

# Last Mile Deliveries

## THE NEW SYSTEM DEMANDS.

Logistics is one of many professional fields of work that is changing rapidly. The growing demand for near instantaneous delivery of goods is changing the retail and restaurant business and the logistical apparatus that delivers goods and meals to the end users, usually in their homes. Remember the old adage – “Everything old is new again.” Consider:

- The United States Postal Service [USPS] collects letters and packages and delivers them wherever in days.
- UPS, FEDEX and DHL collect packages and deliver them overnight, next day or soon thereafter to wherever.
- Amazon, and a growing list of other large operators, record a purchase and deliver the product within hours, over night or soon thereafter.
- “Wholesale” or large traditional warehouses are different from “retail”, or smaller “last-mile” warehouses.
- Robots in the warehouse and on the sidewalks transform the process.
- Autonomous vehicles change the dynamics even more.

The logistical system for gathering and delivering vast amounts of letters, packages, retail products, foods and meals is growing ever more sophisticated.

## THE CHALLENGE TO LOCAL GOVERNMENTS.

This paper is the first of what will end up being a series of explorations about how local governments should or can respond to these changes in how streets and sidewalks are used, where warehouse locations make sense and what constitutes manufacturing when considering downtown brew-pubs and retail ceramic manufacturing on main street? The literature is rich with examples.

The starting point is an understanding of where goods of all types are manufactured or imported and how they find their way to the end user who is probably a resident in an apartment or neighborhood. The delivery systems are changing and they are over-lapping. A thought needs to evolve that describes a delivery system that does not have 18-wheelers on residential streets and does not have multiple vehicles delivering similar goods to similar places creating unnecessary traffic and pollution.

### CITYLAB

## The Race to Code the Curb

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**Everyone—from ride-hailing cars to delivery trucks to bikes and scooters—wants a piece of the curb. How can smart cities map and manage this precious resource?**

#### LINK:

<https://www.citylab.com/transportation/2019/04/smart-cities-maps-curb-data-coord-sidewalk-tech-street-design/586177/>

#### THE ELEMENTS OF A SYSTEMIC THOUGHT.

- Large trucks belong only on large roads.
- Large warehouses belong in industrial or clearly non-residential areas of the city.
- Smaller trucks, vans and delivery cars:
  - Need designated pick-up and delivery zones in commercial and mixed-use districts,
  - Must travel residential roads.
- Small scale manufacturing, to be defined, is desirable in traditional commercial and mixed-use districts.
- The users of the sidewalks and street curbs need specification to mitigate the inherent conflicts between pedestrians and recreational bicycle and scooter users with the delivery scooters, bikes, robots and vehicles.

#### A DISTRIBUTION SYSTEM FOR NATIONALLY OR INTERNATIONALLY PRODUCED GOODS OR FOODS.

- Goods originate at a manufacturing site, a farm or a national point-of-entry such as an airport or sea port.
- Goods once prepared for shipment must then be distributed throughout the market area in one of two scenarios:
  - Good may be distributed to a wholesale network usually consisting of a network of regionally located “wholesale” warehouses where bulk shipments are separated into smaller lots for distribution to their final “retail” destination. Distribution from the point of origin to the regional warehouse is accomplished by:
    - Over-the-road tractor trailers [18-wheelers], soon to be autonomous vehicles, that will deliver goods from its place of origin or manufacture to a network of nationally distributed “wholesale” warehouses where the bulk material is separated for delivery to the customer within a region or metro area in those instances when there is a wholesale warehouse intermediary.
    - Rail service that off-load bulk materials at an intermodal center for delivery to a wholesale warehouse or directly to the end user.
    - Sometimes the logistical service is provided by the manufacturer; sometimes a third party is employed for the delivery, hence the term “third party logistics”.
  - Goods may be distributed directly to the end user. The end user could be a retail shop, a restaurant or a customer's home.
    - The USPS provides such a service with a system of wholesale warehouses or collection/distribution centers and local post offices in neighborhoods or retail locations and a fleet of delivery trucks.
    - UPS, FEDEX and DHL use wholesale warehouses and a fleet of delivery trucks.
    - Each has a network of warehouses to collect materials from around the world and then distribute materials directly to the end user.
    - The creators of the materials to be delivered directly are rarely the manufacturers or originators of the goods or foods; hence the term “third party logistics”.

### **A DISTRIBUTION SYSTEM FOR LOCALLY PRODUCED GOODS, FOODS OR MEALS.**

Local products are usually produced in small quantities creating a challenge for the delivery system, especially when convenience and promptness are the customers' expectation.

- Retail goods and groceries can be taken home upon purchase, picked-up when purchased on-line or delivered in either case.
- Meals can be ordered on-line and delivered to the home.
- The delivery vehicles can be provided by the retailer or grocer using their own vehicles and drivers, sidewalk delivery robots or third party logistic companies like FastMile, Lyft or Uber.
- In all cases, i.e., retail goods, groceries and meals to be delivered may not originate at the shop, the grocery store or the restaurant. In many cases, there is an off-site location where the orders are recorded, prepared and sent on delivery.

### **PRELIMINARY THOUGHTS ON A DELIVERY SYSTEM.**

Cities have long been committed to protecting neighborhoods and reducing traffic congestion and accidents. Given these goals, a delivery system for goods, foods and meals could be constructed thusly:

1. **Regulate and locate wholesale warehouses** as currently done. In Orlando, Amazon is planning an 850,000 SF warehouse at Orlando International Airport.
2. **Limit large truck traffic in selected areas** such as neighborhoods, collector streets, downtowns and main streets in mixed-use activity districts. Large trucks delivering food to neighborhood grocery stores is the biggest problem to solve.
3. **Develop a regulatory classification for small, "retail, warehouses** designed to deliver goods and foods the "last mile". Older properties offer the win-win; the building owner gets a new tenant and the city enjoys the tax benefit. In downtown Orlando, Amazon is planning a "retail" warehouse of about 120,000 SF on an older, heavily commercialize street. Factors to be regulated include:
  - a. size,
  - b. height,
  - c. proximity to residential, office and retail activities,
  - d. parking for employees and delivery vehicles,
  - e. lighting, fencing and security,
  - f. stormwater retention and
  - g. access for 18-wheel tractor-trailer delivery vehicles bringing materials to the warehouse and smaller trucks and vans needing access to deliver materials to end-user locations.
4. **Develop a regulatory classification for retail manufacturing** including commercial kitchens producing meals for home deliveries, brew-pubs and arts and crafts production by retail customers in downtown or mixed-use districts.

### **CONCLUSIONS.**

A system of wholesale and retail warehouses can be designed to meet the needs of residents and businesses expecting convenient and prompt delivery of goods, foods and meals. Locations for the retail warehouses are probably few so they need to be identified early and protected. Retail manufacturing can be a positive contribution to main street when properly anticipated and planned.