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# Complete Streets Considerations for Freight and Emergency Vehicle Operations

## Module 1: Introduction to Freight

May 2018

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# Guidebook



Complete Streets Considerations for  
Freight and Emergency Vehicle Operations



NYSDERDA Project 83178

The City College  
of New York



Topics discussed in this  
module are detailed in

**Chapter 1** of:

*Complete Streets  
Considerations for Freight  
and Emergency Vehicle  
Operations*



# Module 1 Outline

- Generators of Freight Demand
- Freight Stakeholders
- Freight Vehicles
- Freight Parking and Loading Infrastructure
- Regulations that Impact Freight Movement
- Common Freight Challenges on Complete Streets

# Generators of Freight Demand

# Industrial Freight Demand

- Manufacturing
- Warehousing
- Construction



# Commercial Freight Demand

- Retail Stores
- Restaurants
- Offices



# Residential Freight Demand

- Retail goods
- Food
- Household products





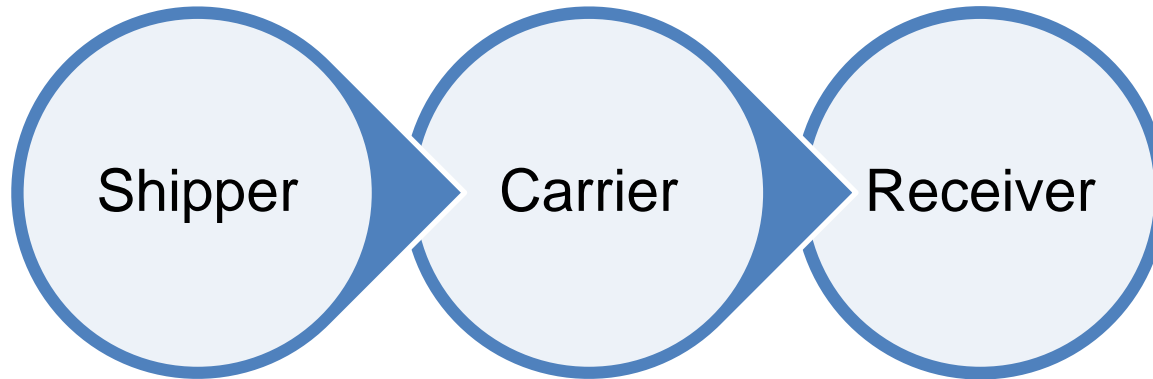
# Waste Management

- Trash
- Recycling
- Specialized waste (e.g. construction, medical)



# Freight Stakeholders

# Supply Chain Actors



# Government Authorities

*(vary by location)*

- State DOT – highway operations
- Local DOT – street operations, curb regulation
- Municipal Planning Agency – zoning
- Parking Authority – pricing, enforcement
- Police Department – enforcement

# Other Private Sector Decision-Makers

- Building Managers
  - In-building delivery rules
  - Scheduling
- Developers
  - Allocation of off-street space

# Stakeholder Outreach

- Internal agency experts
- Agency advisory boards
- Freight industry associations
- Business improvement districts
- Freight quality partnerships

## Methods of Outreach

Meetings

Field Visits/Observation

Surveys

# Freight Vehicles

# Long-Distance Trucking

- Interstate
  - 53-foot
  - 48-foot
- Intermodal
  - 20-foot
  - 40-foot





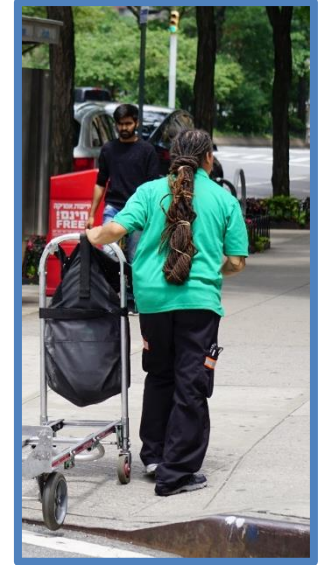
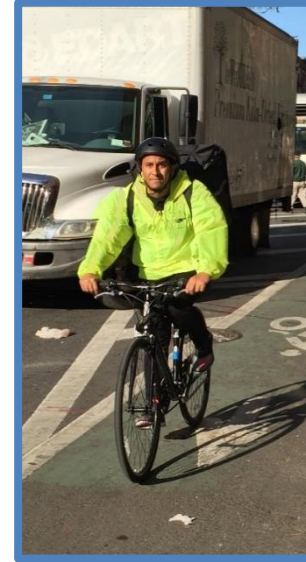
# Local Delivery

- Single-unit truck
- Step van
- Cargo van
- Passenger car



# Human Powered Delivery

- Cargo cycle
- Bicycle
- Hand cart



# Specialized Vehicles

- Construction trucks
- Waste haulers
- Fuel tankers



# Freight Parking & Loading Infrastructure

# On-Street Parking

## Types of Parking

- Dedicated
  - Commercial (includes service)
  - Delivery Only
- Shared

## Types of Regulation

- Fixed
- Time-of-day
- Duration
- Price

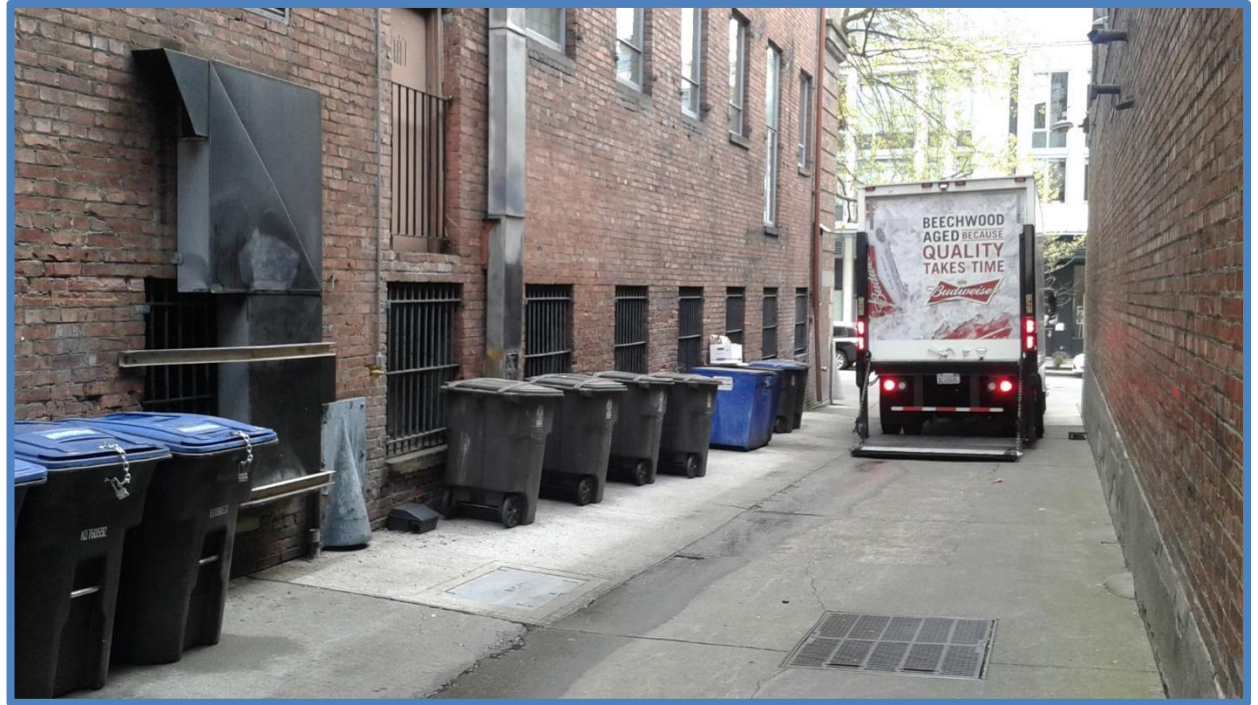
# Off-Street Loading Docks

- Enclosed
- Open
- Flush
- Side





# Alleys



"Freight in Pioneer Square" (CC BY-NC 2.0) by Seattle Department of Transportation

# Freight Regulations



# Truck Size and Weight Regulations

- Length
- Width
- Height
  
- Gross vehicle weight
- Axle weight



# Access Restrictions

- Designated network
- Traffic control zone
- Low emissions zone
- Noise restrictions

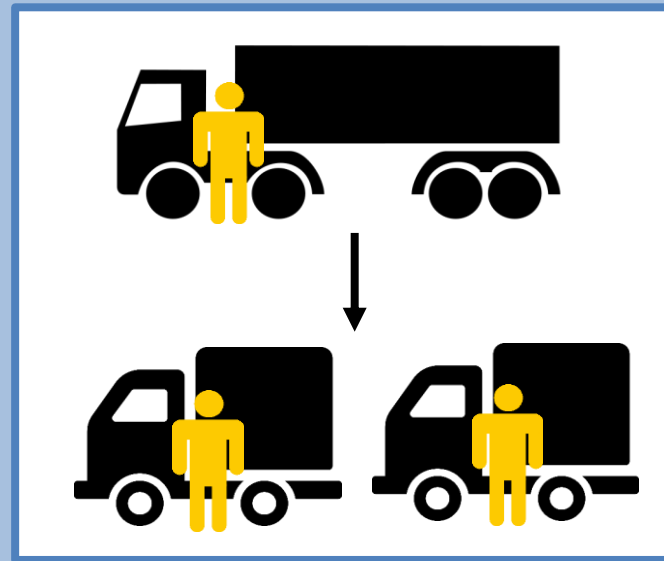


# Potential Unintended Traffic Impacts of Regulation

- Size and weight regulations
  - More (smaller) vehicles, more total VMT
- Route restrictions
  - Increased truck travel distances
- Noise regulations
  - Activity concentrated in congested peak hours

# Potential Operator Costs of Regulation

- Reduced capacity utilization
  - Load per vehicle
  - Stops per tour
- Vehicle wear and fuel
- Labor
- Space for transloading
- New vehicle purchase



# Potential Local Economic Impacts of Regulation

- Increased local costs of goods
- Reduced market accessibility for local businesses
- Lost economic development potential
- Disproportionate burden on independent operators

# Zoning Regulations

- Parking space requirements
- Loading dock requirements
- Freight elevator requirements

**THIS IS NOT A  
PASSENGER  
ELEVATOR.**

No person other than the operator and freight handlers are permitted to ride on this elevator.

# Parking Regulations

- Service vehicles
  - Often occupy commercial dedicated space for long durations
- Time limits & pricing
  - Encourage turnover



# Effectiveness of Parking Enforcement

- Enforcement ineffective if
  - Violation cost relatively low vs. cost of delay
  - No reasonable alternative exists
- Double/illegal parking common





# Common Commercial Vehicle Challenges on Complete Streets

# Navigation Challenges

1. Navigating restricted turns.
2. Conflicts with vulnerable roadway users.
3. Navigating speed reducers.
4. Maintaining reasonable route access on everyday and alternative paths.

# Parking and Loading Challenges

1. Finding adequate space for parking and loading.
2. Finding safe and efficient paths to access sidewalks and buildings.

# Approaches to Address Challenges

- Discussed in detail in *Module 3: Street Design and Management Considerations*