STATEMENT OF

THE HONORABLE MARTHA CASTEX-TATUM

VICE MAYOR PRO TEMPORE AND COUNCILMEMBER, HOUSTON, TEXAS

ON BEHALF OF THE NATIONAL LEAGUE OF CITIES

BEFORE THE

HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

SUBCOMMITTEE ON HIGHWAYS AND TRANSIT HEARING

"THE ROAD AHEAD FOR AUTOMATED VEHICLES"

FEBRUARY 2, 2022

Good morning, Chair Norton, Chair DeFazio, Ranking Members Graves and Davis, and Members of the Subcommittee:

I am Vice Mayor Pro Tempore Martha Castex-Tatum from Houston, Texas, and the council member of District K, a growing area on the southwest side of Houston. There is a unique level of responsibility when you are the council member representing your mom and dad, your ninth-grade science teacher, eighth grade basketball coach, and so many others in the community where you were raised. I am honored to serve and impact city government which in turn impacts the quality of life of our shared constituencies. Houston must be a safe and thriving city for them to live, work and play.

I am here today on behalf of the National League of Cities (NLC) - the nation's oldest and largest network of cities, towns and villages across America. I would like to share with you our city's experience with piloting autonomous vehicles (AVs) and to share the collective wisdom of our city leaders who are both leading the way for AV testing programs and calling for safer streets, sidewalks, and vehicles. Today we are losing far too many of our residents to dangerous roads, driving, and vehicles.

Last week, NLC applauded the USDOT releasing their National Roadway Safety Strategy, a roadmap for addressing the national crisis in roadway fatalities and serious injuries, and we thank Congress for including a new local *Safer Streets and Roads for All* program in the Bipartisan Infrastructure Law. We must change the current transportation status quo which is no longer serving us well. Houston has set the goal of

zero fatalities on our roads. We have lost over 200 lives on Houston's roads plus more than 1,000 serious injuries every year since 2014. Zero is the only acceptable number of deaths on America's roads. We want you to know that city leaders are committed to eliminating these fatalities and serious injuries by 2030, through our city efforts like Houston's Vision Zero program as well as our collective efforts at the NLC like the "Safety First Challenge for Safer Streets" and through participation in the Road to Zero coalition. We look forward to being able to access the safety funds and other programs in the bipartisan infrastructure law new programs once Congress has passed their annual budget which is overdue. Some of the benefits of the bipartisan infrastructure law are being unnecessarily delayed due to Congress' failure to pass the fiscal year 2022 appropriations legislation – this includes programs like the new competitive bridge program even while we saw the horrific photos of a bridge failure last week. At the local level, we are willing to make every effort to reduce fatalities using every possible strategy, including AVs, but we need Congress to complete their fundamental duties here in Washington so we can move the benefits of the bipartisan infrastructure bill forward.

Cities are proud of our reputation as leaders in transportation and innovation. We know we are the ideal laboratories where new mobility models are gravitating to pilot today as many more companies move from test tracks to real streets. From transportation network companies, to bus rapid transit, to micromobility, to shared cars and AV shuttles and buses, the transportation of the future is shared and connected - and it is here today.

Solutions like shared AV rides are important because we cannot just replace a regular gasoline car with an autonomous one. Congestion today demands that we leverage as many shared and connected options as possible. Cities are aiming to create the right environment of shared, safe, connected, and autonomous transportation options that will better serve our residents and meet our goals. While these are significant ambitions, local governments orchestrate most aspects of public transportation in their areas, and our experience and authority equips us to understand both the opportunities and challenges of new entrants to city streets including AVs which we're here to focus on today.

Houston's AV Pilots

Piloting and testing of AVs is happening today on our streets in Houston, across Texas, and in many other states where they are actively passing legislation. As our industry is being shaped, Congress remains a critical leader to:

1) ensure safe operations,
2) prepare our workforce for the great jobs ahead, and
3) invest in foundational transportation planning and technology that will serve us in more sustainable and practical ways.

Autonomous Transit Pilot

Houston METRO, our transit agency, was the first entity in our city to start piloting a self-driving shuttle at Texas Southern University in 2019. It operated on *Tiger Walk* and

served students moving around campus. The Operational Plan laid out some of the infrastructure preparations made to ensure a safe pilot for a new technology, including:

- An emergency operator was on board;
- Emergency procedures were created with TSU's Department of Safety;
- Post-Accident Testing Decision Maker and Notification Testing Form was developed;
- Signage for pedestrians (not for AVs to read) was implemented on the Walk;
- Guests and METRO personnel were required to complete a consent form before boarding the shuttle; and
- Surveys were conducted at the end of rides.

While the METRO EasyMile shuttle pilot has ended, METRO is starting Phase II to provide first and last mile service between Texas Southern University and the University of Houston in 2022-2024. This "Shuttle of the Future" will be an electric shuttle with Level 4 autonomous self-driving and leverage the Federal Transit Administration's Accelerating Innovative Mobility Grant as an Autonomous Vehicle Proving Ground. METRO will continue its involvement in the Automated Bus Consortium, a national collection of transit agencies and departments of transportation to facilitate development of a full-size electric automated bus. Transit continues to be where so much of the value of automation can be realized.

Autonomous Zero-Occupant Delivery

Houston is also one of the first cities to see AVs conducting commercial delivery service, with the deployment of Nuro's zero-occupant, electric AVs, and I am glad that my own District K was one of the first three zip codes where service launched. These vehicles are offering our residents more zero-emission options with lower speeds and smaller, lightweight vehicles. Since 2019, Nuro has delivered groceries, prescriptions, and hot food in partnership with Kroger's, Domino's, CVS, and the Houston Food Bank, which has been helpful during a time when we needed to social distance but also required necessities such as groceries and medicine. They also just completed a year-long research pilot with Houston METRO, exploring the benefits of autonomous delivery service for paratransit customers.

When Nuro first came to District K, we made arrangements with our local police officers to allow them to see the vehicle, understand how to access it in an emergency, and ask questions. Nuro's Law Enforcement Interaction Plan provides the procedures, instructions, and vehicle information necessary to support first responders in the event of an emergency or other issue. They also validated the technical capabilities of their software through perception testing with the Houston Police Department to ensure their AVs detect and respond to emergency vehicles. Prior to testing, and throughout deployment, we saw outreach to our local communities and regular engagement with first responders and city staff to ensure Nuro's vehicles are safely moving into our neighborhoods.

As a mother raising an infant, the promise of an autonomous vehicle delivery dropping off necessities would have been a welcome option from having to pack a diaper bag, then a child into a car seat and go through the motions of parking, unloading, sanitizing the cart, check out, reloading, arriving, unloading my child and the bags, and finally getting settled in, back at home. The time saved, anxiety and elimination of a potential incident on the road are clear reasons to see these opportunities and change it for the better. Sometimes we do not realize the hurdles we create because of the inherited design and land use previous generations made that impact our daily lives.

AV Infrastructure Needs

As autonomous vehicle companies have said before in front of Congress, these vehicles are designed to operate on the roads as they exist today. While most have to extensively map, learn, and grow their testing areas, AVs do not require any new infrastructure improvements specific to autonomous vehicles. However, they do benefit from roads in good shape like any car or driver. If we had to redesign the roads or chip every asset as some suggested to allow AVs on our roads, the cost for local governments who own and maintain the majority of the nation's roads, streets and sidewalks would be untenable. Design of our roads is a critical issue for cities like Houston, and we welcome the opportunity to work with Congress to ensure that guides, like the Manual on Uniform Traffic Control Devices, evolve into the modern and technology-forward tools we need that reflect the budgets we must be realistic about.

The nation's city leaders see that AV technology is here so it cannot be ignored or left in a regulatory limbo while it operates on our streets. In my role as a Councilmember, my

job is to ensure that if the technology is here, then we must prepare to use it well and be willing to speak up when challenges exceed our local reach. Today, NLC is providing three recommendations for federal action that will promote safe AV testing if done correctly and also grow job opportunities in the U.S. as well as urge you to pass the fiscal year 2022 appropriations legislation so the America's infrastructure work is not further delayed.

1. INVEST IN PILOTING WITH LOCAL GOVERNMENTS

America's cities are open to piloting more technology safely that can make our residents' lives better, and Congress and the U.S. Department of Transportation can support localized piloting in a new effort with strong federal safety guidelines. We need to move forward on piloting this technology, particularly for shared uses and in areas of the country that feel left behind, and USDOT has the authority to act on this today. While large hub cities naturally have technology partners interested in testing, thousands more cities and rural towns are interested in what an AV shuttle, like METRO's, or even just one delivery AV, like Nuro, could mean for their community. NLC believes that we can see clearly from our current landscape that simply allowing exemptions and opening up wide areas for testing alone is not going to meet the transportation needs of our country especially in rural and suburban communities. The intentional scaling and spread of piloting to different areas and climates, data exchange, and transportation planning can fundamentally impact our transportation rides as a country and allow for federal safety regulators to have the necessary data to move the

whole autonomous industry forward out of its current limbo and exemptions process. A national pilot under USDOT's careful safety watch could also:

- ensure the type of local safety preparations that we used in Houston are followed as standard practices;
- support clear standardization of necessary connectivity infrastructure;
- ensure cybersecurity practices;
- share operations data that planners need to assess operations in context and NHTSA needs in order to adapt car safety standards to AVs;
- support shared ride practices with equity in mind in urban, suburban and rural markets as well as places with snow and climate challenges; and
- bring piloting forward without setting safety aside.

2. INVEST IN ENSURING A SKILLED, TRAINED WORKFORCE

Investment in workforce needs to happen at scale and today. In cities, towns, and villages across America, we know that we cannot carry out today's road, bridge, water and broadband projects funded through the bipartisan infrastructure law without trained, skilled workers – to say nothing of the future demand for new skills sparked by new technologies such as autonomous vehicles.

In Houston, we want to ensure that we are building up high quality jobs that have even higher earning potential. Locally in Houston, to fill the jobs of the near future at Nuro requires a new focus on upscaling our technical training. Nuro employs 120 people in Houston and continues to actively hire more. These are full-time jobs with full

benefits across skill levels ranging from high school graduates to PhDs. There are several dire and rosy estimates on the impact of AV jobs, but we must consider the quality of jobs in the discussion and recognize that a delivery job may not pay the rent, but a technician position might. That job leap is made possible with workforce training.

In 2021, Nuro launched a first-of-its-kind National Upskilling Initiative that establishes partnerships with community colleges in their operating areas to create education and training opportunities for workers looking to transition to jobs working on autonomous, electric vehicles. Nuro is working with San Jacinto College to establish a certificate program for a variety of roles, many of which do not require four-year degrees, including Fleet Technicians, Junior Fleet Technicians, and Fleet Technician Supervisors. Students qualify for paid internships or part-time work opportunities at Nuro while completing the pathway. They also have preference in applying to full-time positions at the company after completing the initial coursework. New programs will build on learnings from Nuro's current partnership with De Anza College in California, which also includes a tuition-free option.

We also know municipal governments and transit agencies like METRO are equally in need of the right skills to work on more electric and computer-driven vehicles. *How Hard-to-Fill Infrastructure Jobs Impact Building Our Future,* a recent report on infrastructure jobs by the National League of Cities, found that the median infrastructure job takes 20% more time to fill than a non-infrastructure job. To put that in perspective, **if we do nothing to improve labor market outcomes for infrastructure-related jobs,**

we can anticipate that we will struggle to fill at least 4.5 million jobs nationally, which would close the door to opportunity and economic well-being for too many families, businesses and communities.

To meet our own workforce needs, Houston has focused on STEM careers, particularly for youth. The City's Hire Houston Youth program has helped connect more than 30,000 Houston youth to careers, including those in new technologies. In addition, to ensure well-paying infrastructure job opportunities extend to all, we have established Houston's first reengagement center, so that Opportunity Youth ages 16 to 24 can finish school and progress into training. We are glad to be working with NLC and other leading cities on increasing tech-driven workforce opportunities for youth.

Even with our investments as a city, the worker gaps are widely seen and acknowledged by businesses and workers alike as a problem. As Congress moves forward with consideration of the Build Back Better Act, ensuring that we act quickly on workforce funding is paramount to making the most of our federal investment in infrastructure as well as bringing new workers into key sectors to meet employer demand. Without this investment, projects will take longer, cost more and slow our ability to meet employer needs.

3. RAISE PLANNING AND TECHNOLOGY SHARING IN REGIONS

America's transportation foundations shifted underneath our feet during COVID – including travel patterns, land use, freight movement, and more. While some changes

are temporary like a pandemic travel reduction, the shifts from technology in transportation such as transportation network companies changes long-term dynamics. Additionally, larger external business trends like e-commerce remain steadily growing. Anticipating, adapting, and accommodating transportation for these trends is the basis of good transportation planning from our metropolitan planning organizations remains underappreciated in federal programming. Investing in foundational transportation planning, logistics, and technology at the metropolitan and regional levels will serve us in more sustainable and practical ways. Whether it was the arrival of scooters or the coming take-off of advanced aviation, the planning of America's transportation is an investment in the future.

Safe AV Testing Takes All Levels of Government

In conclusion, we firmly believe local governments are crucial to the safe adoption of AVs into our existing transportation networks with other transportation modes and users. Ultimately, implementation of a successful AV policy requires finding the appropriate balance between cooperating and delineating the respective state, local and federal responsibilities and ensuring that appropriate funding and incentives are in place for the desired outcomes. We must approach these issues in a systematic and pragmatic manner to ensure that safety on our nation's roadways and streets is paramount. America's cities, towns and villages look forward to working with each of you to advance our shared goals in transportation.

Thank you.

nuro

The future of local commerce, in Houston

First autonomous commercial delivery service in Houston

About Nuro's Vehicles

- Autonomous Vehicle with no human occupants
- Designed to carry goods for delivery within cities
- Engineered to prioritize the safety of pedestrians, bicyclists, and other road users
- Fully electric and zero emissions

Our Service in Houston

Nuro's autonomous vehicles bring affordable, convenient delivery to Houston in partnership with popular stores and services. That means fewer trips to the store, safer neighborhoods, and more time to do what you choose. Nuro began delivering in West Houston in 2018, and currently employs over 120 local residents in our Gulfton and Heights locations.

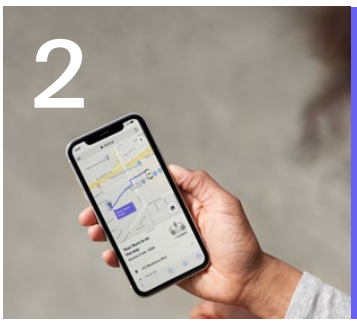
Engaging with the Community

Working with the community to identify how Nuro's vehicles and delivery service can benefit our neighbors is key to our shared success. Before operating in cities, we reach out to municipalities, neighborhood groups, community organizations, and local leaders. We also train first responders on how to interact with our vehicles using our Law Enforcement Interaction Protocol and solicit feedback we can incorporate into our operations and technology.

How Customers Used Nuro to Get Domino's Pizza

Order from Domino's

Place a delivery order on the Domino's app, and opt-in to autonomous delivery.



We'll keep you updated.

Once Nuro's vehicle picks up your order and is on the way, we'll text you a link to easily keep track of its progress.

Grab your order.

We'll text you an access code to retrieve your delivery at your curb. Your order will be secured separately from other items the vehicle is carrying.

Nuro has completed deliveries in partnership with leading brands and organizations in Houston

Kroger · houston foodbank · CVS pharmacy · METRO LIFT · Domino's