For-Hire Vehicle Transportation Study

January, 2016

City of New York
Bill de Blasio, Mayor

Office of the Mayor

I. INTRODUCTION

In the last several years, the ubiquity of mobile phones, and the rise of new platforms for getting and giving rides have increased the complexity of New York's transportation system. With the arrival and rapid growth of new types of on-demand for-hire vehicle services, the City has sought to answer fundamental questions about the potential impact of these changes on key priorities: managing the efficient movement of goods and services across the City, particularly in Manhattan's congested Central Business District (CBD), supporting a comprehensive and sustainable transportation system, promoting equitable growth, and ensuring safety for drivers and passengers.

New York City is committed to offering a reliable, safe, accessible, and comprehensive transportation system that promotes the public good and meets the needs of all New Yorkers across all five boroughs. The City must make sure that residents and visitors have a range of appealing transportation options, that the streets are safe, that passengers are protected from fraud and abuse, and that those who work to provide transportation have fair and sustainable working conditions and income opportunities. While doing so, the City must take steps to ensure that its transportation system is accessible to all, regardless of individual ability.

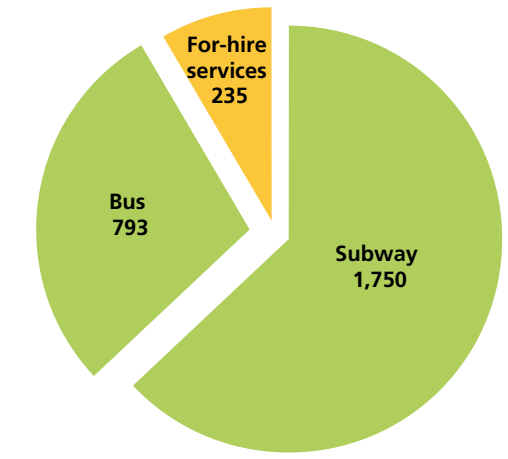
For-Hire Vehicles are a Vital Part of New York City's Transportation Mix

For-hire vehicles (FHVs) -- yellow and green taxis, livery cars, traditional black car services, and the fast-growing app-based car services like Uber and Lyft -- are an important part of the City's transportation mix.

Paid transportation market snapshot

Annual paid trips by mode

Millions of trips, 2014



SOURCE: TLC 2014 data; MTA annual reports

Although subway and bus trips significantly outnumber for-hire vehicle trips, for-hire vehicles provide some services that the mass transit system cannot. Many New Yorkers use for-hire vehicles when subway or bus lines are too far away from their home or destination or when mass transit is perceived as too slow or requires too long a wait. In addition to convenience and speed, passengers may also select for-hire vehicles for comfort, privacy, and the relative ease of transporting bulk items and packages.

Most New Yorkers get around using subways or buses. Public transit makes up the largest part of our transportation system by ridership, but taxi and livery services have long played a significant role. New York City has the lowest rate of private car ownership in the nation and the highest utilization of for-hire services. Every day hundreds of thousands of New Yorkers and tourists take trips in for-hire vehicles, relying on them to get to work, school, medical appointments, to and from the airports, and other destinations.

From the iconic yellow medallion taxis clustered in central Manhattan, to neighborhood car services found in communities across the Bronx, Brooklyn, Queens, and Staten Island, the industry has grown and changed to meet a wide range of customer needs. At the high end, there are limousines and premium black car services that largely work for corporate accounts. In the mid-range value are yellow and green cabs, hailed on the street throughout the five boroughs. There are also small neighborhood livery companies, whose costs are often lowest and conduct many of their transactions in cash.

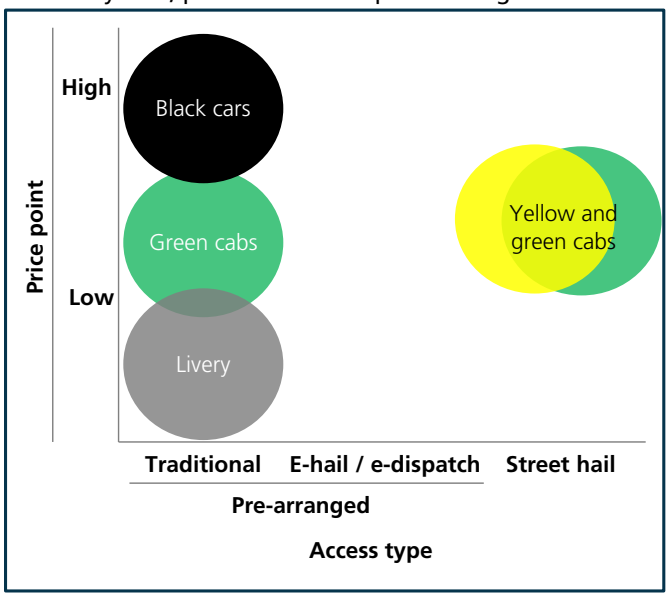
In the last three years, the landscape of for-hire service has changed considerably due to the rise of app-based electronic dispatch (or e-dispatch) services, such as Uber and Lyft, that allow customers to request vehicles on their smartphones.

The City's Regulation of For-Hire Vehicles

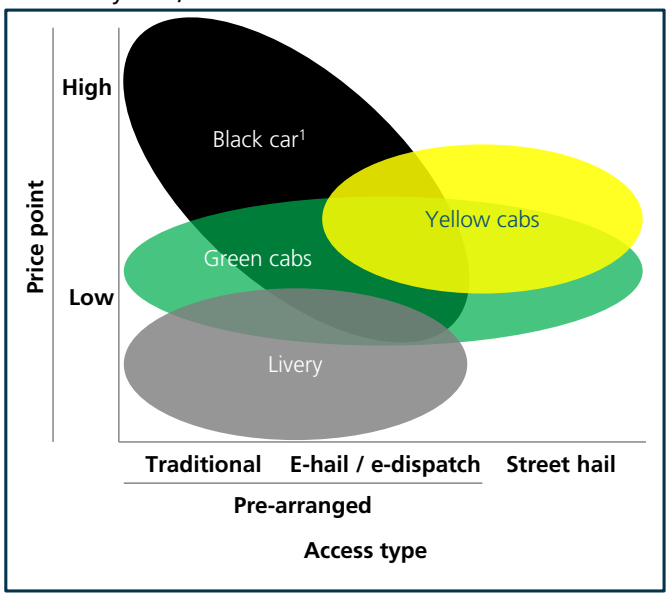
The City regulates for-hire vehicle services through the Taxi and Limousine Commission (TLC) to promote the public interest. The rise of e-dispatch services have blurred the traditional line between medallion cabs, which can offer street-hail service, and non-taxi for-hire vehicles that offer pre-arranged service. With the quick arrival of a car at the tap of a button, the distinctions that yielded differential regulatory treatment across black and yellow cars are less relevant, and the City must adapt its traditional frameworks to support the new entrants that do not squarely fit into traditional categories. E-dispatch providers have worked with the TLC to meet requirements for existing categories, but

Due to technological advances, once-distinct regulatory categories are blurring

FHV Ecosystem, pre-electronic dispatch FHV growth



FHV Ecosystem, 2015



In NYC, Uber and Lyft are categorized as black cars, not as a separate category
Interviews with industry players, experts, consumers, and TLC, and review of TLC regulations

their rapid growth has stressed the regulatory framework and is upending traditional categories, prompting the City to review the for-hire vehicle industry and lay out four priority areas for study and reform:

1. **Supporting a comprehensive transportation system** (including the provision of transit choices, geographic coverage, accessibility, and the financial health of the system as a whole);
2. **Promoting equitable growth** (including consumer protections around pricing and other issues, labor market impact and job quality);
3. **Managing mobility impacts in the Central Business District of Manhattan** (assessing the ability of people and goods to travel into, out of, and around Manhattan, the volume of vehicle traffic on the roads, the capacity of the roads themselves, and assessing any environmental impact); and
4. **Ensuring safety** (for drivers, passengers, and other users of New York City streets).

In the FHV industry, as in other economic sectors, when sudden changes in market activity produce outcomes that might be counter to the public interest, government must evaluate the rapid changes and take strategic steps to promote a vibrant marketplace while crafting reasonable regulations to promote the public good. In this report, we set forth facts and findings that provide a basis for the future regulation of New York City's for-hire vehicle market.

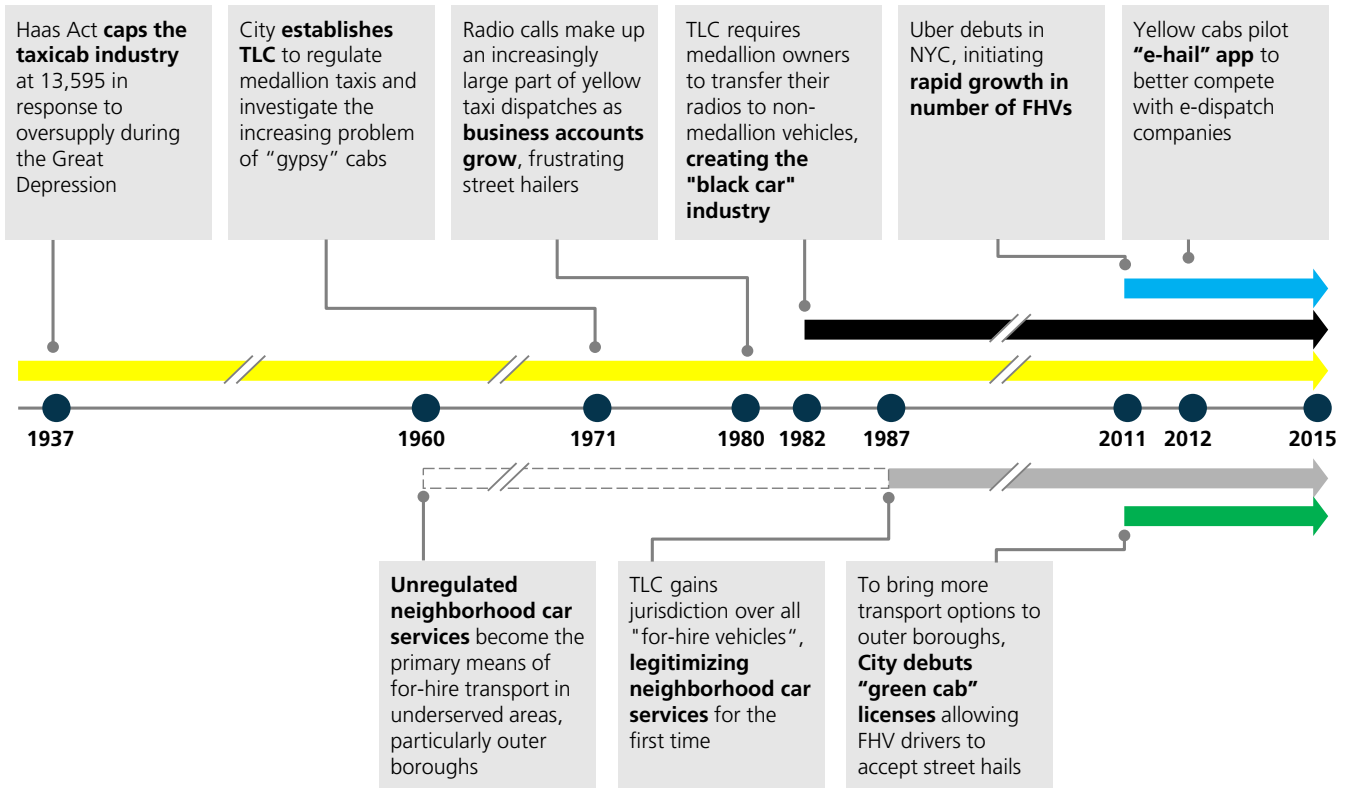
This report is a product of months of analysis and evaluation, drawing upon the City's internal agency expertise, along with the assistance of outside consultants, to provide the fact basis on the current baseline conditions in the Manhattan core. Data provided in this report was collected during the study period (August through October, 2015).

II. THE REGULATION OF APP-BASED "E-DISPATCH" SERVICES

New York City has a long tradition of adapting its rules and regulatory structures to the changing needs of the for-hire vehicle industry and its passengers. These regulations have generally occurred in reaction to market behavior and conditions rather than as part of a proactive vision for the transportation industry. The City's regulation of the industry has adapted with changing times – from the cap on taxi medallions imposed during the Great Depression, to the creation of the Taxi and Limousine Commission in the early 1970s.

Jurisdictions across the U.S. and the world have adapted different models of regulation for e-dispatch operators

Regulation has evolved to recognize four types of FHVs



SOURCE: TLC interviews; NYC FHV Fact Book; Schaller Consulting

like Uber and Lyft. In many jurisdictions, like San Francisco and Washington, D.C., e-dispatch services operate on a decentralized peer-to-peer model.[1] Under this model, these companies provide the software to link passengers to drivers of vehicles who give rides. The platform bears the regulatory responsibility for safety, including training and background checks. In these jurisdictions, drivers without a commercial license may offer rides in their personal cars using the platform.

In New York City, these companies face added requirements under the TLC's for-hire vehicle legal and regulatory framework; drivers are professionals and must hold a commercial license, as well as undergo more rigorous background checks and training. Though drivers may operate their personal vehicles, those vehicles must submit to City inspection.

E-dispatch services are growing rapidly. In New York City, the rise of e-dispatch services has created noticeable shifts in driver and consumer behavior. Many drivers are moving from yellow cabs to drive primarily for e-dispatch companies. In the past two years, the number of active yellow taxi drivers has declined five percent.[2] Over the same two-year period, new for-hire vehicle registrations by former yellow taxi drivers have increased many times over.

III. KEY CHALLENGES & FINDINGS

Managing Mobility in the Central Business District

One of the key transportation challenges in New York City is the movement of people and goods in Manhattan's Central Business District south of 60th Street. The CBD drives the regional economy, houses over two million workers, and attracts tens of millions more tourists each year.[3] It is home to the greatest concentration of economic and social activity in the country and the most intensive vehicle traffic congestion in the City. Most people who enter the CBD do so via subways or buses, but a substantial number arrive by vehicle.

1 Press clippings; City regulatory agencies

2 TLC data

3 NYC&Co.

As the City's population and tourism have grown, the New York City Department of Transportation has worked to improve the safety, efficiency, and livability of the streets by supporting travel options that require less space such as walking, riding the bus, and bicycling, while maintaining appropriate traffic flow for cars and trucks. These steps, including pedestrian safety projects, bus lanes, bicycle lanes, and plazas, are core to the City's safety and sustainability goals, and fundamentally allow more people to access and enjoy the Central Business District without adding more cars on the road.

Road network at full capacity

Road network with capacity reducing factors

Nevertheless, based on several key indicators, vehicle congestion has been increasing in severity in the Manhattan CBD over the past five years, with consequences for people in buses and cars, and businesses and institutions that rely on goods delivered in trucks. Peak hour vehicle commuters in NYC faced an average annual delay of 74 hours in 2014[4]. The annual cost of lost time due to congestion delays was approximately $14.7 billion.[5] Average vehicle speeds have fallen nearly 10% over the last two years.[6]

Vehicle congestion in the CBD is related to a variety of factors, which can be broken into those that affect the volume (demand) of travel and those that affect the capacity (supply) of the roadway. The volume of vehicle traffic in a given area is frequently measured by the total number of vehicle miles traveled (VMT). This will vary based on the total demand for travel (the number of vehicle trips of all types that people take) and the mode of travel by which trips are undertaken. In the Manhattan CBD, the vast majority and a growing share of trips are by foot, rail, bus, and bike; an important but minority share of trips are by car or truck.

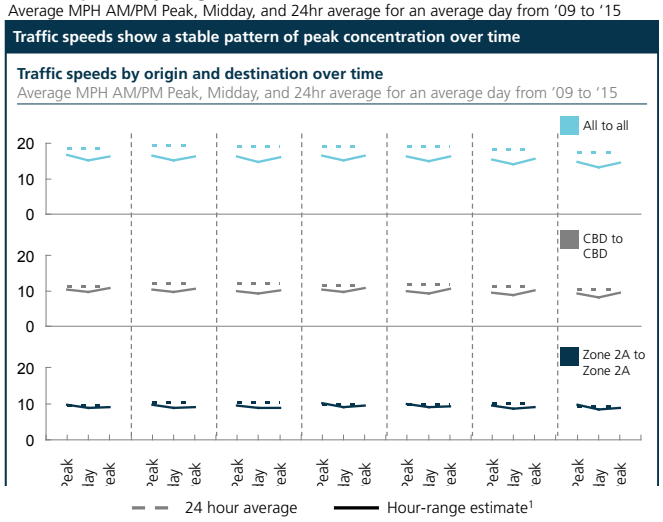
Permanently or temporarily reducing the capacity of roadways generally increases motor vehicle congestion, shifts vehicle travel to other routes or times of day, or causes some traffic to disappear as travelers shift to other modes or otherwise change their pattern of travel. Changes like opening and closing lanes and setting traffic light timing systems alter the baseline vehicle capacity of the roadway producing similar changes to travel behavior. Blocking lanes for construction of buildings, subways, underground utility infrastructure, or road repairs can also reduce road vehicular capacity by anywhere from 25-100%[7] depending on how many lanes are blocked. A large number of people arriving by subway or bus increases pedestrian volumes, which can reduce motor vehicle road capacity by as much as a third as turning vehicles must wait for pedestrians crossing at intersections. Motor vehicle traffic congestion is also significantly affected by how curb space is managed. When there is inadequate space at the curb for trucks and delivery vehicles and those vehicles double park, they can remove a full lane or more from traffic service. Vehicles circulating in a search for parking and engaged in parking maneuvers can also have a significant impact on congestion. In an important respect, many of these contributors to congestion are signs of prosperity and the efficient use of street space – vehicle congestion would be far worse if people on foot drove instead, and the growth of new buildings, tourism, infrastructure investment and economic activity are signs of a healthy city.

Findings:

Traffic speeds show a stable pattern of peak concentration over time

Traffic speeds by origin and destination over time

Average MPH AM/PM Peak, Midday, and 24hr average for an average day from '09 to '15



1 AM peak is 6A-10A, Midday period is 10A-4P, and PM Peak is 4P-8P
SOURCE: TLC database

4 TTI Urban Mobility report, Texas A&M and INRIX, 2015 Urban Mobility Scorecard

5 TTI Urban Mobility report, Texas A&M and INRIX, 2015 Urban Mobility Scorecard

6 TLC TPEP data on taxi speeds

7 Traffic Engineering Book (4th Edition)

Reductions in vehicular speeds are driven primarily by increased freight movement, construction activity, and population growth. According to the City's analysis, several factors have contributed to the recently observed drop in Manhattan CBD travel speeds by taxis and buses, affecting practical vehicular roadway capacity and how it is used. Population and job growth, increased construction activity, growth in the number of deliveries, and record levels of tourism have all contributed to the reductions in vehicle speeds. Construction permits in the CBD are up 6-7% since 2009[8] and pedestrian counts in the CBD are also up 18-24% since 2009.[9]

E-dispatch is a contributor to overall congestion, but did not drive the recent increase in congestion in the CBD. Vehicles of all types play a role in congestion in the CBD. The number of trips by all vehicle types in the CBD remained flat between 2014 and 2015 as increases in transit ridership offset increases in trip deman driven by growth. Increases in e-dispatch trips are largely substituting for yellow taxi trips[10] in the CBD. Because these e-dispatch trips are substitutions and not new trips, they are not increasing VMT. Additionally, there is no clear evidence to suggest decisive capacity effects driven specifically by e-dispatch pick-up, drop-off, and parking behaviors in the period. Therefore, e-dispatch does not appear to be driving the additional congestion experienced in the CBD.

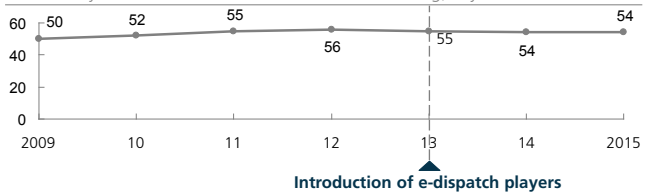
In addition to looking at congestion in the CBD as a whole, the study also briefly examined the impact changes in the FHV sector could have at the micro level. Within the CBD, over the next five years, there are likely to be modest declines in vehicle speed. However, small macro-level changes may drive significant delays at discrete points. For example, if the growth in the FHV sector is due to net new car trips, then high-traffic intersections could see significant increases in vehicular congestion.

Finding:

E-dispatch could drive modest growth in congestion in the future. The impact of e-dispatch vehicles on congestion in the CBD may change in the future. If rapid e-dispatch growth were to reduce public transit trips, there would be additional modest growth in congestion across the CBD due to for-hire vehicles. Given that much of the growth seems to be growth in e-dispatch, these scenarios show modest growth in the CBD as a whole, even with significant growth in other car modes.

Yellow utilization, for sample day

Percent of yellow VMTs travelled where meter is running, city wide



Based on a sample mid-week day in April for each year 2009-2015, annual average of 21.5 trips per shift likely higher and number of yellow shifts per day lower due to shifts that contain hours in consecutive 24-hour days

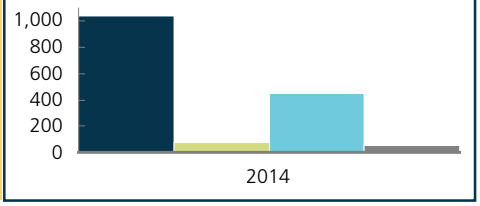
SOURCE: TLC database analysis of a sample mid-week day in April for each year 2009-2015

The number of vehicle-miles-traveled (VMTs), a measure of traffic volume, is flat overall in the CBD from 2014 to 2015, even with the growth of e-dispatch

For-hire services were a relatively small portion of VMT in 2014…

Total 2014 VMTs originating in CBD[2]

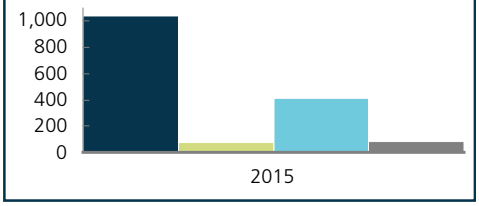
VMTs by mode, millions



…and while e-dispatch grew in 2015, total VMTs are essentially flat

Total 2015 VMTs originating in CBD[2]

VMTs by mode, millions



Private Car · Truck · Taxi and Traditional FHV[1] · e-dispatch

1 Taxi corresponds to BPM "Taxi" category and contains Yellow, Black, Livery, and Limo; in CBD pickups are 95.9% taxi

2 All data is centered on VMTs located wholly within the CBD regardless of origination and/or destination. BPM projections for 2010 and 2020 are interpolated linearly to arrive at 2014 and 2015 values for Private Car and Truck, and Private Car is adjusted by diversion to e-dispatch based on primary research on NYC residents. 2014 and 2015 TPEP data analyzed to determine Taxi trip origins/destinations and lengths; assignments to TAZ based on shortest path through road-network via BPM assignment functionality. No data exists on traditional FHV in 2014, and BPM growth rates are applied in reverse to arrive at 2014 FHV levels. Cruising VMTs incorporated into Taxi / traditional FHV / e-dispatch breadcrumb data estimates from Yellow adjusted to other modes via driver survey. VMT of revenue trips for e-dispatch is taken directly from Uber submitted data; given lack of data on traditional FHVs this information is assumed to apply to those as well. Uber data scaled to total e-dispatch market based on Uber proportion of e-dispatch pickups in 1H'15; measured at 99.5%

SOURCE: NYMTC BPM projections, TLC databases

8 DOT roadway construction permits

9 DOT pedestrian count during one week in Spring, 2009-2015

10 NYMTC BPM Projections, DOT, TLC

Yellow cab utilization remains steady despite decline in trips, with little change in congestion impact. While yellow taxi trips have declined over the study period, patterns of yellow taxi utilization have not changed. Since the arrival of e-dispatch apps, the ratio of yellow taxi vehicle miles traveled with the meter engaged to yellow taxi vehicle miles traveled without a passenger has remained constant, with metered travel representing approximately 54% of taxi vehicle miles traveled.

Ride-sharing may have inadvertent, detrimental impacts on congestion. Ride-sharing – a carpool service operated by e-dispatch and other providers - is gaining momentum in New York City as well as cities around the country. More and more e-dispatch providers are adding this feature to their menu of services for their customers' convenience, as ride-sharing works the same as other e-dispatch services, but offers cheaper individual rides. Though this service may provide some benefit for consumers individually, the effects on congestion vary depending on which pool of consumers ride-sharing pulls from. Ride-sharing could have a substantial impact in reducing vehicle miles traveled, but only if many consumers change from other car-based modes and few riders switch from public transit. NYC buses typically use scarce urban street space much more efficiently than FHVs, even if there are several passengers sharing an e-dispatched ride-share service. The congestion mitigation of an 11-13% switch in yellow taxi and e-dispatch trips over to ride-sharing would be completely offset if less than 1% of public transit riders also switched to ride-sharing.[11]

Air Quality improves over time. Even in light of potential congestion increases, modeling done for this study shows that air quality levels from mobile sources are expected to improve in the future -- in large part due to substantial increases in automotive emissions standards. In addition, the City's new Air Code and new State and Federal requirements mean that any increases in air pollution caused by the addition of vehicles would not be sufficient to alter the overall downward trend. Given the relatively small percentage the FHV industry represents of vehicles in the CBD, and the substitution effect between yellow and FHVs, under the current standard for taxis and for-hire vehicle usage and retirement, changes in the FHV sector are not likely to affect New York City air quality in a significant manner.

11 HDR/KLD for-hire services projection model, Bandwagon ridesharing data; NYC Consumer survey September 2015

Supporting a Comprehensive Transportation System

Meeting Accessibility Commitments

Another continuing challenge the City faces is providing sufficient and reliable accessible transportation. Wheelchair users are about 10%[12] of the total population of people with disabilities.

New Yorkers with physical disabilities have sought equal access to every part of the City, including the taxi fleet, for years. The City is committed to making the yellow cab fleet 50% accessible by 2020 and the green cab fleet 50% accessible by 2024. All black car and livery car services, including e-dispatch providers, are required by TLC rules to provide equivalent service to all users regardless of disability, but a 2014 enforcement action found widespread failure to meet the requirement.

Finding:

As e-dispatch continues to grow, the percentage of for-hire vehicles that are accessible will drop. Yellow and green taxi fleets, which are subject to accessible vehicle requirements, are losing their supply of willing drivers to e-dispatch services, which are subject to the equivalent service rule, but which are not subject to the judicial and statutory mandates affecting yellow and greens cabs. E-dispatched cars are not accessible to many people with disabilities including vision and hearing loss, or people using non-folding wheelchairs. As more e-dispatch vehicles are added to the road, the number of accessible yellow and green taxis becomes a smaller and smaller percentage of all for-hire vehicles – even without the drop in supply of yellow and green taxi drivers that the City is beginning to experience. If the system were fully accessible and people with disabilities were to take as many trips per day as New Yorkers on average, the New York City transit system would see almost 920,000 trips per day[13] taken by people with disabilities out of a population of roughly 1,000,000 disabled individuals. Wheelchair users would generate approximately 83,000 trips per day[14] through the New York City transit system.

Supporting Mass Transit

One of the City's core interests is maintaining adequate revenue to support mass transit and other transportation needs. As an intensive user of City streets, it is appropriate that for-hire vehicle companies participate in funding these needs, and it is appropriate that e-dispatch companies pay their fair share. The blurring between

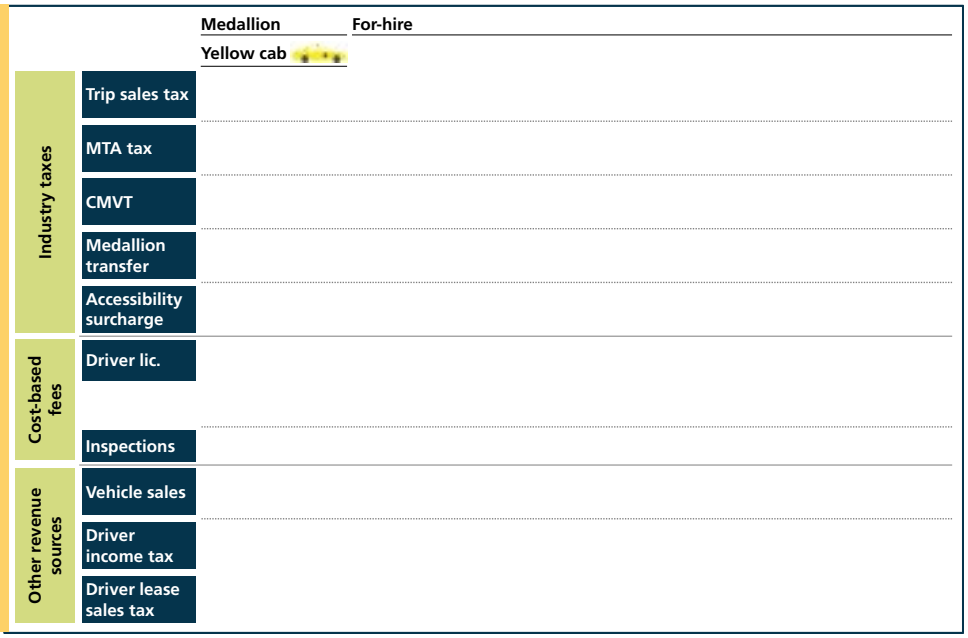
12 Mayor's Office for People with Disabilities

13 Assuming same trip intensity as overall NYC population across all modalities

14 Assuming same trip intensity as overall NYC population across all modalities

The chart below demonstrates how taxes and fees figure into the fare paid by passengers:

Commercial vehicles contribute differently to public revenues



SOURCE: TLC, OMB

the yellow cab and e-dispatch market has eroded an important source of transit funding, since taxes and fees are applied differently between these two sectors even though passengers now readily move between them.

The City and the Metropolitan Transportation Authority (MTA) receive significant amounts of revenue from yellow and green cabs. There is a $0.50 MTA surcharge for every trip in those vehicles that goes to support mass transit. Taxi passengers also pay a 30-cent per ride fee that goes towards an accessibility fund to help the City achieve its fleet accessibility goals. Non-taxi for-hire vehicles, including e-dispatch vehicles, do not pay an MTA surcharge or an accessibility fee. However, they do pay a per trip sales tax of 8.875%, with 0.375% devoted to the MTA, 4.5% going to the City, and the balance directed to the State. Yellow and green cabs do not pay sales tax.[15]

Finding:

The shift to e-dispatch will create a revenue shortfall for key transportation priorities. Every e-dispatch trip taken in place of a yellow or green taxi diverts revenue from measures to fund an accessible fleet and support New York City's subway and bus system. Without regulatory intervention, the growth of e-dispatch services will have lasting impact on this important source of support for public transit and accessible vehicles.

15 New York City Office of Management and Budget, TLC

IV. PROMOTING EQUITABLE GROWTH

As a result of the technological advances that have occurred in the for-hire vehicle sector, once-distinct regulatory categories are now blurring, and causing more direct competition for drivers and passengers. Where there were once yellow and green cabs that took on passengers through street hails, and black cars and livery that did not, these lines are no longer so clear. Through the use of apps that let customers "e-hail" and summon "e-dispatches" yellow and green cabs, black cars, and livery cars are now in direct competition for the same passengers. All for-hire vehicle sectors are under pressure from illegal street hails which leave passengers without the consumer protections offered through regulated services.

This new FHV landscape has had a wide array of ramifications. The market segmentation that once existed has substantially eroded. Yellow cabs once obtained passengers almost exclusively through street hails and taxi stands, including at airports. Livery services worked primarily in neighborhoods that were not well served by yellow cabs. Black cars mainly served corporate clients through advanced bookings, primarily in Manhattan. With the advent of app-based dispatching, Uber's share of the FHV market has risen sharply. Despite the introduction of e-hail apps, yellow cabs have seen their passenger volume decline.[16]

16 TLC database

While the categories of FHV vehicles have blurred, the regulatory framework has remained remarkably fixed. Yellow and green cabs have fleets whose sizes are restricted by law – 15,237[17] and 18,000 vehicles, respectively. Livery, black car, and limousines – including e-dispatch cars – have no such restrictions.

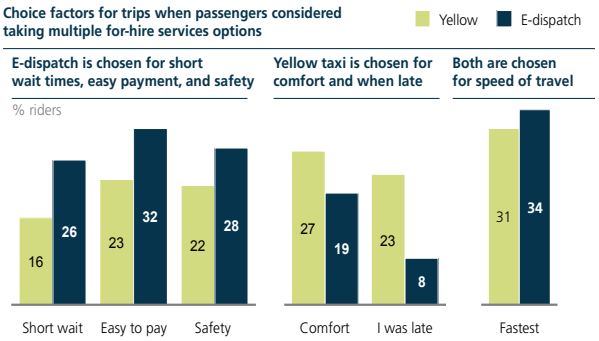
Fare information is disseminated differently by sector. Yellow or green cab prices are fixed and clearly displayed for the customer. A livery passenger can get a price quote from the dispatcher or driver. E-dispatch customers do not receive a firm fare quote in advance, an information asymmetry that can be exacerbated with so-called "surge" pricing.

There are over 148,000 licensed for-hire vehicle drivers[18] in New York City. All of these drivers must interact with TLC at some point throughout the year: getting a car inspected, dealing with a violation, or renewing a license. Until recently, licensing by itself presented a challenge as different sectors have different classifications of licensing. A recent change allows medallion and FHV drivers, who once had separate licenses, to operate vehicles in either sector. Drivers of yellow and green taxis are required to attend taxi school, which provides important training in safety and customer service. This requirement has recently been extended to drivers of non-taxi for-hire vehicles. There are also significant differences in fares, the frequency of TLC inspections, and other regulations.

Data collection is inconsistent across for-hire vehicle classes. Yellow and green taxis have far more stringent data requirements than non-taxi for-hire vehicles, which have, for years, only been required to report manually. This is in contrast to the steady stream of data collected by the Taxi Passenger Enhancements Project (TPEP) system in the yellow sector and Street Hail Livery Passenger Enhancements Project (LPEP) system in the green sectors. E-dispatch's app-based technology provides an opportunity to even out the data requirements and to better understand the needs of all for-hire vehicle customers. It should be noted that e-dispatch providers collect personal information from their customers and it is the duty of the City to ensure that providers protect the customer's privacy from data breaches.

Understanding Customer Choice

To better understand what is driving both consumer and driver decision-making, the City conducted an in-depth survey as part of its study of the for-hire vehicle industry. The survey was the first of its kind for the for-hire vehicle industry in New York City.



Restricted to trips where the respondent stated they also considered another FHS type, such as taxi, e-dispatch, black car or livery company

The survey showed that both financial and non-financial considerations play important roles in customer and driver behavior, and that e-dispatch services are viewed favorably for an array of service attributes, including convenience, comfort, and value.

Among consumer survey respondents who had used a for-hire vehicle service at least once in the past three months, riders chose both taxis and e-dispatch for speed. Riders who chose e-dispatch services chose them for short waits, ease of payment and safety. Riders chose taxis for comfort, or when in a hurry.

Passengers were more mixed on e-dispatch providers' "surge pricing," the practice of raising prices when demand for rides exceeds available vehicles in an area for some period of time. The idea behind surge pricing is to incentivize additional drivers to serve an area experiencing high demand, and to reduce demand at least temporarily and bring it into alignment with current supply. The survey results show that customers generally understand how surge pricing works, but 44% feel like that practice is unfair.[19] Despite this finding, overall, people surveyed felt positively about e-dispatch's "value for the money".

Understanding Driver Choice

To companies providing for-hire service, competition for drivers is often as important as competition for passengers. E-dispatch companies have recruited heavily for drivers and have offered financial incentives and earnings guarantees to attract drivers.

17 Note: the current number of medallions is capped at 13,587. An additional 1,650 have been authorized yet not auctioned.

18 TLC

19 Independent survey of 1,000 transportation consumers in New York City conducted in September 2015, weighted based on American Community Survey 2013 age, income, and gender distributions. Based on 231 trip-level responses from Uber riders

Some drivers have moved from yellow cabs to e-dispatch -- over 1,200 drivers in the first half of 2015.[20] They have made this move for a range of reasons, both financial and non-financial. Among e-dispatch drivers who previously drove for other for-hire service sectors, the most frequently mentioned reasons for switching are convenience of hours, income, and quality of passengers.

The survey results show that flexibility in working hours and income are both important to drivers' choices. On the financial side, a slight majority of e-dispatch drivers believe that driver earnings are higher in e-dispatch than other for-hire service sectors, while one-third view earnings as similar and 11 percent view e-dispatch earnings as lower. However, only 27 percent of drivers who have switched sectors report income was the primary reason for switching. Broadly consistent with these driver survey results, published estimates of possible income by sector support the conclusion that driver earnings are an important part of many, but not all, drivers' decisions to move to e-dispatch.[21]

Drivers across sectors share many of the same characteristics. About three quarters of all drivers say that driving a taxi or other for-hire vehicle is their full-time job. Another common factor amongst all drivers is that they are, for the most part, independent contractors lacking any form of healthcare or disability coverage.

While there are important advantages for drivers and customers in the shift toward e-dispatch services, the City has an important stake in maintaining a vibrant and financially healthy taxi industry given the importance of street hail and taxi stand service in the densest parts of the City as well as the importance of serving cash customers (which e-dispatch companies do not currently do) and wheelchair users. Differential regulations for taxis compared to other categories of for-hire vehicles limit traditional yellow taxis' ability to compete effectively with e-dispatch services, and encourage a vibrant and competitive market for passengers and drivers alike.

V. RECOMMENDATIONS

Based on the findings of the study, the City believes there's a need for further regulatory measures in order to continue to meet the needs of New Yorkers. There are five guiding principles that inform these proposed reforms:

- **simplicity**, or ensuring the system is easy to understand and work within;
- **flexibility**, or maintaining the ability to adapt as technology and business models change;
- **balance**, or providing necessary protections with minimum friction;
- **enforcement**, or minimizing the likelihood of informal or illicit activity; and
- **evenness**, or treating all sectors as close to equally as possible, except where differences are driven by policy goals.

New York needs a level playing field among yellow, green, black and e-dispatch services, with differences in regulations or standard driven by clear policy goals:

(i) a quality passenger experience;

(ii) new income opportunities and good jobs;

(iii) cultivating a competitive and innovative market in for-hire service;

(iv) ensuring accessible for-hire transportation options;

(v) safe and efficient NYC streets; and

(vi) maintaining a regulatory structure with integrity.

Ensure a Quality Passenger Experience

The study recommends reforms to protect the riding public. These reforms build on steps that the TLC has taken over the last two years to specifically address rider safety and consumer protections.

Protect consumers from unexpected or opaque pricing. The study recognizes that the growth of e-dispatch means a growth in passengers traveling without the benefit of a fixed metered fare. The City should continue efforts to protect passengers from unclear or predatory pricing, and continue efforts to innovate additional protections as providers innovate in their pricing mechanisms. Through rulemaking, the City has taken strong measures to ensure transparency and consumer protection in the use of differential pricing in the e-dispatch market, and these efforts should continue.

Coordinated shift changes. Shift changes in the City's taxi fleet lead to regular periods with dramatic drops in taxi availability, often at times where there is substantial demand for for-hire service. The City recently launched two pilot programs to allow more flexible shift times

20 TLC Data and Analysis

21 Online survey of 2,540 TLC-licensed drivers in September, 2015

and has been encouraging fleet managers to better coordinate these shift changes and moderate their impact on taxi availability during peak hours.

Create Opportunity and Good Driving Jobs

The City should pursue a regulatory framework that allows for the maximum flexibility for drivers to choose between driving opportunities, while ensuring a uniform floor of standards to protect consumers and minimize safety risks to drivers, passengers, and other street users. Differences between the different for-hire sectors should not prevent good and qualified drivers from getting on the road.

Equalize worker protections in the for-hire market. To the extent allowable by law, the City should seek to enhance the benefits and protections available to all drivers. To the extent that the law is a barrier to ensuring provision of benefits desired by drivers like health care or disability insurance, the law should be changed.

An extended license period and faster driver licensing processing. The speed with which a person can become a licensed for-hire driver is of major concern to aspiring drivers and companies providing for-hire service. To improve processing times and license acquisition, the TLC will continue efforts to transition to online licensing processes wherever possible and continue to develop a system that offers fuller transparency to applicants about their license status and the ability to perform more of the activities necessary to gain a license without in-person appearances. In addition, the City has published proposed rules to extend the licensing cycle beyond the current two year cycle. With improvements in licensing requirements and better training, licensee renewals can be extended without undermining driver standards or protections for the public. A longer license period will also allow for quicker processing for all current and prospective licensees by reducing processing volume.

Cultivate a Competitive and Innovative Market in For-Hire Service

The City and State can work together in order to create a level playing field that encourages new entrants, while also giving current operators an opportunity to compete by offering quality and responsive for-hire trips.

Offer more flexibility for medallion-owners. Recently, the City announced plans to reform owner-must-drive restrictions. Allowing medallion owners more flexibility to put their vehicles to work will provide broad benefits to the riding public, ensuring the maximum availability of the taxi fleet.

Equalize transit-contribution and workers compensation fees across the for-hire sector. The State tax code and State Insurance Law set a basic framework for the responsibilities of for-hire providers. In the same way that we seek to provide for evenness in City's oversight of the industry, the relevant State laws ought to reflect evenness in the mandates facing for-hire vehicles. In New York City, support for mass transit and accessibility has dropped as e-dispatch has grown. State reforms should ensure that all for-hire services providing on-demand service contribute to supporting mass transit in the localities in which they operate. Further, as there is convergence in the different classes of for-hire service, workers compensation requirements among the vehicle classes should be unified.

Ensure Accessible For-Hire Transportation Options

The study recognizes the growth of e-dispatch for-hire services without proper provision for accessibility as a challenge to the City's ability to fairly provide transportation options to all who need them.

Increase and Enforce accessibility requirements in for-hire service. All riders, regardless of accessibility needs, should enjoy the same ability to use for-hire transportation. Under the City's existing regulations each for-hire vehicle sector has a responsibility to provide accessible service. The City should ensure that these responsibilities are met through enforcement action.

Ensure accessibility in all categories of for-hire service. Over the next several years, the yellow taxi fleet will phase in additional accessible vehicles until it is 50% accessible. Similarly, TLC rules require that 33% of the green fleet be accessible by 2024, with 50% as the ultimate goal. Both accessibility models include incentive funds to encourage vehicle conversion. In the absence of a dramatic improvement in service provision in the coming years, the City should pursue a similar path to ensuring accessibility in the non-taxi for-hire vehicle sector.

Improve coordination with Access-a-Ride to expand on-demand accessible transportation options. The City can expand the reach of accessible for-hire service by identifying ways to improve coordination between the TLC's growing accessible taxi program and the MTA's current Access-A-Ride system. The City's accessible yellow and green taxis can help to provide greatly enhanced and more efficient service for Access-A-Ride

users. The City and the MTA should continue to work together towards that end.

Further Safe and Efficient Use of New York City Streets

The study **does not recommend a cap on for hire vehicles at this time**. While for-hire vehicles contribute to congestion, they have not driven the decline in Central Business District speeds that the City has recently experienced.

Reduce congestion through targeted enforcement of congestion-causing violations. The City should continuously evaluate traffic-causing activities by for-hire vehicles and other vehicles, particularly in the Central Business District, with appropriate enforcement responses. Even at current congestion levels, some for-hire vehicle activities associated with passenger pick-ups – like idling, double-parking, and 'blocking the box' – have particular additional congestion impacts, and should be a particular focus of enforcement in the most congested parts of the City.

Support efforts to improve bus speeds. The City should take steps to reverse the alarming recent decline in bus travel speeds, which is pushing riders out of public transportation and into other modes. It will require strengthening incentives to fill empty seats in vehicles consuming scarce street space in the core and shifting low occupancy vehicles out of the core during times of peak demand.

Better airport connections. At both La Guardia and Kennedy Airports, the City and the Port Authority have worked to provide better and more seamless rider experiences for users of taxi or e-dispatch services. There is still more opportunity to improve service at the airports that the City should pursue in concert with the Port Authority, particularly in facilitating ride-sharing.

Protect the Integrity of the Regulatory System

With more for-hire vehicles on the road, there is more opportunity for illegal or illicit activity, and the City needs more tools to address that activity. At the same time, the City must gain additional information from all sectors on the activities of licensed providers to ensure proper regulation of the system.

Crack down on illegal street hails. Illegal street hails subject both driver and passenger to potentially unsafe and unaccountable rides, open for-hire bases to liability for rides that they did not arrange or mediate, and exploit information asymmetries between driver and passenger that can result in predatory pricing or fraud. The right to accept street hails has historically been limited to yellow taxis and green hail vehicles in order to reduce congestion. This right requires the purchase of a medallion and is subject to heightened regulatory scrutiny. The City should pursue higher penalties for illegal street hails, and options for criminal prosecution against those who flout the law.

Ensure full access to for-hire data. The City works hard to regulate the taxi and for-hire markets, but this oversight could be more effective with fuller access to data about the activities of market participants which drive and inform analysis of the impact of market activity. The City should pursue a broader set of data reporting requirements for all FHV sectors. In addition to the benefits such information would provide for enforcement and the protection of public safety, more comprehensive data would enable continuing analysis of congestion and other impacts from the for-hire system, allowing for informed policy making.

METHODOLOGY

CONGESTION IN THE CENTRAL BUSINESS DISTRICT:

To better understand congestion in the CBD the City used a widely accepted model called the Best Practice Model (BPM). The BPM model was developed to determine the overall 2010 and 2020 vehicle miles traveled, or VMT (private, trucks, taxi) on a 24-hour basis. The VMT were derived from a complex traffic and regression modeling analysis approved by the New York City Department of Transportation. Existing and future demand volume over time by transportation mode was determined using BPM projections, New York City Taxi and Limousine Commission breadcrumb data, and e-dispatch trip records which were less complete for the FHV sector than for the yellow and green sectors. The future VMT projection was mapped out against the 24-hour speed profiles including the capacity reduction factor applied to the number of roadway lane miles.

Speed depends on a combination of the facility type, the free-flow speed, and the ratio of volume to capacity (i.e., the ratio of vehicular traffic demand to the supply of road capacity to accommodate traffic) along the roadway at a given time. The capacity of the road to serve the demand is a function of the number of lanes, number and type of intersections, traffic signal controls, temporary closures, parking and double-parking. The effective capacity of

a road is affected by the composition of the traffic – whether private cars, buses, taxis, trucks, pedestrians, bikes, or other modes.

Generally, when traffic volume is lower, the traffic speed is higher; as volume increases, the speed drops in a non-linear way. Since the CBD is near saturation capacity during the Peak Hours (AM, Midday, and PM), any increase in vehicle miles traveled will not show a linear correlation to a decrease in capacity or increase in VMT with respect to speeds. For this study, a set of macro level curves were developed to analyze these relationships at a zonal level. The model was used as a directional indicator of the change not the absolute change. A higher resolution model with more spatial and temporal detail would yield results with more detailed variation.

If all things were to be held constant, except for changes in the FHV market, a comparable condition to current congestion levels observed in the City can be anticipated for the year 2020.

CUSTOMER/DRIVER SURVEY: The study undertook primary research to build an understanding of the for-hire vehicle market, including a survey of consumers, a survey of drivers, and focus groups with drivers. The consumer survey focused on mode choice decisions and was anonymously administered by a professional market research firm. The survey included 1,850 people in New York City, including 1,000 consumers of for-hire services (defined as having used a for-hire vehicle service within the last three months). The survey results were weighted to ensure representation of the broader New York City population as defined by U.S. Census demographic data. To better understand the labor market and decision factors for drivers of for-hire services, a survey was sent anonymously to 45,000 TLC-licensed drivers, resulting in 2,540 complete responses (response rate of ~5%). Finally, the study held four focus groups, reaching 26 drivers, including drivers of traditional black cars, liveries, yellow taxis, and e-dispatch for-hire vehicles. The focus group participants were recruited by a professional firm and were moderated by a professional moderator not involved in the study.

POSSIBLE FUTURE SCENARIOS: Scenarios were developed to help the City think through the future implications of any policy changes for the FHS market. Scenarios were developed to address what the FHS sector would look like by the year 2020 if the City were to do nothing, and how those changes would impact congestion, accessibility and revenue. Three scenarios were developed to understand the impacts of high- and low-growth of e-dispatch as well as the source of that growth by 2020:

1. if e-dispatch growth has already peaked;
2. if the e-dispatch sector continues to grow, resulting in net new car trips – that is to say, if the growth that occurs pulls new trips from places like public transit, walking and biking, and other transportation modes; and
3. if the e-dispatch sector continues to grow, but only as a result of a displacement of taxis.

AIR QUALITY: As part of the For-Hire Vehicle Congestion Study, macro-level air quality and traffic analyses were conducted to estimate the existing and future FHV impacts over the next five to ten years assuming no changes are made to existing TLC regulations. Additionally, two future scenarios were evaluated for the year 2020. Case A assumes that the FHV growth generates net new trips and Case B assumes that FHV growth will substitute for other car-based modes, which would not result in net new trips. As part of the analysis, the following procedure was undertaken:

1. a regression model was developed to estimate the future trips;
2. the future trips were then converted to vehicle miles traveled; and
3. hourly VMTs were assigned an associated speed based upon existing and projected future speeds.