

Moving to Our Future:

*Pricing Options for **Equitable Mobility***



PBOT
PORTLAND BUREAU OF TRANSPORTATION



Pricing Commercial Services: Background Memo

February 3, 2021

Prepared for the Pricing Options for Equitable Mobility project by PBOT's Policy, Innovation and Regional Collaboration Team to inform Community Task Force discussions

Contents

- Introduction1**
 - Local Context..... 1
 - Key questions for the Pricing Options for Equitable Mobility (POEM) Task Force 2
- Why consider new prices on commercial services?3**
 - Growing proportion of VMT on our roads..... 3
 - Lack of price signals today related to demand or impact..... 6
- Designing potential prices on commercial services.....6**
 - Potential fee design parameters..... 6
 - Implementation considerations..... 7
- Equitable Mobility Considerations7**
- Case Studies10**
 - Chicago** | Ground Transportation Tax & Annual Licensing Fees 10
 - New York City** | Congestion Surcharge 11
 - Urban delivery fee proposals 12
- Endnotes13**

Introduction

The share of vehicle miles traveled (VMT) on US roadways that comes from commercial vehicle traffic is on the rise.^{1,2} This includes VMT from cars, trucks and vans that carry goods or fare-paying passengers as part of a commercial or business service. For the purposes of this memo, we will be looking at two broad categories of commercial services:

- **Private for-hire transportation services:** taxis and app-based, ride sourcing services called transportation network companies (TNCs), including Lyft and Uber.
- **Urban delivery services:** fleets of cars, vans or trucks used to transport food, goods and other lighter-duty freight to people's homes and businesses. Within urban delivery, there are different types of trips, including on-demand urban delivery services (such as instant or same-day food and grocery deliveries) and more traditional parcel delivery services (where goods are shipped and transported from a central warehouse to homes or businesses by car, van or truck).

This trend is the result of rapidly growing demand for these services, driven by technological innovation and evolving consumer priorities. For example, Uber and Lyft started operating in Portland in 2014, and by 2019, Portlanders took more than 12 million annual trips in private for-hire vehicles.³ During the same five-year period on the urban delivery side, e-commerce sales nearly tripled globally⁴, a trend that has only accelerated during the Covid-19 pandemic.⁵

These commercial services offer several benefits and opportunities, meeting evolving consumer needs. For one, they provide a high level of personal convenience by allowing customers to summon transportation or delivery services from their phones or computers. They also can help expand accessibility for people with mobility devices or who live farther from transportation options or jobs, shops and services. Theoretically, access to on-demand transport and delivery could reduce the need to own a car for some people. Growing alongside this consumer demand is a burgeoning workforce, including drivers, warehouse workers, technicians, and operations and logistics employees. On one hand, this can be seen as a positive development, creating new jobs and making it easier for people to find flexible opportunities to earn money. On the other hand, the "gig" nature of many of these jobs, which often don't include benefits or job security has generated scrutiny and debate among labor advocates.^{6,7,8}

The staggering growth of these services also places significant pressure on the limited space of the urban street network. Because of this, many transportation agencies are looking specifically at strategies for managing commercial services in the right of way as they consider how to effectively address traffic congestion, improve safety, reduce overall VMT and cut transportation carbon emissions.

Pricing strategies—including fees paid by the company as well as charges passed through to the consumer to manage demand—can be a tool for managing this impact on the transportation system. This memo will explore why cities might consider pricing commercial services, equitable mobility considerations of this kind of pricing, and how the design of the pricing policy could influence those outcomes.

Local Context

Here in Portland, some administrative fees are already in place related to commercial services. With the exception of the airport ground transportation fee, to date, these prices have not been focused on

changing consumer behavior or reducing the *impact*—traffic, climate, health, safety, economic—of this commercial service VMT on our transportation system.

Local regulation and fees applied to commercial services in Portland today include:

- **City of Portland private for-hire program:**
 - *Agency:* City of Portland
 - *Program objective:* Help ensure all private for-hire rides are safe, reliable and accessible. Promote innovation in the private for-hire industry to meet evolving consumer demand and allow fair competition. Program elements include vehicle safety inspections, insurance requirements, operating requirements, driver background checks, driver education and training, and several programs, such as:
 - [Wheelchair-Accessible Vehicle program \(PDX WAV\)](#),
 - [Safe Ride Home program](#)
 - [Taxi business incubator](#)
 - Taxi/TNC credits for the [Transportation Wallet initiative](#)
 - *Fees involved:*
 - Private for-hire companies (including taxis and other fleet operators) are required to pay an annual permit fee to operate on Portland streets. This includes initial application fees, company/vehicle permit fees and driver permit fees. Rates differ based on type of company
 - TNCs, like Lyft and Uber, don't pay permit fees. Rather, their passengers pay a flat \$0.50 per-ride fee (only implemented on rides originating within the City of Portland boundaries)
 - *More information:*
 - [Program overview](#)
 - <https://www.portlandoregon.gov/citycode/article/536367>
- **Airport ground transportation fee on taxis and TNCs:**
 - *Agency:* The Port of Portland
 - *Objective:* "Provide equal access and opportunity for all modes of transportation to and from the airport."⁹
 - *Fees involved:*
 - TNC passengers pay \$3.00 each for both pick-up and drop-off
 - Taxi and on-demand shuttle passengers pay \$3.50 for pick-up only.
 - *More information:* <https://www.flypdx.com/Newsroom/Parking-Rates-and-Ground-Transportation-Fees-Changing-at-PDX>

Urban delivery in Portland is generally not priced. The City does not currently regulate on-demand delivery, with the exception of [a limit imposed on third-party food delivery fees charged to restaurants](#) passed by City Council in July 2020, protecting food establishments during the COVID-19 crisis.

Key questions for the Pricing Options for Equitable Mobility (POEM) Task Force

Given trends in increasing commercial service VMT on our roads, the City is interested in exploring if and how new prices on these services could advance equitable mobility. While detailed travel data on these sectors is not always plentiful (particularly for urban delivery fleets), observed and qualitative data suggest the increasingly on-demand model of these services—where drivers may circle or idle while waiting for the next job—may be adding to traffic, increasing safety risks and contributing to greenhouse

gas emissions. On the other hand, these services are meeting consumer demand and helping to fill gaps in our transportation system and economy.

As the City explores whether new demand-based or impact-based fees on commercial service users can help better manage our system, we are looking to the POEM Task Force for input on the following questions:

- *Are new demand or impact-based fees on commercial services **worth a closer look** for advancing equitable mobility, as defined in the [Equitable Mobility Framework](#)?*
- *If yes, what potential **outcomes, impacts or risks** are most important to consider?*
- *How are these **similar or different to other pricing typologies** we've reviewed?*
- *What **key questions** would need to be explored to further evaluate the **impact of these pricing strategies on equitable mobility**?*

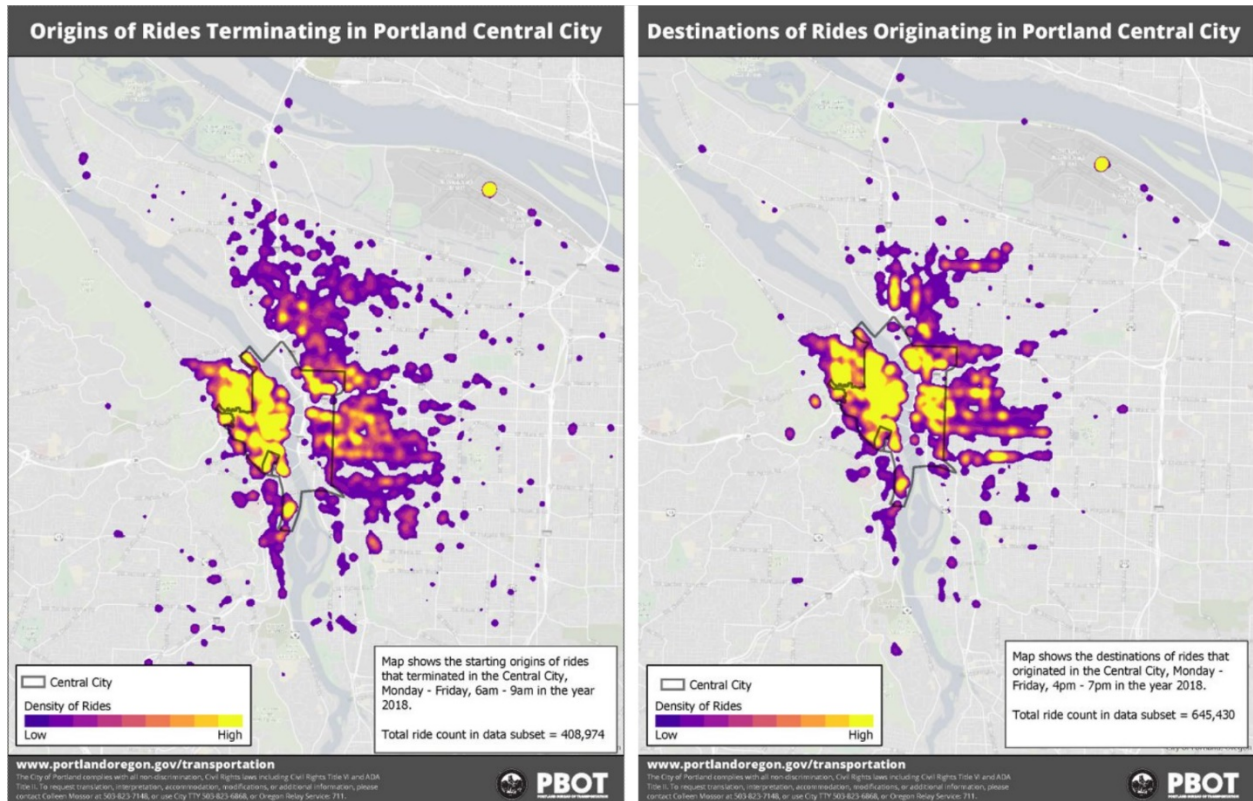
While the POEM Task Force is charged with considering these questions, the City also engages other advisory groups to inform policy related to commercial vehicles. Specifically, the [Private For-Hire Transportation Advisory Committee](#) and the [TNC Drivers Advisory Committee](#), along with other groups, will be consulted on any potential future strategies to manage commercial vehicle traffic on our roads.

Why consider new prices on commercial services?

Growing proportion of VMT on our roads

Prior to the Covid-19 pandemic, private for-hire trips represented a growing portion of VMT on our roadways. These services help fill gaps in our system and meet mobility needs—for example, if you do not have access to a car and live in an area not well served by transit, private for-hire services can help you get to your destination in a reasonable time in a way you previously could not. In addition to these “gap-filling” trips, however, data suggests many people use TNCs for short journeys within the Central City, including at the most congested times. Figure 1 shows the density of rides during the rush hour periods of 6-9 a.m. (left) and 4-7 p.m. (right). The left map indicates that most rides to Central City destinations also begin in the Central City or close in neighborhoods. The right map shows that in the evenings, most trips originating in the Central City also terminate there or in close by neighborhoods. These relatively short trips are occurring in the area of the city best served by alternative transportation options—transit, bikeshare, e-scooters, and a walkable urban grid. They are also occurring at times when traffic is worst. As drivers circle to pick up new customers, this can exacerbate already crowded conditions.

Figure 1: Origins and destinations of TNC trips in Portland Central City at rush hour



Right now, there is no price disincentive to these trips—riders pay the same \$0.50 per ride fee whether they are traveling two blocks downtown at rush hour or cross-town to the airport. There is also no price signal (apart from company incentives) encouraging customers to take shared rides or request a cleaner-fuel vehicle. A new fee designed based on factors like geography, time of day, fuel type or occupancy could help incentivize more sustainable and efficient trip choices.

Since the onset of the Covid-19 pandemic, private for-hire trip trips within the City of Portland have decreased by more than 80%.¹⁰ Monitoring future trends and data will be an important part of designing any potential future demand or impact-based fee.

While private for-hire trips have declined as a result of the pandemic, urban delivery demand has only increased. This is driven by a sharp increase in online shopping—in the first nine months of 2020, online retail sales increased by 40.5%, compared to just 1.7% for in-store sales.¹¹ This follows years of sustained growth prior to the pandemic.¹²

The World Economic Forum projects these trends to continue, with an estimated 36% more delivery vehicles in inner cities by 2030.¹³ If this occurs without intervention, delivery emissions in the top 100 cities globally are projected to rise by 32% by 2030 while traffic congestion will increase by 21% or about 11 minutes of commute time per day. Particularly important for urban street networks is last-mile delivery trends, which refers to how goods are transported from warehouses to their final destinations: people's homes and businesses. Same-day and instant deliveries are the fastest growing segments of last-mile trips, growing at rates of 36% and 17% a year, respectively, according to the World Economic Forum analysis.¹⁴

As with private for-hire trips, the rise of urban delivery and e-commerce reflects growing demand and technological innovation. These developments help bolster macro-economic growth and have helped small businesses including restaurants weather pandemic-related shutdowns. E-commerce also presents opportunities for trip consolidation if one delivery van is replacing several individual drivers. As shown in Figure 2 below, the World Economic Forum estimates about 30% of e-commerce-related delivery traffic could be offset by reduced individual VMT. This offset, however, is projected to be no match for the growing demand for deliveries, so overall levels of congestion and emissions associated with that travel activity are expected to increase substantially over the next decade (Figure 3).

Figure 2: Impact of e-commerce on traffic volume (World Resources Institute, 2020)

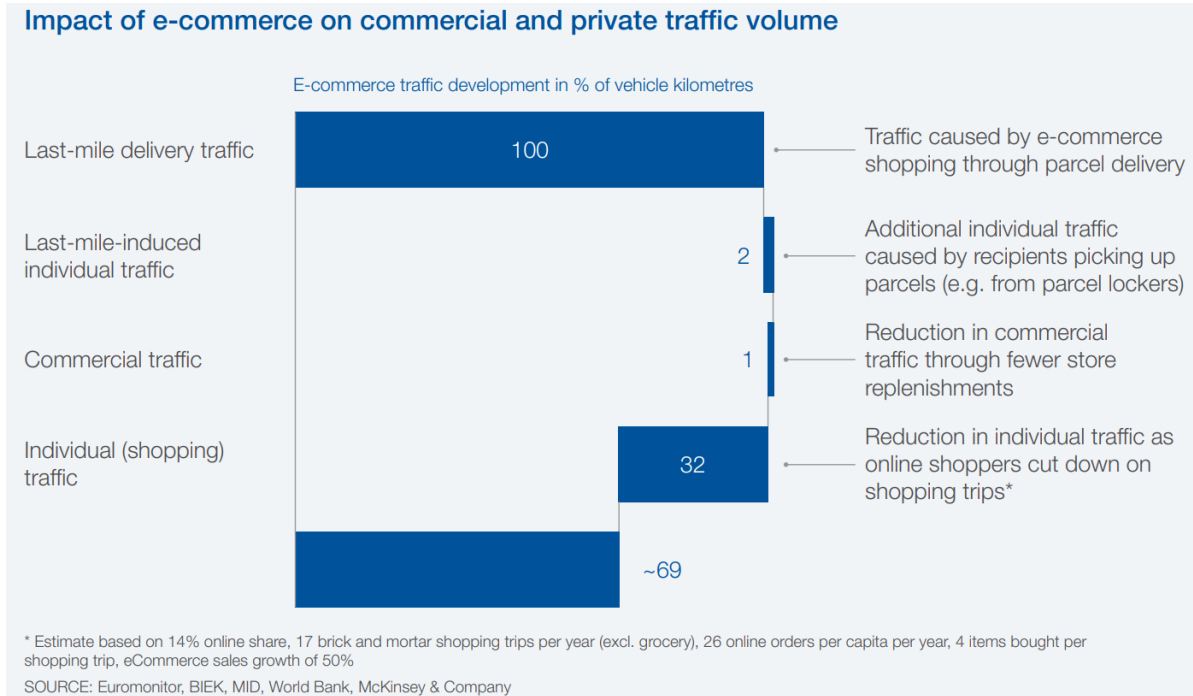
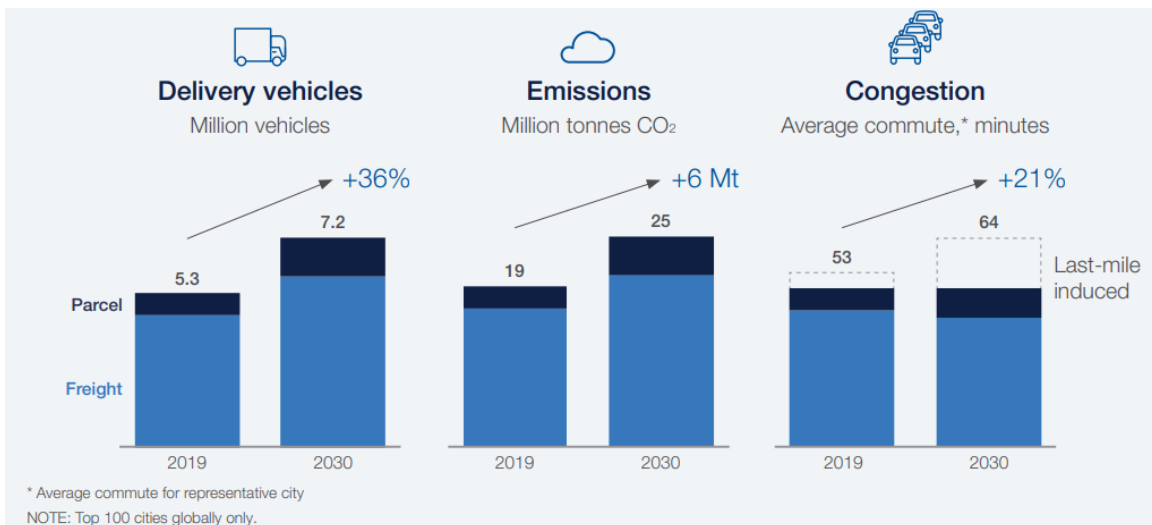


Figure 3: Projected impacts of e-commerce delivery on top 100 global cities (World Resources Institute, 2020)



Addressing these expected impacts on our system—increased VMT, emissions and congestion—will likely require multiple strategies, including changes to delivery logistics, shifting delivery vehicles to electric and cleaner fuels, and exploring the potential role of price signals.

Lack of price signals today related to demand or impact

As explored in previous memos on parking pricing and highway tolling, using pricing to influence transportation demand and behavior is proven to work. Prices can help quantify the impact a trip has on our system, which can be unapparent if the perceived cost is \$0. By sending that price signal directly to the system user, they help people think about the impact of their decisions. People then have to determine if paying that price is worth it to them, or if they want to consider an alternative option.

In general, the City does not have any fees in place today that aim to influence consumer behavior or get end users to think about and pay for these impacts on our system. Commercial companies themselves, however, often send their own price signals through surge pricing, discount promotions and scaled delivery fees.

Other cities have started to explore and implement these demand or impact-focused fees to help manage space on their roads (see the case study section at the end of this memo).

Designing potential prices on commercial services

Prices on commercial services can be designed and implemented in myriad ways, depending on the desired objective. Some cities have started exploring and implementing some demand or impact-focused fees to help manage space on their roads. However, this form of transportation pricing is also fairly recent and applied to a rapidly growing and changing sector, so many of these design parameters may be untested or hypothetical at this time.

Potential fee design parameters

When designing potential fees to impact customer demand or capture more trip impacts, there are various design parameters cities can consider to achieve different outcomes and objectives:

- **Flat fee:** Prices could be designed to be flat, meaning the rate is the same for all trips or deliveries. Advantages of flat fees can include simplicity in communication and administration. On the other hand, flat fees send the same price signal to everyone, so are less effective at encouraging specific behavior change. They also don't provide alternatives for people for whom paying a price might be a bigger burden.
- **Based on geography—origin, destination and/or journey:** Prices could vary in different geographic areas in order to encourage or discourage trips in certain places. For example, a private for-hire fee could be higher in the Central City or downtown where alternative transportation options are plentiful and travel activity is already concentrated to encourage greater use of those non-driving options. On the urban delivery side, a delivery charge could be higher near commercial centers.
- **Based on distance:** Prices could be set based on the distance of the trip to encourage or discourage long or short trips. In a private for-hire context, if prices were charged on a per-mile basis, this could help capture the real costs of this VMT on our roadways. But cities may want to *encourage* private for-hire use for longer-trips if people are using those options because they live in areas not served well by transit or as an alternative to owning their own car. Cities may actually want to charge *more* for shorter trips in dense areas that are well served by transportation alternatives, in order to encourage use of those options. For delivery services, a

distance-based charge may also present significant feasibility challenges given the complexity of supply chains and delivery logistics.

- **Based on time-of-day:** Prices could be set to be higher during peak hours for both private for-hire trips and on-demand deliveries to discourage trips when roads are most congested and spread out demand throughout the way.
- **Based on fuel type:** Prices could be lower or waived for trips and deliveries made by electric vehicle or cleaner fuel vehicles, encouraging consumers to demand these services and companies to shift their fleets. Several companies have already made pledges to electrify and reduce the carbon emissions of their fleets^{15,16,17}, though achieving these goals may be decades off.
- **Based on occupancy (applicable to private for-hire only):** Prices could be higher for single-passenger trips and lower for multi-passenger trips to encourage carpooling and more space efficient travel. Tracking and enforcing an occupancy-based fee could pose implementation challenges, however

Implementation considerations

Regulatory authority: Cities must consider the authority they have to implement fees on commercial services. In Oregon, local jurisdictions have regulatory authority over private for-hire services.

Concerning urban delivery, there is some uncertainty about what implementation authority cities may have and whether interstate commerce regulations would apply. The Federal Aviation Administration Authorization Act as adopted in 1994 preempts states from: “...enact[ing] or enforce[ing] a law, regulation, or other provision having the force and effect of a law related to price, route, or service of an air carrier when such a carrier is transporting property by aircraft or by motor vehicle.”¹⁸ Whether this applies to gig economy urban delivery services (e.g. on-demand food delivery) or urban package delivery is open to interpretation. Some cities in the US have begun proposing fees on these types of urban delivery services, indicating this authority may be allowed. The project team is undertaking work to explore this question further.

Data collection and technology: To design prices on commercial services—particularly variable pricing—and monitor its effectiveness at achieving different goals, cities need to have data on where and how many trips are being made. Companies may be hesitant to share data and consumers may be concerned about privacy issues. Implementing new prices based on different variables may also require leveraging and/or developing technological capabilities on the City and/or company side to track and enforce fees, such as geofencing and ways to record occupancy, fuel type, distance traveled and more.

Equitable Mobility Considerations

As with all pricing typologies, the design, implementation, outcomes, and revenue reinvestment of any fee on commercial services can influence the equity of a transportation system. Several of the dynamics discussed in previous background memos apply to potential fees on these specific sectors. Several unique attributes of these commercial trips, however, may further affect how a price might advance or reduce equitable mobility, as defined in the Equitable Mobility Framework. These unique considerations include:

- **Rapidly growing demand** – VMT is projected to rise in these sectors, which both reflects the consumer desire for the services but also will put increasing pressure on our roadway system and climate.

- **Benefits of personal convenience and increased access** – These services help make many people’s lives easier and provide personal efficiencies, while on a system-wide scale, lead to more inefficiencies and worsening congestion.
- **Frequent innovation and industry evolution** – The connection between these services and rapid technological change can make them difficult to regulate while also creating opportunities for co-benefits (e.g., it may be easier to encourage electrification of these fleets with targeted interventions). It is also hard to predict trends and industry changes.
- **Growing workforce and jobs** – These sectors represent a growing number of employees, contractors and flexible income-earning opportunities, but the lack of workforce protections and oversight raises concerns.
- **Complex systems and regulations** – As these sectors evolve and transform quickly, they can enter uncharted legal and regulatory spaces, as well as many intersecting policy spheres (e.g., freight, transportation, land use, interstate commerce). This can make developing effective and efficient regulatory strategies more complex.

Figure 3 summarizes how demand and impact fees in general may impact equitable mobility across the framework categories (informed by previous Task Force discussions), and points to what additional outcomes could be expected if these fees were specifically applied to commercial services:

Figure 3: Initial equitable mobility screen for fees on commercial services

Equitable Mobility Category	Equitable mobility considerations discussed so far: <i>Pricing can...</i>	Unique equitable mobility considerations of pricing commercial services: <i>New fees on private for-hire or urban delivery trips could...</i>
<i>Moving people and goods</i>	<ul style="list-style-type: none"> • Help manage trips and reduce congestion • Improve travel times • Make it easier to get places • Make travel less affordable – must minimize burden on low-income drivers 	<ul style="list-style-type: none"> • Help manage growing commercial VMT • Encourage more efficient trips • Discourage on-demand deliveries • Increase cost of these services
<i>Sustainability and health</i>	<ul style="list-style-type: none"> • Reduce transportation emissions • Improve air pollution, benefitting health • Encourage transition to electric vehicles/cleaner fuels (if designed to) 	<ul style="list-style-type: none"> • Reduce emissions and pollution from commercial VMT • Encourage more rapid electrification/fuel shifting among commercial fleets (if designed to) • Potentially burden people who use commercial services for health reasons
<i>Safety</i>	<ul style="list-style-type: none"> • Reduce VMT, which lowers crash risk • Increase need for safeguards against inequitable enforcement • Present concerns about privacy 	<ul style="list-style-type: none"> • Reduce commercial VMT • Increase cost of travel modes which people may feel are safest for them
<i>Economic opportunity</i>	<ul style="list-style-type: none"> • Generate revenue to invest in projects/programs that create jobs • Make it easier to move goods and people to jobs and destinations • Raise costs of travel/shipping 	<ul style="list-style-type: none"> • Impact supply/demand for commercial services • Impact workforce behind these services by affecting demand • Potentially benefit brick and mortar establishments • Potentially burden urban delivery-reliant businesses

Case Studies

Chicago | Ground Transportation Tax & Annual Licensing Fees

Chicago applies a combination of annual licensing fees and per trip fees to private for-hire companies.¹⁹ Companies are required to pay a \$10,000 annual fee, plus a \$0.02 administrative fee per trip, and additional fees (called the ground transportation tax) based on occupancy, geography, and wheelchair accessibility, detailed in Table 1.

The ground transportation tax applies to businesses that provide ground transportation vehicles to passengers for hire (e.g., taxis and TNCs). First implemented in 2018, the tax rates are evaluated each year as part of the annual budget approval process. In 2020, Chicago updated the policy to promote more sustainable use of ground transportation services and increase equity of the program by creating a tiered pricing structure based on location and time of day, and lowering rates for wheelchair-accessible vehicles. The 2020 updates aim to make shared rides and rides in neighborhood areas cheaper than single rides in downtown areas, by applying a Downtown Zone Surcharge of \$1.75 for solo rides and \$0.60 for shared rides. Non-wheelchair accessible vehicles are charged an additional \$0.10, and trips that start or end in designated special zones (airports, Waterfront Navy Pier, McCormick Place convention center) include an additional \$5.00 fee.

The intention is for most of the new revenue to come from TNC users in higher-income areas – areas where the great bulk of rideshare trips occur, and areas that are also particularly congested but feature lots of public transit alternatives. It is expected that average fees will increase by \$0.25-\$0.50 in neighborhoods and that downtown rides will increase more than \$2.00.²⁰

The ground transportation tax includes an intergovernmental revenue sharing agreement between the City of Chicago and the Chicago Transit Authority (CTA). The agreement authorizes the City to provide the CTA with \$16.0 million annually from ground transportation tax revenue to be used toward capital projects. The City retains any revenue generated above the amount of \$16.0 million.

Table 1: Ground transportation tax rates – Chicago

Mode	Occupancy	Ground Transportation Tax Rate	WITH Downtown Zone Surcharge*	Per Taxable Day	Per Month
TNC trip	Single	\$1.25	\$3.00	-	-
TNC trip	Shared	\$0.65	\$1.25	-	-
TNC trip that starts or ends in Special Zone	Single	\$6.25	\$8.00	-	-
TNC trip that starts or ends in Special Zone	Shared	\$5.65	\$6.25	-	-

TNC trip in a Wheelchair Accessible Vehicle	Single or Shared	\$0.55	\$0.55	-	-
Taxi (city cabs)	N/A	-	-	-	\$98
Taxi (non-city cabs)	N/A	-	-	\$3.50	-
Pedicab	N/A	-	-	\$1.00	-
Vehicle Capacity ≤10	N/A	-	-	\$3.50	-
Vehicle Capacity 11-24	N/A	-	-	\$6.00	-
Vehicle Capacity ≥25	N/A	-	-	\$9.00	-

*Downtown Zone Surcharge is calculated as follows:

Ground Transportation Tax Rate + \$1.75 (Single TNC) Downtown Zone Surcharge for every ride that includes a pickup or drop-off, or both, between 6:00 a.m. and 10:00 p.m. on weekdays in the Downtown Zone

Ground Transportation Tax Rate + \$0.60 (Shared TNC) Downtown Zone Surcharge for every ride that includes a pickup or drop-off, or both, between 6:00 a.m. and 10:00 p.m. on weekdays in the Downtown Zone

**Every trip also has the following fees applied:

+ **\$.02**/TNC Trip Administrative Fee and a

+ **\$.10**/TNC trip Accessibility Fund Fee, which does not apply to trips on Wheelchair Accessible Vehicles (WAVs).

Article:

https://www.chicago.gov/city/en/depts/bacp/supp_info/city_of_chicago_congestion_pricing.html

Regulation:

https://www.chicago.gov/city/en/depts/fin/supp_info/revenue/tax_list/ground_transportationtax.html

New York City | Congestion Surcharge

In 2019, New York State implemented a congestion surcharge that levies a fee on trips that start, end, or pass through New York City’s Congestion Zone.²¹ The Congestion Zone is Manhattan, south of 96th Street.

The congestion surcharge is as follows:

- **\$2.50** for non-shared taxi trips

- **\$2.70** for non-shared For-Hire-Vehicle trips, including limousines and street-hail liveries (Green Taxis)
- **\$0.75** for shared rides, in any type of vehicle
- **No Surcharge** for Access-A-Ride (paratransit), or any other transit authority dispatched trip

Stipulations of the congestion surcharge require that the fee is passed onto passengers and not taken out of a driver's pay.²²

Resources:

- [New York State Congestion Surcharge](#)
- [Congestion surcharge TSB-Ms](#)
- [Congestion surcharge regulations](#)
- [N-19-2](#), New York State Supreme Court Lifts Temporary Restraining order on Congestion Surcharge

Urban delivery fee proposals

Chicago ground delivery tax proposal: In November 2020, Chicago Alderman Patrick Daley Thompson introduced a proposal to charge a ground delivery tax on packages delivered by ground to addresses within the city limits.²³ Prescription medicine and food deliveries from restaurants would be exempt from the proposed tax. The proposal would charge:

- \$1.25 tax for packages delivered by ground in the city <50 lbs;
- \$2.50 for heavier deliveries

As of January 2021, the bill had been referred to the finance committee for further consideration. No vote or decision on the proposal has yet occurred.

New York online delivery surcharge proposal: In 2019, New York State Assemblyman Robert Carroll who represents parts of Brooklyn proposed an online delivery surcharge as a complement to congestion pricing.²⁴ The proposal would charge a \$3 fee for every package delivered in five NYC boroughs. Deliveries of food and essential medicine would be exempt from the fee. Early estimates suggested the fee could raise more than \$1 billion annually, possibly more than New York's congestion pricing plan. The proposal linked the delivery tax revenue with funding the Metropolitan Transit Authority. As of late 2020, Assemblyman Carroll planned to resubmit the proposal in 2021.²⁵

Endnotes

- ¹ Balding, M. et. al. (2019). “Estimated TNC Share of VMT in Six US Metropolitan Regions.” Fehr and Peers. <https://drive.google.com/file/d/1FIUskVkj9IsAnWJQ6kLhAhNoVLjFdx3/view>
- ² World Economic Forum (2020). “The Future of Last-Mile Ecosystem.” http://www3.weforum.org/docs/WEF_Future_of_the_last_mile_ecosystem.pdf
- ³ City of Portland (2021). “Private for-hire transportation (PFHT).” <https://www.portland.gov/transportation/regulatory/private-hire/pfht>
- ⁴ World Economic Forum (2020).
- ⁵ Garber, S. (2020). “Are home deliveries increasing during the pandemic?” Sorin Garber & Associates. https://6f9e7409-6f5f-49c4-b048-31b59fdc9c52.filesusr.com/ugd/0ec6cb_f3a918ab40f244f6b3054ba33ecdc8ea.pdf
- ⁶ Worksmart (2020). “What’s wrong with the gig economy?” <https://worksmart.org.uk/news/what%E2%80%99s-wrong-gig-economy>
- ⁷ Towers-Clark, C. (2019). “The uberization of work: pros and cons of the gig economy.” Forbes. <https://www.forbes.com/sites/charlestowersclark/2019/07/08/the-uberization-of-work-pros-and-cons-of-the-gig-economy/?sh=613890071cc7>
- ⁸ Kaine, S., and Josserand, E. (2019) “The organization and experience of work in the gig economy.” Journal of Industrial Relations. <https://journals.sagepub.com/doi/10.1177/0022185619865480>
- ⁹ FlyPDX (2018) “Parking rates and ground transportation fees changing at PDX” <https://www.flypdx.com/Newsroom/Parking-Rates-and-Ground-Transportation-Fees-Changing-at-PDX>
- ¹⁰ City of Portland Private For-Hire Program data. (2020).
- ¹¹ Garber, S. (2020).
- ¹² World Economic Forum (2020).
- ¹³ Ibid.
- ¹⁴ Ibid.
- ¹⁵ Uber (2020). “Millions of rides a day. Zero emissions.” <https://www.uber.com/us/en/about/sustainability/>
- ¹⁶ Lyft (2020). “Leading the transition to zero emissions.” <https://www.lyft.com/blog/posts/leading-the-transition-to-zero-emissions>
- ¹⁷ Amazon (2020). “Introducing Amazon’s first custom electric delivery vehicle.” <https://www.aboutamazon.com/news/transportation/introducing-amazons-first-custom-electric-delivery-vehicle>
- ¹⁸ Cortright, J. (2017). “Autonomous vehicles: Does federal preemption shut down the laboratories of democracy?” City Observatory. <https://cityobservatory.org/autonomous-vehicles-does-federal-preemption-shut-down-the-laboratories-of-democracy/>
- ¹⁹ The City of Chicago uses the term Transportation Network Providers (TNP): “A TNP company provides prearranged transportation services for compensation through an Internet-enabled application or digital platform to connect passengers with affiliated drivers or affiliated vehicles for hire. TNP drivers and their vehicles join and become affiliated with TNP companies and are then available to be dispatched through the TNP’s digital platform. TNP companies must be licensed. The TNP license is annual and non-transferable.” More information: <https://www.chicago.gov/content/dam/city/depts/bacp/publicvehicleinfo/publicvehicle/TNP/tnplicensefactsheetv20200120.pdf>
- ²⁰ Center for Neighborhood Technology (CNT). (2019). “Who Will Really Pay the Most for New Ridehailing Fees?” <https://www.cnt.org/blog/who-will-really-pay-the-most-for-new-ride-hailing-fees>.
- ²¹ New York City Taxi & Limousine Commission. “New York State’s Congestion Surcharge.” Accessed 16 October 2020. <https://www1.nyc.gov/site/tlc/about/congestion-surcharge.page>.
- ²² New York State Department of Taxation & Finance. “Congestion Surcharge” Accessed 16 October 2020. <https://www.tax.ny.gov/bus/cs/csidx.htm>.
- ²³ Byrne, J. (2020). “Ground delivery tax would tack \$1.25 onto Amazon orders in Chicago.” Chicago Tribune. <https://www.chicagotribune.com/coronavirus/ct-coronavirus-chicago-lori-lightfoot-restaurant-delivery-fees-budget-20201123-xxrmoqtuijgh5oiycnlwh74u-story.html>

²⁴ Robbins, C. (2020). "NY Lawmaker proposes \$3 tax for online deliveries, to save the MTA and check Amazon's power." Gothamist. <https://gothamist.com/news/ny-lawmaker-proposes-3-tax-online-deliveries-save-mta-and-check-amazons-power>

²⁵ ABC 7 NY (2020). "Proposal would charge \$3 for package delivery in NYC to help fund MTA." Personal Finance. <https://abc7ny.com/package-surcharge-nyc-extra-fee-for-delivery-mta-budget-robert-carroll/8615924/>