

Developing Efficient Freight Operations For Manhattan's Buildings

A research report prepared for the Steven L. Newman Real Estate Institute, Baruch College, CUNY by Anne G. Morris, Ph.D., Director of the Center for Logistics and Transportation, Baruch College, The City University of New York.

Location is a primary and critical business decision; it follows that commercial real estate and "location" are inextricably connected. Factors that impinge upon location, from security to congestion, should be examined in terms of the bottom line before a lease is executed. The advantages of locating in New York City's Central Business District (CBD), a center of commerce, information, and services, including an accessible regional public transportation system, are obvious. Manhattan provides myriad commercial services and resources – retailers, restaurants, beauty salons, spas, gyms and entertainment and cultural institutions – that make the CBD a desirable "destination."

The chief objective of commercial properties is to provide workers and companies with an environment that is hospitable to commerce—the life-blood of the city. It is assumed that such a workplace will have the appropriate amenities to enable them to get their work done with dispatch. Business depends upon dependable pick-ups and deliveries that provide workers with the needed "stuff," ranging from office supplies to technical equipment and support to the expected assortment of bottled waters and snacks.

In a competitive world, commercial centers either grow or they disappear. Rockefeller Center and the World Financial Center, major business complexes, provide tenants with a range of services including timely freight deliveries. While growth is essential, the very factors that accompany growth often interfere with dependable, efficient and secure goods movement which is essential to the economic vitality and livability of Manhattan's business community. However, the CBD's built environment and mature infrastructure, that limits capacity and hinders the potential for change, often exacerbates congestion and

limits freight efficiency, thereby increasing time in transit and reducing productivity and the quality of life.



Freight is a service industry with operations designed to supply and meet any and all customer requirements. The development of a seamless 21st century goods delivery system will require the identification and management of the visible and invisible barriers to efficient goods movement, which supports a major goal of the highly regarded PlaNYC, since it will be inextricably linked to long range sustainability.

Urban Planning efforts involving traffic management, generally do not factor in the negative impact of pick-ups and deliveries upon street traffic and vice versa. Beyond maintaining minimally acceptable service levels for pick-ups and deliveries, operational elements required by freight are often after-thoughts due to their relative invisibility. Developers and planners responsible for the design and operations of new complexes are advised to examine and evaluate the impact of external congestion and internal obstacles that interfere with traffic flow, freight mobility and the timely receipt of goods.

Security and related issues also contribute to the increased time and cost of moving goods into New York City. The destruction of the World Trade Center heightened security concerns in commercial real estate, leading to increasingly rigorous security procedures at off-loading facilities. Reportedly, the restrictive measures instituted have added significantly to the time and cost of moving goods in the CBDs. When carriers are unable to absorb these costs, they are passed onto the shipper, and ultimately, to the customer. And when the cost of doing business in the city is not sustainable, businesses relocate.

The mission of the City University of New York's (CUNY) Center for Logistics and Transportation is to provide state-of-the-art logistics management programs for logistics professionals and to investigate problems particular to domestic and global logistics. Thus, Center staff responded to the late Senator Daniel P. Moynihan's concern that added costs had become a disincentive for companies to locate in New York City. As congestion escalated in the mid-nineties, costs to move goods in the city climbed. Per Senator Moynihan's request, the Center began the Urban Goods Movement Study to obtain up-to-date information from shippers and carriers regarding obstacles to efficient goods movement in the CBD. The research project entailed a series of focus groups, survey/interviews and related field studies.

Data analysis revealed an unexpected surprise⁽¹⁾⁽²⁾. The research team's hypothesis that obstacles to freight mobility would be different for luxury products vis-a-vis consumer products was demolished by the consistent focus group findings that barriers to mobility were the same for Burger King and Tiffany's, among comparable examples. Pooled data for 13 major industry sectors located in the tri-state region revealed that

obstacles to freight efficiency, such as inaccessible curb space and gridlock, are under the jurisdiction of the public sector. Despite long term complaints by the carriers insufficient enforcement of existing regulations continues to compound the lack of legal parking. On the other hand, an invisible and recurrent bottleneck, the lack of insufficient freight elevators and loading bays in "The Last Mile," (the pick-up /drop-off point to the end customer in commercial buildings) is a private sector responsibility that is regulated by the Department of City Planning. Although this obstacle is repeatedly identified as a major contributor to increased turnaround and street congestion, it apparently is a low priority for property owners and for regulators, as well, who are overwhelmed by the increased growth in construction that involves numerous zoning changes.

The process of delivering freight to commercial properties has not changed greatly since the end of the 19th century although trucks and vans have replaced the horse and carriage. Although product may arrive by ship, plane or train, delivery to the end customer in "The Last Mile" is always by truck or by a delivery person using surface transportation. The continuous stream of new technologies and distribution strategies have greatly increased pick-ups and deliveries and improved productivity; however, the processes involved in freight delivery in the city remain the same.



In light of these consistent findings, a Commercial Office Building Dock Survey was constructed to identify the characteristics

of Manhattan's commercial properties. The Dock Survey was completed by property managers of 59 Class A buildings and 23 Class B's. Class A properties compete for major firms, have highly desirable locations and above average rents. Class B's are generally older buildings with fewer amenities. A Time & Motion Report of Vehicular Deliveries was carried out at six Class A properties for periods of four to six weeks. Analysis indicated that insufficient loading dock facilities, such as the number of loading bays and freight elevators, compounded by a continual and significant increase in pick-ups and deliveries, appeared to increase dwell times at both classes of buildings. ⁽³⁾ ⁽⁴⁾

Subsequently, as a member of the Downtown Future Group organized by CUNY's Steven L. Newman Real Estate Institute, the Center extended its congestion study to Lower Manhattan. While carrying out field studies downtown, we observed trucks standing and circling the streets while awaiting access to buildings or parking spaces supported our findings that "The Last Mile" continued to be a major contributor to the omnipresent street congestion. To evaluate the impact of gridlock upon Lower Manhattan's business community, meetings were also held with representatives of private and public organizations located throughout the downtown area. There was consensus that the intractable congestion which appeared to be increasing, limited productivity, mobility, and the quality of life. The findings were consistent across organizations that often had very different agendas.

Radical changes in the 1980's, starting with transportation deregulation have had a major impact on the freight sector. The motor carriers rapidly implemented new information technologies and innovative management and distribution practices that increased productivity. However, while deliveries to commercial properties in the city over the past 30 years increased by about 300 percent, New York City's regulations for the number of bays required for off-loading facilities have not changed since 1972. The Department of City Planning's Transportation Division reported that the number of bays required for large commercial buildings in other major urban areas in the United States were more than

double New York City's requirement of four bays for one million square feet. ⁽⁵⁾

Since delivery cycles had changed nationwide in the time period under study, zoning officials in American cities with major commercial centers were contacted to compare their requirements for loading bays for the same amount of square footage as those of New York City. The cities participating, their controlling agencies and the number of bays mandated by each city follow:

- Atlanta, Bureau of Buildings, 6;
- Boston, Zoning Commission-Dept. of Transportation, 8;
- Chicago, Dept. of Zoning, 6;
- Dallas, Dept. of Development Services, 10; and,
- Seattle, Dept. of Design, Construction and Land Use, 9.

Officials from the five cities cited above reported that their requirements for the number of bays have remained the same since 1992.

Although New York City requires passenger elevators in buildings of four or more floors, no zoning standards exist for freight elevators. In light of the surprising lack of requirements for freight elevators in New York City, despite the marked increase in pick ups and deliveries, officials in the cities listed above were contacted again to ascertain their mandates, if any, for freight elevators in commercial buildings. It was found that none of these cities had requirements regarding the number of freight elevators ⁽⁶⁾. Further investigation revealed that the primary concerns of the agencies responsible for elevators relate to installation and safety issues.

It is time to re-learn a lesson from New York City's history of commercial construction. In 1931 when construction began at Rockefeller Center it is not likely that congestion was a significant issue. However, its prescient developers recognized that trucks on the street could diminish the value of their vision of an upscale complex. To achieve their goal, commercial vehicles were restricted from parking or standing on Rockefeller Center's public streets. This turned out to be a smart marketing strategy that morphed from a model plan for optimum off-loading facilities to a



prototype of an energy efficient system to move goods in commercial properties. Trucks delivering product to the complex were not permitted to stand or park on Rockefeller Center's public streets between Fifth Avenue and the Avenue of the Americas. To accommodate the approximately 400-500 trucks servicing their tenants daily, the developers set aside sufficient underground space for loading docks, ample off-loading bays, and placed a manned freight elevator in each of the nine buildings abutting the underground space.

In March 2001, the Center for Logistics and Transportation and the National Small Shipments Traffic Conference sponsored a "Best Dock" contest. 30 Rockefeller Plaza received the highest number of votes of the truck driver contestants. The drivers concurred that a major asset of Rockefeller Center was its state-of-the-art dock facilities that decreased congestion, time in transit and air pollution. The design of the dock system also decreased turnaround and lowered time and costs for the motor carriers while less air pollution reduced maintenance costs for the exteriors of the complex's nine buildings. The appropriate number of loading bays supported and improved security, since trucks lined up on the streets and curbs are a security threat. The truck drivers' assessment of the value of these facilities was summed up by the complex's Director of Administration who said, "What makes it so good, is that it keeps trucks off the streets." Some things never change. Keeping trucks off the streets remains a major objective of transportation planners in 2009 ⁽⁷⁾⁽⁸⁾.

Unfortunately, the real estate sector has not replicated the remarkable foresight of Rockefeller Center's developers. Their decision eighty years ago to market the complex to tenants and shoppers as a relatively truck-free environment, contrasts sharply with the attitudes of today's developers who apparently haven't picked up on the 21st century public's environmental concerns that were so successfully addressed in the 1930s by 30 Rockefeller Plaza. The real estate sector primarily considers off-loading facilities as a necessary service that takes up valuable street level space that could be used more profitably for commercial tenants. Moreover, they may not regard the environmental benefits of state-of-the-art off-loading facilities to be an effective sales pitch.

When Albany refused to approve Congestion Pricing legislation last spring, its primary supporters, especially the media and environmental groups, railed against the rejection of this heralded process that would cure congestion and provide funding for the subway system. The freight sector, among others, was greatly relieved. Increasing the cost of pick-ups and deliveries in Manhattan, which has always been pricey, could have devastated smaller carriers and also small businesses that provide a range of needed services to firms and buildings located in this global business center.

Widespread concerns about congestion's devastating impact upon goods movement in Manhattan prompted the Center to update its freight mobility database. The 2008 Congestion Survey is similar to earlier surveys administered from 1997 to 2006. It was designed to identify obstacles to traffic flow that increased the time and cost of moving product through the city. The sample population, representing 14 companies that participated in earlier studies, included carriers, shippers, property managers and members of the 2003 World Trade Center Goods Delivery Focus Group.

Analysis of the 2008 survey revealed that congestion, a lack of curbside space to unload, and inadequate off-loading facilities were identified as the major impediments to productivity and efficiency. However, for the first time, participants complained about the citywide increase in construction activities that interfered with

getting their work done. Construction related barriers close off lanes, limit access to cross streets, foster double parking and prevent access to the curb space required by trucks. They also interfere with, and delay, scheduled deliveries and reduce the predictability of scheduled arrival times at commercial properties, thereby contributing to congestion. The recent proliferation of bike lanes by the Department of Transportation has led to unintended consequences for the carriers. Trucks can no longer access what was formerly accessible curb space. The lack of legal parking space is a serious problem for commercial vehicles since they are subject to tickets and towing when parking space is not available.

A list of commonsensical solutions developed and implemented on the job, and at minimal cost by survey participants follows. The solutions were designed to modify and resolve intractable features inherent in the long-term problems identified above.

- To increase security post-9/11, property managers in Class A buildings developed a system for handling mail and small packages that eliminated the need for messengers to enter building lobbies or elevators. Staffed Messenger Centers that have increased security have become a "Standard Operating Procedure" in Class A properties.
- Off-peak deliveries that were forbidden due to union issues are now permitted in buildings operating 24/7 in response to the special needs of international business. Property managers are able to take advantage of available space to schedule night deliveries. If deliveries can be scheduled so that unloading occurs after store/office closings, vehicle time on the street is reduced enabling quicker departures the carriers reward building management with rebates — a win/win for both sectors.
- Daytime delivery services can be changed to cluster pick-ups and deliveries during periods of lower traffic by utilizing available information about scheduled delivery times.
- A process was developed and implemented to reduce receiving and internal distribution time in commercial properties caused by daytime gridlock in CBDs. Product was made floor-ready in out-of-city-hubs with the precise destination in the building indicated on the finished package.

SUMMARY

A review of congestion related findings from downtown's historic commercial area to midtown's CBD revealed a cluster of characteristics integral to goods movement in CBDs. The limited space in business centers is a given. The Last Mile's negative contribution to congestion is highlighted in this constrained environment. The public perceives trucks as a major contributor to traffic. However, repeated observations of pedestrians watching trucks standing and circling the streets of the CBDs found that they didn't connect the ensuing congestion to a lack of curb space or to insufficient off-loading facilities. While goods movement in business centers is shaped by different factors than highway freight, is it just another category of freight movement? The answer is yes. Whereas, highway freight generally operates in flexible surroundings that offer opportunities for needed changes; in contrast, what we have defined as Urban Freight operates in a built environment with a mature infrastructure that severely limits options for change. Consistent findings have confirmed that space restrictions in CBDs, compounded by increased land values foster denser development, that negatively impact service levels. This supports the value in identifying the unique characteristics of Urban Freight so as to ensure it a place in the urban planning process.

The Center for Logistics and Transportation's Urban Goods Movement Study, subsequent research efforts and the resulting findings and recommendations have changed the dialogue about congestion in the city. Previously, there was a singular focus on the movement of people, and symptoms identified and solutions proposed, were exclusively concerned with concrete and steel. As the approach to congestion has expanded, the movement of goods as well as people is being factored into the planning process and functional solutions, not previously considered, are also evaluated and rated.

Goods movement does not occur in a vacuum. Collaboration and information sharing that utilizes unique expertise of shippers, carriers and commercial real estate professionals will enhance efforts to identify and alter the multiple factors impinging upon goods movement in

New York's commercial centers. Decreasing turnaround while increasing security remain essential goals for urban goods movement. Although major infrastructure changes are generally not viable in existing commercial complexes, limited modifications that tweak infrastructure and/or institutional barriers have the potential to improve freight mobility. Providing sufficient off-loading facilities and vertical lift in new or retro-fitted commercial properties makes it possible to decrease turnaround and ease street congestion, as does revisiting 20th century zoning codes and traffic regulations to meet 21st century needs for off-loading space for the ever increasing movement of people and goods.

The stakes are high. A 2006 study by the Partnership for New York City conservatively estimated the economic impact of congestion in the New York Region at \$13 billion annually⁽⁹⁾. These impacts included lost revenue, increased operating expenses, and the sheer waste of productivity as vehicles sit idly in traffic. Manhattan alone suffers an annual \$3.2 billion loss in such direct costs, and an additional \$1.3 billion loss in gross output. As we confront more difficult economic times the city's businesses and its taxpayers can ill afford such wastefulness. Especially now, it is vital to move forward with a coordinated effort to improve our system of Urban Freight.

Anne G. Morris, Ph.D., Director of the Center for Logistics and Transportation, Baruch College, has been a Principal Investigator and contributor on research projects of The Steven L. Newman Real Estate Institute, Baruch College, The City University of New York. ■

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