Chicago Tribune, The Telegraph, The International Business Times and The Hollywood Reporter.

### Alain Kornhauser



Dr. Alain Kornhauser is a Professor of Operations Research and Financial Engineering at Princeton University. He is also Director of Princeton's Transportation Research Program and the Faculty Chair of Princeton's Autonomous Vehicle Engineering. In 1979, Dr. Kornhauser founded Alk Technologies, Inc. and he currently serves as the Director and Member of Board of Advisors. ALK Technologies Inc. provides design and implementation of transportation, navigation, and logistics management systems for transportation, logistics, mobile workforces, government agencies, and consumers in the United States and internationally. Dr. Kornhauser led the development of the CoPilot suite of portable in-vehicle navigation systems for consumers and business professionals.



# SMART MOBILITY 2018

## About the Speakers:

**Richard Montanez**



Richard Montanez is the Deputy Streets Commissioner for Transportation for the City of Philadelphia. He is responsible for the maintenance, operation, and improvements of approximately 2,500 miles of local roads, 3,000 traffic signals, 280 bridges, over 100,000 street lights and 18,000 alley lights in the City of Philadelphia. Montanez leads the Streets Department in a variety of efforts, such as transportation management, operations, Intelligent Transportation Systems, Vision Zero, and Smart Cities and is responsible for the development and implementation of the transportation division's strategic plan.

**Ed Reiskin**



Edward D. Reiskin, Director of Transportation of the San Francisco Municipal Transportation Agency (SFMTA), oversees the Municipal Railway (Muni), parking, traffic engineering, pedestrian planning, bicycle implementation, accessibility and taxi regulation.

**Jeffrey Weatherford**



Jeffrey Weatherford is the Deputy Director of Public Works and Engineering for Transportation and Drainage Operations for the city of Houston, Texas. Weatherford oversees all of Houston's traffic operations and transportation engineering functions, throughout the city's 640 square miles and 6,000 center lane miles of streets. Weatherford serves on the H-GAC Technical Advisory Committee, the Transportation Planning Council, as well as the Houston Transtar Leadership Team. Transtar pioneered the use of traffic monitoring using Anonymous Wireless Address Matching (AWAM) and its transportation management activities has saved commuters \$5.4 billion in reduced traveler delays and fuel costs.



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