

Inside Citywide Podcast Transcript

Episode Two: NYC's Electric Vehicle Future

Michael Santos: You are listening to the Inside Citywide podcast, brought to you by the New York City Department of Citywide Administrative Services. Inside Citywide provides you with a behind the scenes look at some of the work we do to serve the people of New York City.

Nick Benson: Hello, everyone. Welcome to Inside Citywide. I'm Nick Benson.

Belinda French: And I'm Belinda French. We would like to thank you for joining us.

Nick Benson: For our second episode, we have two excellent guests joining us today for a conversation about electric vehicles at DCAS. We manage the city of New York's vehicle fleet, which includes everything from firetrucks to police cars, to garbage trucks and everything in between.

There are now over 2,800 electric vehicles in the city fleet, and we're going to discuss what the city has accomplished to date and how the city will achieve an all-electric municipal fleet by 2040.

Belinda French: We're also going to discuss how the City's encouraging broader public adoption of electric vehicles and how this fits into the City's ambitious climate goals.

Nick Benson: Our guests today are Keith Kerman, who is the chief fleet officer for the City of New York and the deputy commissioner for fleet management at DCAS. Welcome, Keith.

Keith Kerman: Thank you, Nick, Belinda, and Jen Robertson. Great to be here with you. It's an exciting time with the electric vehicles and great to talk about it.

Nick Benson: And we're also joined, as Keith mentioned, by Jen Robertson who serves as senior transportation advisor for the Mayor's Office of Sustainability. Thanks for joining us, Jen.

Jen Robertson: It's really great to be here. Thanks for having me.

Belinda French: All right, Jen. So, I think we're going to start with you. And before we delve into the specifics of our electrical vehicle conversation, we'd like you to give us a larger context. What are some of the City's overall climate goals?

Jen Robertson: Definitely. So, New York City's goal is to be carbon neutral by 2050, which looks like having net zero emissions and a reduction of at least 80% of the emissions that we have here in the city. Transportation is the second highest emitter of carbon in New York City and reducing the carbon footprint is actually very complex. To put this into context, reaching our goal of carbon neutrality by 2050, looks like having 80% of trips in 2050 be taken by a walking, biking, or mass transit and the remaining 20% being taken by vehicles. This means that we need to seriously deprioritize vehicle travel, and when they are necessary for commercial or accessibility reasons, these cars and trucks must have no

emissions coming from their tailpipes. For us to build the infrastructure needed to reach net zero carbon, one of our biggest projects is rapidly expanding the charging network for electric vehicles here.

We released a study last month with Con Edison and National Grid called carbon neutral New York City, that models pathways towards our carbon goals and transportation, buildings, and energy. By 2050, the study models that 1.5 million electric vehicles will be needed on our streets to reach our goals.

Right now, we have under 20,000 electric vehicles and only around 800 publicly accessible charges. For us to get to where we need to be by 2050, we need nearly 1 million chargers. So that's a lot more than we have today. So, we have our work cut out for us. Leveraging the City's fleet, however, which is the largest municipal electric fleet in the nation, as a key stakeholder will move the market towards electric vehicles in New York through our purchasing power and infrastructure investments, including installing chargers that the public can actually use themselves.

Nick Benson: And Keith, as Jen mentioned, obviously an important part of the puzzle in accomplishing the City's climate goals is to lead by example, including with the way we manage the City's vehicle fleet.

The mayor set a major goal of having an all-electric vehicle fleet by 2040. Why electric vehicles? Do you think this will be the technology that will finally begin to wean us off fossil fuels?

Keith Kerman: Yes, I think so. Electric does a number of things. First, air quality emissions, right? Zero emissions is as good as you can get in air quality. Asthma are huge issues for the City. We operate the largest fleet in the city of 30,000 vehicles and a lot of those are trucks and heavy-duty equipment. So, getting to zero emissions, um, hugely important. Of course, also electric is a big step forward in our climate, um, change in our climate reduction goals. So, addressing greenhouse gases.

We've seen an enormous improvement in increase in the electric vehicle industry in just really the last 15 years. It's a remarkable thing, but in 2006, a well-done documentary was done and it was called who killed the electric car. It was an interesting documentary with a premature obituary on the electric car and truck industry has really grown tremendously, um, in certainly in the last 10 years, but really in the, just the last few years, if you'd asked me three years ago, is there a viable electric van, a viable electric pickup truck, a viable electric garbage truck out there in the market, electric SUV, I would have told you no. Today, all of that is available. So, we've seen a real growth in electric vehicle models, um, electrification, in addition to the air quality emissions, the climate emissions. It's quiet, right? The internal combustion engine is many things. It's very inefficient and it's very loud. It's based on constant explosion. Nothing particularly attractive about that. So, you're also getting a quieter a vehicle and a more maintenance effective vehicle. You know, we did a study, and it was picked up by Axios, that our all-electric vehicles are getting about two-thirds the maintenance reduction.

So, they are two thirds less costly to maintain. You don't have as many things to break. You don't have the engine, the transmission, the fuel system. So electric vehicles, zero emissions at the tailpipe, hoping to address climate change and frankly, they can be a less expensive, quieter and better vehicles to drive.

Belinda French: So Jen, in addition to the work the City is doing with its own vehicle fleet, there is obviously a need to invest in broader public electrical vehicle charging infrastructure. What kind of infrastructure will the City need to build, and where is the line between what the City does and what charging infrastructure might come from the private sector?

Jen Robertson: Definitely a crucial question. We know from data collected by the City's Department of Transportation, that around half of New Yorkers with cars park their vehicle on the street most of the time. So, charging a vehicle while parking overnight is largely out of their hands in comparison to people with a private driveway or garage where they can install a plug for their vehicle themselves.

The most immediate short term step is to get charging plugs into the hands of New Yorkers. We're working closely with our utility Con Edison to pilot 120 charging plugs that will be installed on the curb to serve drivers parking on street, a key component of our plan, distributing chargers to where people are already parking their vehicles.

Keith can definitely speak to this more than me, but we are very proud that our City fleet is the largest electric vehicle charging network in the state, and they're opening up eight fast chargers for the public to use alongside their vehicles. This is definitely helping us move towards more infrastructure for New Yorkers. The Department of Transportation will be expanding charging availability at their municipal lots and garages with two sites slated to open soon and an additional five sites to be open next year with four fast chargers per site. The Department of Transportation also expanded the clean trucks program and are piloting over 350 cargo bikes to complete deliveries, both of which are replacing truck trips that are more polluting and less efficient and congest areas of the city. So, balancing our goal to expand charging access while also incentivizing people away from unnecessary car trips, especially in areas like Manhattan which has some of the world's best access to public transit and bike share, really looks like doubling down on electrifying fleets first, representing trips that can't be switched away from a vehicle easily and providing also more options for people to walk and bike and take transit where vehicles may be not absolutely necessary. To drastically cut greenhouse gas emissions produced by vehicles, we need to focus on converting taxis to trucks, to electric vehicles.

The City has taken a number of steps to support businesses to do this, including the City's Taxi and Limousine Commission recently approving a pilot program to expand the number of electric vehicles allowed in the yellow taxi fleet. The mayor also just announced a month ago that our school bus fleet will be all electric by 2035, but plans to scale the City's first two school buses currently operating to purchasing at least 75 school buses.

In the next two years, these programs are just some examples of how our work expanding electric vehicles and chargers as explicitly targeting large fleets, both privately and publicly

owned. Electric vehicles are definitely a viable, viable option for New York City, and it starts with our own fleet operations as innovators in this field.

Belinda French: Thank you, Jen. Uh, you know, building on that, Keith, you told us a little bit about your take on the viability of electrical vehicles, but what has the City done to date to build its electric fleet and transition its fleet to cleaner and greener technologies?

Keith Kerman: Well, we've made a lot of good progress. New York City's fleet currently operates 2,800 electric vehicles and 1040 charging ports, both of those are the largest programs in New York state. So we are leading the state in these efforts. And there are some really exciting and interesting aspects of that. Almost every one of our ambulances now is both hybrid and plug-in. Something that I'm sure very few New Yorkers would realize. If you see an ambulance that has an FDNY green on it, that's the initiative to reduce emissions from our ambulances.

The Department of Sanitation has recently started to test its first all-electric garbage truck. Garbage trucks are the biggest users of fuel in the City fleet, as well as the most difficult units to maintain, critical to the cleanliness and of course, snow operations in our city. And we just announced last week, the first all-electric street sweeper. It's an interesting fact, but New York City operates the largest street sweeping program in the world. We will very soon announce a really exciting development at the Parks Department with all-electric garbage trucks at the Parks Department. We have sedans, SUV's, crossovers, minivans.

The mayor operates in an electric minivan as his vehicle. Already on contract. And this year, we will be bidding all-electric SUV, all-electric pickup, all-electric van. And then an all-electric what we call a class three truck. But if you think about sedans, SUV's pickups and vans, that's most of the vehicles that operate on the streets of this country, right?

Most people own one of those four types of vehicles, and there are viable electric options in all of them. I do want to say we really have a three-part strategy on reducing emissions. Obviously by 2040, it's going to be one part strategy, all electric, but as we move toward that, our three-part strategy is electrify wherever and as quickly as you can, we don't have electric options in everything yet. New York City operates 160 types of vehicles. So, there are some we don't have. Hybrid and more fuel-efficient vehicles where we don't, that's our second strategy. And so, at the police department, we've already begun the transition to all hybrid police cars.

We will soon test the first all-electric police car, but as we work to develop a viable all electric pursuit rated vehicle, we are in the implementing hybrids. And the third strategy for diesel equipment, heavy trucks, and also off-road equipment (we operate 5,000 off-road pieces, construction pieces, agricultural tractors, snow melters) is biofuels.

If we have to use diesel fuel and diesel is 60% of the fuel we use, we want it to be biofuels. So, we began with biodiesel, which we've been using for 15 years. We're now testing and hopefully, we'll soon implement in a large scale, renewable diesel. Biodiesel is used as about 20% of your fuel, but renewable diesel can completely supplant regular diesel.

So, the three parts: electrify where you can, hybrid and more efficient vehicles for the other vehicles, and then everywhere in the trucking and off-road side use biofuels until you get to an all-electric future, which for us will be 2040.

Nick Benson: And Jen, you focus broadly on transportation in your role in the Mayor's Office of Sustainability. In addition to the City's work with electric vehicles, what else is the City doing in the transportation space to achieve its sustainability goals?

Jen Robertson: So I can't say this enough, most of the work we need to do in transportation involves getting people out of cars and onto bikes, sidewalks, mass transit.

Based on the latest data, we have a mobility trend nearly 70% of trips are taken on an active mode or on a bus or subway. So, getting to 80% of trips by 2050 is definitely within reach, but still requires an investment and rethinking our street space. We continue to make inroads into expanding non-vehicular options for New Yorkers.

The mayor committed just last week during the streets week to adding 30 miles of protected bike lanes and bike boulevards this year, as well as building or improving 28 miles of bus lanes. Electric bikes and electric scooters were legalized last year. And the city just launched its first pilot of electric scooter share, which includes its first of its kind wheelchair attachment to make sure New Yorkers of disabilities have equal access to this new mode.

And our own fleet, we have introduced electric cargo bikes as well to meet the need of our staff when a vehicle may not be the most appropriate tool. So, thinking beyond vehicles is crucial as well to our sustainable future here.

Belinda French: Great. Keith, one fairly recent development has been the City's focus on fast electric vehicle charging. How have fast chargers, which we know reduce vehicle charging times, made a difference to date, and how do you see this technology continuing to evolve?

Keith Kerman: I do want to follow up one thing about Jen said. While I am the City fleet chief, I spend most of my own travel in the New York City subway and on my very fun mountain bike. So, I would agree. I do far more miles myself in the subway on my bike than I do in a car and I run the fleet. So, I agree that if you don't need to use a car, you shouldn't. In terms of fast charging, we've seen a lot of progress. So, I mentioned that we have 1,040 chargers and that is growing. So, when we started with electric vehicles, it was mostly what are called level two chargers.

Those are slow chargers. You use a vehicle during the day, then you plug it in all night, take eight to 10 hours to charge, but you don't care because you're asleep. You're doing your thing. And then you wake up and you have the car. But as we grow this initiative, as we become more ambitious, as we look to policing vehicles, as we look to two shift and three shift vehicles, as we look to school buses and trucks, as electricity becomes responsible for emergency fleet operations, we need to have fast charging.

So, we are in the progress of completing our first rollout of fast charging. 100 fast chargers about 70 are done. I think 28 are in construction now, we have a couple more that we're

completing. And we will have a network of a hundred fast chargers all over the city with I think, 13 different agencies in every borough that are going to be available to everyone.

So, we're going to have that asset. We also plan to grow and do even more fast charging. One thing about charging in electrification and electric vehicles, the charging always has to come first, right in the chicken or the egg question, the charging, I don't know if it's a chicken or the egg, but it's got to come first.

Right? We can't buy hundreds and hundreds of electric vehicles, show them, you know, they show up and then everyone says, "well, where are you going to charge?" So, the charging infrastructure really is the key. The fleet has moved tremendously, but the charging infrastructure is the key, and it's always going to have to come first.

So, we're always going to have to be a couple of years ahead in building our chargers so that the plugs are there when the vehicles show up. I'll say one other thing, we also have in New York City a really unique asset. We have the world's largest system of solar freestanding carpool. So, electric charging of course gets its power from the grid, which has various sources and it's fairly clean in New York, but the best possible option would be zero with the vehicle tailpipe and zero in the production of energy. So, we have 87 solar carports. Now they're all over the city. They don't plug into the grid. They quite literally tow in play. Um, and they're charging each about two or three light duty electric vehicles each.

In addition to being another form of charging. These are also very interesting emergency assets and we really purchase them as a form of secondary emergency generator. As we become electric vehicle dependent, we will need to think about the redundancy in emergency issues. If the power goes out today, our fleet does not depend on it.

Yeah, we have liquid fuel sites. And if the power goes out throughout the city, the police cars and ambulances and sanitation trucks just operate on liquid fuel. As we become electric dependent, the fleet will now be dependent. And when I say the fleet, I mean, emergency services in the city will be dependent on electricity. So, we're going to need backup power sources. Solar is one of the ones we're looking at.

Nick Benson: And Jen, I imagine a transition to electric vehicles and other green technologies, not just in transportation, will have a positive impact on the local economy. How do you see these technologies impacting jobs and economic growth in New York City?

Jen Robertson: So when we're talking our economy, what we're talking about at the end of the day are the lives of the people who call it the city home. We know that from COVID-19 to climate change, a crisis does not impact everyone equally. And one big factor we can point to is racial and economic inequality.

Recovering from the pandemic requires the City to continue to create good paying jobs and invest in our residents, especially those in frontline communities. For example, our open streets program was launched last year as a response to needing more space for social distancing and taking advantage of the rapid decline and traffic during the first wave of the pandemic.

We now have over 10,000 restaurants operating on the streets and sidewalks, providing small businesses a way to operate amid social distancing rules, as well as continuing to provide space for residents to enjoy the outdoors. Just last week, the mayor announced 10 open boulevards operating across all five boroughs that provide street seats, plazas, street performances, art installations, and basically giving more space to people. These open boulevards also provide safe passage for cyclists and pedestrians to travel without cars. So instead of traffic congestion, we will have vitality added to these streets that benefits local businesses and residents. Ground was also broken last week on New York's first on-street charging infrastructure project, which as I mentioned is a partnership between the Department of Transportation and Con Edison.

We are also installing charging at our municipal lots and garages. The City's fleet is rapidly electrifying as Keith has mentioned and installing hundreds of chargers as well. These sorts of investments represent immediate jobs for construction crews installing chargers, electricians wiring and maintaining the equipment, and even salespeople getting more electric vehicles on our roads.

These all represent jobs for New Yorkers coming out on the pandemic. So, for us to just transition involves us rethinking how streets can be for our residents and small businesses, as well as working towards training the workforce of tomorrow.

Nick Benson: And building on this talk of the economic impact of electric vehicles and green technology Keith, how do you think the adoption of electric vehicles will impact the city workforce? I imagine we'll need experts who understand the technology and who can service the vehicles. What kind of skills will city workers need to succeed in the fleet industry of the future?

Keith Kerman: Well, New York City is unique in that we have 1400 skilled trained permanent civil servant mechanics. So, we have an enormous repair technical capacity for the City fleet to make sure our ambulances, our fire trucks, our emergency service units, the sanitation trucks, the sweepers, our DOT street paving equipment are all operating out there 24 hours a day. So, there's a real dynamic in transition happening in the fleet industry.

The traditional vehicle is the combustion engine vehicle. A mechanic really had to learn how to repair an engine and transmission. That was your core skill. We're really seeing two different areas of technical specialty now merging with fleet. One of course is the whole electrical specialty, right? Hybrid batteries, full electric batteries are becoming the key propulsion systems for vehicles.

So that's a different electrical skillset as well as the charging infrastructure. Really depends on electricians. We've been doing out of DCAS, training for mechanics and electricians now because we kind of need the electricians, which was traditionally a building's trade, and mechanics were fleet trade, but honestly the whole electric charging infrastructure is going to be a, you know, a building's trade.

It's chargers tied to buildings. So, electricians are now part of our mix. The third area is information technology. It's IT. DCAS is unusual in really the country in that the number two

person in our fleet operation, the deputy chief, is an IT professional, Eric Richardson. And there's a reason for that.

We operate nine different technology systems and are data and information and technology dependent. And you're seeing that in the core design of a vehicle, the vehicles were becoming computerized. Right? We know that some electric vehicle companies are actually doing software upgrades to the cars out on the roads every week.

Right? So, you think about, you know, your laptop computer, and every once in a while, you have to pause while you update all the software, cars are now getting the same software upgrades. So, we really see the industry changing three areas: the core mechanical trades, still very important, the electrical trade, and the IT trade.

So, it's becoming more demanding. We are going to need to help our mechanics make that transition. We of course have a great partnership with the Department of Education in training, the mechanics of the future of the automotive high schools. And they do internships with New York City. I'm actually very pleased to note that we are going to restart our automotive hands-on internship program in just a few weeks.

Thanks to the improvements in COVID-19. We did lose a year last year. And so there's a lot of challenges in really upping the skill level, expanding the skill level, but I've no doubt. We have a great team of professional mechanics who've taken care of this city 24/7 for decades, and we'll be ready for the future.

Belinda French: Thanks, Keith. I have no doubt about that either. Jen, I have one final question for you. What will success look like if the city succeeds in achieving its climate goals, you can speak first to transportation, but overall, what will success look like?

Jen Roberton: So, reaching our climate goals looks like creating a fully accessible transportation system, free of pollution. And getting there and fighting climate change is both a local and a global battle. Globally, we know that emitting carbon emissions at the rate we are doing today, and certainly at the amounts humans have put into the atmosphere going all the way back to the industrial revolution has warmed our planet in ways that threatens the survival of our species. Coordination from cities, states, and countries all committed to reduce emissions as rapidly as possible is absolutely necessary.

For transportation, it looks like decarbonizing our transnational supply chain of goods and services from manufacturing to its final destination. Locally, we historically have had some of the worst air quality concentrated in areas with disproportionately high numbers of New Yorkers of low income. Environmental justice is crucial to improve the day-to-day lives of all New Yorkers.

In the City's roadmap to 80 by 50 report, we found that particulate matter from tailpipe emissions caused 320 premature deaths and 870 emergency department visits annually. With the worst impacts coming from trucks and buses and areas of high concentrations of residents living below the federal poverty level.

So economic disparities and historic disinvestment in areas where we have concentrations of heavy vehicle traffic near the homes of vulnerable New Yorkers is prioritized in our transition to a zero-tailpipe emission future by doubling down on transitioning large fleets first, which creates some of the worst air quality, and starting with our own vehicles as early market innovators.

We're also right-sizing our own fleet by at least a thousand vehicles using telematics remove unnecessary vehicles from the streets altogether. So again, getting back to getting rid of cars and it doesn't make sense, but making sure we have zero-tailpipe emissions for the vehicles that remain.

Studies like our carbon neutral New York City study, we've done the math, showing that meeting our 2050 climate goals is definitely possible, and it has benefits in the global fight against climate change as well as reducing local pollution.

The challenge we face now is making sure that we invest in infrastructure that puts the needs of our most vulnerable residents first.

Nick Benson: And Keith, one final question for you. Where do you see the electric vehicle industry and clean fleet industry heading in the coming years and decades? Is America ahead of the curve or are we at risk of falling behind other countries and competing to be the leaders in these industries?

Keith Kerman: Well, there's good and there's bad news. So, you know, the good news, is that we've seen an enormous improvement in electric vehicle options. A lot of interest in what's taking place. And more understanding of what's out there. Right? So, a lot of countries around the world who have committed to electric vehicle adoption, a lot of major manufacturers have said that they're only going to sell electric cars by 2030 or 2035. Right. Big moves.

The challenging news. Most people still today do not understand electric vehicles or even hybrid vehicles. Most people when they go shop for a car are still shopping a traditional gas vehicle. So, we know the good news, the industry, the technology is there. That is not the challenge, the combustion engine vehicle is an incredibly inefficient wasteful way to get around. It wastes over 70% of the fuel you put into it. It's smelly, it's dirty, it's polluting, it breaks down a lot. There's not a lot to it. Right? You know, I've no doubt that Americans are pretty into personal transport. You might not break the car culture for a while, but you can break the gas station and the combustion engine culture.

Right? But we need to do a lot more to educate, you know, the regular driver and the average American, the average New Yorker, about these options. Also, frankly, electric cars are great, right? There's some idea, "oh, they're weak cars and they don't work that well. And I'll sacrifice so much." And the truth is most people who would say that have never been behind the wheel of an electric car.

The first time I was ever behind the wheel of electric cars was an electric Mini Cooper. And I was going up the ramp off Randall's island to Queens and I press the accelerator and I almost

shot myself over the side because it went so fast. It was like a roller coaster. And it went *woosh*, and there you go. And then I'm like, oh my god, who knew?

Electric cars are great vehicles to operate. The top luxury vehicle in the world today, not the top luxury electric vehicle, the top luxury vehicle in the world is an electric car! There's a reason for that. The technology's there, DCAS gets a hundred miles per gallon on average fuel economy today. We're there in terms of the technology and that will only get better. But on getting the broader understanding of this out there, changing the culture of driving is critical. Right? We, you know, we don't have to convince anybody. You don't need a government program to get an iPhone. The government doesn't give you an incentive for iPhones. We don't have an initiative.

People get the iPhones just well on their own. We need to get electric cars and fuel-efficient cars to that place where people are buying them because they understand them and want them. That will drive the big scale change we need.

Nick Benson: I really want to thank you both for this informative conversation.

Keith, I've worked with you for over three years now, and I'm always so impressed by what you and your team accomplish and the passion you have for your work. New York City is truly an international leader in fleet management and it's thanks in large part to your leadership. So, thank you very much for everything you do.

Keith Kerman: Thank you, Belinda and Nick and Jen. It's great to do this. And, you know, you all play as critical a role, you know. What I just said, and I really mean it. Public information, public education is the key here. I think much more than technology enhancement at this point, is going to be your role in spreading the word, helping people understand what's possible.

Belinda French: And Jen, thank you as well for joining us today, your office has been pivotal in setting some of the most ambitious climate goals in the country and building a roadmap for how to get there. You have a great team at sustainability and your work is a model for cities all over the world. Thank you so much.

Jen Robertson: Thank you so much for having me. It's really great to be part of the Inside Citywide conversation, and definitely agree a hundred percent with Keith that getting the word out there is so key, and this is a great opportunity to do that. And, um, definitely could listen to Keith talking about electric cars probably all day, to be honest, I find this stuff really interesting. So, I really appreciate getting to know you and being part of the conversation. This is I think really fantastic.

Nick Benson: All right, we really appreciate it. Thanks so much to both of you.

Michael Santos: Thank you for listening to Inside Citywide, a podcast brought to you by the New York City Department of Citywide Administrative Services. To learn more about DCAS, visit our website at nyc.gov/DCAS.