

SEAPORT DISTRICT, BOSTON MA

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CONTEXT

Over the last 150 years the Seaport district has undergone a series of transformations. It has evolved from a thriving shipping area in the early part of the 20th century, to a decrepit no-man's land of parking lots in the mid-1900s, to its most recent iteration: a hotbed of new economic development. The Seaport district lies at the heart of Boston and is currently enjoying a renaissance as the fastest growing urban area in the Commonwealth of Massachusetts. The Seaport attracted ten million square feet of development between 2000 and 2013, with more than 4,100 new residents and 7,700 new jobs. Over this period the area has emerged as a unique combination of a vital industrial port, an artistic and cultural center of national importance and a hub for innovation in finance, legal, technology and biomedical research.

Much of the area now known as the South Boston Waterfront, or Seaport, was originally tidal marsh. Landfill activity was initiated in 1833, and the area became home to new land, piers, and channels. Eleven wharves—four belonging to the Commonwealth of Massachusetts—were added to South Boston's port facilities. The Seaport was also known as Fort Point Channel, along South Boston's Water-



HISTORY

front was originally a wide saltwater inlet, the channel linked Boston Harbor and the South Bay, separating the Shawmut Peninsula from the tidal mud flats that lay off Mattapanock, or Dorchester Neck. The channel was named for Fort Point, near today's Rowes Wharf where Fort Hill and the Colonial fortifications known as the South Battery were situated and where the International Place towers stand today. As Boston grew, Fort Hill was leveled to fill the coves on either side. Although there were wharves along the Boston side of the South Bay, Dorchester Neck was sparsely settled during the Colonial period. The Leather District is located across the Fort Point Channel near the Financial District.

By the late 1880s, the Seaport was a bustling industrial center. Soon after this time, the Port of Boston was eclipsed by other eastern seaports such as Port of New York City as local merchant companies were bought out by New York businessmen. In 1956, control of the port was handed to the Massachusetts Port Authority (Massport), which began the process of modernizing the port. In 1966, Sea-Land introduced containerized shipping and later established one of the first container ports on Castle Island, where Conley Terminal now stands. To meet the growing demand for container shipping, Massport constructed a common-use container port on what is now Moran Terminal. However, the port faced a setback with the closure of the Charlestown Navy Yard in 1974. As the industrial era qui-



eted in Boston, the Seaport began to serve mostly as parking. During the 1980s and 1990s, the Massachusetts Water Resource Authority (MWRA) oversaw a project dedicated to the cleanup of Boston Harbor.

In the early 1990s Mayor Tom Menino made development of the Seaport a priority, pushing for the Boston Convention & Exhibition Center and the ICA to get built there and at one point proposing to move City Hall there, too. Just two years later, he rebranded the area the “Innovation District” and set about creating a tech hub to rival Cambridge.

The turn of the 20th century into the 21st saw a burst of redevelopment in the area, with residential, office, and tourism uses being constructed along the waterfront. In 2005, Joe Fallon, the founder, president, and CEO of the development firm the Fallon Company, bought the 21-acre Fan Pier waterfront site — at the time a parking wasteland — and kicked off a development boom. Now the biggest tenant by far is Vertex Pharmaceuticals: The company’s global headquarters — twin 18-story towers with 1.1 million square feet of research labs and office space. The biotech multinational signed a 15-year lease worth \$1.1 billion in 2011, joining other major corporations in the area such as Manulife Financial and Fidelity Investments. The “Big Dig”, has created a completely new transportation network for this area. The Silver Line of the MBTA provides public transportation to the area, and the Boston Harborwalk runs through it.

In, 2016, it was announced that GE would be moving its corporate headquarters from Fair-



DEMOGRAPHICS

field, Connecticut to the South Boston Waterfront. Some of the workers will arrive in the summer of 2016 and the full move will be completed by 2018. GE ranks eighth on the Fortune 500 and will become the largest publicly traded company based in Massachusetts.

Demographics

The South Boston Waterfront has seen significant residential development over the past 15 years and today is home to 10,867 residents. As shown in to the right, denser residential areas are evolving in the district in the Seaport/Fan Pier area, in the World Trade Center area, and in the Fort Point area.

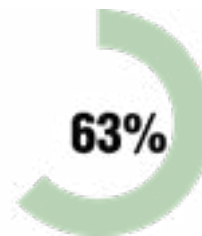
The composition of households in the South Boston Waterfront speaks to the population type residing in the area—namely young professionals who are single and without dependents. According to census data, approximately 37 percent of South Boston Waterfront households are families while the remaining 63 percent are categorized as non-family households. About 15 percent of households in the district include people under the age of 18 (i.e., dependents). By way of comparison, approximately 46 percent of households in the City of Boston contain families and 20 percent include people under the age of 18. This trend is also evident in the age distribution in the in

Reference: Mennessaan valahtivat en jo polvilleen lekkeriaan rypattiin tuhattakin. Puhuu ne ai ai akkia lokit te.

Who lives here?



of households are families



of households are non-family

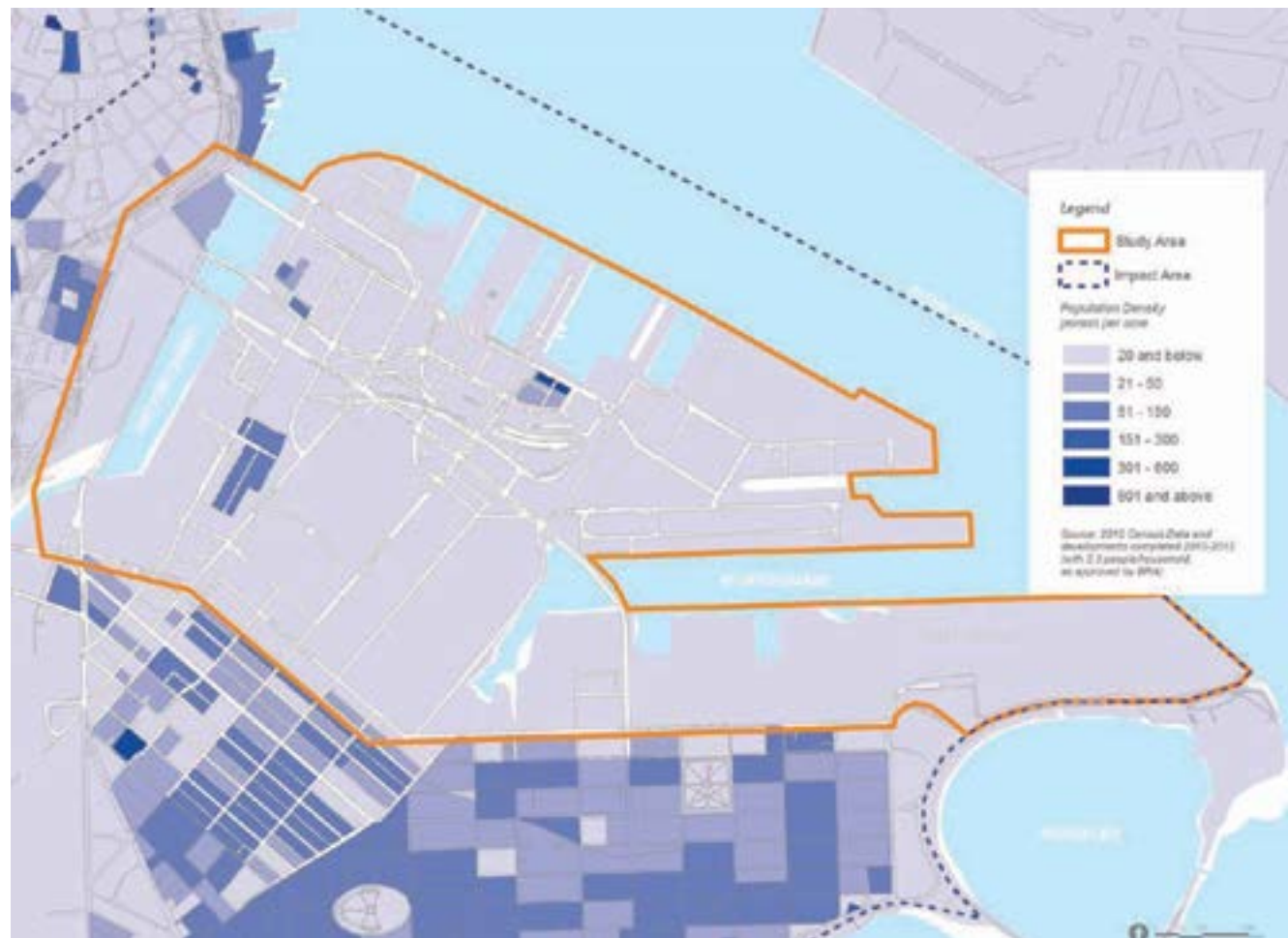
Comparison to Boston:



of households are families



of households are non-family



the South Boston Waterfront with 44 percent of district residents between the ages of 25 and 40 (as compared with 27 percent in the age range for other areas of Boston).

Economy

As shown in Exhibit 10, 75 percent of the district's residents work in the immediate metro-area of Boston, Brookline, Cambridge, or Somerville. Approximately 17 percent of residents both live and work in the South Boston Waterfront or adjacent neighborhood, a result of the emerging mixed use nature of the district.

With a high concentration of residents working in the City, it may be expected that the district would see a significant non-automobile mode share. However, transit, pedestrian, and bicycle connections from/to the South Boston Waterfront are fairly limited when compared to other Boston neighborhoods. As a result, approximately 43 percent of South Boston Waterfront residents drive alone to work.¹ By comparison, more central Boston neighborhoods such as Back Bay, Chinatown, or the North End have resident drive alone mode shares ranging from 15 to 25 percent. Only 14 percent of South Boston Waterfront residents walk or bike to work; the more well connected Boston neighborhoods experience walk/bike shares as high as 50 to 55 percent.

Where do residents work?



Work in Suburbs

Work in Boston

“The Port of Boston is New England’s largest seaport and its activities support approximately 50,000 jobs”

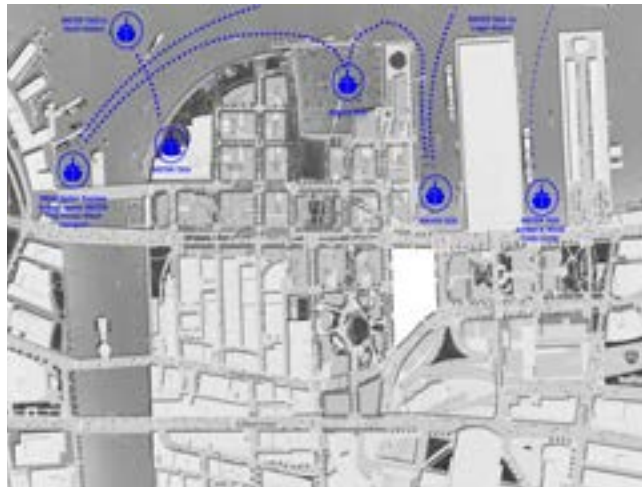
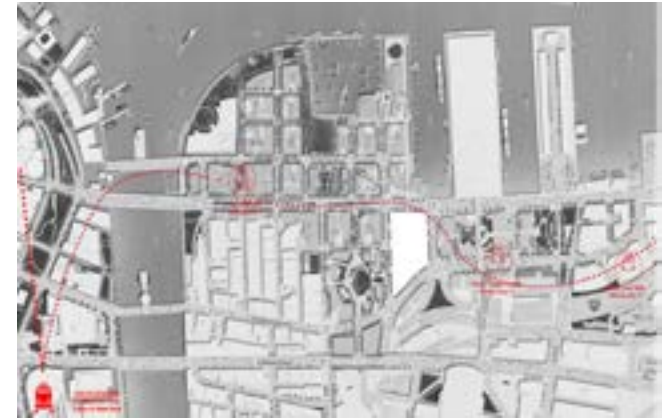
Work Close to	% of Residents	Work in Suburb	% of Residents
South Boston	44%	South Boston	4%
South Boston Waterfront & Neighborhood	17%	Westchester	7%
Boston South Neighborhood	8%	North West Suburbs	8%
Boston East End Neighborhood	7%	North Shore	7%
Boston West End Neighborhood	7%	South West Suburbs	8%
Cambridge & Somerville	4%	Far West Suburbs	8%
Total	75%	Other	25%



CONNECTIVITY

37 percent of the district's workers live in the immediate metro-area of Boston, Brookline, Cambridge, or Somerville. Approximately 5 percent of workers also live in the South Boston Waterfront or adjacent neighborhood. About 58 percent of the district's employees live in the Massachusetts suburbs, with the largest share (24 percent) commuting from the South Shore.

According to the 2006-2010 American Community Survey (ACS), approximately 53 percent of South Boston Waterfront employees drive alone to work and 31 percent take transit. By comparison, Boston neighborhoods that have better access to transportation alternatives such as Back Bay, Chinatown, or the North End have worker drive alone mode shares ranging from approximately 30 to 35 percent and transit shares as high as 50 to 55 percent—essentially the inverse of South Boston Waterfront commuter mode share.





This map shows the transportation network throughout the sea-port district for hubway and bike networks as well as bus stops and part of the Urban Ring's Silver Line.

Reference: Google Maps, MassGIS 'Data Layers', Hubway 'Find a Station'.

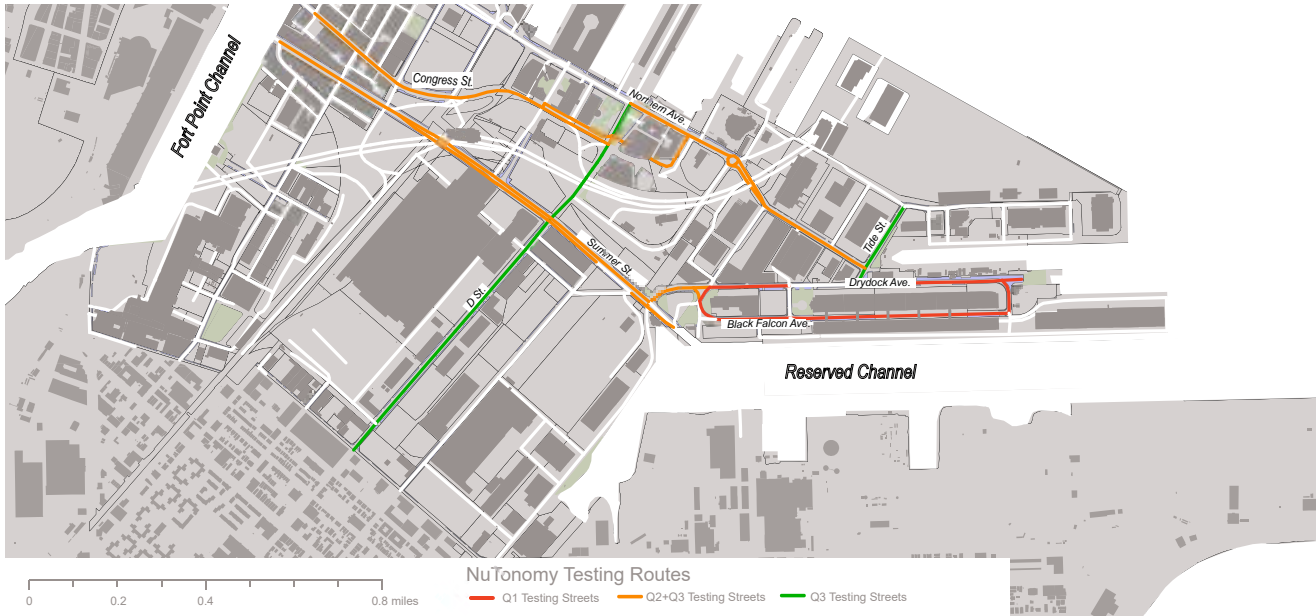
AV's in Boston

Boston has long been considered a top candidate for autonomous vehicle testing and deployment because of its advanced-technology cluster, openness to innovation as well as its mixed-usage transportation profile. The City of Boston carefully monitors the effects of autonomous vehicles, on the safety, accessibility, and sustainability goals stated in the city's Go Boston 2030 plan.

Currently the City of Boston has three partners in the testing phase, NuTonomy, Optimus Ride and Aptiv. The City of Boston has jointly developed phased test plans with these start-ups, by which they are mandated to report and publish testing progress each quarter.

nuTonomy, after meeting strict evaluation criteria, has received permission from the City to expand testing over a larger 1000-acre area of the Seaport. The newly expanded geography allows nuTonomy to expand the technical complexity of testing and expose their AVs to multi-lane roads, signalized intersections and shared roads with cyclists. nuTonomy, in the fourth quarter of 2017, reported that they had begun a nuTonomy-Lyft Pilot, which gave rides to passengers along multiple user-selected routes on these same streets. As of 2018 they have covered over 600 miles and have never been involved in any collisions during testing.

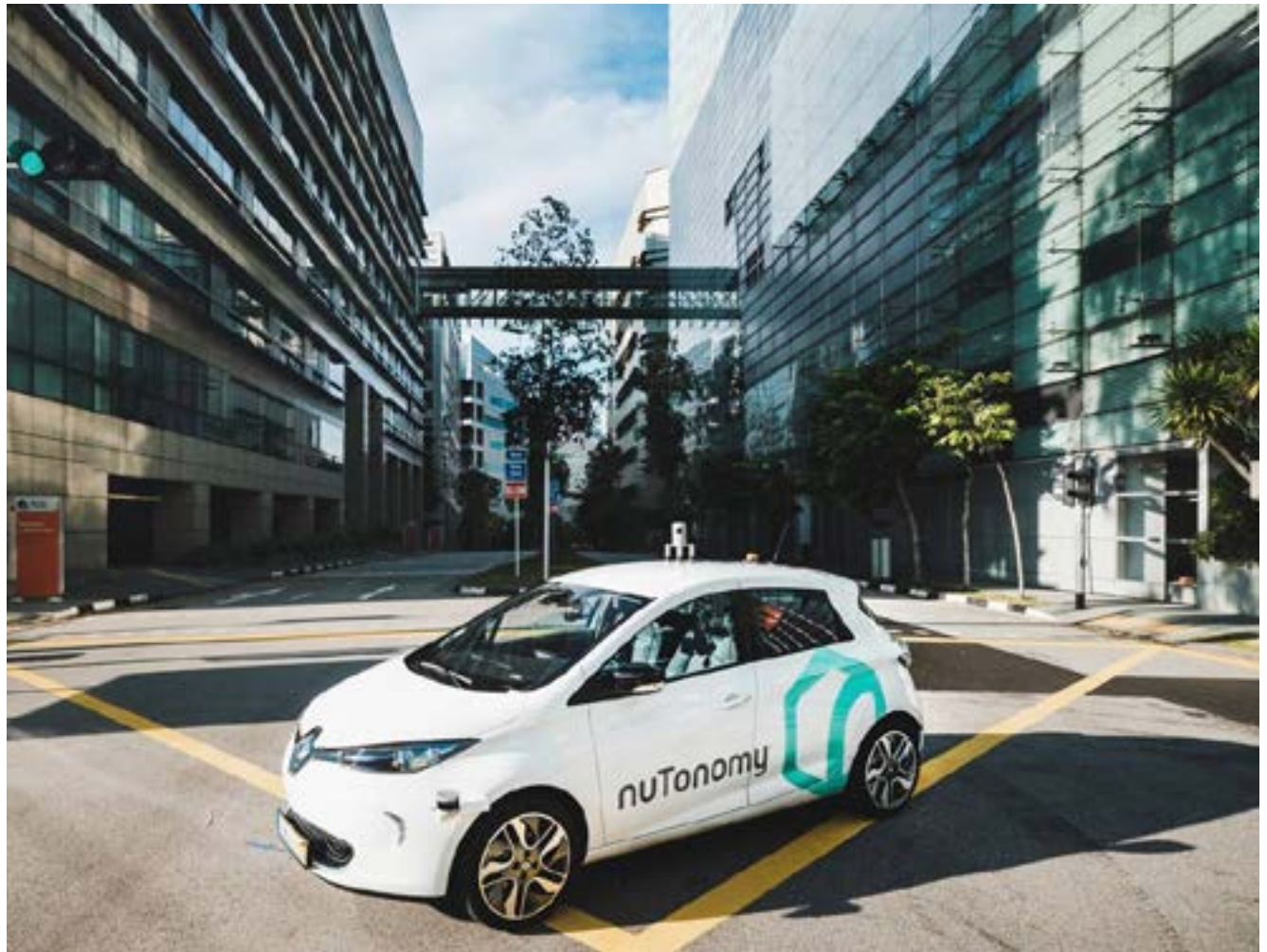
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AV TESTING NETWORK

Reference: City of Boston, AV Testing Route Reports

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The other major company of focus for us is Optimus Ride. They revealed that construction activities created an environment that drastically deviated from nominal, creating complex traffic conditions. Such conditions include construction activities that occupied over half of the lane of travel, requiring our vehicle to travel across double yellow lines into the opposing lane of traffic. They have driven in autonomous mode, well over 100 miles on public roads and have accumulated a total driving mileage within the Raymond Flynn



Marine Park of 184 miles.

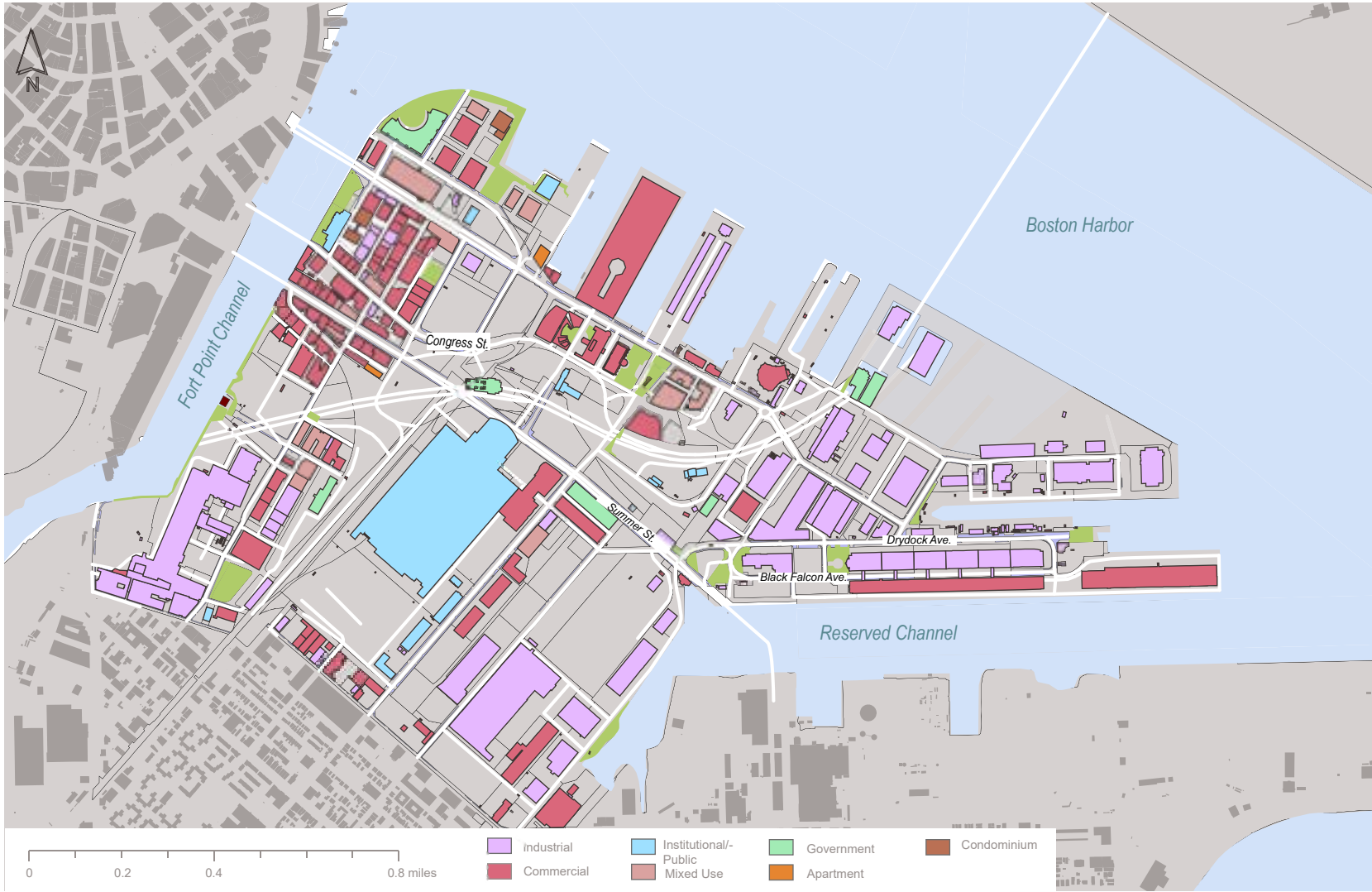
Current Status

On March 18th 2018, A woman was hit and killed by an Uber self-driving car when walking across the street in Tempe, Arizona, at night.

There have been previous crashes involving autonomous cars but non involving driver fatalities. Uber has temporarily halted self-driving car tests in all locations after the deadly accident. The NTSB had earlier scrutinized accidents involving Tesla's autopilot technology, but those cars operate with different technology than what Uber was testing.

On March 20th 2018, in response to the accident in Arizona, nuTonomy and Optimus Ride were asked to stop their autonomous vehicle testing in the Seaport District by the Mass-DOT.





LAND-USE SEAPORT DISTRICT

Reference: City of Boston Land Use

Owner:
Congress Plaza LLC
Total Value:
\$14,129,500
Gross Area:
54,299 sq ft

Owner:
Buck Janet
Total Value:
\$309,000
Gross Area:

Owner:
Ms Boston Seaport
LLC
Total Value:
\$60,720,300
Gross Area:

Owner:
Commonwealth Flats
West
Total Value:
\$242,896,000
Gross Area:
223,311 sq ft

Owner:
Seaport Realty
Company
Total Value:
\$21,336,500
Gross Area:

Owner:
Children's Museum
Inc
Total Value:
\$5,818,000
Gross Area:

Owner:
Three Forty Seven
Congress
Total Value:
\$13,762,500
Gross Area:
91,385 sq ft



Owner:
Ms Boston Seaport
LLC
Total Value:
\$63,900,500
Gross Area:

Owner:
Mass Port Authority
Total Value:
\$1,635,400
Gross Area:

Owner:
Seaport Realty
Company
LLC
Total Value:
\$350,400
Gross Area:
844 sq ft

LAND-USE CONGRESS ST

Most of the land use around Congress Street is commercial and mixed use buildings. There are very little residential units. Large parking lot parcels around the street are owned by the Boston Seaport LLC. Open space on the street are mainly around the World Trade Center Complex

Reference: Massachusetts Interactive Property Map. Seaport District. Accessed March 27, 2018



Low/Medium Rise
 Mixed-Use Building
 19,633 sq ft
 Construction Cost
 ~\$90-\$140/ sq ft



Mid/High Rise
 Park Lane
 Apartment Building
 Luxury Apartments
 23,088 sq ft
 Construction Cost:
 -



New Development
 399 Congress St



Mid/High Rise
 Seaport Hotel
 Tourist Market
 39,094 sq ft
 Construction Cost:
 \$125-\$275/ sq ft



COMMON BUILDING TYPES



East Congress St



Center Congress St



East Congress St

Lack of Trees and
Street Furniture



Tall buildings

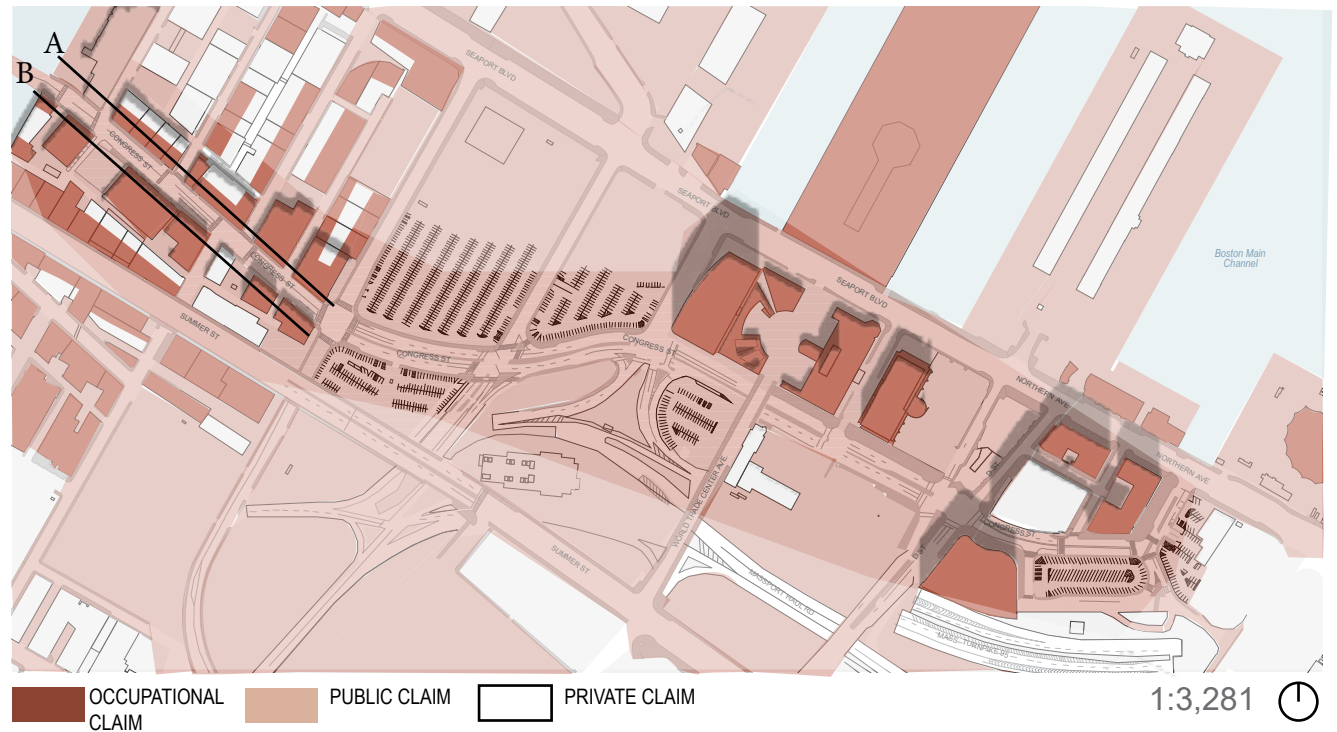
Large Parking
Surfaces



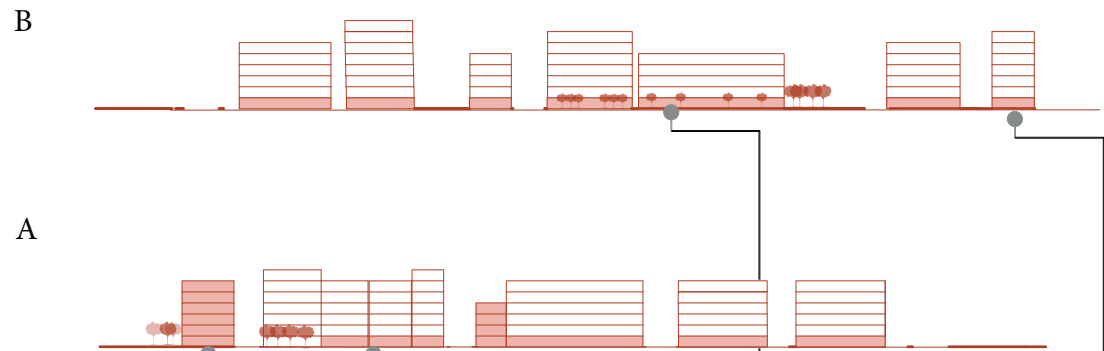
WALKING ON CONGRESS STREET

PROJECT

Following Stan Anderson's taxonomy of public, private, and occupational claims we shaded the plan and section of Congress Street to match the respective claims. The public claim shaded in light pink represents any area where a pedestrian could walk in or around. This includes the streets, the sidewalk and the vast parking lots. On the other hand, the occupational claim, in the plan we only included the ground floor, in which people can enter or exit. As can be seen, most of the buildings on Congress Street are commercial and people in the street could enter to a certain extent the ground floors of these buildings. Private claim on the other hand represents the areas in which public access is denied. Most private claimed areas on this map are either residential or industrial plants.



The sections to the right show are another version of Anderson's taxonomy map. Here we provided sections of two sides of Congress Street. As can be seen in the sections, some buildings are fully public--Children's Museum in Section A--while others have ground floors being public and top floors are private.



STAN ANDERSON CONGRESS ST



PUBLIC WAY
-Two-Way Street
-6 pedestrian lanes
-6 intersections

UNDER CARE OF MASS. PORT
-Multi Lane Street
-12 pedestrian lanes
-7 intersections

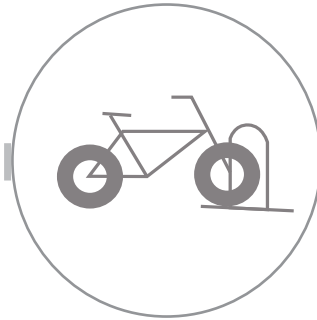


STREET PROFILE CONGRESS ST

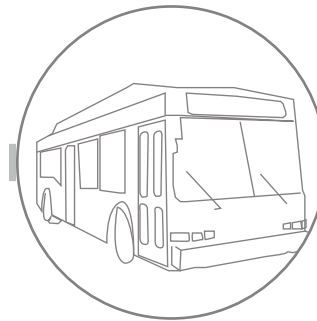
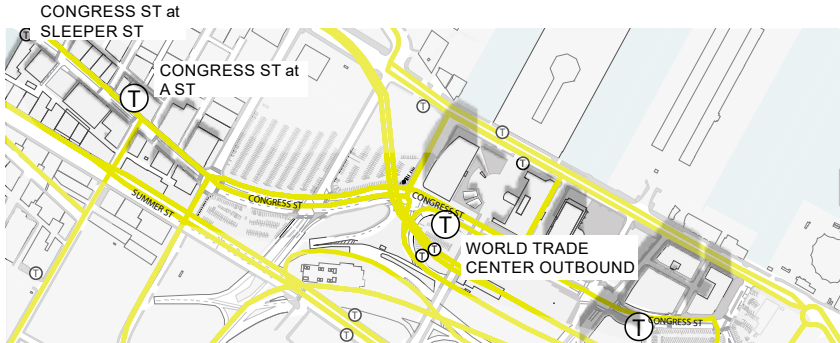
Congress Street that runs from 295 Northern Ave. to 50 Sudbury Street is a public way and under the care of the City of Boston. This part of the street is two-way with parking on either side of the street. The part of the Street from Boston Warf Road to Northen Avenue is under the care of Massachusetts Port Authority and most of the street is a multi lane, two double lanes. Congress Street runs for 1.26km.



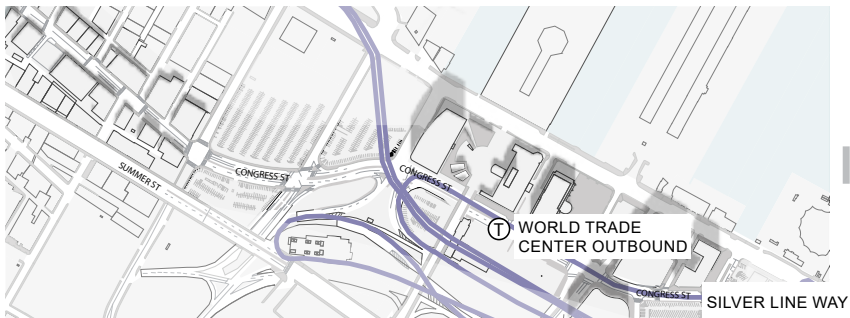
PEDESTRIAN ACCESS
Congress Street




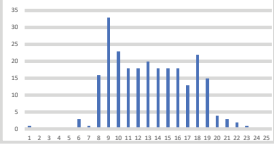

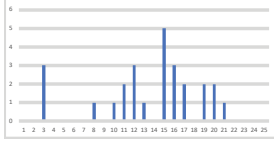

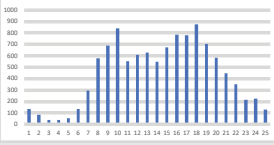

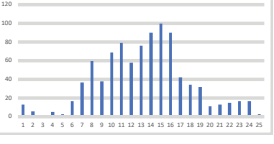

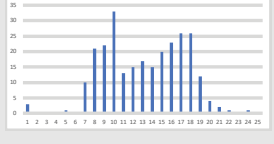

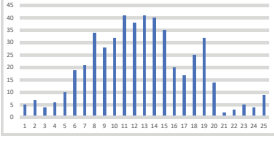

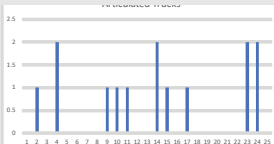
BICYCLE NETWORK
Congress Street
3 Hubway Stations
Only 1 is active--Seaport Hotel Hubway Station

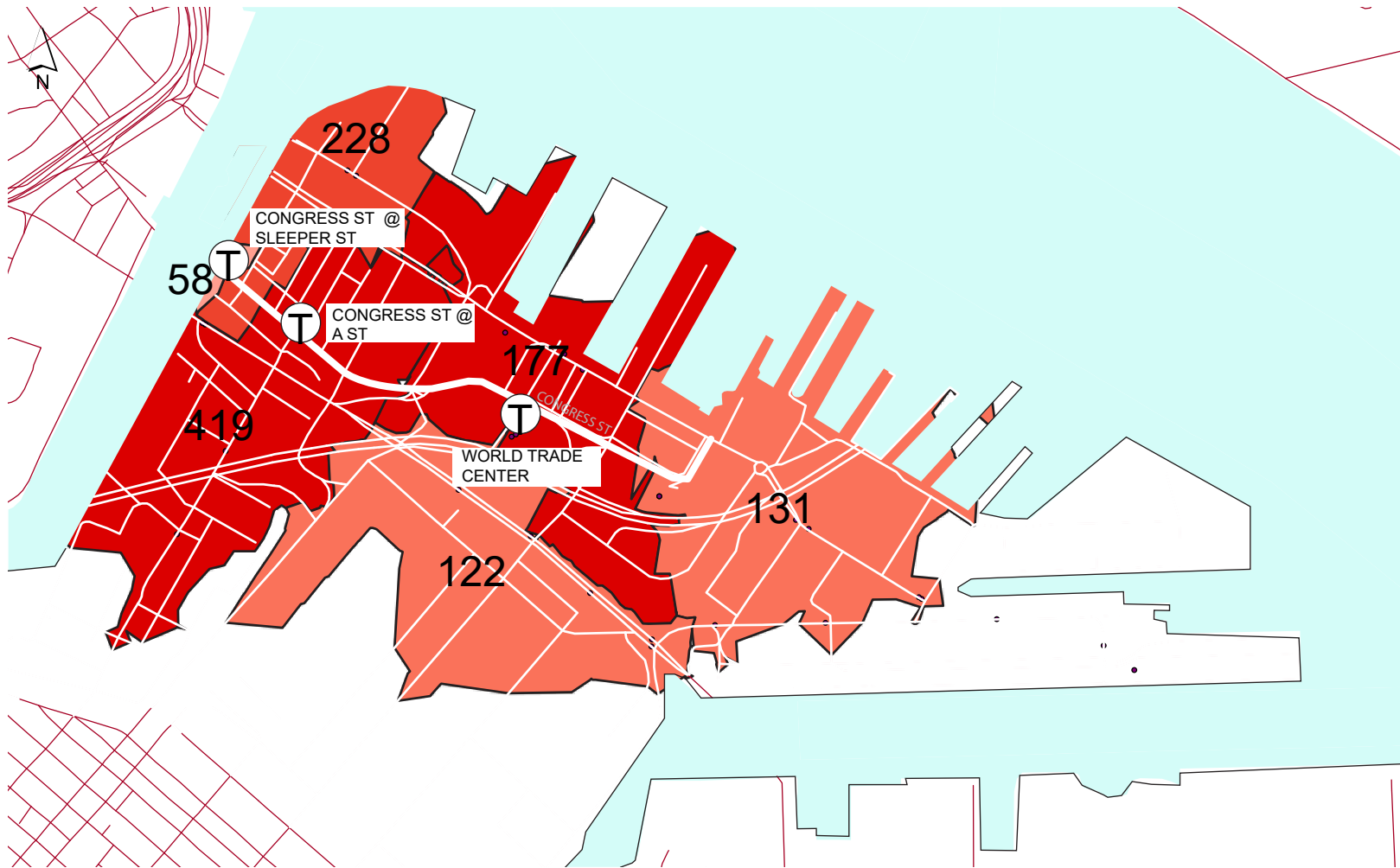


MBTA NETWORK
Congress Street
3 Buses Serve Congress St
Routes 448, 449, and 459--they are express bus services



SILVER LINE NETWORK
Congress Street
2 Stops, World Trade Center and Silver Line Way

		NUMBER	PERCENTAGE	AM PEAK	PM PEAK	GRAPH
BIKES		259	1.9%	8:00AM	17:00PM	
MOTORCYCLES		26	0.2%	10:00AM	13:00PM	
CARS		11,279.5	84.7%	8:00AM	15:00PM	
LIGHT TRUCKS		975.5	7.3%	11:00AM	14:00PM	
BUSES		275.5	2.1%	9:00AM	12:00PM	
SINGLE UNIT HEAVY		498	3.7%	11:00AM	14:00PM	
ARTICULATED TRUCKS		10	0.1%	4:00AM	13:00PM	



This map shows the 10-minute walk sheds from different bus stops on Congress Avenue. The numbers represent the number of employees per businesses in the buildings.



A Day in the Life

1:00 pm

Visitors to the district begin their shopping / cultural activities.

3:00 pm

Parents spend time with their kids on the playground.

5:00 pm

Workers begin to leave work.

7:00 pm

Second wave of people to the Sea-front restaurants.

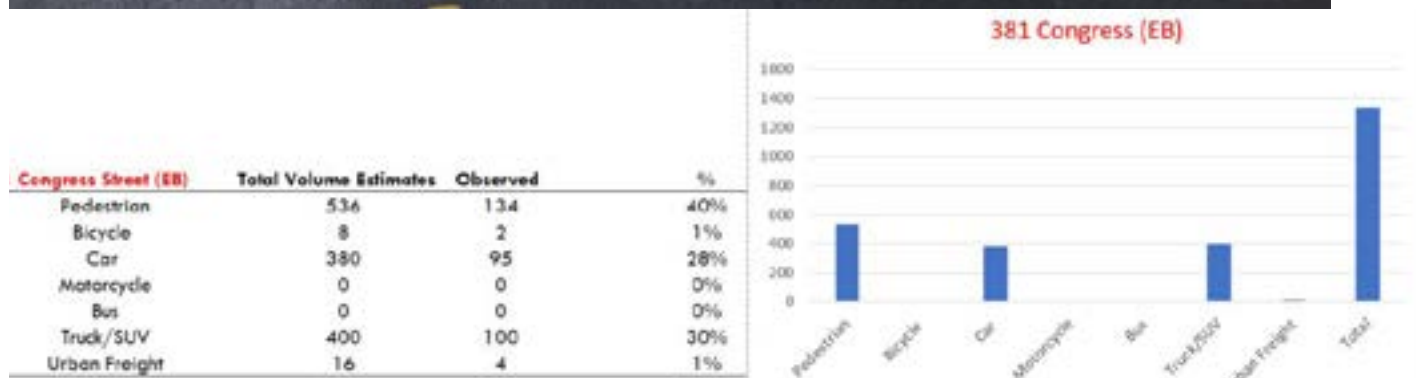
10:00 pm

Crowds at the restaurants begin to dwindle.

CONGRESS STREET, SEAPORT DISTRICT



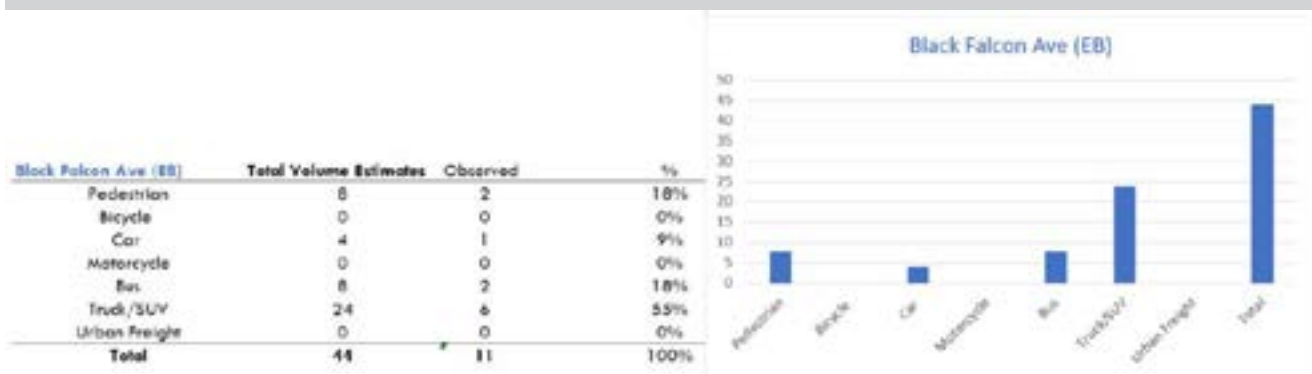
CONGRESS STREET, SEAPORT DISTRICT



BLACK FALCON AVE, SEAPORT DISTRICT



BLACK FALCON AVE, SEAPORT DISTRICT





CONGRESS STREET
15 MINUTES