



# IMPROVING THE EFFICIENCY OF TRUCK DELIVERIES IN NYC

April 2019

Prepared in response to: Local Law 189 (2017)



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# EXECUTIVE SUMMARY

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## Understanding the Challenges of Urban Freight Deliveries in NYC Today Enables Us to Identify Opportunities for Improved Efficiency in the Last Mile Delivery

- Truck activity is economically important to NYC, where over 300,000 jobs are directly dependent on freight. It is critical to ensure that businesses receive deliveries they need to serve city residents and visitors.
- Today, of the 365 million tons of cargo that enter, leave, or pass through NYC each year, 89% is carried by a truck. In 2045, the same proportion will be delivered by truck, however, tonnage is expected to grow by 68% to 540 million tons.
- There are a total of 125,621 truck crossings into Manhattan per day, and Brooklyn has 73,583 daily trucks crossing its boundaries.
- Trucks comprise a meaningful but relatively small percentage of the traffic stream ranging between 8 and 12 percent; other vehicles, including taxis, other for-hire vehicles, private vehicles, and buses make up the remaining 88-92% of traffic.
- Within Midtown Manhattan and Downtown Brooklyn, 80% of the commercial activity on average, occurs during the day (7am-7pm).
- Congestion within Midtown and Downtown Brooklyn impedes truck mobility during the day with truck speeds dropping to 7 mph and 9.5 mph respectively, 50% slower compared to off-peak periods (7pm - 7 am).

# EXECUTIVE SUMMARY

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## Understanding the Challenges of Urban Freight Deliveries in NYC Today Enables Us to Identify Opportunities for Improved Efficiency in the Last Mile Delivery

- In 2016, the estimated cost of congestion to the trucking industry within the NYC metro area was \$4.9 Billion [3]. While these congestion costs highlight the magnitude of the effect of congestion on freight movement, estimates are benchmarked on free-flowing traffic which is often not the base condition in dynamic urban areas like NYC that has experienced significant economic growth, employment, and tourism in recent years.
- While Midtown is heavily regulated at the curb, issues such as: long staging times to service vertical markets and loading/unloading spaces used by service vehicles and non-commercial vehicles (including vehicles with valid and non-valid placards) create additional vehicle miles travelled (VMT) and congestion.
- There are real operational and financial benefits for off-hour deliveries that companies can realize as part of their delivery strategy for New York City. When compared with performance during congested times, deliveries in the off-hours have allowed:
  - **Receivers** to spend less time during store hours to receive and stock deliveries, and more time with customers with increased certainty of truck arrival.
  - **Transporters** to realize an increase in the efficiency of their operations, improve customer-to-customer service time, reduce transit time and fuel costs, spend less time finding space at the curb, increase reliability of delivery windows, improve their truck utilization and fuel efficiency, and reduce delivery costs overall.
- DOT has outlined steps to improve the efficiency of freight deliveries in NYC as described in the following sections.

# EXECUTIVE SUMMARY

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## Recommendations

The recommendations outlined in this report can only be achieved through the support of various stakeholders. Partnership and collaboration with and between the freight industry and their customers is fundamental to the success of these strategies.

### **Expand Off-Hour Deliveries (OHD) Program to reduce daytime traffic and congestion**

- Expand the OHD Program, targeting 900 retail locations in congested areas including Midtown Manhattan and Downtown Brooklyn, with a focus on businesses that can control delivery hours.
- Dedicate staff to facilitate targeted outreach to large corporate chains of receivers and transporters.
- Coordinate with BIDs and other business organizations around ideal targets for OHD and other efficiency strategies.
- Implement localized and targeted media plan to feature BIDs or specific businesses that engage in Off-Hour Deliveries within established priority focus areas.

### **Additional Recommendations:**

- Work with BIDs on consolidation of deliveries and development of delivery service plans.
- Study truck routes to evaluate changes to reduce through truck trips in busy areas.
- Collaborate with sister agencies on using Congestion Pricing policies that encourage efficient deliveries.
- Continue supporting plans for freight mode shift, including non-motorized, rail, and water.

# ABOUT THE STUDY

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## Local Law 189 (2017)

Signed by New York City Mayor Bill de Blasio on October 16, 2017, Local Law 189 requires a study of traffic congestion resulting from truck deliveries in Manhattan below 59th Street and in Downtown Brooklyn.

The law was sponsored by: Mark Levine, Ydanis A. Rodriguez, Fernando Cabrera, Vincent J. Gentile, Peter A. Koo, Darlene Mealy, Rosie Mendez, Donovan J. Richards, Deborah L. Rose, Carlos Menchaca, Andrew Cohen, Helen K. Rosenthal, Margaret S. Chin, David G. Greenfield, and Ben Kallos.



Source: Google Maps

# ABOUT THE STUDY

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## Local Law 189 (2017)

### Requirements:

- Such study shall include traffic congestion from truck deliveries at all hours of the day, night, and overnight.
- Such study shall include, but not be limited to, an analysis of the feasibility and necessity of implementing measures to reduce traffic congestion resulting from truck deliveries in the designated area between the hours of 7 a.m. and 7 p.m., including the possibility of shifting truck deliveries between the hours of 7 a.m. and 7 p.m. to hours after 7 p.m.
- The department shall implement feasible measures deemed necessary to decrease traffic congestion resulting from truck deliveries recommended by such study.

**Definitions:** For purposes of this local law, the term “truck deliveries” means the unloading of property to the curb from a motor vehicle designed, used, or maintained primarily for the transportation of property.

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## Context & Overview

# 1

# DOT'S STRATEGIC PLAN & FREIGHT MOVEMENT

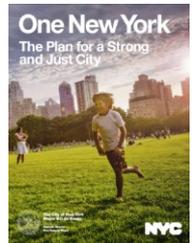
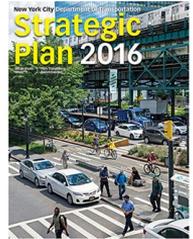
## Overview

In September 2016, DOT released its **Strategic Plan 2016: Safe-Green-Smart-Equitable** [1], echoing the agency's commitment to improving traffic safety and public health, expanding travel choices for all New Yorkers, supporting the City's efforts to fight climate change, increase cycling, and maintaining our streets and bridges to bring them into a state of good repair.

### Freight Goals

1. In partnership with the freight industry, **improve the safety, environmental performance, and economic efficiency of truck deliveries** across the five boroughs.
2. **Foster a culture of regulatory compliance** in the trucking industry.
3. **Expand partnerships with the freight and trucking industry** to encourage sharing of data to better manage truck movements throughout the City.

**Freight Movement** is one of eight themes featured in the 2016 Strategic Plan. Improving the efficiency and sustainability of the freight network is essential to New York City's quality of life and continued economic and population growth. To advance these goals of reducing the freight footprint of trucks, DOT is committed to making trucking greener and more efficient through smarter technology, better enforcement, and partnerships with freight haulers, receivers, and other industry stakeholders. The agency's strategic freight plan, *Smart Truck Management Plan* will be released in 2019.



Source: NYC.gov

# NYC RELIES ON TRUCKS FOR THE LAST MILE OF DELIVERY

## Trucks Deliver 89% of Goods in NYC

New York City's freight network moves goods from warehouses and vehicles outside the city, to stores and homes within the five boroughs.

Today, of the 365 million tons of cargo that enter, leave, or pass through the City each year, 89% is carried by a truck [2]. Although trucks will deliver the same proportion of goods in 2045 as they do now, the total freight tonnage is expected to grow by 68% to 540 million tons by 2045 [2], creating even more competition for contested street space.

With 41% of New Yorkers [5] receiving a delivery at their home at least a few times a week, the explosion of online retail has created additional demand on the City's transportation system, creating ever more competition on the road. In the U.S., increased demand for e-commerce is expected to grow reaching 15% of all retail sales by 2020 [6]. To meet this rising demand and movement of goods, it is critical to use our streets in a more efficient way than we do today.

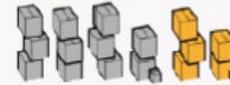
### The Challenge for Goods Movement in NYC

Today, there are over 8.6 million people in New York...



**6.4%**  
More People

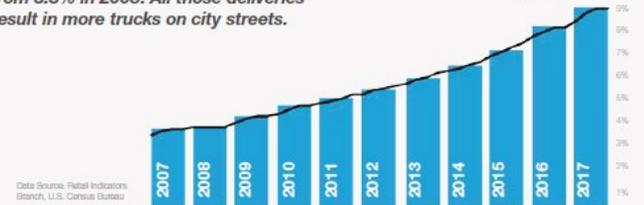
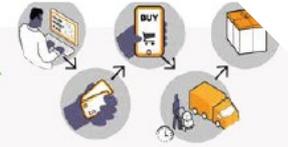
... who rely on the 186 million freight tons that are moved throughout NYC...



**68%**  
More freight tons

### Growing Demands for E-Commerce

E-commerce is rapidly growing, and now accounts for 9.5% of all retail sales, up from 3.3% in 2008. All those deliveries result in more trucks on city streets.



# NEW YORK CITY TRAFFIC

## Truck Mobility Impediments

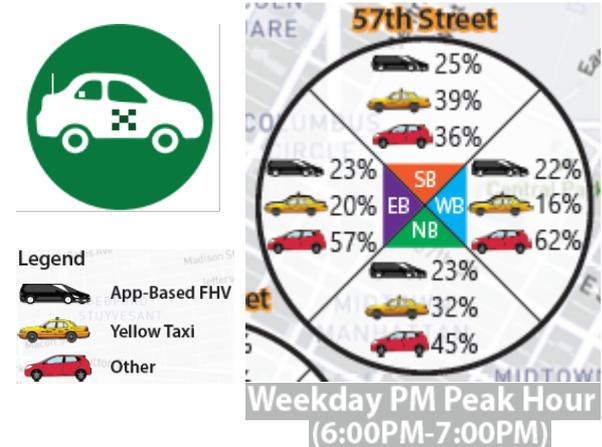
### Traffic Stream Composition

In Manhattan and other busy areas, trucks account for approximately 8-12% of vehicles on average based on DOT counts. Other vehicles, including taxis, other for-hire vehicles, private vehicles, and buses make up the remaining 88-92% of traffic.

### NYC Growth and Congestion Costs

While truck movement in NYC contributes to congestion, it is also affected by congestion. Increased congestion slows down trucks, increase freight transportation costs, reduces fuel efficiency, increase emissions and diminishes economic productivity. A report by the American Transportation Research Institute (ATRI) estimated that slightly more than 91% of the total trucking congestion costs in 2016 occurred in metropolitan areas. The estimated cost of congestion to the trucking industry along the interstate and national highway system within the NYC metro area was \$4.9 Billion [3]. While these congestion costs highlight the magnitude of the effect of congestion on freight movement, estimates are benchmarked on free-flowing traffic which is often not the base condition in dynamic urban areas like NYC that has experienced significant economic growth, employment, and tourism in recent years. Improving the reliability of travel conditions during peak periods and effectively managing demand is critical for the ensuring livable and sustainable communities.

### 2018 Existing Taxi and FHV Percentages



Source: DOT

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## State of Freight In NYC

# 2

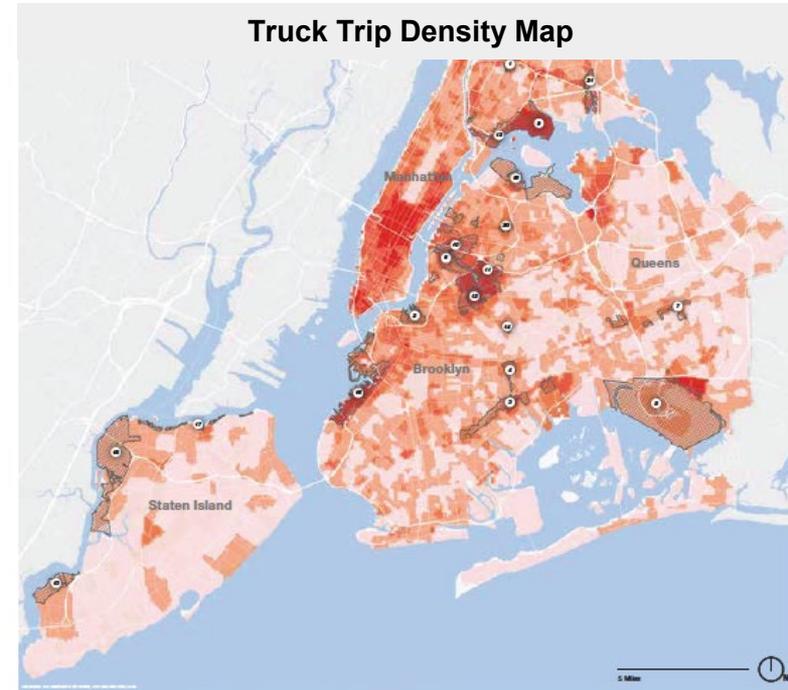
# FREIGHT DEMAND & LAND USE

## Freight Trip Generation

Freight demand and delivery activity is unique to every neighborhood in NYC. The amount, frequency, and type of deliveries varies by land use type, resulting in different levels of truck demand. An analysis of a truck trip model produced by RPI (Rensselaer Polytechnic Institute), indicates that seven industry sectors account for 84% of all freight trips in NYC, with retail and wholesale trade representing the largest truck trip-generating industries citywide.

Manhattan is the largest employment center in the city: businesses employ over 2.4 million people in the borough. The finance sector and other service industries, primarily comprised of high-rise vertical markets, are the CBD's largest generators of truck trips. Downtown Brooklyn's CBD exhibits a high level of truck activity relative to other parts of the borough, but pales in comparison to Manhattan.

The demand generated by these buildings can dictate the dwell times for trucks and commercial vehicles servicing them. Due to the age of the building stock in NYC, many buildings lack sufficient off-street loading docks to accommodate deliveries. The lack of direct access to adequate loading dock space may exacerbate congestion as commercial vehicle drivers search for parking in the surrounding area.



The map illustrates truck trip density normalized by trips per square mile highlighting concentrations in central business districts and industrial business zones throughout the city. Source: ATRI

# COMMERCIAL VEHICLE TIME OF DAY ANALYSIS

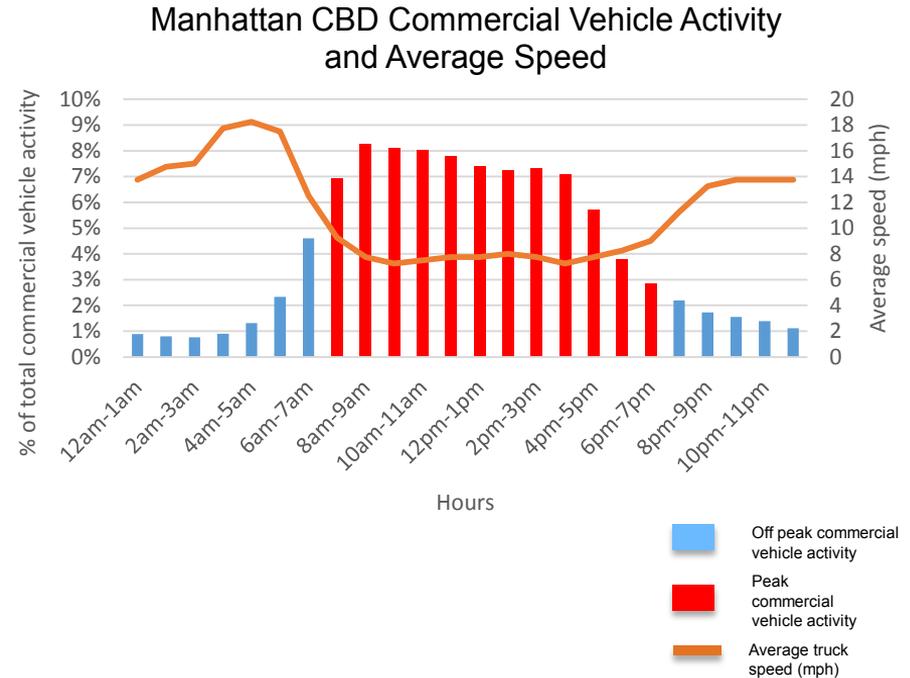
## Methodology

- To better understand the local impact of freight demand and activity in the CBD, DOT conducted an analysis for average weekdays (Tuesday - Thursday) between the months of February and May, over a 3-year period (2015-2017).
- The following focus areas were identified for commercial vehicle activity, based on the density of commercial markets:
  - Manhattan CBD (all areas below 60th St)
  - Midtown Manhattan Core (from 42nd to 59th Streets, between 3rd and 6th Avenues)
  - Financial District (FIDI) (south of Chambers St)
  - Downtown Brooklyn (from Tillary to Livingston St, between Court St and Flatbush Avenue)
- GPS data from medium and heavy duty commercial vehicles was utilized for this analysis; data was provided via Streetlight Data Insights - a company that supplies organizations with anonymized GPS and Location-Based Services data for analyses of both commercial and personal vehicles.
- Factors evaluated in each zone included average speed, and trip activity by time of day (hourly) – information on these attributes is available with each sample of data (for each commercial vehicle).

# COMMERCIAL VEHICLE TIME OF DAY ANALYSIS

## Manhattan CBD

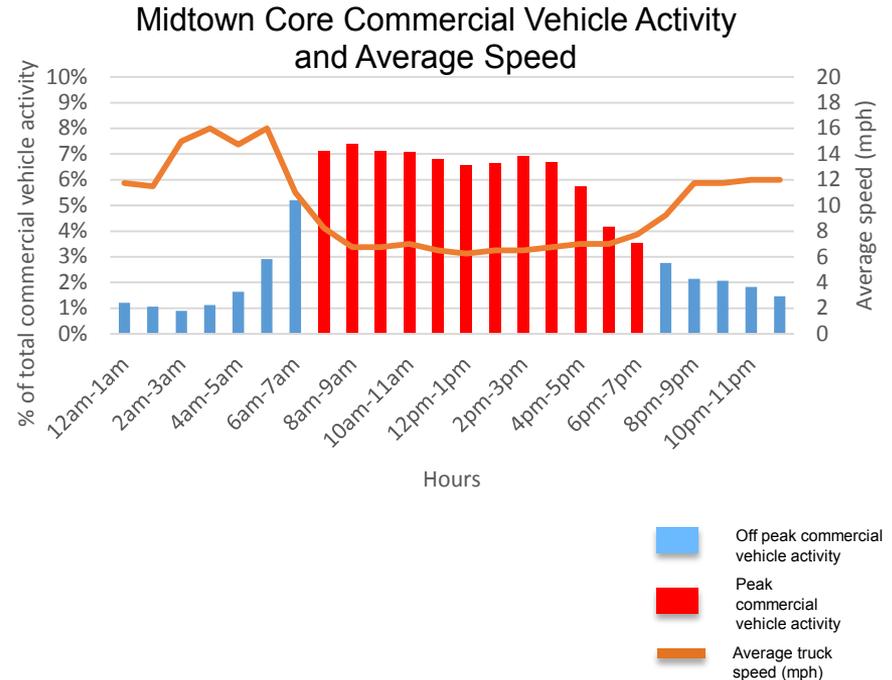
- 80% of all commercial vehicle activity occurs between 7a.m. and 7 p.m.
- Commercial vehicle activity peaks between 8 a.m. – 9 a.m. and persists until 4 p.m., after which it steadily declines.
- Peak commercial vehicle activity is 4 times greater than off peak commercial vehicle activity.
- Average commercial vehicle speeds are 1.8 times slower within the Manhattan CBD when the daytime traffic volume of passenger cars and FHV vehicles are significant.



# COMMERCIAL VEHICLE TIME OF DAY ANALYSIS

## Midtown Core

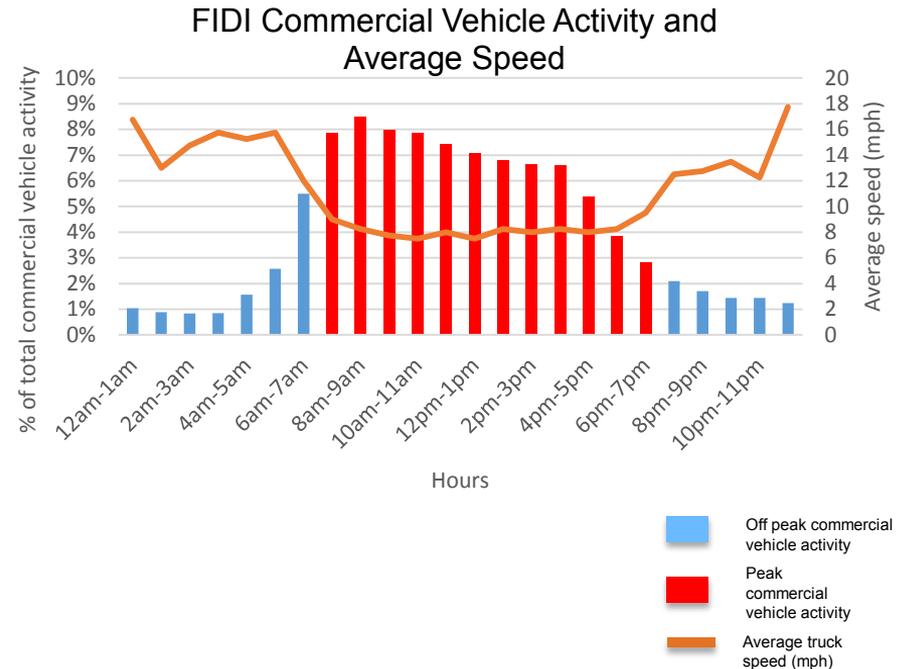
- The Midtown Core contains approximately 9% and 7% of total Manhattan CBD commercial vehicle activity (for peak and off peak periods respectively).
- 76% of all commercial vehicle activity occurs between 7 a.m. and 7 p.m.
- Commercial vehicle activity peaks between 8 a.m.- 9 a.m. with a steady decline after 4 p.m.
- Peak commercial vehicle activity is 3 times greater than off peak commercial vehicle activity.
- Average commercial vehicle speeds are 1.8 times slower within the Midtown Core when the daytime traffic volume of passenger cars and FHV vehicles are significant.



# COMMERCIAL VEHICLE TIME OF DAY ANALYSIS

## Financial District (FIDI)

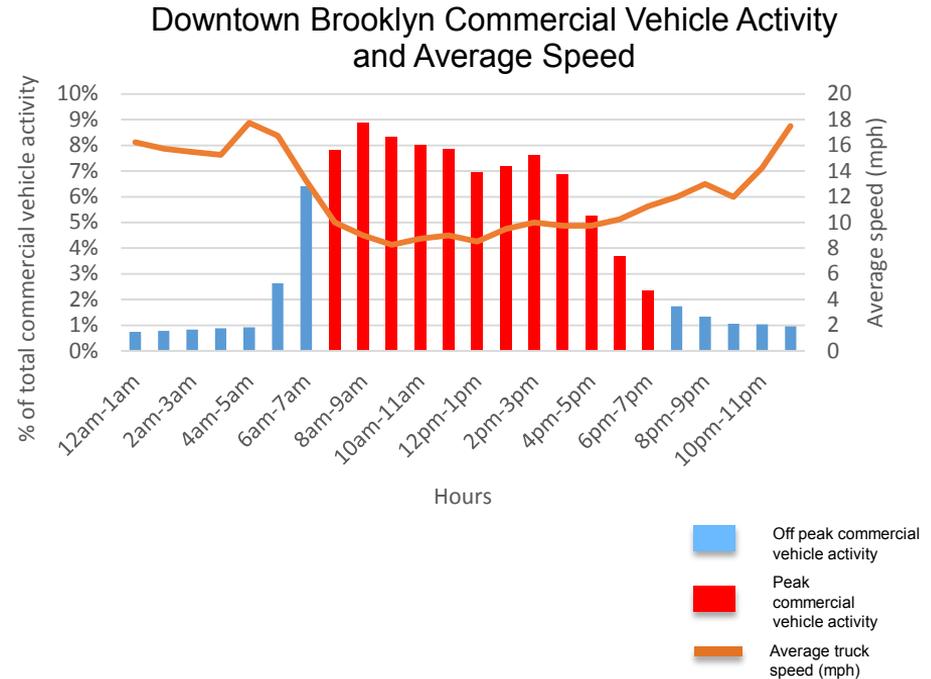
- Commercial vehicle activity peaks at 8 a. m. – 9 a.m., and then gradually declines for the remainder of the day.
- 79% of all commercial vehicle activity occurs between 7 a.m. and 7 p.m.
- Peak commercial vehicle activity is 4 times greater than off peak commercial vehicle activity.
- Average commercial vehicle speeds are 1.75 times slower within FIDI during peak hours when the daytime traffic volume of passenger cars and FHV vehicles are significant.



# COMMERCIAL VEHICLE TIME OF DAY ANALYSIS

## Downtown Brooklyn

- Commercial vehicle activity peaks between 8 a.m.- 9 a.m., and persists until 4 p.m., after which it steadily declines.
- 81% of all commercial vehicle activity occurs between 7 a.m. and 7 p.m.
- Peak commercial vehicle activity is 4 times greater than off peak commercial vehicle activity.
- Average commercial vehicle speeds are 1.5 times slower within Downtown Brooklyn during peak hours when the daytime traffic volume of passenger cars and FHV vehicles are significant.



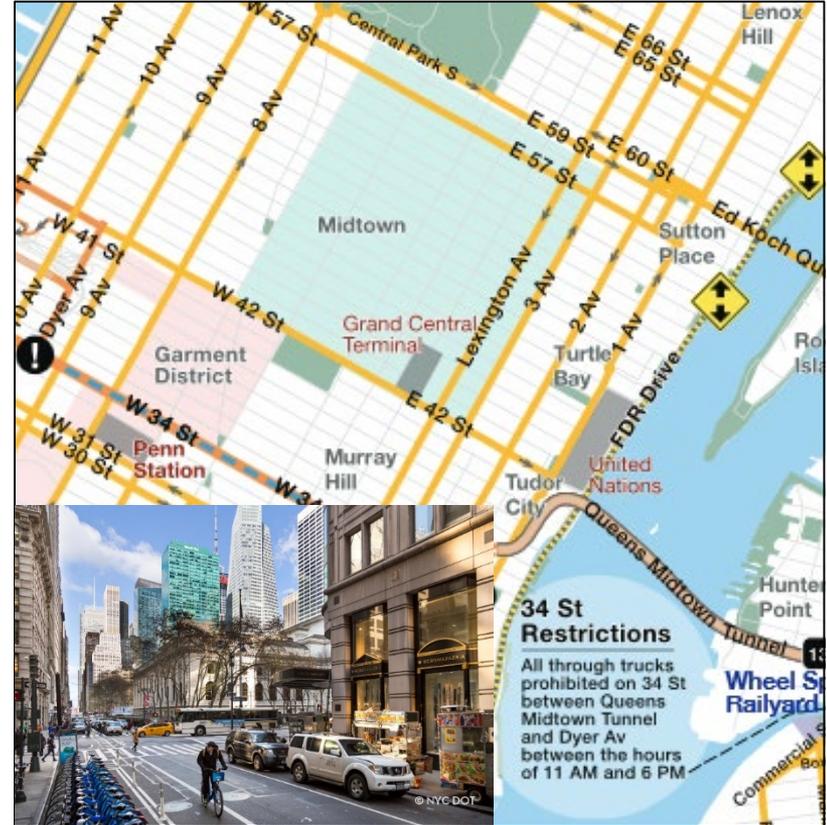
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## 2.1 East Midtown Case Study

# FREIGHT SURVEY

## East Midtown, Manhattan

- Curbside use also impacts freight transport and delivery. DOT conducted an on-street survey to better understand curb management, using East Midtown as a case study.
- Midtown Manhattan is the largest CBD in the world
- Dense vertical market, home to Empire State Building, Chrysler Building, Bryant Park, and many flagship retail stores
- Transit hub (Penn Station, Grand Central Terminal)
- On-street survey focused on the area between 2nd and 5th Avenues, and 41st and 45th Streets



Source: NYC Truck Route Map 2015; Image: DOT

# FREIGHT PROFILE: EAST MIDTOWN, MANHATTAN

## Typical Loading Activity

### Companies engaged in high density deliveries

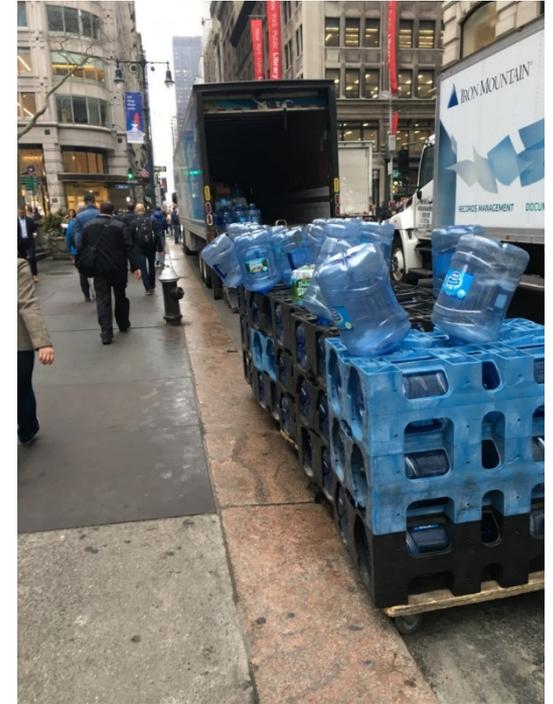
- Have many deliveries in a specified area – two or three blocks.
- Park vehicle and operate from truck back/forth.
- Vehicle may be parked for 6-8 hours.
- Are typically delivering small packages, parcel and office consumables.

### Lower Density Deliveries

- Usually involves one stop for one delivery, then off to the next.
- See a higher occurrence of double parking.
- Sectors include food delivery (multiple one-stop deliveries).

### Servicing & Construction

- Typically pick-ups and vans have long dwell times and curb space is used as staging for tools/equipment.
- Construction-related activity varies by phase: heavy-duty trucks for excavation and/or demolition, transitioning to light-duty trucks and pick up vans for finishing and refurbishments.



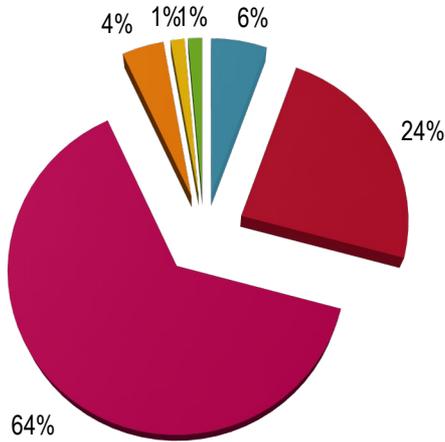
A truck unloading on 41<sup>st</sup> Street in Midtown  
Source: DOT

# DELIVERY VEHICLE SIZE

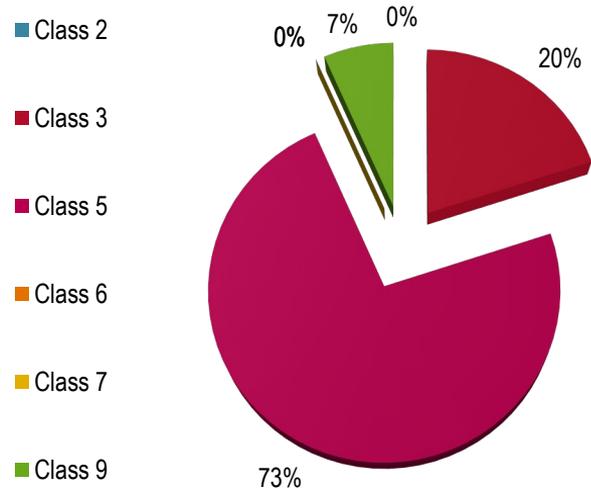
## East Midtown, Manhattan

64-73% of delivery vehicles were single unit box trucks

Streets\*



Avenues



<b>Class 1</b> Motorcycles		<b>Class 7</b> Four or more axle, single unit	
<b>Class 2</b> Passenger cars		<b>Class 8</b> Four or less axle, single trailer	
<b>Class 3</b> Four tire, single unit		<b>Class 9</b> 5-Axle tractor semitrailer	
<b>Class 4</b> Buses		<b>Class 10</b> Six or more axle, single trailer	
<b>Class 5</b> Two axle, six tire, single unit		<b>Class 11</b> Five or less axle, multi trailer	
<b>Class 6</b> Three axle, single unit		<b>Class 12</b> Six axle, multi-trailer	
		<b>Class 13</b> Seven or more axle, multi-trailer	

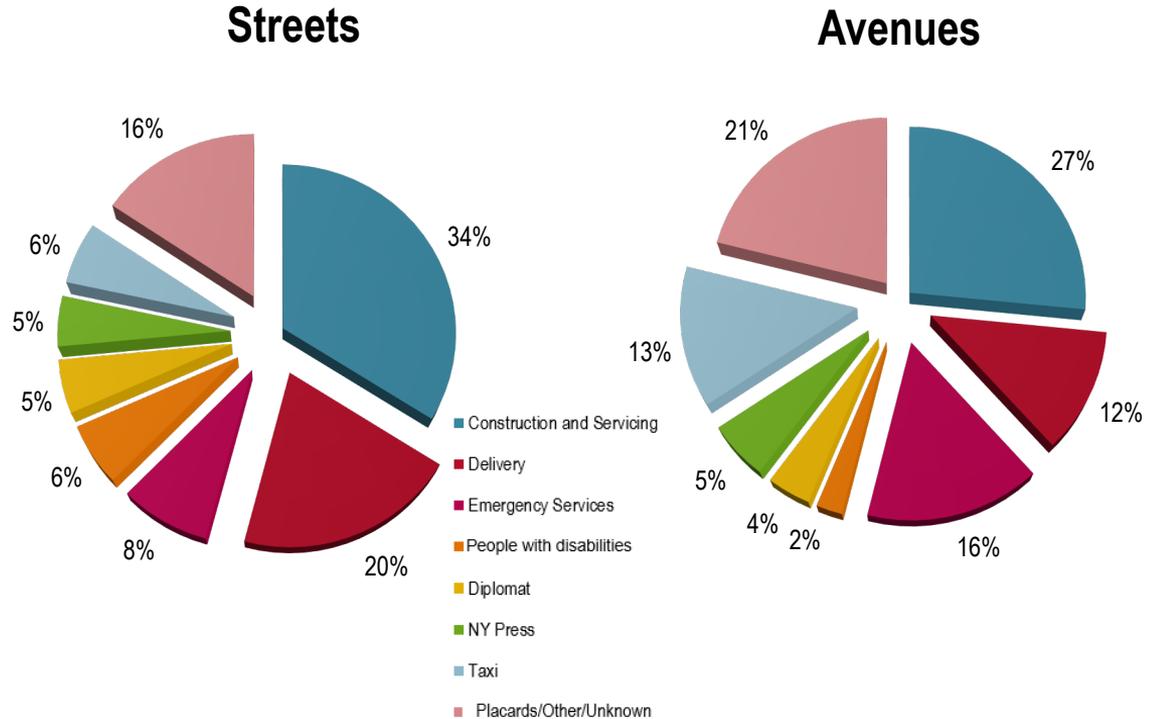
Source: Federal Highway Administration

\*Generally, cross streets have longer durations of commercial loading regulations, compared to avenues. Survey data and analysis provided by DOT.

# CURBSIDE USE OBSERVATION

## East Midtown, Manhattan

- The survey of curb activity in East Midtown, (41<sup>st</sup>- 45<sup>th</sup> Streets between 2<sup>nd</sup> and 5<sup>th</sup> Avenues) revealed a large mix of curbside uses, including construction.
- Delivery vehicles took up 12-20% of the curb in an area that is predominantly regulated for commercial vehicles during the day.
- These findings are typical of many streets in congested areas, but suggest increased competition for space at the curb for a variety of functions.



*On street surveys focused on the area between 2<sup>nd</sup> and 5<sup>th</sup> Avenue, and 41<sup>st</sup> and 45<sup>th</sup> Streets; Period: March 2016, Time of Day: 8am-12pm; Survey data and analysis provided by DOT.*

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## Best Practices for Efficient Deliveries

# 3

# BEST PRACTICES

## National and Global

The challenge of efficient deliveries is not one that New York faces alone. Cities in both the United States and abroad are tasked with addressing the impacts from the growing number of delivery trucks and vans of all sizes including: air quality, emissions, noise levels and street congestion. A number of voluntary programs, initiatives and regulations implemented in London, Los Angeles and other cities aim to reduce congestion and improve the quality of life, especially in areas that are most susceptible to the effects of higher truck volumes (i.e., central business districts, & industrial business zones). Some provisions and benefits of these efforts include:

Actions	Results/Benefits
Restrictive Delivery Windows	More Efficient Journey Times
Value Pricing	Cost savings (less tickets, etc.)
Fees for Daytime Deliveries	Daytime Trips & Vehicles Reduction
Use of Quiet Equipment	Emission/Noise Reductions
Consolidating suppliers or frequency of deliveries	Reduce total number of deliveries/week & save on costs

### Best Practices Spotlight:



Since 2015, Transport for London (TfL)'s off-hour delivery initiatives have resulted in a reduction of journey times by up to 18%, fewer penalty/fees (at a savings of approximately \$14 USD per vehicle per day) and one businesses achieved a 30% reduction in its CO<sub>2</sub> emissions by shifting delivery times.

TfL's **online toolkits** for retiming deliveries outlines specific steps on how to engage local authorities and a checklist for changing delivery times. Other toolkits provide guidance on developing a **noise management plan** and a **Code of Practice** for quiet deliveries. TfL also offers **online training** and a **Quiet Equipment Matrix** which highlights specific quiet equipment that can be used to minimize delivery-related noise.

# BEST PRACTICES

## Sample Programs

Voluntary off-hour delivery programs deployed both nationally and abroad have experienced a variety of results. Key implementation challenges for these include: compliance with local regulations, consistent enforcement, upfront investment in quiet vehicles/technology, and coordination between transporters and receivers.

Location	Program	Details	Results
Los Angeles, California	Off-Peak Program (2005- Present)	A container fee for daytime port use incentivized the shift of truck pick up/drop offs to weeknights and Saturdays (the fee and the program are run by a non-profit created by the port and marine terminal operators)	Estimated 40 million truck trips have been diverted out of peak daytime hours from start of program, congestion & idling reduction around the port has significantly decreased
Brussels, Belgium	Night Time Deliveries (2015)	Tried deliveries between 8PM and 10PM using 'silent' trucks and equipment over two-weeks (deliveries were also made during other times during the day at specific sites to compare noise levels)	Deliveries could be made at night without negative noise impacts, a reduction in CO <sub>2</sub> (20%), NO <sub>x</sub> (40%) and PM <sub>10</sub> (40%) emissions, safer operations and reductions to journey time during off-peak hours
Bogotá, Columbia	Off-Hour Deliveries Pilot (2016)	17 independent participants voluntarily opted to change their scheduled deliveries to be made between 6PM and 10PM	20% reduction in loading times for receivers, 60% reduction time in unloading for transporters, no security/theft of items during the trial, emission reductions by approx. 13%
São Paulo, Brazil	Off-Hour Deliveries Pilot (2014-2015)	11 companies and 45 retail locations (esp. malls) volunteered to shift their deliveries to the off-hours	No noise or safety complaints arose during the pilot, reduction of travel times and distance, city-wide implementation of OHD is on-going as of 2016

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## NYC Off-Hour Deliveries Experience

# 4

# OFF-HOUR DELIVERIES (OHD)

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## Pilot Program Overview

In line with global best practices in freight demand management, DOT piloted an Off-Hour Deliveries Program between 2007-2010. The program was funded by the USDOT Research and Innovation and Technology Administration (RITA), in partnership with the Rensselaer Polytechnic Institute, Rutgers University, ALK Technologies, and New York University. Participants in the program agreed to shift delivery times from peak hours (between 7 a.m. to 4 p.m.) to off-peak hours (between 7 p.m. and 6 a.m.), with the goals of reduced truck traffic and congestion at peak hours, improved business operations, and improved air quality. A detailed report on the pilot is available [here](#) [7].

The pilot included over 30 participants operating out of 400 business locations to demonstrate that Off-Hour Deliveries:

1. is effective in inducing a shift of urban deliveries to the off-hours;
2. enjoys broad-based industry support;
3. would bring about substantial reductions in congestion and environmental pollution thus increasing quality of life; and
4. would increase the competitiveness of the urban economy.

# OFF-HOUR DELIVERIES

## Pilot Program Overview

The pilot program yielded positive feedback from receiving companies, carriers, and truck drivers – with some participants implementing the off-hour policy at a number of their locations. Overall:

- Delivery speeds in Manhattan increased by 50% during off-hours than during the morning (8 a.m.-10 a.m.) and by 130% as compared to the midday (10 a.m. – 4 p.m.) and evening (4-10 p.m.).
- Median service times during off-hour deliveries were as low as 25 minutes for one delivery, as compared to over one hour during peak hours.
- The average service time at each individual stop was 30 minutes during the off-hours period, while drivers spent roughly 3 times longer at each stop during the day due to longer walks, wait at freight elevators, and other sources of delays.
- Making deliveries in the off-hours not only reduces operational costs, but can lead to highly reduced parking fines. This is a major issue as parking fines that are incurred range on average between \$500-\$1000 per truck per month [5].



*As a Pilot participant, Sysco initially had one overnight route, but at the end of the Pilot they added 31 additional routes. Also, during the pilot the fill rate for product being delivered was nearly 100%.*



*During the pilot, Duane Reade realized a 75% reduction in parking tickets and an overnight delivery route that was approximately 60 minutes faster than the day route. Approximately 120 of Duane Reade's 160 Manhattan stores were OHD locations during the pilot.*

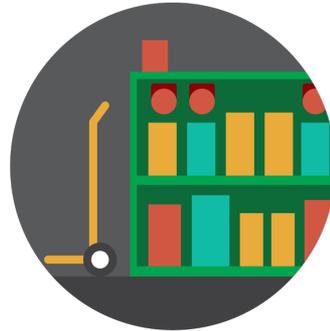
# OFF-HOUR DELIVERIES

## Receiver Benefits

Notably, receivers reported a number of benefits to their operations after participating in the pilot, most of which contributed to improvements to either cost of business or productivity. Receivers spent less time during store hours to receive deliveries, and more time with customers.



**GOODS DELIVERED  
OUTSIDE STORE HOURS**



**GOODS PREPARED  
BEFORE STORE OPENS**



**MORE CERTAINTY ON  
TRUCK ARRIVAL TIMES**



**REDUCED DELIVERY  
COSTS**

# OFF-HOUR DELIVERIES

## Transporter Benefits

Transporters reported a number of benefits to their operations after participating in the pilot, that resulted in increased efficiency of their operations, reduced transit time and fuel costs, more predictable deliver windows, lower parking fines and delivery costs.



EFFICIENT  
DELIVERIES



REDUCED TRANSIT TIME  
AND FUEL COSTS



LESS PARKING  
HEADACHES



MORE PREDICTABLE  
DELIVERY WINDOWS



IMPROVED TRUCK  
UTILIZATION



REDUCED  
DELIVERY COSTS

# OFF-HOUR DELIVERIES

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## Challenges & Lessons Learned

Off-Hour Deliveries is not a one size fits all strategy and may not be appropriate for all sectors and commodities. There are some challenges for **receivers**:

### **Stipulations in Building Lease Agreements**

- Some lease agreements restrict when deliveries are permitted, usually during business hours. As such, negotiations between building owners and tenants are often needed to accommodate off-hour deliveries.

### **Receivers have a strong influence over how deliveries are made**

- The ability of receivers to do off-hour deliveries is key as shippers and carriers cater to the needs of receivers - transporters cannot implement OHD on their own.

### **Lack of financial incentives**

- The OHD Pilot provided a small financial incentive to participants, however, this will not be an option with program expansion. Other OHD pilots demonstrate that such incentives are not required for implementation. Complementary policies to foster change and contributions from public sector agencies offer more effective incentives (i.e., DOT guidance in providing curb space and a participant Recognition Program).

# OFF-HOUR DELIVERIES

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## Challenges & Lessons Learned

The transporting industry also faces some challenges:

- **Barriers to changing delivery windows**
  - Receivers determine when and how they receive their deliveries, so if they are not interested or cannot accommodate OHD, carriers and transporters will be tied to daytime schedules.
- **Variable industry types**
  - Not all industry sectors are suitable for off-hours, e.g. package deliveries. Targeting specific industries, such as major freight traffic generators (i.e., fast food) will help allocate resources.
- **Barriers to unattended deliveries**
  - Many businesses may have a lack of trust for facilitating unattended deliveries and will want someone present to inspect deliveries.
- **Lack of Carrier-Centered incentives**
  - There are no immediate tax incentives or relaxing of permits or parking regulations that could “push” transporters into off-hour deliveries.

# OFF-HOUR DELIVERIES

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## Challenges & Lessons Learned

- **City Challenges**

- OHD programs require persistent efforts from the public sector, with dedicated staff.
- The impacts of OHD are not immediately evident, especially to the public. As such, a consistent and sustained effort to promote the program is critical.
- The implementation of OHD will require a significant amount of inter-agency coordination and multi-stakeholder engagement.
- The City Charter prohibits offering financial incentives. Thus, other measures, such as public recognition schemes can incentivize participants.

- **Community**

- Noise is an issue that can not be neglected and can run the risk of impacting the reputation of any program. Lack of appropriate provisions in the noise code impacts ability to enforce accordingly.
- Local perception of OHD is not always positive as the benefits do not always directly affect residents. Strong marketing and engagement can address these concerns.

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Recommendations:  
NYC Off-Hour Deliveries Expansion

5

# OFF-HOUR DELIVERIES

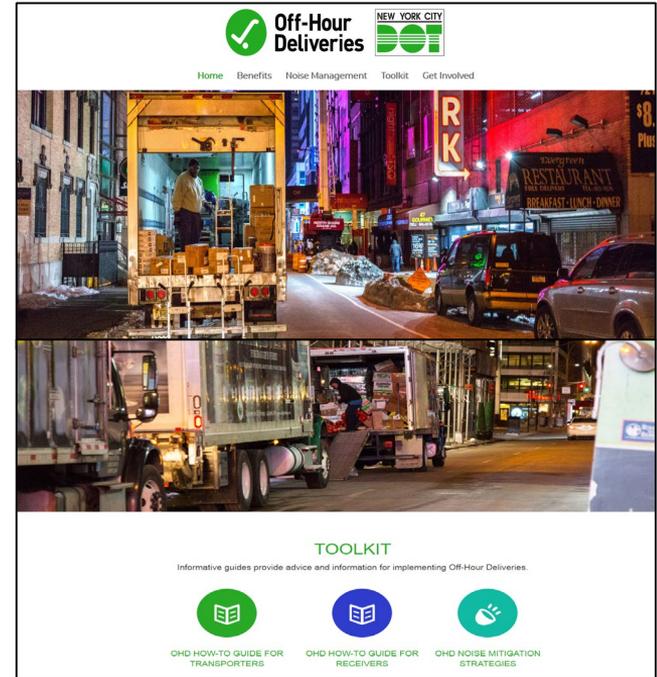
## Program Expansion

Due to the success of the pilot program, DOT has permanently adopted OHD and made critical steps to expand it over the past two years. Since the program's adoption, the agency surveyed businesses, including freight transporters and receivers, to better understand how and when deliveries are made, and the financial and logistical reasons behind these decisions.

### Key Elements to Program Expansion accomplished:

- Developed an OHD program brand & marketing strategy, and focused outreach to businesses in target areas
- Enhanced program website with new content and recognition of participants, including updated tailored program implementation guides for receivers and transporters
- Established a protocol for noise management and promote noise mitigation best practices, including educating participants on quiet delivery equipment and behaviors during deliveries.
- Developed an OHD Recognition Program to foster behavior change by publicly spotlighting companies demonstrating OHD best practices in safety, efficiency, and emissions.

Forward  
Thinking.



OHD Website serves as a communication platform for companies to access How-To Guides for transporters and receivers.

Visit: [www.ohdnyc.com](http://www.ohdnyc.com)

# OFF-HOUR DELIVERIES

## Focus Areas

Forward  
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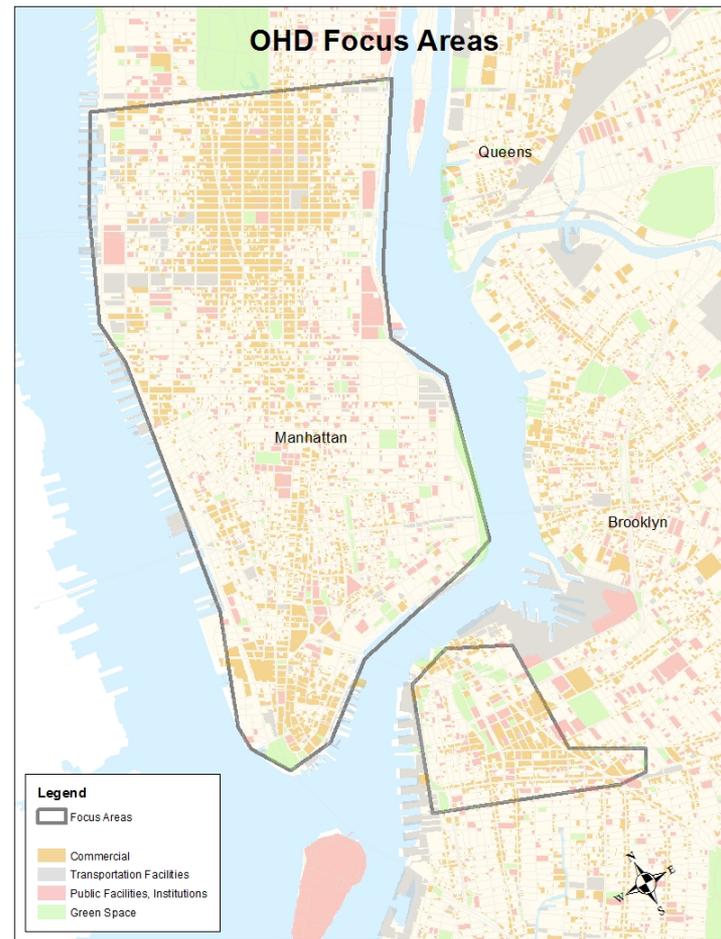
### Program Goal

Expand the OHD program to 900 new food and non-food retail locations by the end of 2021. DOT will focus on implementation in targeted areas throughout NYC in order to shift deliveries to the off-peak hours of 7 p.m. – 6 a.m.

### Focus Areas

The OHD Program expansion will primarily focus on areas with high congestion during the day:

- **Manhattan – South of 59<sup>th</sup> Street**
- **Downtown Brooklyn**
- **Downtown Jamaica and Flushing**



Source: DOT

# OFF-HOUR DELIVERIES

Forward  
Thinking.



## Focus on Local BIDs

Business Improvement Districts (BIDs) can lead the way for the expansion of the OHD program city-wide as the efficiencies, cost-saving benefits and improvements to the local neighborhood (i.e., less congestion) with off-hour deliveries can be realized and measured for a sizable number of BID members.

DOT plans to select and partner with a BID to be an active case study showcasing the benefits of efficient deliveries. This model will then be replicated with other BIDs throughout 2019. Under this partnership, the agency will:

- run advertisements in local papers to feature the BID or specific businesses
- provide content for BID newsletters
- host breakfasts to recognize BID members



# OFF-HOUR DELIVERIES

Forward  
Thinking.



## Targeted Outreach & Marketing

### Trade Publications

The agency is targeting the trucking industry at large, Supply Chain Managers and receivers in key industries (fast food, pharmacies, etc.) through placed advertisements in trade publications and on trade association websites. Some of the advertisements include testimonials from current OHD participants, praising the benefits of the program.



Sample Advertisements

### Key Retail Targets

The primary targets of both marketing and outreach undertakings are **large corporate chains** as identified from the Center for an Urban Future's (CUF) State of the Chains report, with a special focus on **food and non-food retailers** as they are large freight generators. These companies also have vertically integrated supply chains, making it easier for them to implement OHD into their operations.

# OFF-HOUR DELIVERIES

Forward  
Thinking.



## A Proactive Approach to Noise Management

The City is committed to protecting those who live, work, and visit the New York area from noise intrusion. Deliveries occurring in the off-hours can generate additional noise, especially in residential areas. The sources of noise can include: **Back-Up Alarms, Engine idling, Truck or Forklift, Slamming of gates and doors, Delivery staff talking and shouting.**

To that end, a fundamental component of our strategy is to proactively address noise mitigation through the development and inclusion of a *Noise Mitigation How-To Guide*. The Guide specifically identifies processes, procedures and staff behavior that companies undertaking off-hours should consider within their plans and operations in mitigating noise.



While the NYC Noise Code does not directly address freight deliveries, Section 24-218 of the code provides general provisions that can be enforced for situations where unreasonable levels of noise are identified. DOT will coordinate with DEP to investigate complaints, as applicable and provide appropriate information for filing complaints through an updated 311 platform.

**Code of Conduct**

The Code of Conduct is a set of guidelines for OHD participants that specifically outlines the practices and behaviors related to noise that are expected of them once enrolled in the program.

 <b>TRANSPORTERS</b>	 <b>RECEIVERS</b>
Will not slam truck doors or lift gates	Will not slam gates or doors
Will utilize noise control equipment where applicable (quiet reverse alarms, etc.)	Will not shout or yell during deliveries

# OFF-HOUR DELIVERIES

Forward  
Thinking.



## A Proactive Approach to Noise Management

### Noise Monitoring and Mitigation

The agency offers education on quiet delivery practices and low-noise delivery equipment. These measures have been effective in further improving the relationship between OHD participants and the surrounding community. Should the source of noise not be easily determined, noise monitoring equipment is deployed for data collection. This equipment is also used to measure the impact to overall noise levels in target areas.

### Low Noise Delivery Equipment

Another way that the agency contributes to the reduction of noise is educating OHD participants on the use of low-noise delivery equipment. When a particular piece of equipment like the back-up alarms, refrigeration units on a truck, or a pallet jack is notably noisy, it should be replaced with a newer model. Newer equipment typically has specific noise reduction measures built-in (i.e., electric motors). The OHD website showcases samples of this type of equipment and offers a more detailed guide to noise-quiet technologies in the Noise Mitigation Toolkit.



Noise Monitoring Equipment deployed in Manhattan



**bbs-tek® White Sound®  
Reversing Alarms**

Only heard in the danger zone  
Instantly locatable sound  
Certified for night deliveries  
No annoying beeps!

**BRIGADE**

**BRIGADE**

The advertisement features a green background with white text and a white line-art illustration of a truck. The text lists the benefits of the reversing alarms. The Brigade logo is in the top right and bottom right corners.

Quiet Back Up Alarms (Source: Brigade Electronics)

# OFF-HOUR DELIVERIES

Forward  
Thinking.



## Trusted Vendor Program

The Trusted Vendor Program was developed by RPI, sponsored by New York State Energy Research and Development Authority (NYSERDA), NYSDOT and NYC DOT. The Grand Central Partnership and the Trucking Association of New York are supporters of the program.

The program serves as an initial reference for receivers looking to implement OHD. Businesses are provided with information about 'trusted' shippers, carriers and vendors that have proven that they can make deliveries successfully and safely, especially during the off-hours. The current list of Trusted Vendors includes Sysco, who was also an OHD Pilot Participant. The program has plans for expansion in 2019 to enroll even more businesses.

The Trusted Vendor program supports the expansion of the OHD program as it mitigate concerns about OHD and foster the adaptation of the practice, particularly facilitating unattended deliveries, and builds up private sector support for the program.



Current Trusted Vendors



ANHEUSER-BUSCH



# OFF-HOUR DELIVERIES

Forward  
Thinking.



## Fostering Behavior Change Through Recognition

Opportunities for public recognition can incentivize companies to implement OHD into their operations and support their corporate sustainability initiatives. Recognition options include:

- Annual Certificate of Participation
- Website listing
- Social media spotlights & press releases
- Stickers

The goal of this program is to publicly spotlight companies demonstrating OHD best practices in safety, efficiency, and emissions. The recognition program serves as an alternative to a financial incentive, and is one of a few ways that the agency supports businesses (i.e., curb space assistance) interested in OHD.

The program scheme will consist of four accreditation levels: **Bronze**, **Silver**, **Gold** and **Platinum**. Each level offers a greater magnitude of public recognition as companies raise their standard of operations by implementing OHD practices.



Sample Logos for Accreditation Levels

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## Additional Tools for Improving Efficiency of Truck Deliveries

# 6

# ADDITIONAL RECOMMENDATIONS

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## OHD is Part of a Suite of Strategies Used to Improve the Efficiency of Deliveries

- DOT recommends scaling existing DOT freight delivery initiatives and expanding programs to the extent that funding is available:
- **Commercial Access at the Curb**
  - Better integrate commercial access needs in future street improvement projects along commercial corridors.
  - Limit placard parking where there is an inadequate amount of curb space available for loading/unloading activity, and reduce double parking of trucks and commercial vehicles.
- **Sustainable Modes of Delivery for last mile**
  - Foster environment for cargo bike freight deliveries: DOT will pursue a formal rule change to launch zero-emission, pedal-assist cargo bikes for last mile freight deliveries with industry partners. A rule change is required to clearly define cargo bikes for commercial use in NYC.
  - Off-street Consolidation: DOT will work with private garage operators to allocate off-street parking spaces for freight consolidation in order to support a more streamlined freight network. This strategy also compliments the expansion of the OHD program, as the staging and storage of goods will be in a central place. Deliveries can then be hand trucked or delivered with a smaller vehicle during the day.

# ADDITIONAL RECOMMENDATIONS

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## OHD is Part of a Suite of Strategies Used to Improve the Efficiency of Deliveries

- **Regulatory and Pricing Strategies**
  - Evaluate Through-Truck Route Network Regulations to reduce impact of truck trips in congested areas and at various times of the day.
  - Work with MTA & PANYNJ to implement Congestion Pricing policies that encourage efficient deliveries and support continued growth in freight activity
- **Reduce Freight Footprint from Large Freight Generators**
  - Large freight generators can be buildings comprised of a number of businesses, which individually or collectively generate a significant amount of freight trips. DOT will evaluate opportunities to work with building and property owners on developing strategies for better management of deliveries, a review of supply chain and identification of opportunities to improve efficiency, and streamline relationships with suppliers. Such approaches can be fostered through the:
    - Development of guidance for implementing Delivery & Service plans, and
    - Promotion of voluntary vendor procurement consolidation programs in partnerships with BIDs.

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# Appendices

# 7

# END NOTES

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# LIST OF ABBREVIATIONS

- **BID** Business Improvement District
- **CBD** Manhattan Central Business District: The CBD is the same area as denoted by NYMTC for their Hub Bound Travel report, covering Manhattan south of 60th Street, river to river.
- **DOT** New York City Department of Transportation (NYC DOT)
- **FHV** For Hire Vehicles
- **GPS** Global Positioning System
- **OHD** Off-Hour Deliveries
- **RPI** Rensselaer Polytechnic Institute
- **VMT** Vehicle Miles Traveled

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