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## **Mobility On-Demand: The Future of the Transportation Ecosystem** ***(U.S. & Canadian Developments on First/Last Mile & Paratransit Public Transit Partnerships)***

The rise of on-demand mobility services, like ride-hailing and microtransit, is challenging the traditional public transportation model. A new wave of collaboration is also emerging, with organizations like the *International Association of Transportation Regulators (IATR)* and the *International Association of Public Transport (UITP)* discussing partnerships between public agencies and private companies at their events and conferences.

One example of this collaborative spirit is UITP's *On-Demand Mobility Committee*. This Committee brings together stakeholders from various sectors, including public transit authorities, ride-hailing companies, taxi operators, and technology providers. This cross-pollination of expertise facilitates knowledge sharing and the development of common standards for integrating on-demand mobility services with existing public transit infrastructure. Another example of the public-private partnership model comes from the Federal Transit Authority's (FTA) Mobility on Demand (MOD) Sandbox program. This program paired public transit agencies with private FHV companies to test innovative microtransit and on-demand options in real-world settings. The program yielded impressive results.

Public agencies can leverage the private sector's agility and technological advancements to develop and implement innovative solutions. Private companies, in turn, benefit from access to a broader customer base and the opportunity to test new technologies in collaboration with public support. Ultimately, this collaborative approach fosters cost-effective solutions that address critical transportation challenges while paving the way for a more sustainable and equitable transportation future.

I recently was invited to attend and speak at two separate events in Canada, sponsored by the UITP, the first in Montreal, and the second in Vancouver, British Columbia. Both events indicated how advancements in multi-modal innovation are progressing up north, and how Vancouver is truly a transit-oriented-development exemplar city. The advances in sustainable transportation, data integration and platforms has Montreal on the road to Mobility-as-a-Service. Both cities are inspiring, along with many other cities and provinces in Canada.

### ***IATR and UITP – A Longstanding Collaboration & Partnership***

UITP, established in 1885, is a worldwide network bringing together all public transport stakeholders and all sustainable transport modes. UITP releases publications and statistics, organizes events, leads knowledge and innovation projects, and delivers training programs. UITP partners with global organizations, like the World Health Organization and the United Nations, to work toward better mobility worldwide.<sup>1</sup>

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<sup>1</sup> <https://www.uitp.org/about/>

UITP is a member of IATR's Advisory Board. Advisory Board members will provide valuable guidance, insight, and recommendations regarding IATR conferences, educational activities, and collaborative projects among the Advisory Board, IATR, and its members, including IATR's Board of Directors and its President and Officers. **Jaspal Singh, Senior Director of Membership and Global Operations at UITP**, represents UITP on our Advisory Board.



**Matt Daus and Jaspal Singh, Senior Director of Membership and Global Operations at UITP**  
*North America Forum 2024 in Vancouver, Canada*

The IATR has also had the pleasure of working with several other UITP leaders who have served on our Advisory Board and collaborated with us at numerous conferences and events, including IATR's Annual Conference, over the last decade. We thank **Mohamed Mezghani, General Secretary of UITP**; **Lidia Signor, Head of the UITP Multimodal Mobility Unit**; **Andrew Bata, North America Regional Manager at UITP**; and **Dr. Kaan Yıldızgöz, Senior Director of Membership & Global Operations at UITP**.

At the *Transportation Research Board's 103<sup>rd</sup> Annual Meeting* in Washington, D.C., IATR and UITP were proud to co-sponsor (with several other organizations, including the *European Conference of Transport Research Institutes* (ECTRI), the *International Road Federation* (IRF), the *Chinese Overseas Transportation Association* (COTA), and Bentley Systems) the *International Coordinating Council's (ICC) 2<sup>nd</sup> Annual International Networking Reception*. The ICC concentrates on the evolution of international perspectives, practices, and research in all facets and services of all modes of transportation. The Council brings together experts from TRB technical committees and external organizations to collaborate on issues

affecting the safe and secure movements of goods and people in the U.S. and around the globe. The reception included words from Jack Chambers, Minister of State for the Ireland Department of Transport, and Victoria Sheehan, Executive Director of TRB.

### ***On-Demand Mobility and the Last Mile with UITP***

As IATR President, I was proud to provide an update on our organization's work at UITP's On-Demand Mobility Committee in Montreal. The meeting, held from June 10-12 and hosted by the ***Agence de Mobilité Durable (the Montreal Sustainable Mobility Agency)***, brought together around 45 participants (online and in person) to explore critical topics in the field of on-demand mobility. Sessions throughout the meeting focused on integration with public transit, inclusion, energy transition, and demand-responsive transport. The UITP On-Demand Mobility Committee brings together stakeholders involved in providing and designing on-demand mobility services, from ride-hailing, taxi, and demand-responsive transport, to foster collaboration between selected professionals among operators, on-demand software providers, and authorities in their sectors. **Sylvain Tousignant, General Director of the Montreal Taxi Bureau**, chairs the UITP On-Demand Mobility Committee, and also is co-chair of the IATR's Canadian Regulators Committee and recipient of the IATR's prestigious "Regulator of the Year Award."



***From left: Sylvain Tousignant, General Director at the Montreal Taxi Bureau; Frederic Pregent, GM of Taxelco Taxis; and Matt Daus***



**Charles de la Chevrotière, Executive Director, Business and Mobility Strategies at Agence de mobilité durable speaking at the UITP On-Demand Mobility Committee meeting in Montreal.**

The meeting also featured technical visits to the Masson Hub and the Transit App office. The Masson Hub is Montreal's first mobility hub, part of an ambitious plan to build 6-7 hubs annually, reaching over 150 by 2030. These hubs will enhance multimodality, electrification, and local social interaction. The Transit App office visit featured Transit App and MobilityData presentations focusing on transit data and data standards. Participants learned about the collaboration with the Agence de mobilité durable to integrate Taxi Registry data, resulting in a new feature that allows users to call a cab via the app.



[Click Here to Read the Full Report](#)





***Matt Daus speaking during the UITP 2<sup>nd</sup> Annual On-Demand Mobility Committee Meeting in Montreal, Canada on June 12, 2024***

In Montreal, I delivered a speech on the IATR's upcoming report, ***“Modernizing Taxi Regulations: An Innovative Governance Framework for the Future.”*** Taxis have been at the forefront of transportation regulation for over a century. Still, the last decade has witnessed an influx of new players, namely app-based, on-demand transportation services. Our report draws from the international experience to set a framework to streamline regulations, make the vehicle, driver, and company approval process more efficient, and maximize regulatory flexibility and benefits to customers, operators, and drivers – all without compromising safeguards for health, safety, and consumer protections. The recommendations include allowing taxis to use e-hail and up-front fares, allowing soft meters where metered fares are necessary, ensuring driver eligibility criteria are relevant in the age of GPS, and making taxi companies responsible for driver credentialing. Regulators are overdue to look at taxi rules from the bottom up and remove those standing in the way of innovation supporting multimodal mobility, sustainability, accessibility, equity, and partnerships.



***Group photo during the UITP 2<sup>nd</sup> Annual On-Demand Mobility Committee Meeting in Montreal, Canada***



**Kim Thibault, *Planning Advisor at City of Montreal;* and Matt Daus**

One approach the Montreal Taxi Bureau took to integrate with transit systems is their Taxi Registry, which collects real-time data on the location and availability of all taxis in service to bridge the gap between systems, dispatch, and different mobility applications.<sup>2</sup> The Registry is essential in integrating taxi service into mobility solutions.

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<sup>2</sup> [www.registretaximontreal.ca/en/what-is-the-taxi-registry/](http://www.registretaximontreal.ca/en/what-is-the-taxi-registry/)



[Click Here to Read the Full Report](#)

Ahead of the Taxi Registry deployment in 2017, the Windels Marx transportation practice group prepared a report for the Montreal Taxi Bureau titled ***"Study for a Centralized Application for Taxis in Montréal."*** The report discusses several approaches to implementing a centralized electronic dispatch system. After a comprehensive review of different approaches undertaken by jurisdictions, including San Francisco, Chicago, Los Angeles, Montgomery, New York, Tampa, and Washington, D.C., this study presents recommendations for the best regulatory approach for the City of Montreal to implement a centralized taxi database platform. I am pleased to learn that some of the recommendations included the development of a data platform that led to the creation of the Montreal Taxi Registry. The Registry is essential in integrating taxi services into mobility solutions. It is now becoming very important as Montreal builds multi-modal mobility-as-a-service options within public transit, along with Mobility Data GTFS standards and a connection with worldly known Transit App.





*Matt Daus in Vancouver at UITP's 7<sup>th</sup> Annual North American Forum with TransLink*



*From Left: Mohamed Mezghani, UITP Secretary General; Kenneth Sim, Mayor of Vancouver; and Nadine Lee, President & Chief Executive Officer Dallas Area Rapid Transit (DART)*

On June 25, 2024, I spoke on a panel at another UITP event, the **7th UITP North America Forum** in Vancouver, British Columbia. The UITP North America Forum is an annual conference to offer the North America region UITP's worldwide resources for global connectivity and knowledge, bringing together the most current information and developments for our urban transit industry. TransLink, the Forum's host, is the transit authority responsible for the regional transportation network of Metro Vancouver in British Columbia, Canada, including public transport, major roads, and bridges. This year's Forum looked at multimodal transportation, including bus electrification, rail automation, and on-demand mobility.<sup>3</sup>



*From Left: Jen Shepherd, Global Head of Uber Transit at UBER; Kristoffer Vik Hansen, CEO of Spare; Sascha Meyer, Chief Executive Officer of MOIA GmbH; Sandra Phillips, President and CEO of Movmi; and Matt Daus*

I participated on a very thought provoking panel entitled, "***The Last Mile Challenge: Seamless Solutions for More Connectivity***," which was moderated by **Sandra Phillips, President and CEO of Movmi**. The panelists were **Sascha Meyer, Chief Executive Officer of MOIA GmbH**; **Jen Shepherd, Global Head of Uber Transit at UBER**; **Kristoffer Vik Hansen, CEO of Spare**; and myself. The emergence of new mobility options and the evolution of public transportation have put increasing pressure on transit systems worldwide to develop intermodal systems. Many transit agencies are integrating several transportation modes, such as microtransit and bike share, to provide on-demand transportation options supporting their traditional transit bus or rail service. Our panel covered various initiatives launched by different agencies to offer a seamless journey experience.

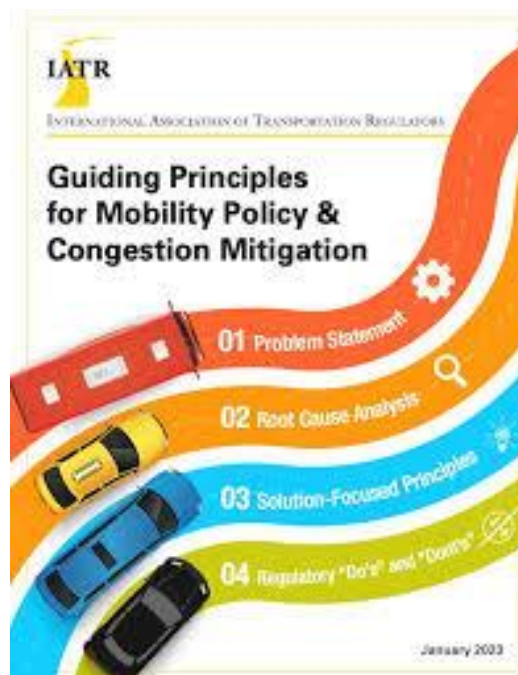
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<sup>3</sup> [https://www.uitp.org/events/uitp-north-america-forum-2024/](https://www UITP.org/events/uitp-north-america-forum-2024/)



**Sascha Meyer, *Chief Executive Officer of MOIA GmbH*; and Matt Daus**

I discussed the importance of viewing first and last-mile service as part of the larger public transit ecosystem. Transit agencies must break down barriers and forge partnerships with Transportation Network Companies (TNCs) and ride-hailing services to offer more attractive options and better rider connectivity. Last-mile services also present the opportunity for transit systems to truly serve their riders who are elderly and disabled and require door-to-door service. These efforts are now seeing better funding and integration into the transportation ecosystem.



[Click Here to Read the Full Report](#)

Also crucial to growing last mile services are *IATR's "Guiding Principles for Mobility Policy & Congestion Mitigation."* The public-private partnerships with government agencies and taxicabs/TNCs are critical to the future of the public transit ecosystem, and ultimately to mitigating congestion on numerous levels – including driving more passengers to use public transit instead of personal motor vehicles. One topic of discussion at the Vancouver conference was the recent indefinite pause that NY State Governor Kathy Hochul announced for NYC's congestion pricing program. This decision had rippled effects throughout North America, and in Canada, and even came-up during my panel discussion given I was of few New Yorkers at the conference. I was quick to point out the IATR's work on this topic, which concludes that congestion pricing is only one of many tools in the sustainable transportation toolbox, and should not be relied on as the only solution to mitigating vehicle congestion. According to the IATR, Congestion pricing and toll policies should incentivize sustainability and equity by exempting or reducing shared ride fees and designating revenue streams for goals like EV grants and inter-modal connections through a policy-directed lockbox. This lockbox, which would be funded by taxi and TNC passenger surcharges through congestion pricing, would be used to subsidize wheelchair accessible taxicab services as part of paratransit programs, as well as first-and-last mile taxi and TNC public transit partnerships with possible mobility hubs in transit deserts. Exemptions and subsidies for low-income individuals, TNCs, for-hire vehicles, and taxis are crucial for equitable congestion pricing implementation. Lastly, as seen in London and Sweden, successful implementation of congestion pricing requires solid political support, public acceptance, and demonstrated benefits such as time savings and improved transit services.

### ***On-Demand Mobility Concepts Put to the Test***

In 2016, the FTA created the ***MOD (Mobility on Demand) Sandbox Demonstration Program*** to provide a venue for demonstrating integrated MOD concepts and solutions in real-world settings, supported through local partnerships.

The FTA funded eleven project teams to innovate, explore partnerships, develop new business models, integrate transit and MOD solutions, and investigate new, enabling technical capabilities such as integrated payment systems, decision support, and incentives for traveler choices. The agencies running these projects were the ***Regional Transportation Authority of Pima County (AZ), Valley Metro Rail, Inc. (AZ), City of Palo Alto (CA), LA County MTA (CA), San Francisco BART (CA), Pinellas Suncoast Transit Authority (FL), Chicago Transit Authority (IL), Tri-County Metropolitan Transportation District (OR), Dallas Area Rapid Transit (TX), Vermont Agency of Transportation (VT), and Pierce County Public Transportation Benefit Area Corporation (WA).***





**DART's GoLink Service**

MOD Sandbox projects took several approaches, including developing new or improved trip planners, integrating innovative mobility services with traditional public transportation functions, and implementing new integrated payment and incentive structures for travel using public transportation. Several MOD Sandbox demonstrations focused on improving first/last mile access to public transit through collaboration with private sector operators, including bike-sharing, carpooling, ridesourcing/TNCs, and other shared mobility operators. Many of the MOD Sandbox demonstrations explored public-private partnerships serving a variety of use cases, including trip planning and payment integration, first and last-mile strategies, supplemental and extended service, flexible pricing and incentives, innovative paratransit service, and parking utilization. The program's guiding principles were:

- **System Integration:** Integrate new technology into existing infrastructure.
- **Partnerships:** Build partnerships between the participating public organization and at least one public or private entity.
- **Innovative Business Models:** Using innovative business models and fostering a marketplace creates further growth and development opportunities.
- **Equity of Service Delivery:** Create equitable mobility strategies for all customers and users, regardless of socioeconomic status.

FTA conducted evaluations for each of the Sandbox demonstrations between 2020 and 2022. Notable findings from the programs highlight efforts to address first and last-mile challenges, improve access for customers with disabilities, decrease personal car use, provide improved multimodal trip options, decrease emissions and fuel consumption, and decrease public transit system costs.

Microtransit systems in Dallas improved public transit connections for users, while a carpooling app in the San Francisco Bay Area encouraged carpooling to address overcrowding issues at park-and-ride locations. Similarly, Portland's trip planner enhancements optimized pedestrian routes by incorporating sidewalk data, promoting a more walkable environment.

On-demand paratransit services in Florida increased mobility and accessibility for disabled customers, created shorter wait times, and enhanced satisfaction. Thanks to microtransit options, passengers with disabilities in Dallas also experienced improved access. Additionally, the Phoenix area's Pass2Go trip planning app became more user-friendly for disabled users after accessibility improvements.

Low-income commuters benefited significantly from the ***Bay Area Fair Value Commuting Program***, with savings translating to a more significant portion of their income compared to higher-income counterparts. Integrated fare payment options in the Puget Sound region facilitated more manageable payments for underserved residents using the first-mile/last-mile ridesourcing service. While some programs, like carpooling initiatives, demonstrated a shift away from single-occupancy vehicles, others, like on-demand services in Tucson, failed to show an apparent reduction in car usage.

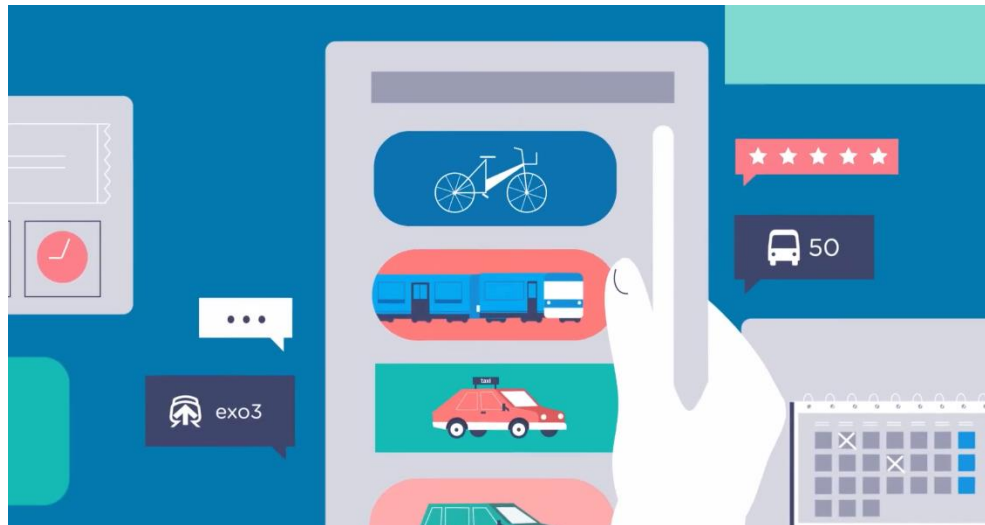
Trip planning system improvements in Dallas, Portland, and Phoenix led to better user experience, faster trip options, and reduced wait times. However, some cases, such as Vermont's flexible trip planning option, did not show increased public transportation ridership. ***Bay Area Fair Value Commuting Program*** successfully reduced commute-related emissions and fuel consumption. At the same time, first-mile/last-mile ridesourcing services in Los Angeles and Puget Sound regions saw a net increase due to empty non-revenue miles.

Microtransit services proved cost-effective compared to low-ridership fixed routes in Dallas, though not necessarily compared to the region's average fixed route. Similarly, WAV-enabled first-mile/last-mile services in Dallas were more cost-effective than paratransit per ride but less efficient than other options like buses and bike-sharing. On-demand services in Tucson offered lower per-trip user costs but were significantly more expensive for the agency than conventional demand response services.

The MOD Sandbox program served as a critical springboard for innovation in public transportation. By fostering the development and testing of microtransit and on-demand options, the program addressed key challenges like first-mile/last-mile connectivity and accessibility for disabled riders. These findings demonstrate microtransit and on-demand services' crucial role in creating a more user-centric and equitable public transportation system. The program's success in reducing car usage and emissions underscores the potential of these flexible, integrated solutions for a more sustainable future. The program's success also highlights the importance of public-private partnerships (PPPs) in advancing transportation solutions. Public agencies can leverage private sector expertise and resources to develop and implement innovative microtransit programs. Private companies, in turn, benefit from working with the public sector to test new technologies and reach a broader customer base. This collaborative approach can accelerate innovation and ensure cost-effectiveness through efficient resource allocation.

Similar mobility-on-demand partnerships with transit agencies have been formed in Canada as well. An early innovator, Uber, launched one of Canada's first ridesharing-transit partnership with the town of Innisfil, Ontario. Innisfil subsidized a portion of the fare for all trips taken by residents within the town, and offered additional subsidies for rides to and from transit

hubs.<sup>4</sup> Now, as on-demand transit becomes more popular across Canada as cities and transit authorities look to offer greater connectivity and customer service, over twenty five programs have been launched across the country.<sup>5</sup> As the number of programs grows, so does their complexity.



**Image: ARTM**

The Autorité régionale de transport métropolitain (ARTM) is an umbrella organization that manages and integrates road transport and public transport in Greater Montreal. The ARTM received a mandate from the Québec government to implement an integrated mobility offering across its territory, a level of integrated mobility service no other Canadian city has undertaken. The ARTM and its partners, including Greater Montréal's public transit companies and the City of Montréal, are rethinking travel with a project for integrated mobility as a service (MaaS). By creating a one-stop shop, the goal is to simplify access to sustainable mobility services offered on the territory and increase public transit ridership. The ARTM has already been working closely with several municipalities, including the Ville de Montréal, public transit organizations and private transit operators. This project can integrate service options from ride-sharing and taxi services, other on-demand transport providers, and even bike-sharing services to fill the first and last-mile gap.<sup>6</sup> With access to a wider range of mobility options, riders can make informed decisions based on their needs and preferences, and increase the flexibility of the region's entire transit system.

### ***Connecting Innovation and Regulation***

One key factor in the success of programs like the MOD sandbox program is the interplay between innovative solutions and the regulatory environment. The program fostered experimentation with microtransit and on-demand services to address critical challenges in public transportation. Regulations and funding limitations will impact the development and implementation of these shared mobility solutions.

<sup>4</sup> <https://www.uber.com/en-CA/newsroom/innisfil-transit-partnership/>

<sup>5</sup> <https://mobility-innovators.com/evolution-of-on-demand-transit-services-in-canada/>

<sup>6</sup> <https://www.artm.quebec/en/grands-projets/mobility-solutions/>

The FTA drug and alcohol testing regulations do not apply when a transit agency contracts with multiple taxicab companies to provide service and the passenger randomly chooses from among a number of taxicab companies providing service.<sup>7</sup> This is referred to as the “taxicab exception.” For example, suppose a transit agency contract with multiple taxicab companies to provide ADA paratransit service. If the paratransit users chooses which taxicab company to contact for a ride, the exemption applies. However, if the transit agency contacts the taxi company to schedule the ride, the FTA drug and alcohol testing rules apply to the taxi company that provides the service. The taxicab exception also applies to TNCs when a public transit agency contracts with multiple TNCs or taxicab companies. It is important to note that the exception does not apply if the transit agency contracts with only one TNC or taxicab company. In such cases, the TNC or taxi company can limit the number of drivers that provide service for the public transit contract to control the number of drivers that it will need to subject to the drug and alcohol testing.

FTA funds may be used to reimburse recipients for expenses associated with public transportation capital projects and, in some cases, the costs of operating transit service. Microtransit services are eligible for FTA grant programs if they offer shared rides and are open to the general public (i.e., they meet the definition of public transportation).<sup>8</sup> A transit agency may contract for eligible microtransit services, but private companies are generally ineligible to receive FTA funds as a direct recipient or subrecipient. The FTA programs may fund shared mobility services when federal public transportation law allows funding for transit operating expenses – if grantees make sure the terms of service will meet the legal definition of public transportation.<sup>9</sup> FTA grant recipients may only use FTA funds for eligible expenses, and the eligibility of shared mobility services depends on the specific contracts between FTA recipients and shared mobility operators.

The MOD Sandbox program thrived within a framework established by the FTA. These regulations provided clear guidelines for key areas: integrating new technology with existing infrastructure, fostering public-private partnerships, and ensuring equitable service delivery for all. This regulatory framework helped to ensure that the innovative solutions piloted during the program were safe, accessible, and met the needs of the broader community. Without clear guidelines, there's a risk that innovation in shared mobility could lead to unintended consequences, jeopardizing safety or public access.

The "taxicab exception" to drug and alcohol testing regulations is an example of how regulations can adapt to the unique characteristics of shared mobility providers. This exception recognizes the operational structure of companies with multiple drivers, allowing more flexibility when partnering with transit agencies. This can encourage collaboration between public transportation and a wider range of shared mobility options, like those explored in the MOD Sandbox program. However, the exception also highlights the ongoing challenge of balancing innovation with safety. The "taxicab exception" ensures some level of safety through drug and alcohol testing in certain situations, while still acknowledging the realities of how some shared mobility services operate.

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<sup>7</sup> <https://www.transit.dot.gov/what-taxicab-exception-and-when-does-it-apply>

<sup>8</sup> <https://www.transit.dot.gov/regulations-and-guidance/shared-mobility-faqs-eligibility-under-fta-grant-programs>

<sup>9</sup> <https://www.transit.dot.gov/regulations-and-guidance/shared-mobility-faqs-eligibility-under-fta-grant-programs>



FTA funding eligibility limitations highlights the financial realities that shape shared mobility innovation. While the MOD Sandbox program explored promising solutions, FTA funding is limited to services that meet the legal definition of public transportation. This regulation influences the types of services that transit agencies can support and potentially limits the scope of innovation.

The FTA is now led by **Veronica Vanterpool, Acting Administrator**. She brought her transportation innovation experience to the FTA from the Delaware Transit Corporation, where she served as the agency's first Chief Innovation Officer. Her previous roles include being the Deputy Director of the national Vision Zero Network, executive director of the New York City-based Tri-State Transportation Campaign, and board member of the New York Metropolitan Transportation Authority. We look forward to Administrator Vanterpool addressing these last-mile issues, and building on the Sandbox program.



**Matt Daus and Veronica Vanterpool, Acting Administrator of the Federal Transit Administration**

The MOD Sandbox program's success showcases shared mobility's potential to improve public transportation. However, the industry is rapidly evolving, and regulations may need to adapt to keep pace with new technologies and business models. Finding the right balance between fostering innovation and ensuring safety, accessibility, and equity will be crucial for the future of shared mobility. As shared mobility continues to transform our transportation landscape,

policymakers will need to carefully consider how regulations can be adapted to support continued innovation while protecting public interests.

### ***Collaboration for Seamless Mobility***

Continued collaboration between public and private stakeholders will be even more crucial. PPPs are vital to unlocking the full potential of on-demand mobility and creating a transportation system that is user-centric, equitable, and environmentally responsible. Public agencies can leverage the private sector's agility, technological expertise, and existing infrastructure by working together. Public agencies can integrate the strengths of the taxi and FHV industry into their existing transit systems. Imagine a seamless user experience where a public transit app allows riders to book buses, trains, cabs, or FHV's for first-mile or last-mile connections.

UITP and IATR are committed to fostering these partnerships and innovations. By working together, we can create a transportation ecosystem that benefits everyone—riders, municipalities, taxi and FHV companies, and the environment. This exciting new era of mobility holds immense promise for building a more connected, sustainable, and equitable future for communities worldwide.