

New York City (NYC) has been a player in private sector off-hour deliveries (OHD), a freight demand management tool that shifts deliveries from daytime (6:00 a.m. – 7:00 p.m.) to off-hours (7:00 p.m. – 6:00 a.m.). OHD has shown benefits including reducing truck traffic and congestion at peak hours, improving business operations, and improving air quality.

The New York City Council introduced Local Law 184 of 2019 (LL 184), which requires an "assessment of all city facilities in designated areas to determine whether off-hour deliveries are feasible at such facilities." The first required feasibility report regarding OHD can be found on the <a href="NYC">NYC</a>
<a href="Department of Records & Information Services Government Publications portal">NYC</a>
<a href="Department of Records & Information Services Government Publications portal">NYC</a>

This submission includes the requisite report submissions (two and three) for the assessment and implementation in Lower Manhattan south of (and including) Canal Street, facilities in the central business district (bounded by Canal Street and 60th Street in Manhattan), and the other "highly congested areas identified by the City" not in lower Manhattan. In collaboration with partner agencies, DCAS identified the "congested areas" of DUMBO in Brooklyn, and South Melrose in the Bronx.

This report also identified factors that limit the feasibility of OHD. Goods that require inspection prior to acceptance (i.e., automotive, health and safety items, and furniture, etc.), facilities with enhanced security protocols (i.e., locations that require screening prior to acceptance, K-9 inspection, etc.), and facilities that do not operate 24/7 are less feasible for off-hour deliveries. Vendors' willingness and ability to align their operations with designated OHD hours without incurring high operational costs pose another challenge. Additionally, deliveries by large parcel carrier services such as the United States Postal Service (USPS), FedEx or United Parcel Service (UPS) would likely be excluded from OHD as these carriers are not directly contracted with the City, and it would be difficult to mandate their participation in the OHD program.

While OHD is feasible at some city-owned facilities, it was found that for sustainable implementation, various factors were required: freight coordination, funding for agencies to address staffing at city-owned facilities or building operating fees at leased facilities, storage for unattended deliveries, and improvements to systems for internally tracking deliveries.

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Key definitions impacting this report for off-our delivery at city facilities are:

- City facilities. A facility used or occupied or to be used or occupied to meet city needs that is located on real property owned or leased by the city or is operated by the city or pursuant to a written agreement on behalf of the city. Following the recommendations of DCAS Office of the General Counsel (OGC) and the City's Law Department, the following facilities were not included in the analysis: court facilities, MTA facilities (including TBTA and NYCT facilities), Brooklyn (BPL) and Queens Public Library (QPL) facilities, New York Public Library (NYPL) facilities, CUNY facilities, School Construction Authority (SCA) facilities, and Economic Development Corporation (EDC) facilities.
- Central business district (CBD). The area lying south of and including 60th Street in the borough of Manhattan.
- Highly congested areas (HCA). Areas outside of the central business district with high levels of traffic congestion and highdensity of city facilities. DCAS partnered with NYC Department of City Planning (DCP) to identify highly congested areas. The geographic areas identified for OHD were DUMBO (Brooklyn) and Melrose South (the Bronx).
- Lower Manhattan. The area of the borough of Manhattan lying south of and including Canal Street. The geographic area of "lower Manhattan" is defined as any tax lot on a block adjacent to Canal Street on either side (north or south), and any tax lot in Manhattan south of Canal Street. On the east side of Manhattan where Canal Street ends, the geographic boundary line proceeds northeasterly along East Broadway until it reaches Grand Street, and then easterly along Grand Street until it reaches the high-water line. The dataset was compiled by identifying city block numbers that meet the above description and selecting City-owned or leased properties with those block numbers.

The Department of Citywide Administrative Services (DCAS) was required by the City Council to submit three reports to comply with LL 184 (Table 1), including developing the feasibility framework and implementing the requisite feasibility assessments to implement off-hours (7 p.m. to 6 a.m.) deliveries. In addition to identifying facilities and working with partner agencies where OHD was feasible, the assessment aimed to highlight general policy, process, or operational challenges to citywide implementation.

This feasibility assessment report combines the second and third (of three) required reports for the speaker of the City Council and the mayor pursuant to the requirements of LL 184. The first report, <u>"A Framework to Assess the Feasibility of City facilities in the Central Business District and Highly Congested Areas Receiving Off-hour Deliveries"</u>, was submitted by DCAS to the city council on May 18, 2020.

The local law was sponsored by Council Members Costa Constantinides, Ydanis Rodriguez, Stephen T. Levin, Mark Levine, Helen K. Rosenthal, Ben Kallos, Andrew Cohen, and I. Danek Miller.

Table 1. Required Phases of Local Law 184

Local Law Sections	Phases of Implementation	Description
1a Definitions		
1b (1-7)	Research and report submission	Develop a framework to assess the feasibility of off-hour deliveries to city facilities in the central business district and high congested areas receiving off hour deliveries. Submit a report on the framework (submitted 2020).
С	Phase I, lower Manhattan	Assess feasibility of city facilities in lower Manhattan (south of Canal Street).
С	Phase I, lower Manhattan	Support agencies in conducting off- hour deliveries at locations in lower Manhattan where feasible.

Local Law Sections	Phases of Implementation	Description
d	Phase I, lower Manhattan	Submit a report on locations where off-hour deliveries were implemented at city facilities in lower Manhattan. The report shall include the number of deliveries, the provider of the goods delivered, value of the goods delivered, and measures taken to increase off-hour deliveries.
е	Phase II, central business district and two other areas	Conduct a feasibility assessment of city facilities in the central business district (south of 60th Street in Manhattan) and two other highly congested areas not in lower Manhattan, conduct off-hour deliveries at such facilities.
f	Phase II, central business district and two other areas	Submit a report where off-hour deliveries were implemented at city facilities.

This submission covers both phases: the assessment of locations in lower Manhattan, and the areas between 60<sup>th</sup> Street and Canal Street, Brooklyn (DUMBO), and Melrose South (the Bronx).

Feasibility was determined by analyzing the following characteristics:

**Building Characteristics:** Facility features that support implementation of OHD. This includes 24-hour operations, a central storage area/mailroom, a loading dock, and building delivery requirements.

**Goods and Vendor Characteristics:** The types of goods appropriate for OHD, volume and frequency of deliveries to the city facility, and flexibility at which a vendor could shift their staff schedules.

**Building and Agency Operations:** The relevant building delivery requirements including staffing, policies, procedures, and infrastructure available to support unattended and/or off-hour deliveries.

**Cost:** Capital and operating expenses required to implement OHD at city facilities.

#### **Assessment Approach**

DCAS established a project team made up of representatives from DCAS, the NYC Department of Transportation (DOT), the Mayor's Office of Contract Services (MOCS) and the Mayor's Office of Operations to advise on the development of the framework, and to provide recommendations and technical support as needed.

For Phase 1, the project team identified facilities south of Canal Street that frequently receive goods purchased using DCAS requirements contracts. The team then followed up with agencies housed in these facilities to determine feasibility of OHD. To prioritize vendors, the project team identified vendors that frequently delivered goods to facilities south of Canal Street.

In addition to the steps outlined in the Feasibility Framework below, DCAS identified and engaged city agency contacts who could support OHD implementation at their agency. DCAS also explored feasibility with internal delivery teams, including the DCAS Central Storehouse, and with vendors that have large City contracts. To understand the potential financial impact of OHD implementation, DCAS developed a fiscal impact summary.

Feasibility was further refined based on the pilot study conducted between October 2021 and January 2022 at select facilities in lower Manhattan. The findings suggested that the size of the agency and the value of the goods purchased were significant factors in OHD implementation. It appears that smaller agencies with low value purchases would be disproportionally impacted by OHD costs.

The framework model focused on identifying city facilities within the designated areas, developing the feasibility characteristics list, compiling building details, and identifying relevant data and data sources. The framework model consisted of six sections and was applied to both phases of the local law:

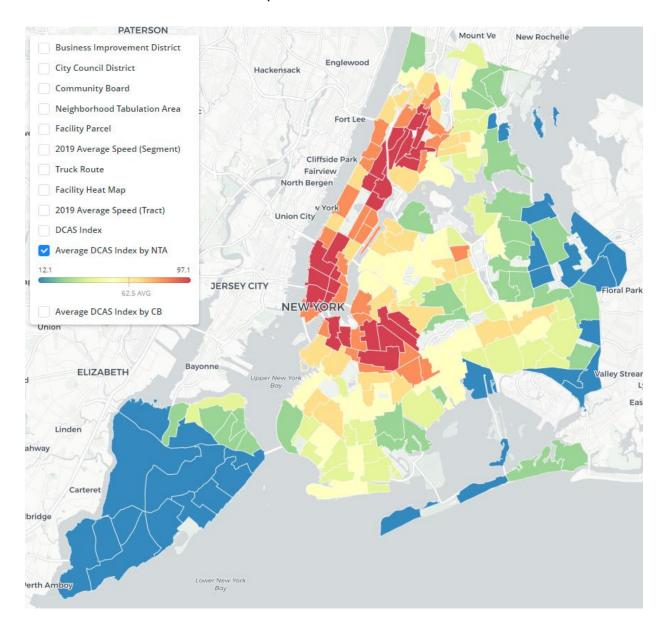
- 1. An analysis of procurement and delivery data including goods, vendors, and the volume and number of deliveries;
- 2. Development of feasibility criteria by building, economic, goods, neighborhoods, partnership, and transportation characteristics;
- An online facility survey of the current delivery landscape and operations at city facilities within the designated areas;
- 4. Rating of buildings based on facility characteristics (see Table 4);
- 5. Stakeholder interviews including DCAS staff, partner agencies, and vendors with frequent deliveries to feasible locations;
- 6. A fiscal impact summary and cost-benefit analysis.

#### **Identification of City Facilities in Designated Areas**

A "city facility" is defined as "a facility used or occupied or to be used or occupied to meet city needs that is located on real property owned or leased by the city or operated by the city or pursuant to a written agreement on behalf of the city." LL184 specified lower Manhattan, the area lying south of and including Canal Street, and the area south of and including 60th Street in Manhattan as target areas. The designation of the two other "highly congested areas of the city outside of the central business district", was determined by the City. Based on an analysis conducted by the DCP, which examined the citywide traffic speed and density of city facilities to develop a map of highly congested areas, DCAS selected DUMBO in Brooklyn and South Melrose in the Bronx.

Figure 1. DCP Citywide Map of Priority Areas (2020)

DCP created a DCAS Index which combined the facility index and speed index to determine a priority score. Higher scores in red indicate denser facilities and slower vehicle speeds.



# Framework Model - Section 1: Procurement and Delivery Data

To understand the current state of agency deliveries citywide, the project team identified the type, source, and availability of data related to purchases and deliveries. Data collection challenges included fragmented data, a lack of data standardization, inconsistent data on the current state of deliveries citywide, and the use of many paper-based delivery log procedures. The table below provides an overview of the data collected during the study.

**Table 2. Procurement and Delivery Data Overview** 

Data Description	Data Source	Data Objective	Additional Information
Procurement and delivery data for facilities in scope:  - Goods delivered - Vendor - Delivery address - Delivery date - Receiving agency - Volume of deliveries - Number of deliveries - Value of goods	<ul> <li>PASSPort<sup>1</sup>, the City's digital Procurement and Sourcing Solutions Portal managed by MOCS</li> <li>DCAS Warehouse Management System (WMS)<sup>2</sup></li> <li>DCAS Bureau of Quality Assurance (BQA) Application<sup>3</sup></li> </ul>	<ul> <li>To understand the existing delivery landscape (locations, volume, costs, etc.)</li> <li>To understand the delivery data landscape including owners, existing standards or processes, future work, etc.</li> </ul>	<ul> <li>All contracting activities with the City of New York are entered into this centralized procurement system.</li> <li>The Warehouse Management System (WMS) tracks deliveries from the DCAS Central Storehouse, which is responsible for the distribution of commodities to City agencies.</li> <li>DCAS's BQA unit conducts inspections against purchase orders and contract specifications. The BQA app tracks all inspections of goods purchased from DCAS requirements contracts.</li> </ul>

Data Description	Data Source	Data Objective	Additional Information
Facility characteristics and building information	<ul> <li>PLUTO</li> <li>Integrated         <ul> <li>Property</li> <li>Information</li> <li>System (IPIS)</li> </ul> </li> </ul>	To establish basic geographic, land use, ownership, and use information of City-owned and leased properties in the selected geographic area.	<ul> <li>PLUTO: Dataset published by DCP which includes land use and geographic data at the tax lot level.</li> <li>IPIS is the real estate data warehouse for the City of New York that tracks information on all City-owned property, property that was previously owned by the City, and property where the City has or had an interest, such as a lease.</li> </ul>

<sup>&</sup>lt;sup>1</sup> PASSPort data from December 2019 - May 2021

# Framework Model - Section 2: Survey of Current Landscape

To better understand the purchasing process and how deliveries are made and received across agencies, the project team conducted a citywide survey of city agencies and interviews with key stakeholders. The table below provides details on the objective and activity. The project team also identified the landscape of existing off-hours deliveries, and agencies that had previously or were currently implementing OHD as of October 2021. See Table 12.

### Table 3. Survey of Delivery and Related Operations Processes at City Facilities

<sup>&</sup>lt;sup>2</sup> WMS data from January 2019 - August 2021

<sup>&</sup>lt;sup>3</sup> BQA data from January 2019 - July 2021

Data Description	Data Source	Data Goal	Additional Information
	Agency engagement survey (online AirTable questionnaire)	To collect information on the delivery of goods to city facilities. Survey questions asked for details on deliveries, receiving, staffing, contracts, and purchasing at the facility level.	In January 2021, the Mayor's Office of Operations (Ops) sent the survey to the Chiefs of Staff at the 37 inscope agencies within the designated areas.
Current landscape of delivery and operations practices at city facilities	Interviews with agencies and other key stakeholders	To collect information related to managing the delivery of goods to city facilities. Questions asked for details on deliveries and receiving, staffing, contracts and purchasing at the facility level, as well as general buyin.	Interviewees:  Partner agencies: Department of Education (DOE), New York City Police Department (NYPD), Department of Sanitation (DSNY), New York City Fire Department (FDNY), NYC Small Business Services (SBS), Administration for Children's Services (ACS), and Department of Parks and Recreation (Parks)  DCAS teams: Office of Citywide Procurement (OCP), Central Storehouse staff, Office of the General Counsel (OGC), Real Estate Services (RES), Facilities Management (FM), Administration (Mailroom), and DCAS Police.

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## Framework Model - Section 3: Classifying Facilities by Feasibility Level

The project team developed feasibility criteria to rate facilities based on their ability to accommodate off-hour deliveries. The factors were building characteristics, the types of goods received, neighborhood characteristics (zoning designation), partner agency operations, and transporter characteristics.

#### Figure 2. Feasibility Criteria

#### **Building Characteristics**

- 1. Frequency of deliveries
- 2. Ownership
- 3. Lease characteristics
- 4. Loading dock availability
- 5. Security protocols
- 6. Freight elevator availability
- 7. Number of agencies in the building
- 8. Building hours
- 9. Centralized receiving center

#### **Goods Characteristics**

- 1. Perishability
- 2. Volume and type
- 3. Existing contract language
- 4. Vendor participation
- 5. Existing requirements contract or agency contract
- 6. Frequency of deliveries

#### **Neighborhood Characteristics**

1. Zoning district

#### **Partner Characteristics**

1. Feasibility of unattended deliveries

- 2. Screening processes
- 3. Existing delivery requirements
- 4. Union and staffing requirements
- 5. Ability to track deliveries

#### **Transporter Characteristics**

- 1. Vendor vs. city transporter (from city warehouse)
- 2. Ability to shift schedules
- 3. Relationship between transporter/vendor and the City
- 4. Frequency of deliveries to multiple agencies in one building

Based on the feasibility criteria, the characteristics favorable to OHD implementation were prioritized into high, medium and low feasibility groups. See Table 4. Facility characteristics that indicated a high feasibility level included city-owned buildings, buildings that were open 24 hours, those with minimal security protocols, and facilities with a loading dock and a central mailroom. To receive a "high" rating, at minimum, a facility needed to be City-owned and located in a non-residential area.

**Table 4. Facility Feasibility Level** 

Feasibility Rating	Building Characteristic	
High*	<ul> <li>City-owned</li> <li>Loading dock</li> <li>24/7 operating hours</li> <li>No/low security protocols</li> <li>Non-residential area</li> <li>Central mailroom</li> <li>No elevator restrictions</li> </ul>	
Medium	<ul> <li>Dedicated parking</li> <li>Loading dock</li> <li>High security protocols</li> <li>Leased/Not city-owned (owner is private, other public authority or mixed ownership)</li> </ul>	

Feasibility Rating	Building Characteristic
Low	<ul> <li>Building does not receive deliveries</li> <li>Contains residential units or located in a residential zoning district<sup>1</sup>.</li> </ul>

<sup>&</sup>lt;sup>1</sup>Residential districts are characterized by a range of housing types, from detached single-family homes in R1 districts to residential skyscrapers in R10 districts.

## Feasibility Assessment of City Facilities in Lower Manhattan (South of Canal Street)

DCAS identified 116 in-scope facilities in lower Manhattan, south of Canal Street, with 37 agency tenants. Ops emailed the survey to partner agencies, and DCAS and Ops jointly conducted interviews with select agencies (DOE, NYPD, DSNY, FDNY, SBS, ACS, and DCAS) and key DCAS stakeholders (General Counsel, DCAS Police, Citywide Procurement, Facilities Management, and the Mailroom team) to follow up on their survey responses and to learn more about their operations. Agencies interviewed included those with the highest number of facilities in the target area (DOE, FDNY, DSNY, ACS, NYPD), those located in leased spaces (ACS, SBS), and DCAS, as the agency that manages cityowned facilities and negotiates leased space for agency tenants. Table 5 groups the 116 facilities in lower Manhattan by feasibility level.

## Figure 3. Map of City Facilities in Lower Manhattan, South of Canal Street

Local Law 184 of 2019: Off-Hours Deliveries

Phase I: City Facilities South of Canal Street

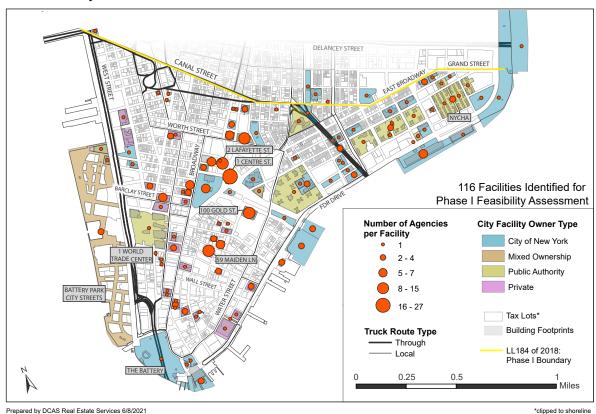


Table 5. Feasibility Grouping of Lower Manhattan Facilities

Feasibility Rating	Count of Facilities
High	31
Medium	39
Low	46

# Feasibility of City Facilities in Lower Manhattan (South of Canal Street)

The project team received 96 survey responses out of the 116 surveyed facilities. Survey responses suggest that OHD is feasible but requires extensive freight operation coordination and additional investments.

#### Of note:

 Some facilities south of Canal Street, such as park locations, staging sites, and highways, do not receive deliveries.

- Agencies in DCAS-managed buildings are subject to DCAS facility delivery policies. Two-thirds of responding agencies receive deliveries from the DCAS Central Storehouse.
- 92% of survey respondents require a staff member to be present to receive a delivery at their facility. However, 72% of survey respondents do not have any requirements that the staff member be a unionized employee or have a specific civil service title for who can receive goods, which provides flexibility for agencies to hire or assign staff for this duty.
- Most agencies track deliveries through an internal dedicated system.
  As of November 2021, agencies are required to confirm receipt of
  goods in PASSPort in the newly created "Receipt Timestamp" field.
  Phase I: Implementation of Off-Hour Deliveries at City Facilities in
  Lower Manhattan, South of Canal Street

#### **Overview**

This is the second of three reports required by Local Law 184. DCAS, as the agency designated by the mayor, is required to submit a report regarding deliveries at each city facility in lower Manhattan, at which off-hour deliveries were implemented that includes the number of deliveries, the provider of the goods delivered, and the value of goods diverted to off hours, and any measures taken to increase off-hour deliveries. The COVID-19 pandemic impacted the initial timeline, as the presence in City offices were limited until September 2021 (when all City employees were required to return to the office full time).

Considering the residual impact of the pandemic and based on agency feedback, the project team determined that a pilot would provide more details to inform citywide implementation. This section documents the operational challenges and opportunities presented by this program. Staffing and operational costs emerged as primary impediments to agency-wide implementation. The pilot underscored the need for agency funding to offset the operational costs of OHD.

#### **Approach**

DCAS conducted a 15-week pilot between October 14, 2021, and January 27, 2022, to identify operational challenges and opportunities for OHD implementation and determine the feasibility of citywide implementation. Five city agencies and one vendor participated in the pilot. DCAS surveyed City agencies south of Canal Street about their facilities, procurement, and receiving practices and invited agencies to participate in the pilot based on DCAS's assessment of their ability to implement OHD.

In addition to favorable facility characteristics, DCAS sought a representative mix of agencies for the pilot by size and facility type. Table 6 shows the participating agencies, facility type, and headcount. WB Mason, the City's contracted office supply vendor was selected because the Phase I survey indicated that office supplies were the most frequently delivered goods across all agencies. During the pilot, WB Mason consolidated orders from participating agencies and delivered weekly on Thursdays between 6 a.m. and 8 a.m. (Deliveries that fell on a holiday were rescheduled during that week.) This differed from the normal practice where deliveries arrive within 2-3 business days. Agencies used existing staff, and provided overtime where needed, for earlier start times. Agencies also worked with their facilities and security teams to coordinate OHD deliveries.

**Table 6. Participating Agencies and Locations** 

Agency	Address	Facility Type	Property Type	FY 21 Total Agency Headcount <sup>1</sup>
Administration for Children's Services (ACS)	150 William Street	Leased	Single tenant	6,863
Small Business Services (SBS)	1 Liberty Plaza	Leased	Multi-tenant	322
Department of Citywide Administrative Services (DCAS)	1 Centre Street	City owned/ DCAS managed	Multi-tenant	2,243
Department of Housing Preservation and Development (HPD)	100 Gold Street	City owned/ DCAS managed	Multi-tenant	2,335
New York City Police Department (NYPD)	1 Police Plaza	City owned	Single tenant	50,496

<sup>&</sup>lt;sup>1</sup>Headcount Actuals by Funding Source. <a href="https://data.cityofnewyork.us/City-Government/Headcount-Actuals-By-Funding-Source/dcjb-es8v">https://data.cityofnewyork.us/City-Government/Headcount-Actuals-By-Funding-Source/dcjb-es8v</a>

#### **Data Collection**

The pilot monitored the delivery volume, the value of the goods delivered that have been diverted to off-hours deliveries, and the impact to both agency and vendor operations. DCAS asked participants to record their orders, and the PASSPort team customized an OHD report. The data tracking tools are listed below.

- Agency Tracker
   – Participating agencies filled out spreadsheets with
  the delivery date, quantity and cost of goods, civil service titles of
  staff facilitating deliveries, and delivery challenges.
- Vendor Tracker

  DCAS asked the vendor to provide weekly documentation logging delivery date, agency, address, and the quantity of goods delivered. Cost and quantity of goods were not included.

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 PASSPort
 – Agencies were required by the Mayor's Office of Contract Services (MOCS) to confirm receipt in PASSPort upon receiving a shipment of goods from a vendor. A customized report was available in PASSPort that included the agency's name, purchase order (PO) number, value of goods ordered, delivery date and time.

#### **Data Challenges**

Data challenges included data collection, incomplete, inconsistent, or inaccurate data, such as self-reported delivery times in PASSPort.

#### 1. Incomplete reporting by agencies and vendor

- a. Only three of the five agencies submitted trackers.
- b. The vendor's initial reports did not include the PO number, which made it more difficult to cross-reference deliveries with PASSPort data.
- c. Multiple reports had to be cross-referenced to validate data.

#### 2. Discrepancies in delivery dates recorded in PASSPort

a. The delivery date and time can be entered days or weeks after the delivery and often did not match the vendor's delivery dates which impacted the ability to cross-reference PASSPort data with WB Mason's delivery data.

#### 3. Identifying item values for orders delivered on multiple dates

- a. There were instances where items from one PO were delivered on multiple dates, but the corresponding item and value were not available in PASSPort. This impacts the accuracy of the value of goods delivered on a particular date and also skewed the cost per delivery during the pilot for those deliveries.
  - To rectify this for the LL184 report, the PO value was recorded on the first delivery date and zero was entered for subsequent deliveries from the same PO.

#### 4. Freeform address field

a. Without a standard address format or an drop-down address menu, addresses provided by users were inconsistent. This complicated reporting by location, and the vendor noted this as a challenge when identifying and sorting pilot orders.

#### **Operations**

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There was minimal disruption to daily operations for agencies. Agencies implemented earlier start times for relevant staff and used overtime to compensate existing staff for additional hours. In some instances, security or custodial staff received deliveries in lieu of the vendor delivering to the recipient's office. By utilizing existing agency procedures and processes, additional training or unique skillsets were not required.

Participants noted that weekly consolidated deliveries minimized process time and reduced traffic to buildings and was beneficial for bulk items like paper. Not knowing when items and which items would be delivered in a shipment and having to wait an additional week for delivery if items were missing was flagged as a drawback.

#### **Agency Operational Challenges**

Staff noted the following operational challenges during the pilot:

- If a delivery was missed, or an item was missing, items were not delivered until the following week.
- Paper-based data collection was prone to errors.
- If staff believed that OHD is interfering with deliveries, agencies would be less likely to support or implement OHD.
- In several instances, orders for non-participating agencies were delivered to pilot participants.
- The only identification information for deliveries is the purchase order number. There was no identifying information of end users; which made the delivery process more difficult.

#### **Operational Challenges (Vendor)**

WB Mason adapted their automated fulfillment process to accommodate OHD. Instead of fulfilling orders once received, during the pilot, agency orders were manually flagged, then separately sorted and packaged for the weekly delivery. WB Mason noted the following challenges during the pilot:

- Drivers typically start at 6:45 a.m. so overtime was paid for the earlier start time.
- Manually separating OHD orders from regular orders required additional time and staffing.

 Free form field address fields in PASSPort occasionally created challenges with identifying the correct delivery location and reporting, since addresses were not standardized.

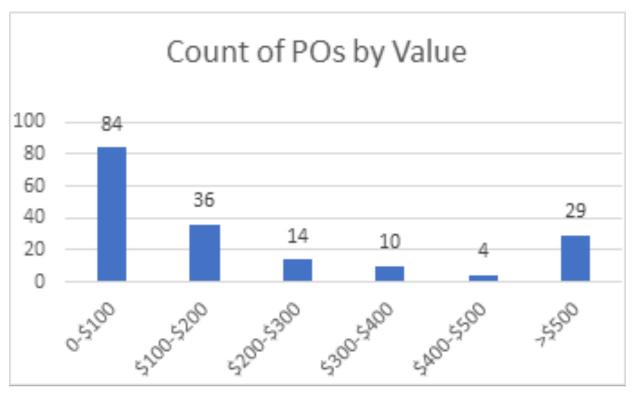
#### Cost

OHD has a significant cost implication to implement effectively. Facility fees (i.e. freight elevator, security, staff overtime, canine costs) are incurred with each delivery. During the pilot, deliveries were consolidated and scheduled between 6 a.m. and 8 a.m., about two hours before regular shifts began. Agencies that modified staff schedules incurred two to four hours of overtime. If the city moved all daily deliveries to OHD (7 p.m. to 6 a.m.) costs would be significantly higher. Without consolidated deliveries, the operational costs for separate deliveries would also have been much higher. The pilot study found that:

- One to three personnel are needed to facilitate OHD. Current work schedules do not align with the OHD timeframe.
- Staffing costs and staffing changes varied by agency. Some agencies provided overtime to staff members while others held packages in a secure area for staff pick up during normal business hours. No new staff were hired for the pilot.
- There are significant costs associated with the use of the freight elevator and loading dock, after-hours particularly at leased buildings. Regardless of package size, vendors are typically not allowed to use passenger elevators.
- Package inspection required an additional K-9 to reduce the wait time for package inspections (and overall delivery time).
- Only one K-9 serves several facilities in lower Manhattan. Since business hours for the K-9 unit are 6:30 a.m. to 2:30 p.m., a new OHD shift is needed to accommodate OHD hours; the K-9 fee is \$75 for off-hours.
- WB Mason reported that additional staff are needed to separate OHD orders and package deliveries. Additionally, they estimate that it would cost 30 percent more to hire staff with a commercial driver's license (CDL) which is compounded by an already tight labor market.

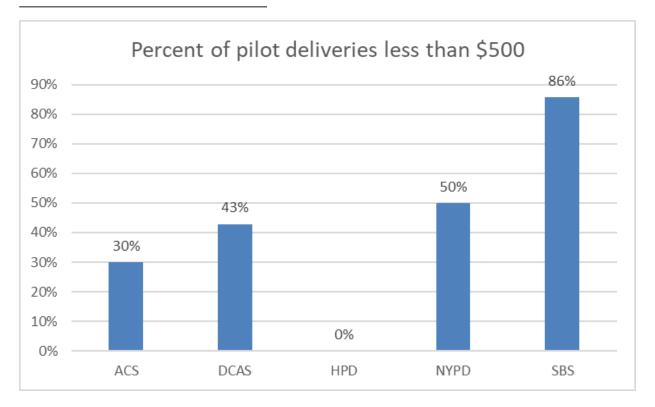
Figure 4 shows the number of purchase orders by the purchase order value during the pilot period, October 14, 2021 to January 27, 2022. For over 80% of purchase orders (POs), the value of goods was \$500 or less; for 47% of POs, the value of goods was less than \$100.





Facility fees of \$300 or more make low valued deliveries inefficient. Daily deliveries, versus consolidated deliveries, increase the cost per delivery and the likelihood that thee fees will exceed the value of the goods purchased. Smaller agencies, agencies with few deliveries, agencies that are the sole building tenant, and agencies that require a freight elevator would be most impacted by the OHD building fees. Consolidating deliveries would help to mitigate these costs. Figure 5 shows the percentage of deliveries under \$500 by agency during the pilot period (October 14, 2021 to January 27, 2022).

Figure 5. Percent of Consolidated Pilot Deliveries Under \$500 by Agency (October 14, 2021 to January 27, 2022)



#### **Unattended Deliveries**

Unattended deliveries were outside of the scope of this pilot. However, the vendor pointed to "proof of delivery" (POD), a physical signature on the receipt, as a barrier to implementing unattended deliveries citywide. Because a signature is typically required for verification before an invoice is paid, this would require a policy change.

#### **Pilot Results**

There were 197 deliveries, from 177 purchase orders, valued at nearly \$60,000 during the pilot. Agencies used existing processes and personnel to minimize costs and disruptions to operations. However, facility fees (e.g., staff overtime, freight elevator, loading dock charges, etc.) of \$300 or more make low value deliveries inefficient; requiring daily deliveries (as opposed to consolidating deliveries weekly or biweekly) raise the cost per delivery and increase the likelihood the delivery fees will exceed the value of goods purchased. Smaller agencies, agencies with few deliveries, agencies that are the sole building tenant, and agencies that require a freight elevator would be most impacted by the OHD building fees. Consolidating deliveries would help to mitigate these costs. Table 7, the OHD Agency Impact Summary, shows the civil service title of staff involved in the OHD pilot, changes to staffing, costs incurred for the OHD deliveries, and process changes by the participating agency.

#### **Table 7. OHD Agency Impact Summary**

Agency	Civil Service Titles	Additional Costs	Staffing Changes	Operational Process Changes
SBS	Procurement Analyst, Space Analyst	Freight elevator: \$125/ hour. with a four-hour minimum	NA	Delivery confirmation was needed to avoid unnecessary freight elevator fees.
DCAS	Community Associate, Custodian	<ul> <li>Overtime: ~\$200-\$300 for two staff members</li> <li>K-9: \$75/hour. with a four-hour minimum</li> <li>K-9 fee (10/21-1/22): Approximately \$800</li> </ul>	Staff began their shift 2-2.5 hours earlier to accommodate OHD	A custodian was assigned to escort the vendor to agency offices.
NYPD	Community Coordinator, HQ Security, Laborer	NA	NA	NA
HPD	Community Associate	Overtime: Approximately \$300 for two staff members	Staff began their shift earlier to accommodate OHD	The mailroom held and delivered packages.
ACS	Security	NA	NA	This is a 24/7 facility. Security received packages. The freight elevator was not used.

Table 8 summarizes the total number of deliveries moved to OHD during the pilot, total value of deliveries, total volume of deliveries, and the impact to vendor operations during the pilot.

**Table 8. Summary of OHD Indicators** 

Indicator	Data Source	Data	Details
Number of deliveries moved to OHD	WB Mason, PASSPort	197 deliveries	<ul> <li>Deliveries are tracked by the purchase order number. Each PO represents one delivery. In some instances, items from one PO may be split over multiple delivery dates.</li> <li>Although there are 177 unique POs, there were 197 deliveries that corresponded with the PO numbers.</li> </ul>
Value of deliveries moved to OHD	PASSPort	\$59,791.77	
Volume of deliveries (total number of items delivered)	PASSPort	1,074	

Phase 1: Implementation of Off-Hour Deliveries at City Facilities in Lower Manhattan, South of Canal Street

Indicator	Data Source	Data	Details
Number of new hires at WB Mason  Number of shift changes and cost at WB Mason	WB Mason	0 - New hires 0 - Shift changes	<ul> <li>There was no change to shifts. Drivers received overtime for additional hours worked. WB Mason coordinated pallet (bulk delivery) drivers instead of their normal delivery team.</li> <li>The vendor modified its fulfillment procedures for the pilot. Salaried staff absorbed the cost of manually sorting and consolidating orders.</li> </ul>

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## Measures to Increase Implementation of Off-Hour Deliveries

The project team's collaborative efforts led to the implementation of the following measures to increase OHD during the feasibility assessments and pilot planning:

- 1. Introduced off-hour delivery language into all new requirements contracts beginning after June 1, 2021.
  - City agencies will be able to require off-hour deliveries through the DCAS requirements contracts for all new or renewed contracts as of June 2021. The specific language in the requirements contracts reads:

**Delivery Time**. Unless otherwise stipulated in this Contract, delivery shall be made between 9 a.m. and 4 p.m., Monday to Friday inclusive, except as may be otherwise required by the City. The City reserves the right to require delivery at times other than between 9 a.m. and 4 p.m. On goods required for daily consumption, or where the delivery is an emergency, a replacement, or is overdue, the convenience of the agency and the City's inspector shall govern. If, in calculating the number of days from the order date, the delivery date falls on a Saturday, Sunday or holiday, delivery shall be made no later than the next succeeding business day.

- 2. The DCAS Real Estate team is exploring how to incorporate OHD in the negotiations of new and renewed leases in privately-owned buildings.
- 3. In January 2021, DCAS Office of Citywide Procurement (OCP) released a trucking-services bid for off-hour delivery rates. The contract is expected to be in place in February 2023.
- 4. The DCAS project team met with OLR to discuss the possibility of shifting staff schedules to off-hours. Changing staff hours is possible, according to OLR, but a pay differential could apply, depending on the civil service title.
- 5. DCAS secured funding for an additional K-9 for inspections during the pilot program and established a second K-9 as a requirement for OHD implementation at select buildings in lower Manhattan.

6. NYC DOT and DCAS developed <u>Forward Thinking</u>. <u>Off-Hour Deliveries</u>: A <u>How to Guide for NYC Agencies</u>, for City agencies and building managers to implement off-hour deliveries.

#### Recommendations

Based on the pilot, DCAS determined that cost and staffing were major challenges to implementation. Most agencies will need additional funding for increased operational costs. Additional recommendations are:

- Offer agencies flexibility to creatively address OHD staffing needs using schedule and shift changes or expanding the types of staff (titles) that can support OHD.
- Designate secure areas or invest in shared-use lockers for unattended deliveries to reduce the cost of additional security and other staff.
- Update inventory and other policies that may require a signature for "proof of delivery" or which include other requirements that impact implementation of unattended deliveries.
- To improve efficiency, consider consolidating orders on the agencyside either, through PASSPort or through a central point of contact.
- Select a delivery window, within the OHD range, that minimizes costs and impact to operations. (e.g. at the beginning or end of the OHD timeframe)
- Address employee expectations for delivery times and modify procedures to facilitate consolidated deliveries.
- Improve tracking and reporting. For example, consider using a universal barcode scanner to improve management and tracking of deliveries and implement standardized addresses (eliminate the freeform address field) for consistency.

#### Conclusion

The New York City Council passed Local Law 184 to reduce congestion and improve safety by shifting agency deliveries to non-peak hours. The pilot determined that agencywide OHD expansion will require additional funding and resources. Augmenting staffing through overtime, shift changes, or additional staff, as well as updates to policies, procedures, and systems will facilitate implementation of the OHD program. Given the higher cost of OHD deliveries, agencies should review the volume, type, and frequency of deliveries at their agency to determine necessary resources and operational changes required for implementation.

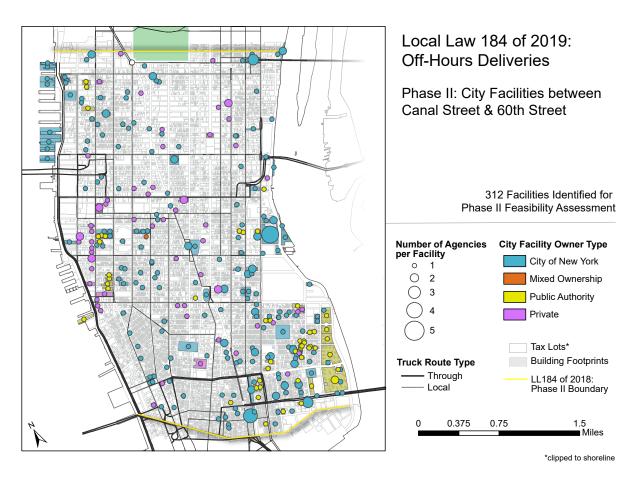
In Phase II of the local law, "the agency or office designated by the mayor shall assess all city facilities in the central business district and highly congested areas that are not in lower Manhattan to determine whether off-hour deliveries are feasible at such facilities and such agency or office, in consultation with other agencies or offices as deemed appropriate by the mayor, shall conduct off-hour deliveries at such facilities." The "central business district" means the area of the borough of Manhattan lying south of and including 60th street.

In Phase II, DCAS administered one survey covering the three target areas. Of the 22 city agencies surveyed, DCAS received responses from 16 agencies for 30 facilities. Interviews were not conducted. The New York City Housing Authority (NYCHA), Community Boards, Office of Court Administration (OCA), the NYC Department of Education (DOE), and the Health and Hospitals Corporation (HHC) were not surveyed.

DCAS identified 312 facilities in the central business district, with 31 agency tenants. Of the 312 facilities, DCAS excluded 141 facilities from the survey because they were classified as residential or other public authority (NYCHA), educational including religious, vacant, or occupied by community board or Office of Court Administration (OCA).

Table 9 groups the 141 facilities in the central business district by feasibility level.

## Figure 6. Map of City Facilities Between Canal Street and 60<sup>th</sup> Street (Manhattan)



**Table 9. Feasibility Grouping of Central Business District Facilities** 

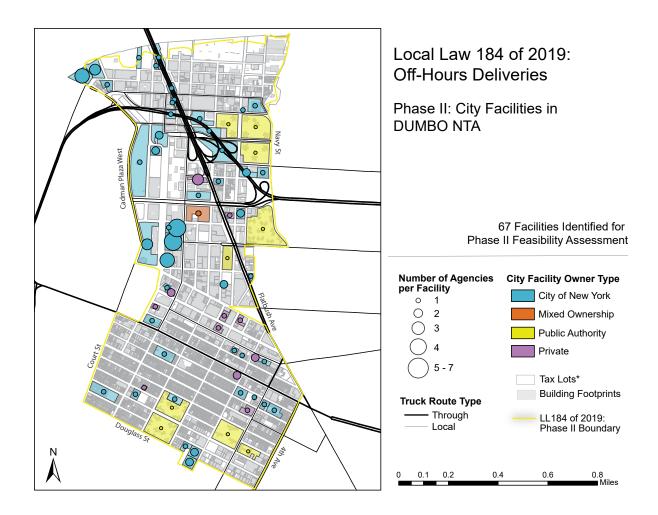
Feasibility Rating	Count of Facilities
High	64
Medium	51
Low	197
TOTAL	312 facilities; 22-City agencies (nine non-City agencies)

DCAS identified 67 facilities in downtown Brooklyn (DUMBO) with 24 agency tenants (20 NYC agencies and four non-city agencies). DCAS did not survey the Board of Elections, the Borough President's office, the

Office of Court Administration (OCA), the New York City Housing Authority or the Department of Education. There are several buildings that house three or more agencies which may present opportunities for coordination with vendors or consolidation of goods.

#### Figure 7. Map of City Facilities in DUMBO (Brooklyn)<sup>1</sup>

This area is bordered by Navy Street, Flatbush Avenue, 4th Avenue, Douglass Street, and Cadman Plaza West.



<sup>&</sup>lt;sup>1\*</sup> Neighborhood Tabulation Areas or NTAs, are aggregations of census tracts that are subsets of New York City's 55 Public Use Microdata Areas (PUMAs). Primarily due to these constraints, NTA boundaries and their associated names may not definitively represent neighborhoods. <a href="https://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/census2010/ntas.pdf">https://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/census2010/ntas.pdf</a>

Table 10. Feasibility Grouping – DUMBO NTA (Brooklyn)

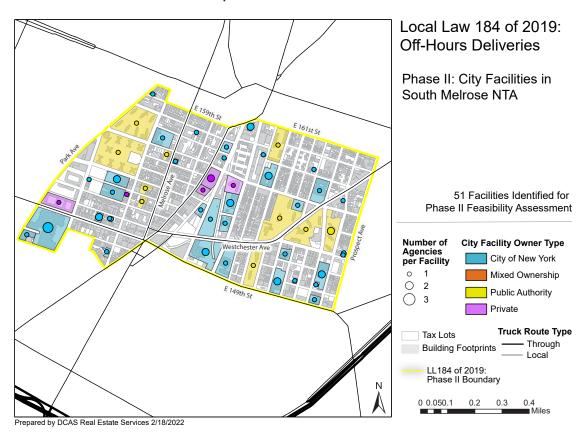
22 facilities in DUMBO were deemed highly feasible because they are City owned and located in a non-residential area.

Feasibility Rating	Count of Facilities
High	22
Medium	10
Low	35
TOTAL	67 facilities; 18 NYC agencies (4 non-City agencies)

DCAS identified 52 facilities in the South Melrose (Bronx) area, 15 NYC agencies and three non-City agencies. DCAS did not survey NYCHA or the NYC DOE. Nearly 50% of facilities are residential or educational. South Melrose is the least dense of the three target areas; other target areas have at least one building with at least five or more tenants.

#### Figure 8. Map of City Facilities in South Melrose (Bronx)<sup>2</sup>

This area is border by East 159th and East 161st Streets, Park Avenue, East 149th Street, and Prospect Avenue.



<sup>&</sup>lt;sup>2\*</sup> Neighborhood Tabulation Areas or NTAs, are aggregations of census tracts that are subsets of New York City's 55 Public Use Microdata Areas (PUMAs). Primarily due to these constraints, NTA boundaries and their associated names may not definitively represent neighborhoods. <a href="https://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/census2010/ntas.pdf">https://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/census2010/ntas.pdf</a>

Table 11. Feasibility Grouping of Facilities in South Melrose (Bronx)

Feasibility Rating	Count of Facilities
High	7
Medium	2
Low	43
TOTAL	52 facilities; 18 agencies (15 NYC agencies; three non-City agencies)

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# Phase II: Survey Findings in the Central Business District, DUMBO (Brooklyn), and South Melrose (the Bronx)

A survey to gauge feasibility and interest in participating in the off-hours delivery program was disseminated to agencies with facilities in the Central Business District, DUMBO (Brooklyn), and South Melrose; no deliveries were conducted. Staffing was the primary challenge listed by survey respondents to OHD implementation in Phase II sites. While staff scheduling and funding for overtime or new positions are key considerations, 83% of respondents reported that there is no union or civil service title requirement to modify work schedules, providing agencies more flexibility to staff during OHD hours. Nearly all respondents indicated that a staff member is required to receive deliveries.

Office supplies and promotional/branded products were the items most frequently delivered. Most respondents received goods from one to four vendors, with WB Mason being the most frequent vendor. Perishables were the most frequently delivered items for Parks. Both Parks and DOT indicated that OHD would be possible at select sites. Staffing, building hours, security and storage were barriers to implementation, and most sites could not accommodate unattended deliveries.

Several agencies were already implementing off-hour deliveries as of the time of this report submission or have implemented off-hour deliveries in the past. DCAS Bureau of Quality Assurance (BQA) currently operates from 6 a.m. to 2 p.m. and inspects items such as food and fuel for the Department of Correction (DOC) as early as 5 a.m., as specified in their contract. Table 12 provides an overview of the current state of OHD at city facilities as of October 2021.

Table 12. State of Off-Hour and Unattended Deliveries at City Facilities (as of October 2021)

Agency	Off-Hour Deliveries	Unattended Deliveries
NYC Administration for Children Services (ACS)	<ul> <li>OHD conducted at 57-61 Broadway and 150 William, Manhattan.</li> <li>Vendors have requested OHD because it is easier for them to access the freight elevator.</li> <li>OHD is especially beneficial for prescheduled furniture and computer deliveries.</li> <li>Vendors did not charge more for OHD.</li> <li>Strong contender for OHD - Children's Center on First Avenue, Manhattan.</li> </ul>	<ul> <li>OHD at 66 John Street and 51 Broadway, Manhattan.</li> <li>The freight elevator goes directly to agency space – only ACS staff have access to this space.</li> </ul>
NYC Small Business Services (SBS)	<ul> <li>Used OHD for construction deliveries at 1 Liberty Plaza.</li> <li>OHD resulted in less backlog on the freight elevator, fewer parking issues, and less time spent in traffic for the transporter staff.</li> </ul>	<ul> <li>Due to COVID-19, SBS implemented unattended deliveries.</li> <li>Drivers leave packages in a holding area/freight elevator lobby on the 10th floor.</li> </ul>

Agency	Off-Hour Deliveries	Unattended Deliveries
NYC Fire Department (FDNY)	<ul> <li>Uses OHD on an asneeded basis.</li> <li>Depending on the emergency, OHD may be used.</li> </ul>	The sites below Canal Street are all firehouses and space is an issue to accept unattended deliveries.
NYC Department of Sanitation (DSNY)	<ul> <li>Currently the salt delivery shift starts at 5:00 a.m., so salt is delivered off-hours to some DSNY locations</li> <li>44 Beaver Street, Manhattan could potentially have staff coverage on off-hours</li> </ul>	• None
NYC Department of Education (DOE)	■ None	<ul> <li>Had discussions with a vendor (Box Lock) to pilot unattended deliveries with custodial supplies.</li> <li>As of April 2021, the pilot is on hold.</li> </ul>
NYC Police Department (NYPD)	230 East 21st Street is a 24/7 facility and can receive deliveries during off-hours	■ N/A

Several key challenges were identified that affect off-hour delivery implementation at city facilities including:

- 1. Data availability: There is limited data available on deliveries after the point of purchase. DCAS only has access to agency purchasing data from purchases by way of a review of requirements contracts (through PASSPort) and purchases from the DCAS Central Storehouse. Coordination is often done between the purchasing team and the vendor directly, with limited data collected. At the point of receipt, mailroom staff maintain receipt logs, but there is no centralization or standardization of delivery data across the city. This lack of data makes it difficult to identify deliveries best suited for OHD, to partner with vendors, identify delivery scale and frequency, as well as realize all the expected benefits from shifting to OHD among city facilities.
- **2. Labor regulations:** OHD may have labor implications if employee work schedules (shifts) need to change.
- 3. Limitations at leased sites: Many building leases require deliveries be made during typical business hours due to loading dock and freight elevator operator availability. Additionally, some buildings charge hourly rates to accommodate off-hour deliveries. These rates are established by building management and are in accordance with agreements made with the Labor Services Union 32 BJ. At sites where the City is the primary tenant, it may be possible to negotiate this term for new leases. However, for sites with a smaller City presence, delivery hours will need to align with business operating hours.

#### 4. Costs and resources necessary to implement:

- There may be a pay differential (in most cases 10%) to work offhours or overtime for city workers in both leased and city-owned buildings for the following functions:
- · Staff to receive goods
- · Staff to inspect goods
- · Security staff to screen goods
- · Freight elevator operators
- Potential increase in contract prices if vendors increase prices to accommodate delivery to City facilities off-hours.
- Building fees for OHD in privately-owned buildings.

Given the costs associated with off-hour deliveries, we recommend providing additional support to receiving facilities and agencies for largescale participation. The following costs were identified:

## **Staffing**

#### · Receiving staff

Staff at the receiving agency must be present to receive the delivery. By shifting staff schedules to off-hours, hourly pay differentials for staff that work between 8 p.m. and 6 a.m. may be incurred. There may be less of an impact on incoming staff (new hires) to accommodate OHD, rather than modifying existing staff schedules from normal business hours to off-hours, as this poses a major change to how employees do their work.

#### Security

- Many city-owned facilities will need to implement or increase security to shift to off-hour deliveries. Depending on the volume of deliveries, additional staff may be needed for screening and to monitor deliveries.
- DCAS-managed buildings in lower Manhattan require a K-9 inspection for all deliveries. The K-9 is contracted during normal business hours and has an hourly fee for of \$75 during the offhours.

#### Freight elevator operators

 At DCAS-managed buildings, the freight elevators require freight elevator operators to accompany the delivery staff. A minimum of one freight elevator operator is required. These staff may also be eligible for the 10% pay differential, depending on the civil service titles.

## **Facility Fees in Privately-Owned Buildings**

DCAS identified costs to implement off-hour deliveries at privately-owned buildings. For Phase I, they identified off-hour delivery fees imposed by building management at 11 Manhattan properties: 33 Beaver, 55 Water Street, 375 Pearl Street, 180 Maiden Lane, 100 Church Street, 151 West Broadway, 233 Broadway, 42 Broadway, 250 Broadway, 59 Maiden Lane, and 150 Greenwich.

Most properties required tenant agencies to pay for a minimum of four-hours for accepting deliveries off-hours and ranged from \$134 to \$372 per hour for freight elevator, porter and loading dock access.

### **Vendor Contracts**

Adding OHD language to existing and new contracts may increase the contract price, depending on the vendor. Vendors who do not currently conduct off-hours deliveries may incur additional staffing or other operational costs.

## **Scenario Analysis**

Scenario:	Vendor only makes deliveries during off hours, between 7 p.m. and 6 a.m. The analysis below is for OHD at one agency.
Assumptions:	Staffing costs require 10% pay differential for hours between 8 p.m. and 7 a.m., the leased buildings are staffed for deliveries from 8 a.m 6 p.m. (deliveries outside of these hours incur additional fees.)

**Table 13. Potential OHD Implementation Costs** 

	Facility Ownership	
Costs per Day	DCAS-Owned	Privately-Owned
Staffing at Receiving Facility		
Security K-9	\$825	n/a
1-Freight Elevator Operator	\$34	n/a
3-Receiving Staff	\$120	\$120
Leased Building Fees	n/a	\$2,544
Total Staffing Costs at Receiving Facility	\$979	\$2,664

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Total Daily Cost for OHD	\$979	\$2,664
Weekly Cost for OHD	\$4,895	\$13,320
Monthly Cost for OHD	\$19,580	\$53,280
Yearly Cost for OHD	\$254,540	\$639,348

The assessment determined that while OHD is feasible at some cityowned facilities, it requires extensive freight operation coordination, funding for agencies to address staffing, storage for unattended deliveries, and building operating costs at leased facilities.

Facility type, types of goods delivered, and operational characteristics will determine if a location is viable for OHD. In co-located facilities, agencies may also consider coordinating deliveries with other agencies. Additionally, those city facilities that have experience with overnight and/ or unattended deliveries, facilities that operate 24/7, and facilities that currently receive inspected goods during off-hours, can use findings in this report to expand OHD. For smaller facilities, or city facilities with few deliveries OHD may not be feasible or cost effective.

Options for pursuing OHD based on viability are listed below:

- Use unattended deliveries (viable)
  - Unattended deliveries decrease the need for staffing and allows agencies to better budget for and manage costs.
  - Constraints: Security protocols, quality assurance inspections of certain goods, or policies that require a signature for delivery may limit the goods that are eligible for unattended deliveries. Also, there may be a high-upfront costs to procure lockers and implement additional security measures. Agencies will need to identify a secure area to store oversized items.
- Change existing or create new shifts that align with OHD hours (less viable)
  - Align staff hours with the OHD delivery window
  - Constraints: The volume and frequency of deliveries may not warrant a new shift. For union staff, shift changes may require union approval and pay differentials.
- Implement a modified OHD schedule and consolidate deliveries (viable)
  - For non-essential goods, consolidate deliveries on one or two weekdays. Staff scheduling, overtime, and other costs can be better managed with predictable deliveries.
  - Constraints: Employee expectations for delivery of goods.
     Consolidation may not be possible for all goods (e.g., perishables or time-sensitive goods) and would necessitate a change to how orders are processed on either the vendor or

agency side. Funding for freight/loading dock fees at leased properties and staff overtime is required.

#### Delivery to Hubs (Less Viable)

- Direct vendors to deliver to central points (the DCAS Central Storehouse or an agency's central warehouse or other central location). Re-delivery to agencies can be scheduled to make the best use of staff time. Some agencies like Parks and NYPD already utilize this structure for select deliveries such as pool supplies (Parks) and paper (NYPD).
- Constraints: Requires additional staffing and and potential system upgrades to facilitate tracking and reporting.



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