Wynn Everett
Boston
Presentation to MGC Staff

Presented by

Keri Pyke, P.E., PTOE

Howard/Stein-Hudson Associates, Inc.

July 23, 2014

Keri Pyke, P.E., PTOE

Summary of Qualifications

- B.S. in Civil Engineering, Rensselaer Polytechnic Institute, 1993
- Registered Professional Engineer in MA, CT, NY, RI, NH, NC
- Certified Professional Traffic Operations Engineer (PTOE) by the Institute of Transportation Engineers (ITE)
- Over 21 years' experience in traffic engineering and transportation planning

Representative Project Experience

- Seaport Square in South Boston
- Bulfinch Triangle development parcels, Boston
- Residences @ Malden Station, Malden
- East Milton Square Parking and Access Study, Milton
- EMC Westborough-Southborough Campus*
- Water Street Mills, Stonington, CT*
- I-93/I-95 Interchange Transportation Study, Woburn/Reading/Stoneham*

*completed while at another firm

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Overview

- Over 26 years' providing transportation planning/traffic engineering services

Representative Traffic Impact Studies for Development Projects

- Boston University Medical Center, Boston
- New Brighton Landing, Allston
- Seaport Square in South Boston
- Northeastern University Institutional Master Plan
- One Congress Street mixed use development, Boston
- One Franklin/Filene's Basement site redevelopment, Boston
- W Hotel and Towers, Boston

Traffic Engineering Terminology

Abbreviation	Definition
ATR	Automatic Traffic Recorder
DEIR	Draft Environmental Impact Report
DCR	Massachusetts Department of Conservation and Recreation
EENF	Expanded Environmental Notification Form
EOEEA	Executive Office of Energy and Environmental Affairs
FEIR	Final Environmental Impact Report
ITE	Institute of Transportation Engineers
LOS	Level of Service
MAPC	Metropolitan Area Planning Council
MassDOT	Massachusetts Department of Transportation
MBTA	Massachusetts Bay Transportation Authority
MEPA	Massachusetts Environmental Policy Act
TDM	Transportation Demand Management
vph	vehicles per hour
vpd	vehicles per day

Traffic Engineering Standards

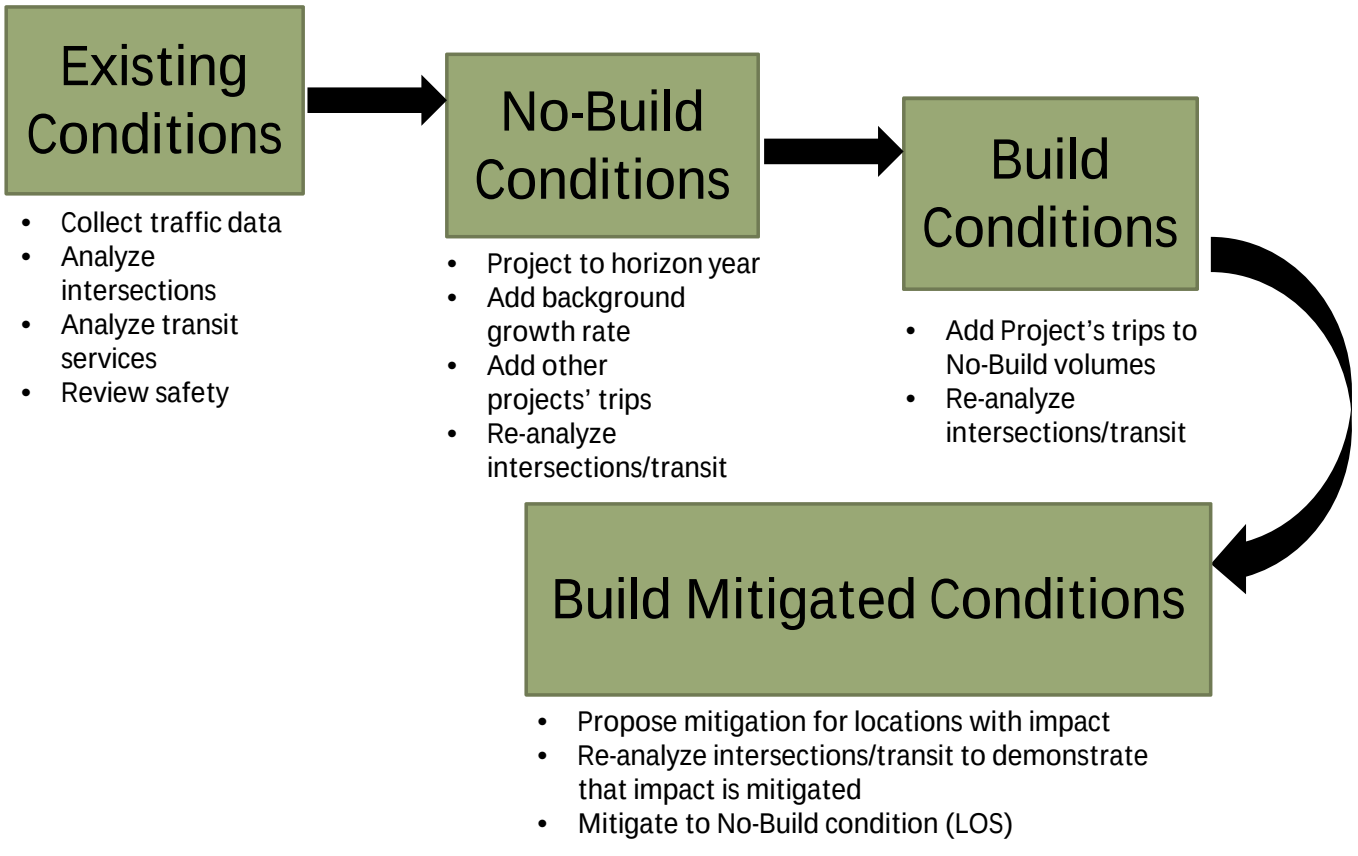
- *301 CMR 11.00 MEPA Regulations*
- *EIR/EIS Guidelines for Traffic Impact Studies,* originally adopted October 1988, updated March 13, 2014
- *Manual on Uniform Traffic Control Devices (MUTCD),* FHWA, 2009, with MA amendments (2011)
- *Highway Capacity Manual,* Transportation Research Board (TRB), 2010
- *Project Development and Design Guidebook,* MassDOT, 2006
- *A Policy on the Geometric Design of Highways and Streets* (The Green Book), American Association of State Highway Transportation Officials (AASHTO), 2011
- *Trip Generation Manual,* 9th edition, Institute of Transportation Engineers (ITE), 2012

Transportation Analysis Overview

- Traffic impact analysis focuses on intersections; they are the most constrained element of the transportation system.
- Primary measure of effectiveness (MOE) = Level of Service.
- In urban areas, LOS D is considered acceptable.

Signalized Intersections	
Level of Service	Average Delay (Seconds)
A	0-10
B	10-20
C	20-35
D	35-55
E	55-80
F	> 80

Transportation Analysis Overview



- Collect traffic data
- Analyze intersections
- Analyze transit services
- Review safety

- Project to horizon year
- Add background growth rate
- Add other projects' trips
- Re-analyze intersections/transit

- Add Project's trips to No-Build volumes
- Re-analyze intersections/transit

- Propose mitigation for locations with impact
- Re-analyze intersections/transit to demonstrate that impact is mitigated
- Mitigate to No-Build condition (LOS)

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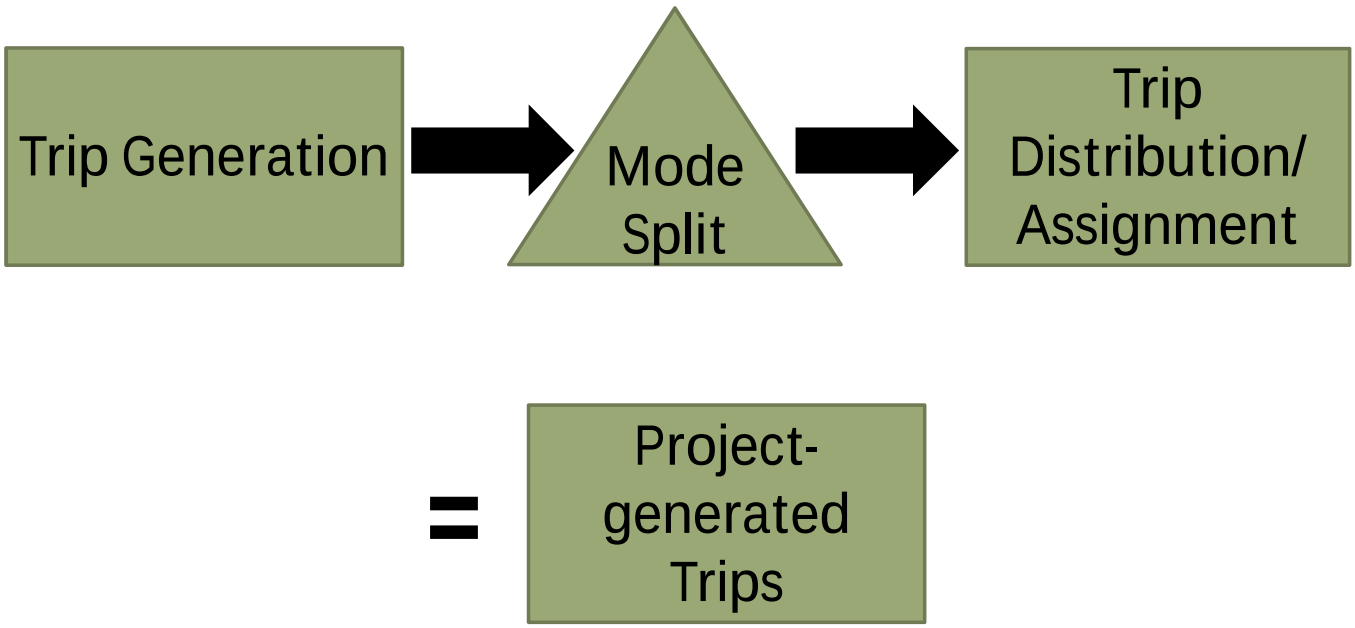
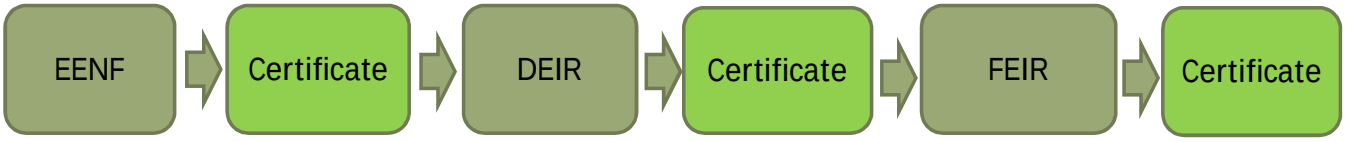
Trip Assignment Process



Transportation Analysis – Timeline



- Expanded Environmental Notification Form (EENF), filed May 31, 2013
- Secretary's Certificate on EENF and scope of DEIR, issued on July 26, 2013
- Draft Environmental Impact Report (DEIR), filed December 16, 2013
- Secretary's Certificate on DEIR and scope of FEIR, issued on February 21, 2014
- Final Environmental Impact Report (FEIR), filed June 30, 2014
- Secretary's Certificate on FEIR anticipated by August 15, 2014

EENF Study Area

Wynn Project

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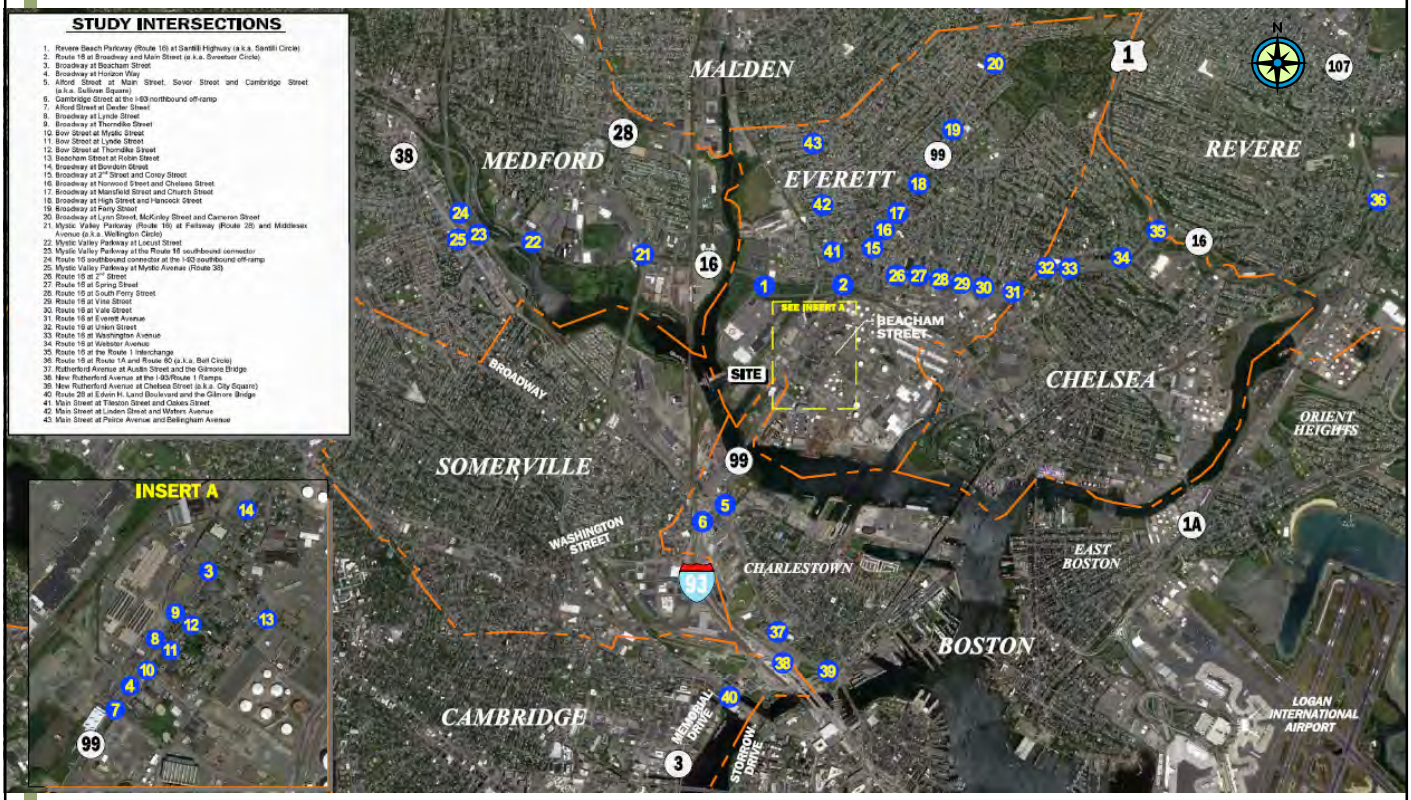
EENF – Proposed DEIR Study Area

Wynn Project



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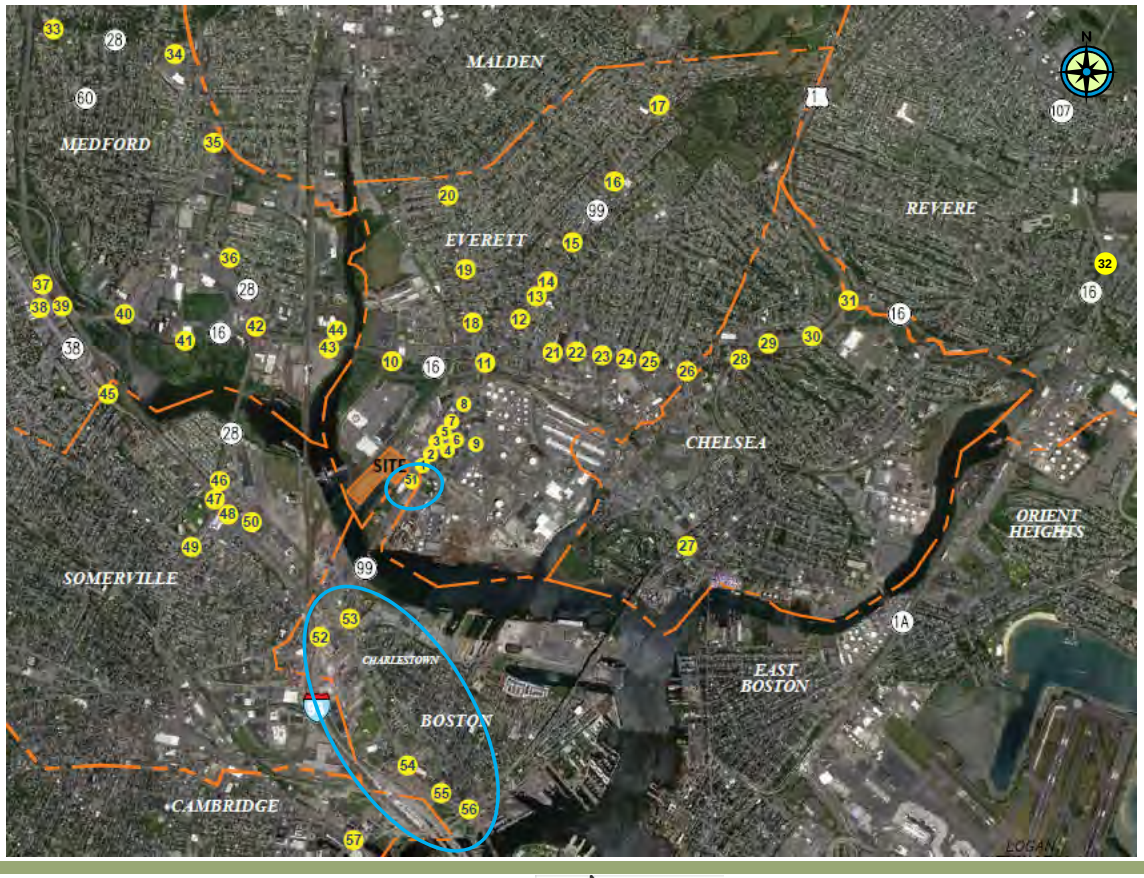
DEIR Study Area

Wynn Project



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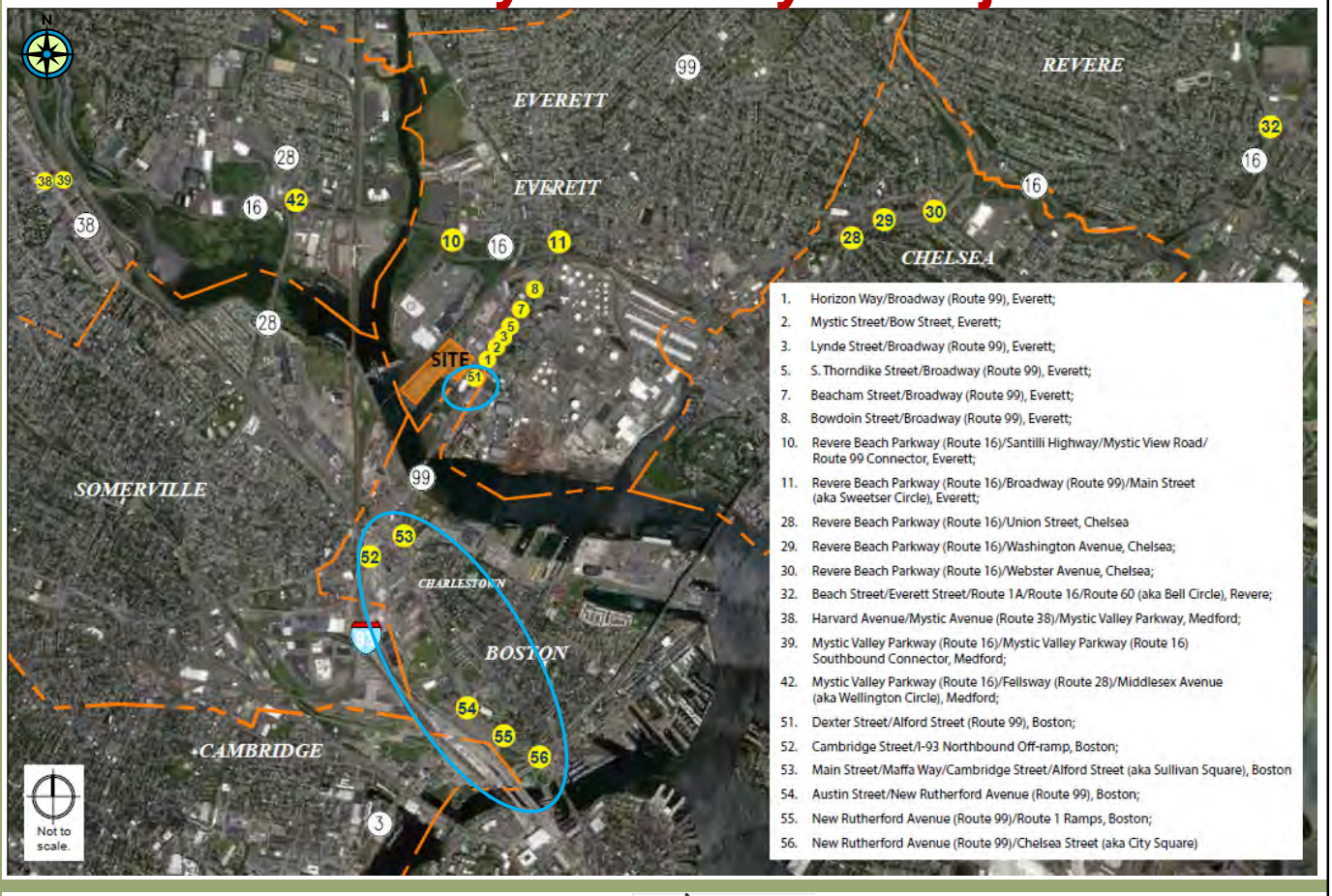
Transportation Analysis – DEIR

Wynn Project

- Analyzed intersection capacity at 57 locations (7 cities)
- Analyzed transit capacity on Orange Line (northern end) and MBTA bus routes (4)
- Prepared detailed Project trip generation
- Prepared detailed Project trip distribution
- Proposed recommended access to Project site
- Proposed TDM measures to reduce auto trips
- Proposed transportation mitigation

FEIR Study Area – Wynn Project



1. Horizon Way/Broadway (Route 99), Everett;
2. Mystic Street/Bow Street, Everett;
3. Lynde Street/Broadway (Route 99), Everett;
5. S. Thorndike Street/Broadway (Route 99), Everett;
7. Beacham Street/Broadway (Route 99), Everett;
8. Bowdoin Street/Broadway (Route 99), Everett;
10. Revere Beach Parkway (Route 16)/Santilli Highway/Mystic View Road/ Route 99 Connector, Everett;
11. Revere Beach Parkway (Route 16)/Broadway (Route 99)/Main Street (aka Sweetser Circle), Everett;
28. Revere Beach Parkway (Route 16)/Union Street, Chelsea
29. Revere Beach Parkway (Route 16)/Washington Avenue, Chelsea;
30. Revere Beach Parkway (Route 16)/Webster Avenue, Chelsea;
32. Beach Street/Everett Street/Route 1A/Route 16/Route 60 (aka Bell Circle), Revere;
38. Harvard Avenue/Mystic Avenue (Route 38)/Mystic Valley Parkway, Medford;
39. Mystic Valley Parkway (Route 16)/Mystic Valley Parkway (Route 16) Southbound Connector, Medford;
42. Mystic Valley Parkway (Route 16)/Fellsway (Route 28)/Middlesex Avenue (aka Wellington Circle), Medford;
51. Dexter Street/Alford Street (Route 99), Boston;
52. Cambridge Street/I-93 Northbound Off-ramp, Boston;
53. Main Street/Maffa Way/Cambridge Street/Alford Street (aka Sullivan Square), Boston
54. Austin Street/New Rutherford Avenue (Route 99), Boston;
55. New Rutherford Avenue (Route 99)/Route 1 Ramps, Boston;
56. New Rutherford Avenue (Route 99)/Chelsea Street (aka City Square)

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Transportation Analysis – FEIR

Wynn Project

- Analyzed intersection capacity at 21 locations (5 cities)
- Analyzed transit capacity on Orange Line (northern end) and MBTA bus routes (4)
- Updated detailed Project trip generation
- Updated mode splits
- Proposed recommended access to Project site
- Proposed TDM measures to reduce auto trips
- Proposed transportation mitigation

Travel Mode Share - Wynn Project

	DEIR		FEIR	
Travel Mode	Patrons	Employees	Patrons	Employees
Automobile				
Park on-site	69%	0%	63%	0%
Taxi/Private Car Service	8%	0%	8%	0%
Park remotely (connect to employee shuttle)	0%	44%	0%	41%
Subtotal	77%	44%	71%	41%
Public Transportation				
Orange Line (connect to transit shuttle)	10%	20%	10%	20%
Local bus	0%	10%	0%	10%
Water transportation	3%	3%	6%	3%
Subtotal	13%	33%	16%	33%
Tour Bus	10%	0%	10%	0%
Premium Park and Ride	0%	0%	3%	3%
Walk/Bicycle	0%	3%	0%	3%
Neighborhood Employee Shuttle	0%	20%	0%	20%
Total	100%	100%	100%	100%

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Trip Generation Summary - Wynn Project

		DEIR			FEIR		
		Patron Vehicle Trips	Employee Vehicle Trips	Total Vehicle Trips	Patron Vehicle Trips	Employee Vehicle Trips	Total Vehicle Trips
Friday Daily (vpd)	In	8,983	1,793	10,776	8,289	1,459	9,748
	Out	8,983	1,793	10,776	8,289	1,459	9,748
	Total	17,966	3,586	21,552	16,578	2,918	19,496
Friday p.m. Peak Hour (vph)	In	745	126	871	723	12	735
	Out	703	169	872	672	12	684
	Total	1,448	295	1,743	1,395	24	1,419
Saturday Daily (vpd)	In	10,656	2,072	12,728	10,354	1,817	12,171
	Out	10,656	2,072	12,728	10,354	1,817	12,171
	Total	21,312	4,144	25,456	20,708	3,634	24,342
Saturday Afternoon Peak Hour (vph)	In	880	148	1,028	880	135	1,015
	Out	836	177	1,013	824	114	938
	Total	1,716	325	2,041	1,704	249	1,953

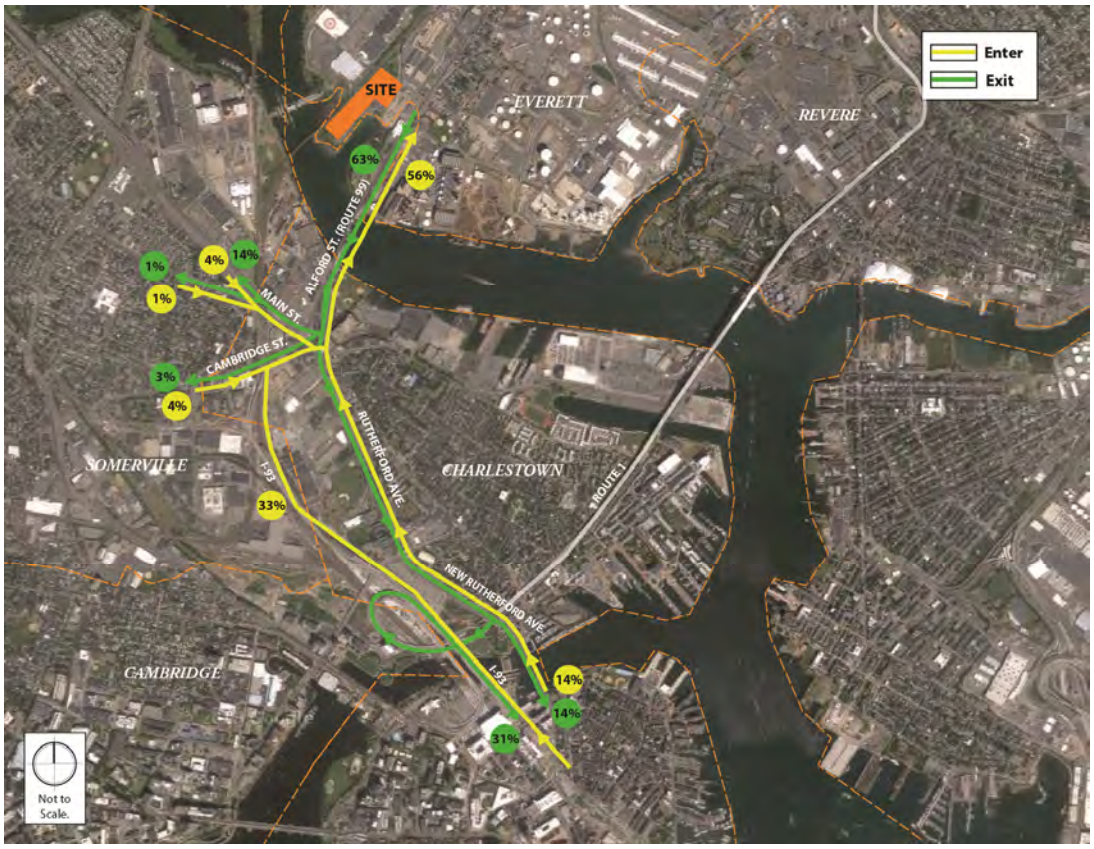
Changes in Traffic Volumes – Friday p.m. Peak Hour Wynn Project

Location	Existing (2013) Volume (vph)	No-Build (2023) Volume (vph)	Project-generated Trips (vph)	Build (2023) Volume (vph)	Change in Volume Build to No-Build (%)
Alford Street (Route 99) Bridge, Charlestown	2,702	3,220	540	3,760	17%
Rutherford Avenue (Route 99), north of City Square, Charlestown	2,814	2,955	197	3,152	7%

Note: All volumes reflect Friday p.m. peak hour of roadways, which occurs 4:30-5:30 p.m. Wynn's peak traffic volumes occur between 9:00-10:00 p.m. on a Friday night.

Trip Distribution in Boston

Wynn Project



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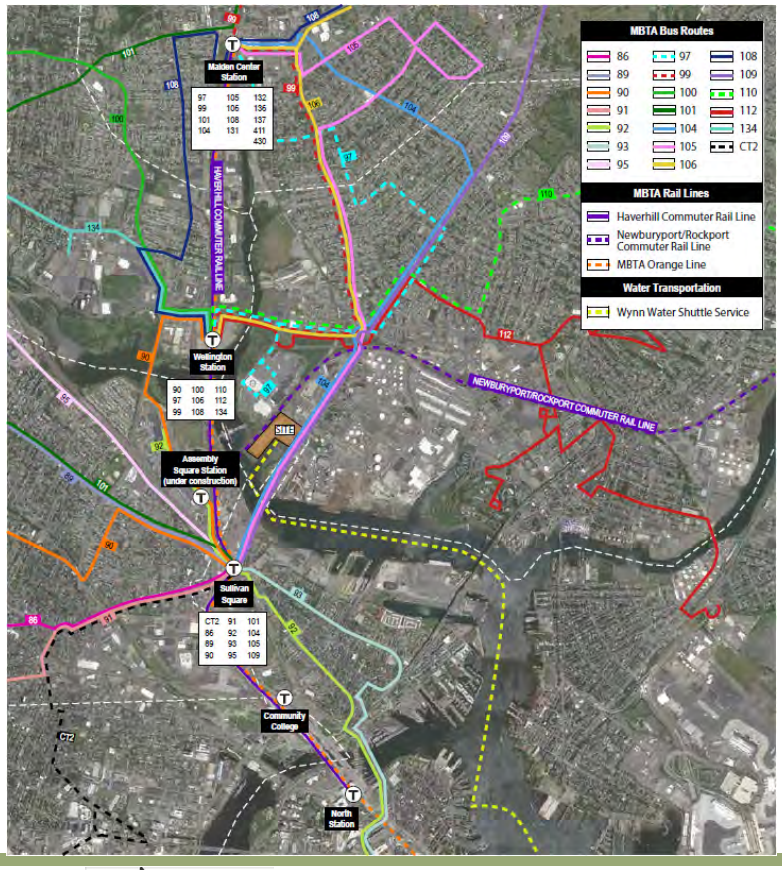
Transit Overview

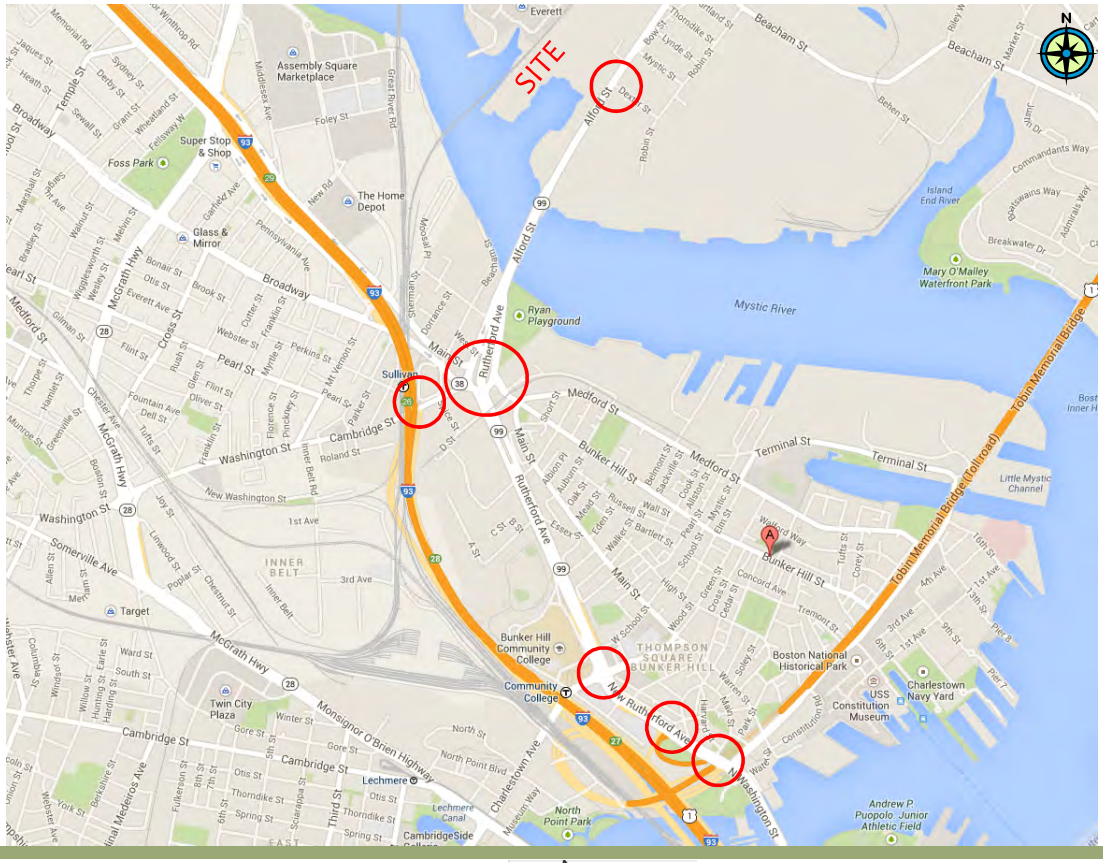
- Patron shuttles from Orange Line stations
- Patrons not expected to take MBTA buses to site
- Percentage of employees expected to use MBTA buses
- New water transportation service to be provided by Wynn



Transportation Demand Management

- Transportation coordinator on-site
- Guaranteed ride home
- Ride sharing program
- MBTA Charlie Cards provided for employees and sold on-site for guests
- Provide information regarding public transportation services to employees and guests
- ZipCar on-site
- Hubway bike share on-site
- Covered, secure bicycle parking in parking garage
- Electric vehicle charging stations in parking garage
- Employee and patron shuttles to transit stations
- Water shuttle to downtown Boston

Boston – Intersections Studied in MEPA



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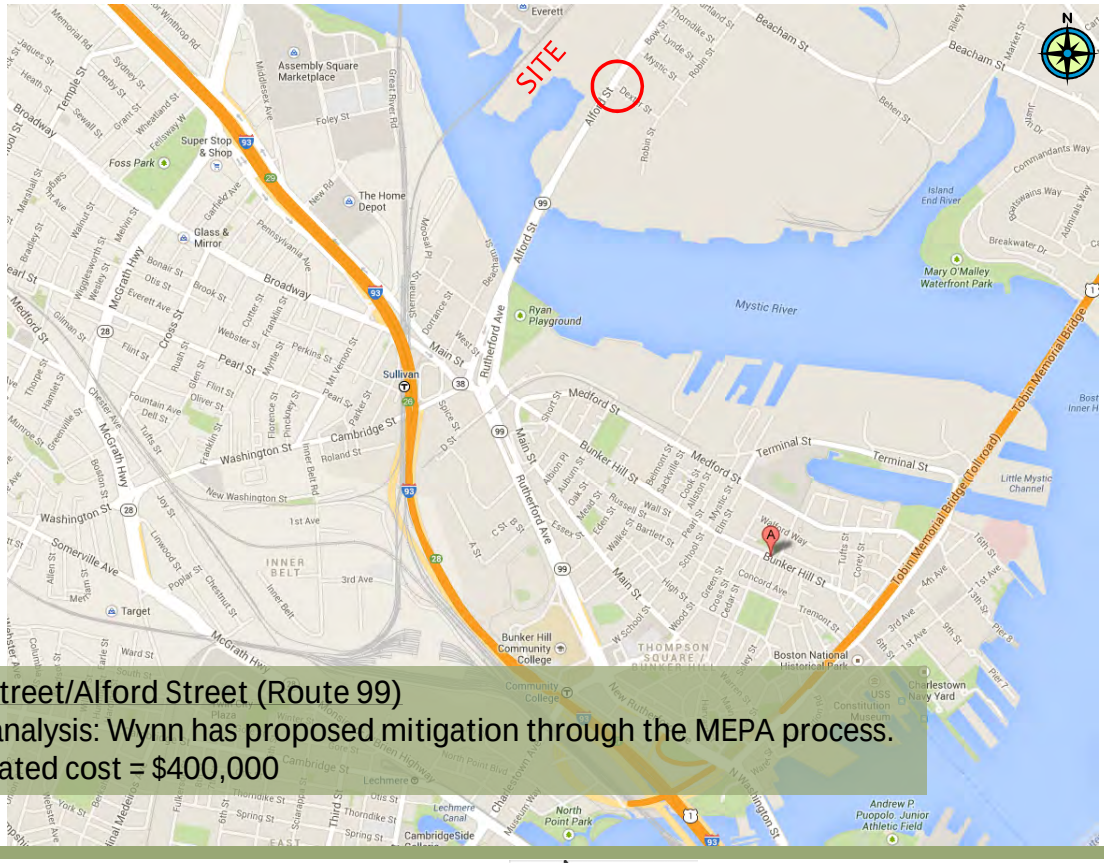
Boston – Transportation Infrastructure Analysis
Dexter Street/Alford Street (Route 99)



Dexter Street/Alford Street (Route 99)

- HSH analysis: Wynn has proposed mitigation through the MEPA process. Estimated cost = $400,000

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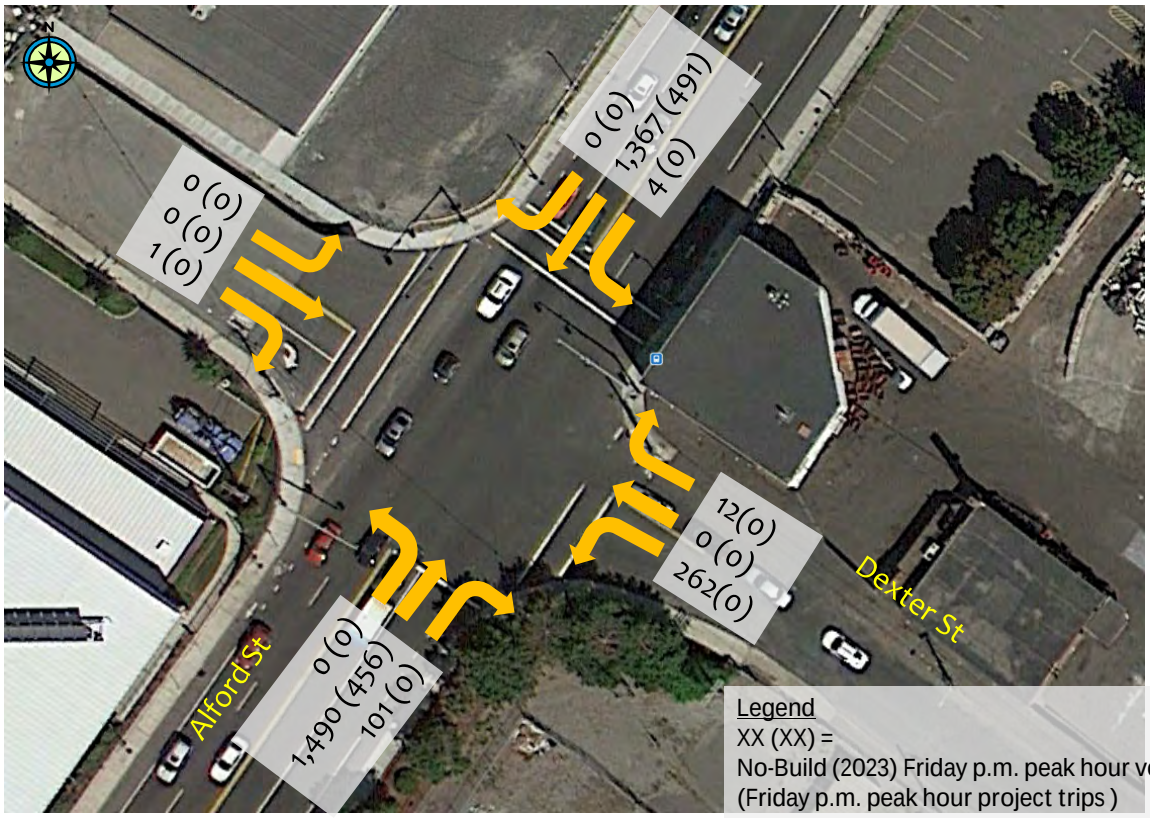
Boston – Transportation Infrastructure
Dexter Street/Alford Street (Route 99)



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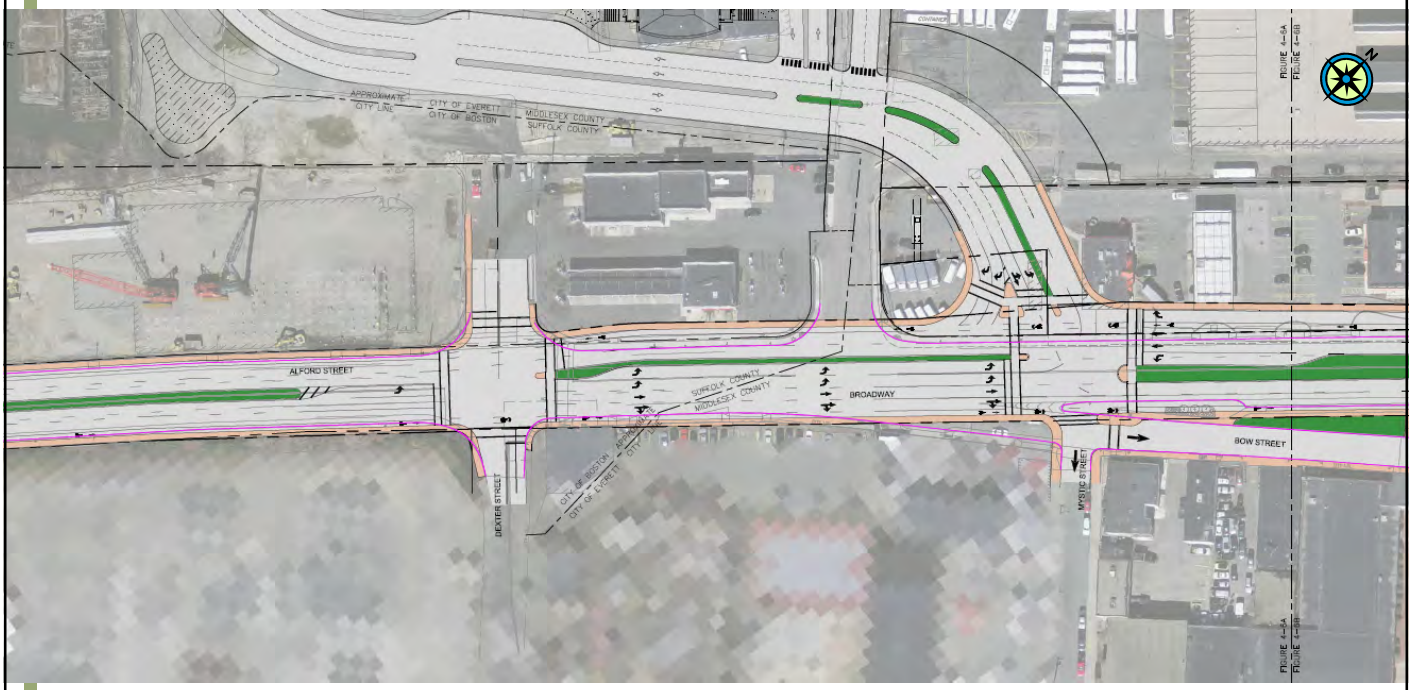
Boston – Transportation Improvements
Dexter Street/Alford Street (Route 99)



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Boston – Dexter Street/Alford Street (Route 99)
Capacity Analysis Summary – Friday p.m. Peak Hour

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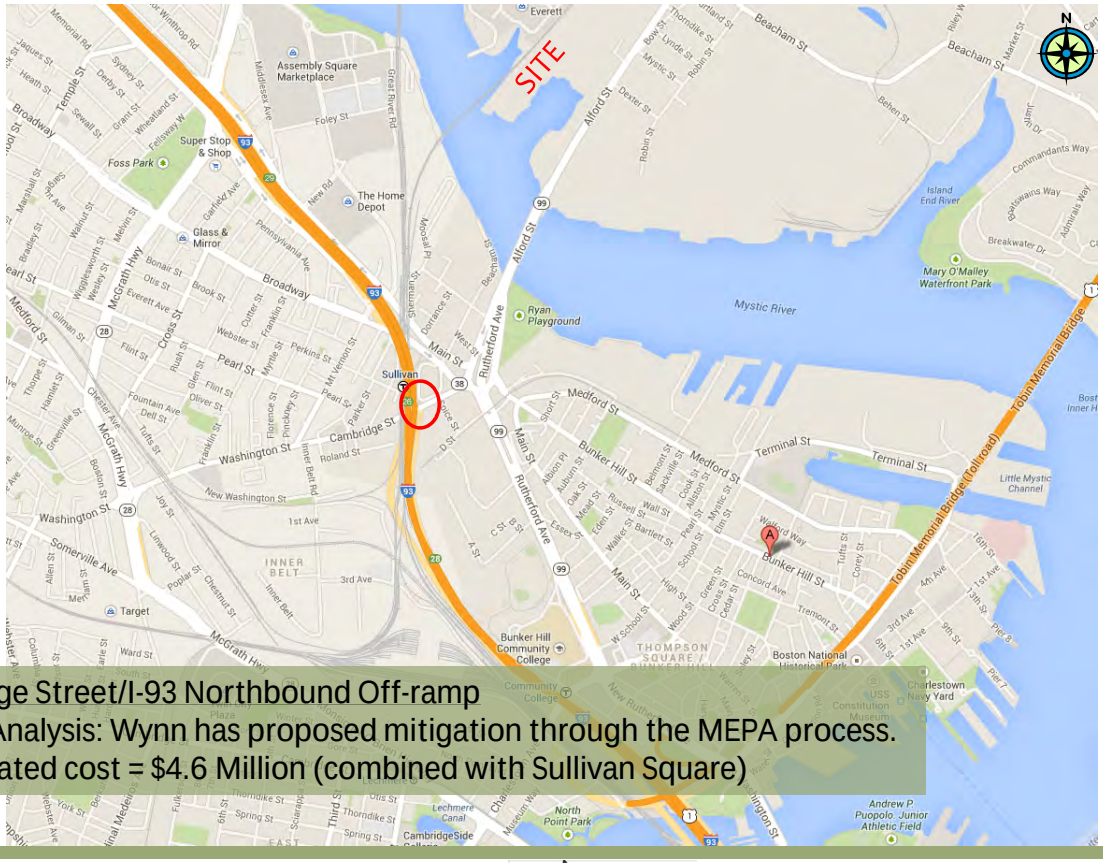
Boston – Transportation Infrastructure Analysis
Cambridge Street/I-93 Northbound Off-ramp



Cambridge Street/I-93 Northbound Off-ramp

- HSH Analysis: Wynn has proposed mitigation through the MEPA process. Estimated cost = $4.6 Million (combined with Sullivan Square)

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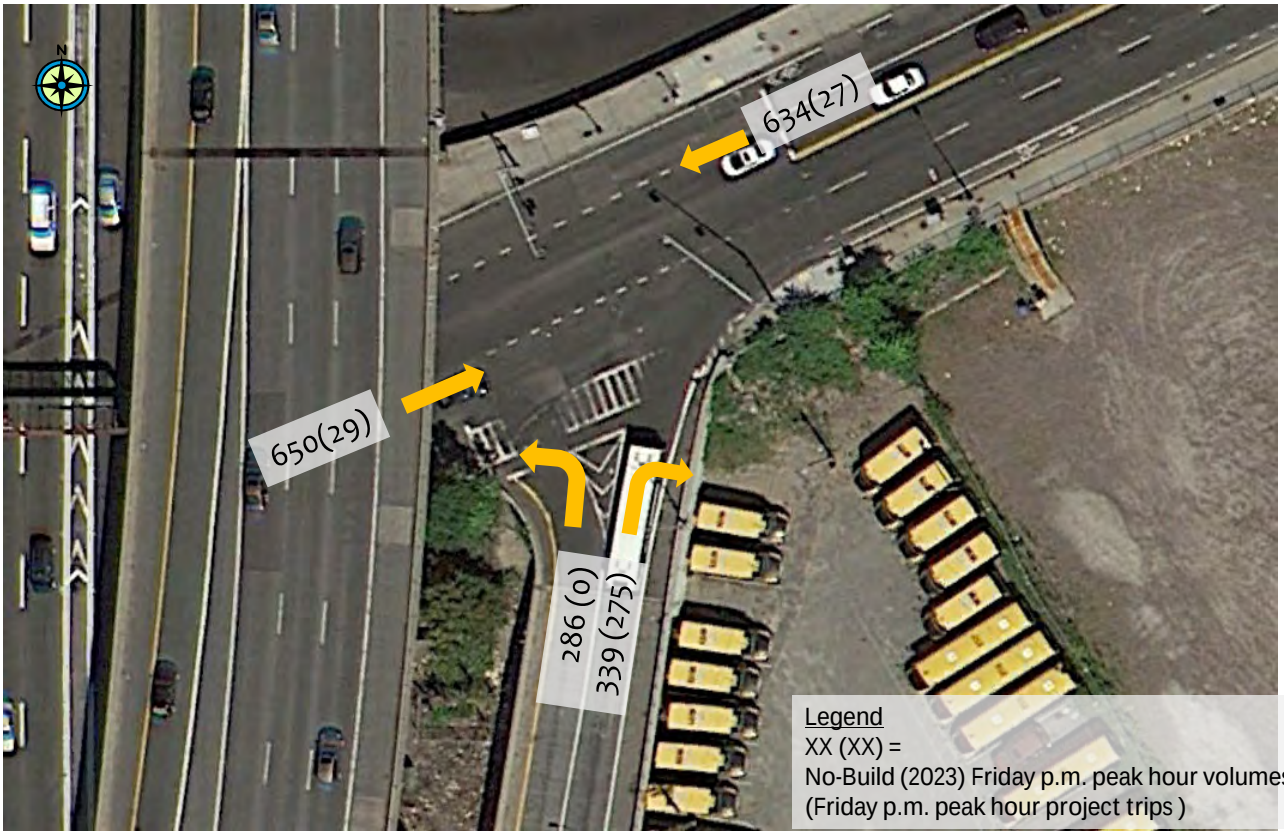
Boston – Transportation Infrastructure
Cambridge Street/I-93 Northbound Off-ramp



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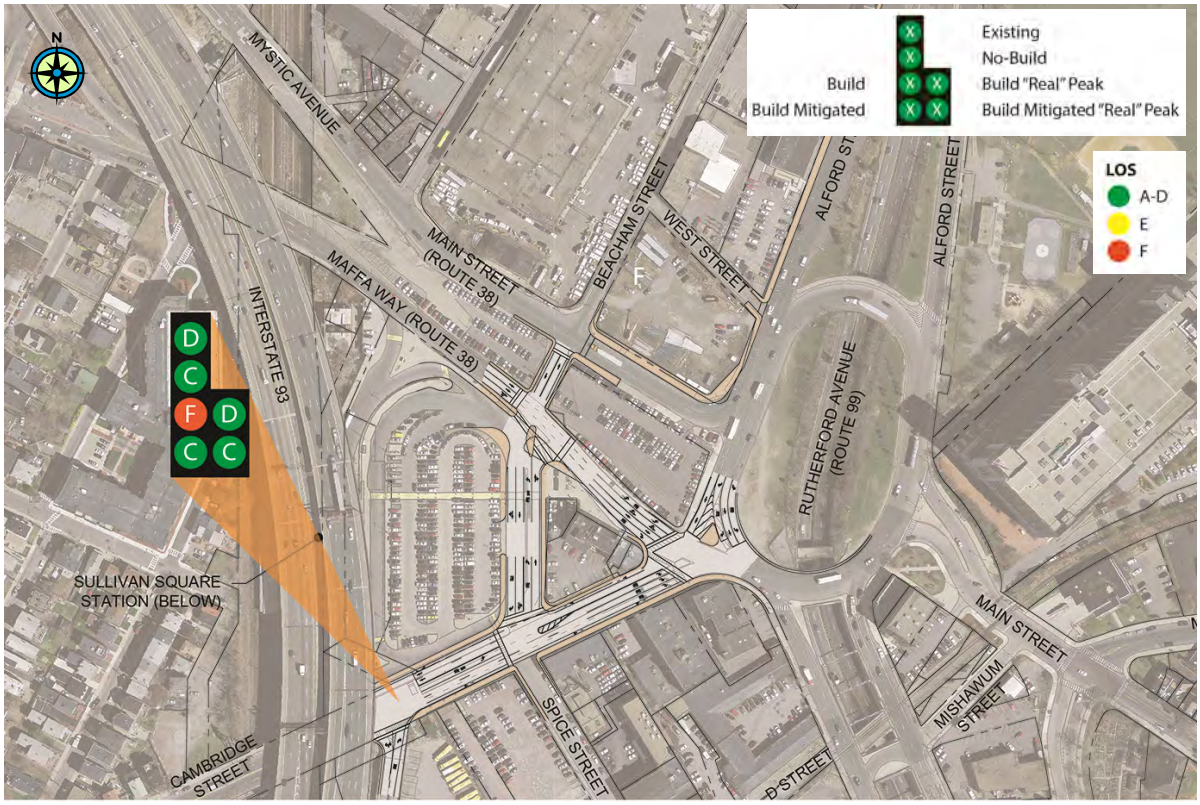
Boston – Cambridge Street/I-93 Northbound Off-ramp Capacity Analysis Summary – Friday p.m. Peak Hour



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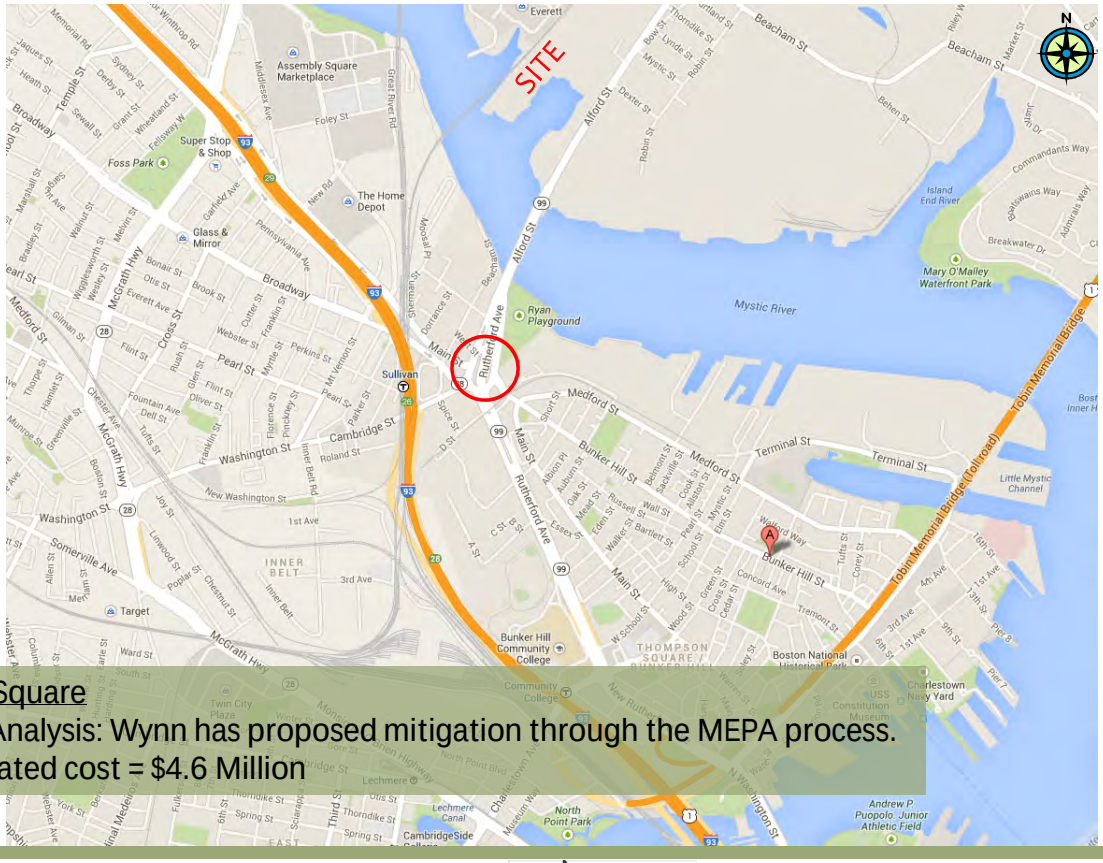
Boston – Transportation Infrastructure Analysis
Sullivan Square



Sullivan Square

- HSH Analysis: Wynn has proposed mitigation through the MEPA process. Estimated cost = $4.6 Million

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Boston – Transportation Infrastructure – Sullivan Square

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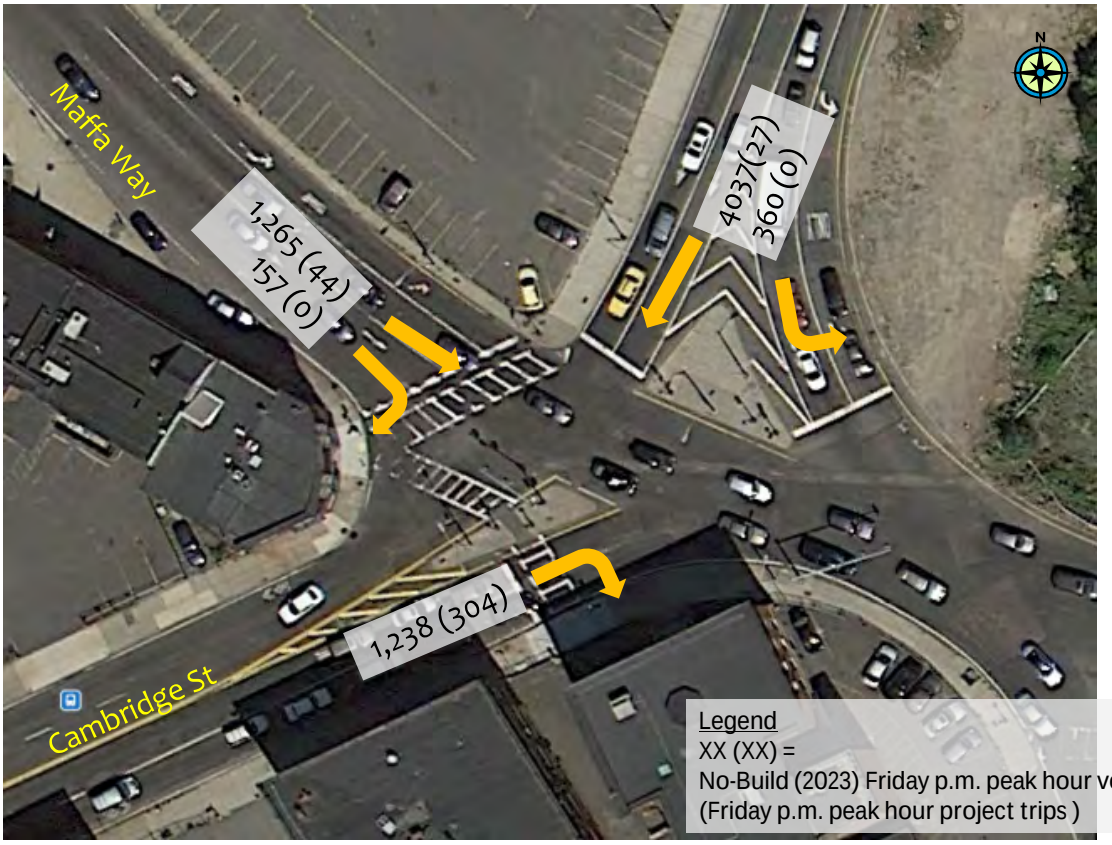
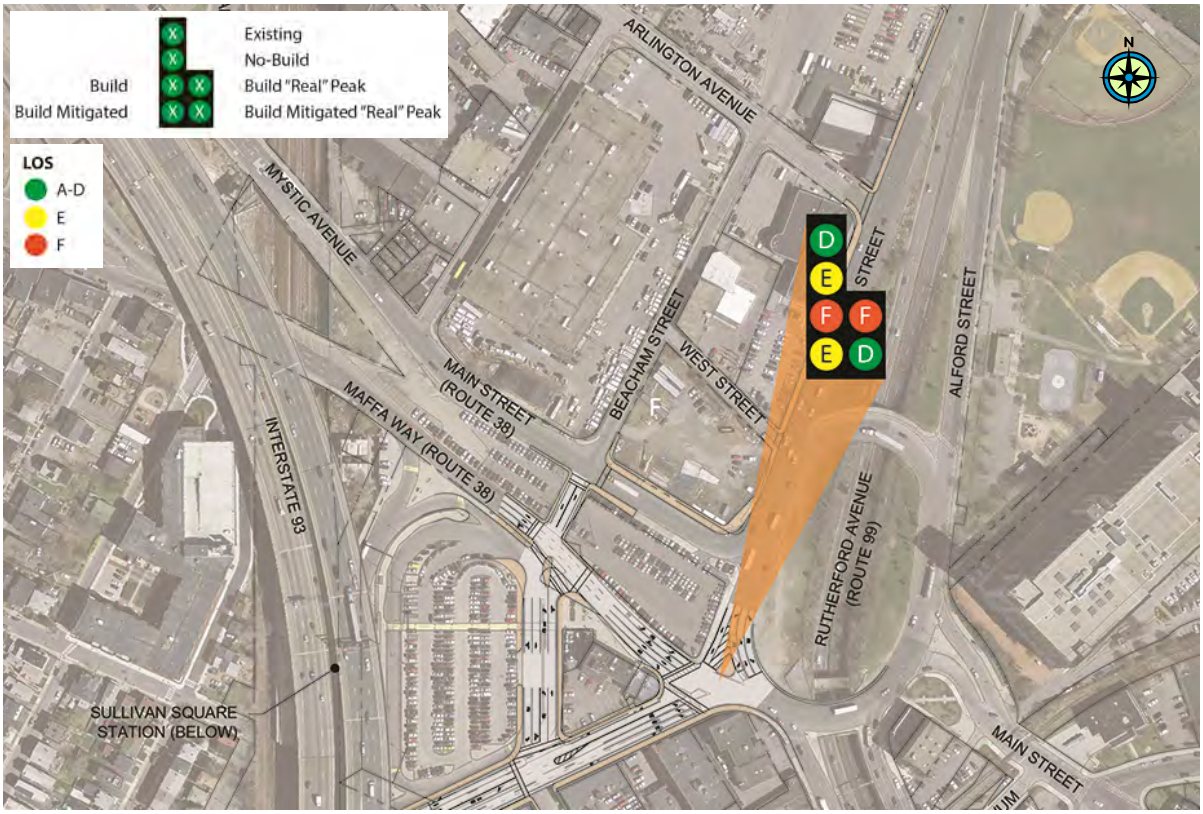
Boston – Transportation Infrastructure Analysis – Sullivan Square



Boston – Sullivan Square
Capacity Analysis Summary – Friday p.m. Peak Hour



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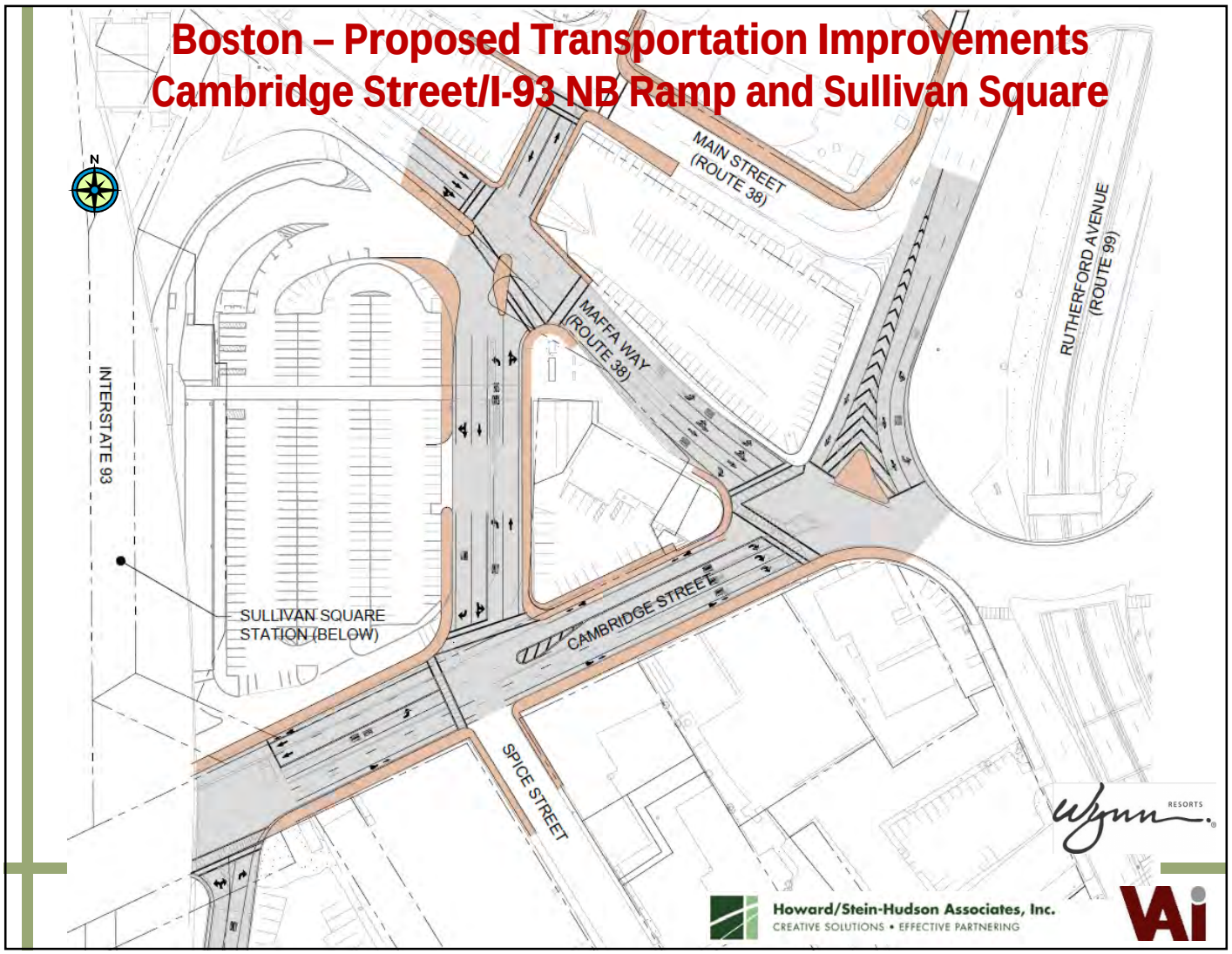
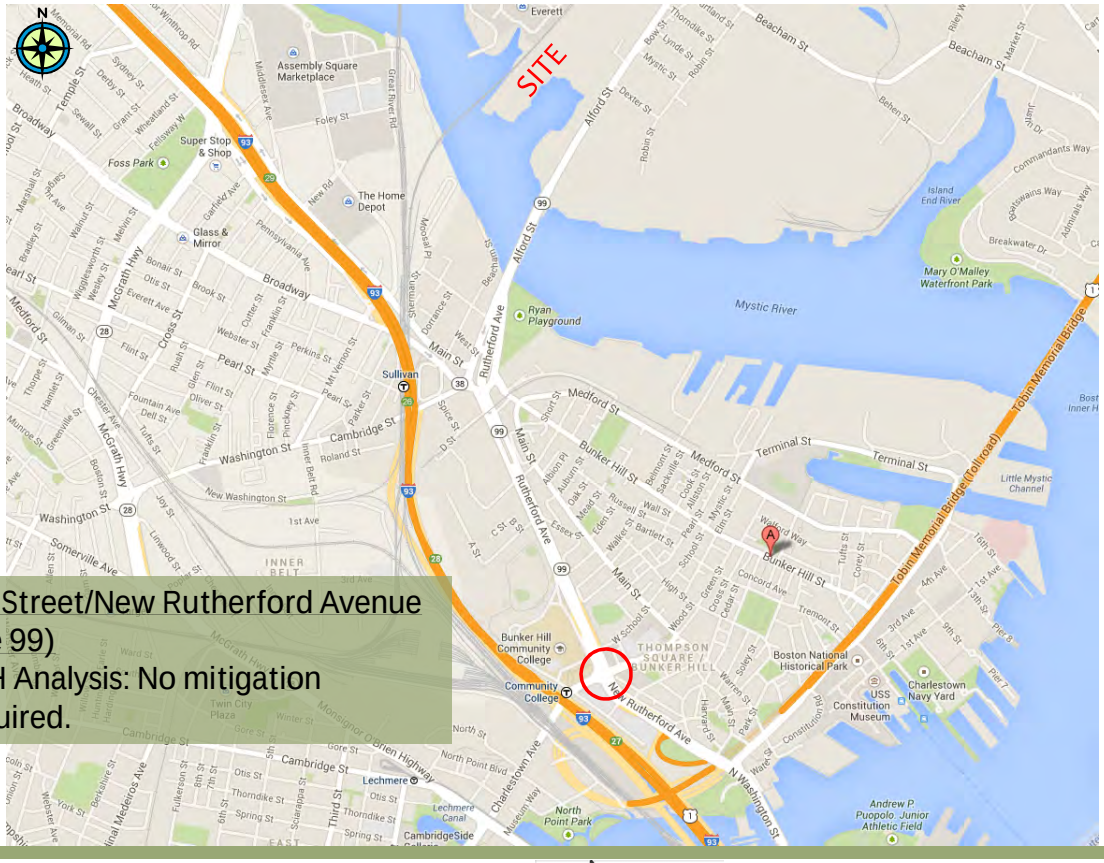
Boston – Proposed Transportation Improvements
Cambridge Street/I-93 NB Ramp and Sullivan Square



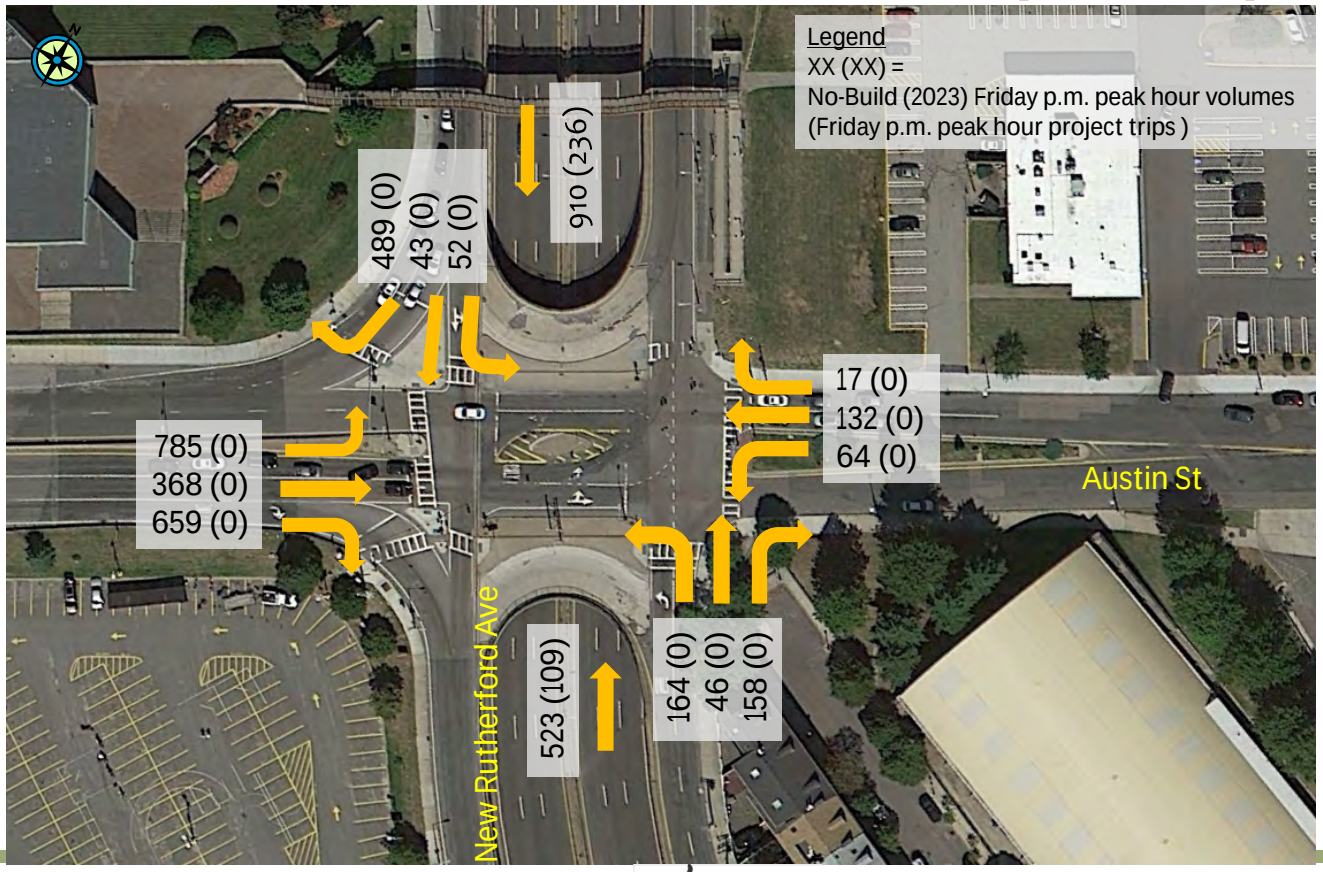
Boston – Transportation Infrastructure Analysis
Austin Street/New Rutherford Avenue (Route 99)



Austin Street/New Rutherford Avenue (Route 99)

- HSH Analysis: No mitigation required.

Boston – Transportation Infrastructure Analysis
Austin Street/New Rutherford Avenue (Route 99)



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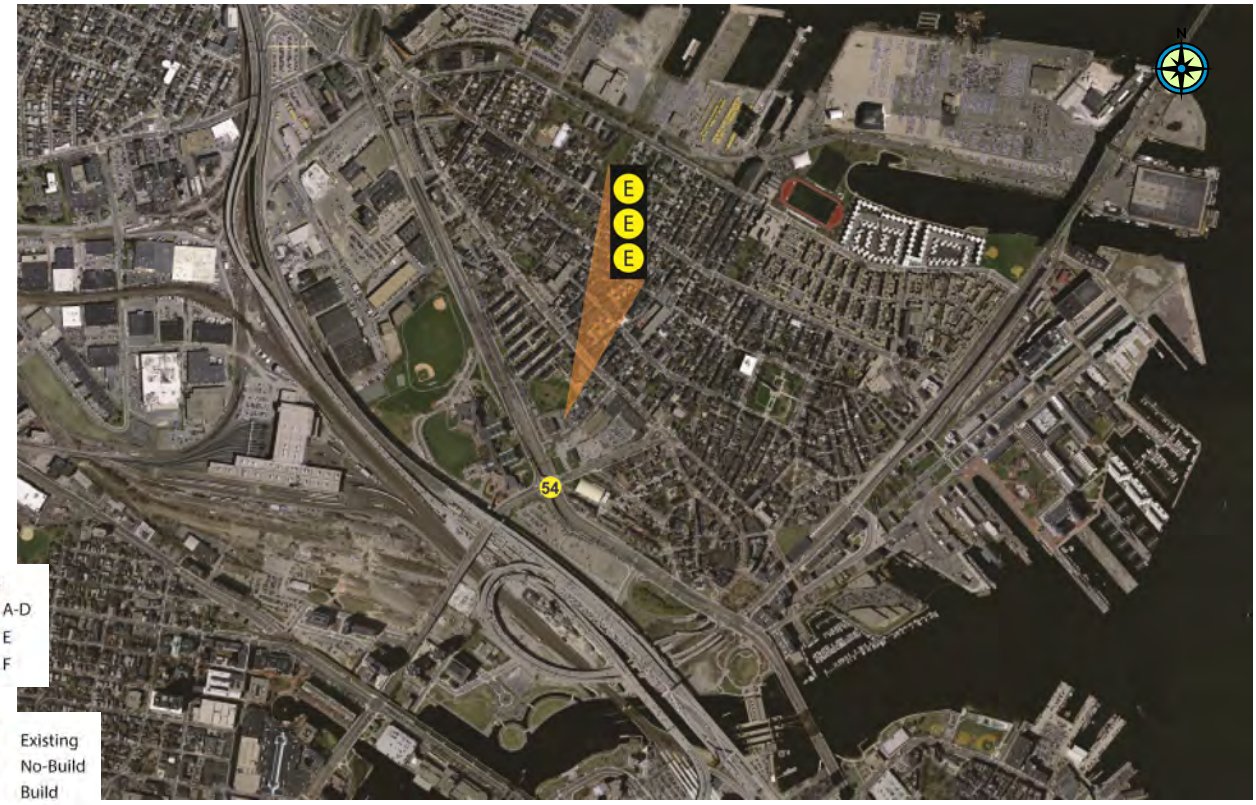
Boston – Austin Street/New Rutherford Ave
Capacity Analysis Summary – Friday p.m. Peak Hour



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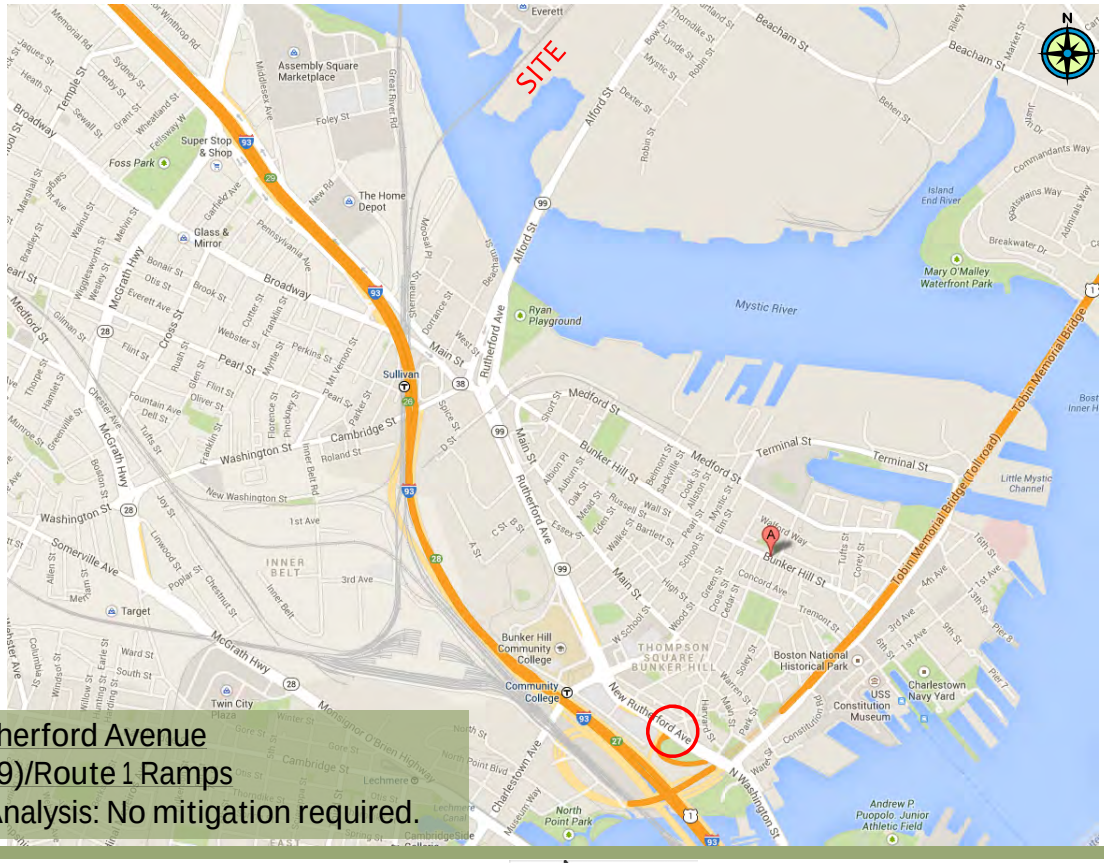
Boston – Transportation Infrastructure Analysis
New Rutherford Avenue (Route 99)/Route 1 Ramps



New Rutherford Avenue
(Route 99)/Route 1 Ramps

- HSH Analysis: No mitigation required.

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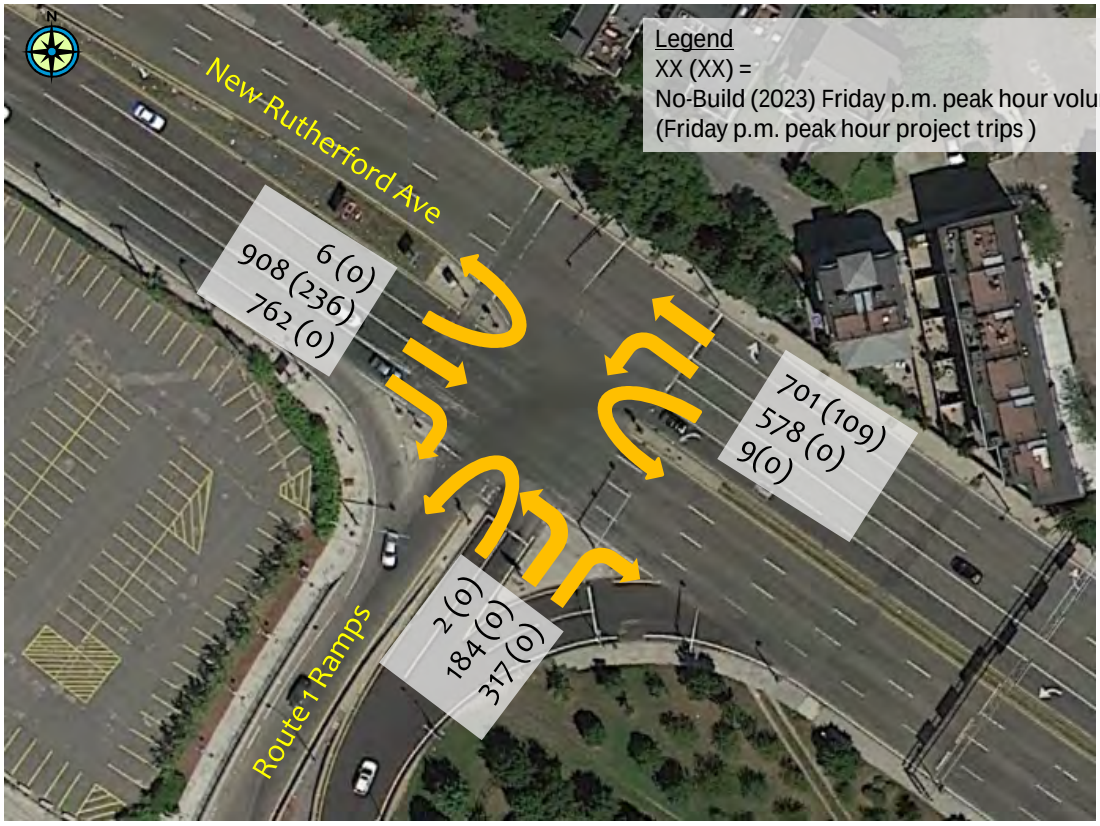
Boston – Transportation Infrastructure
New Rutherford Avenue (Route 99)/Route 1 Ramps



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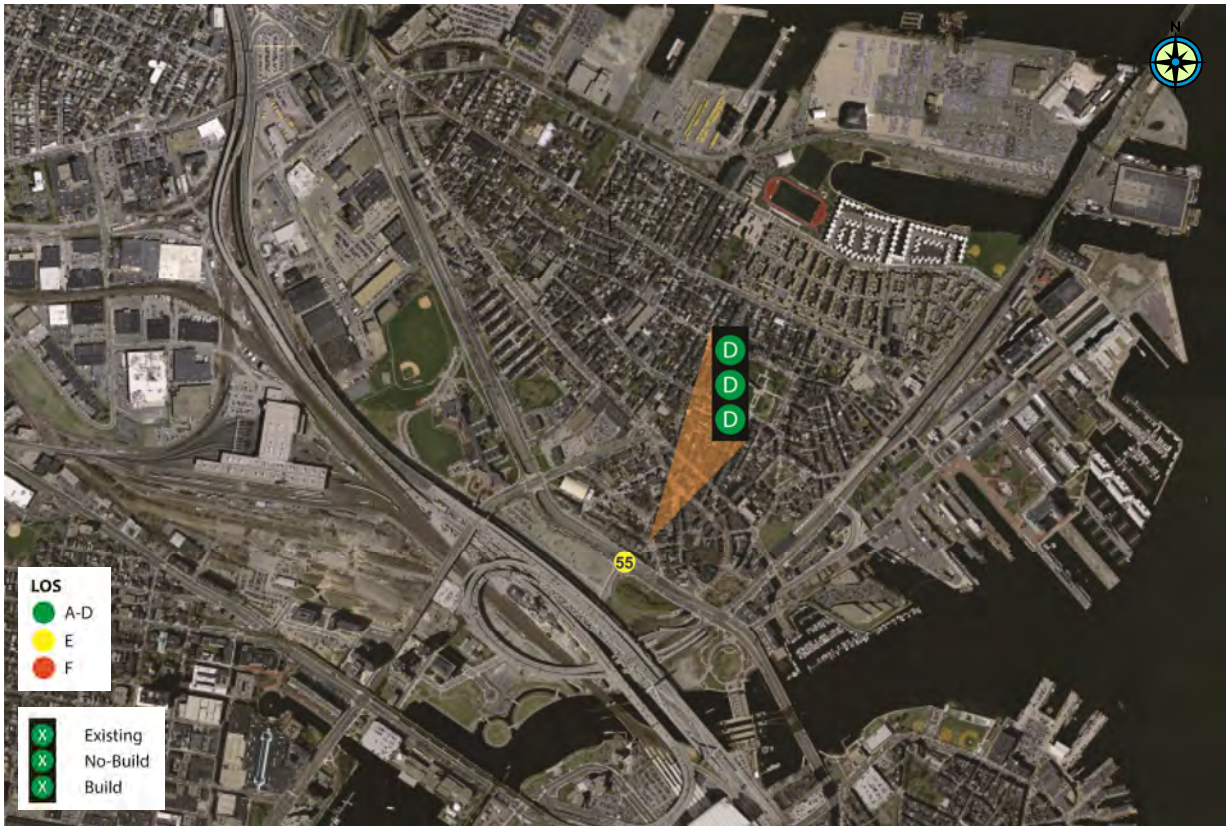
Boston – New Rutherford Avenue (Route 99)/Route 1 Ramps Capacity Analysis Summary – Friday p.m. Peak Hour



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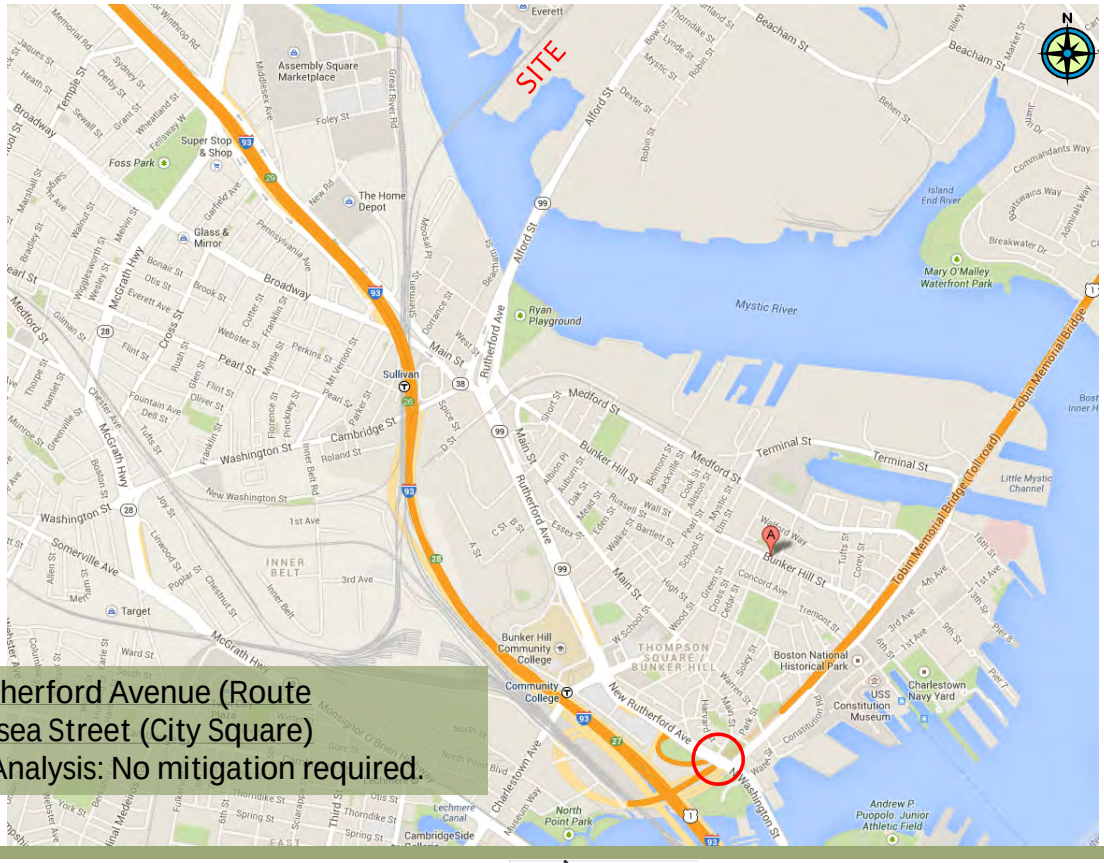
Boston – Transportation Infrastructure Analysis

New Rutherford Avenue (Route 99)/Chelsea Street (City Square)



New Rutherford Avenue (Route 99)/Chelsea Street (City Square)

- HSH Analysis: No mitigation required.

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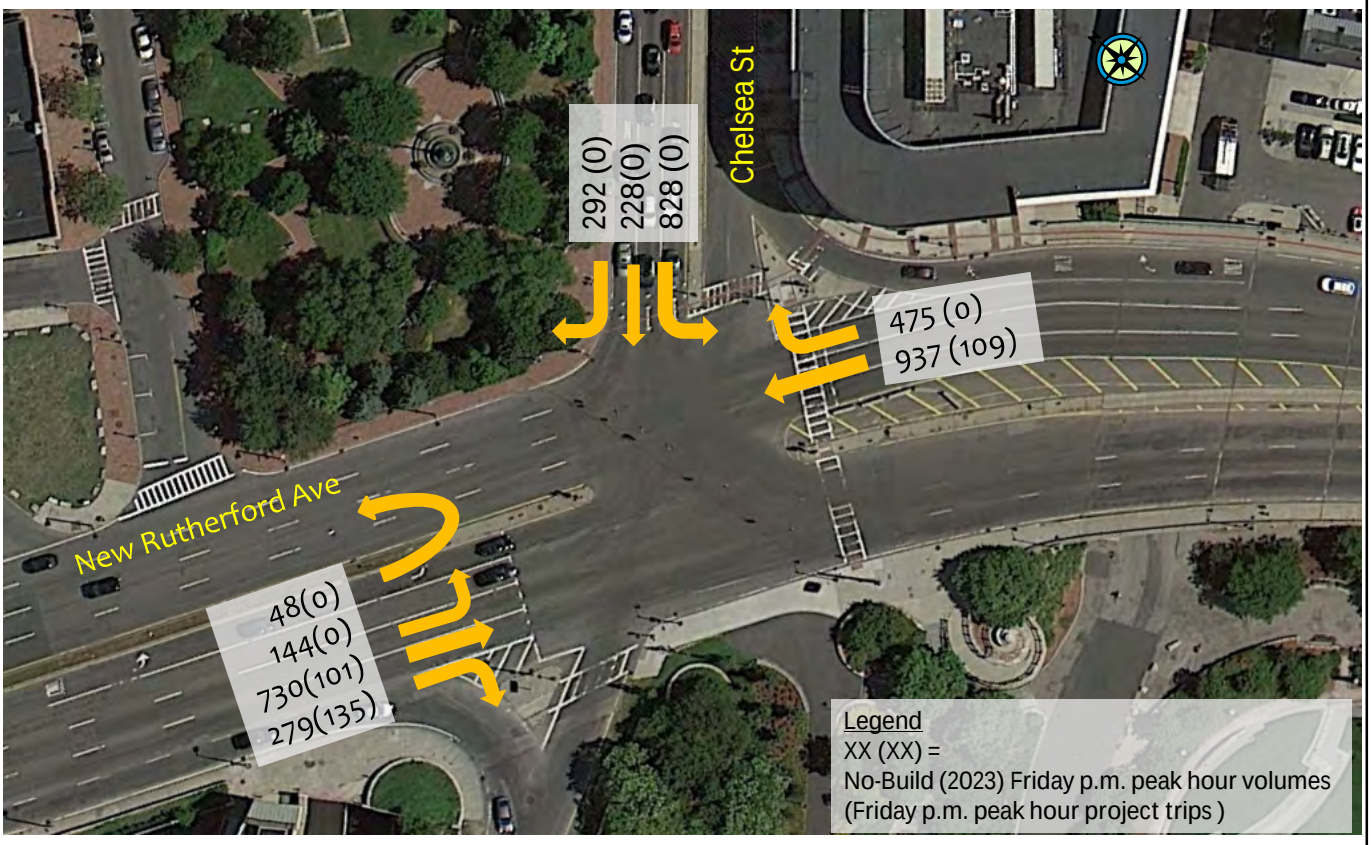
Boston – Transportation Infrastructure

New Rutherford Avenue (Route 99)/Chelsea Street (City Square)



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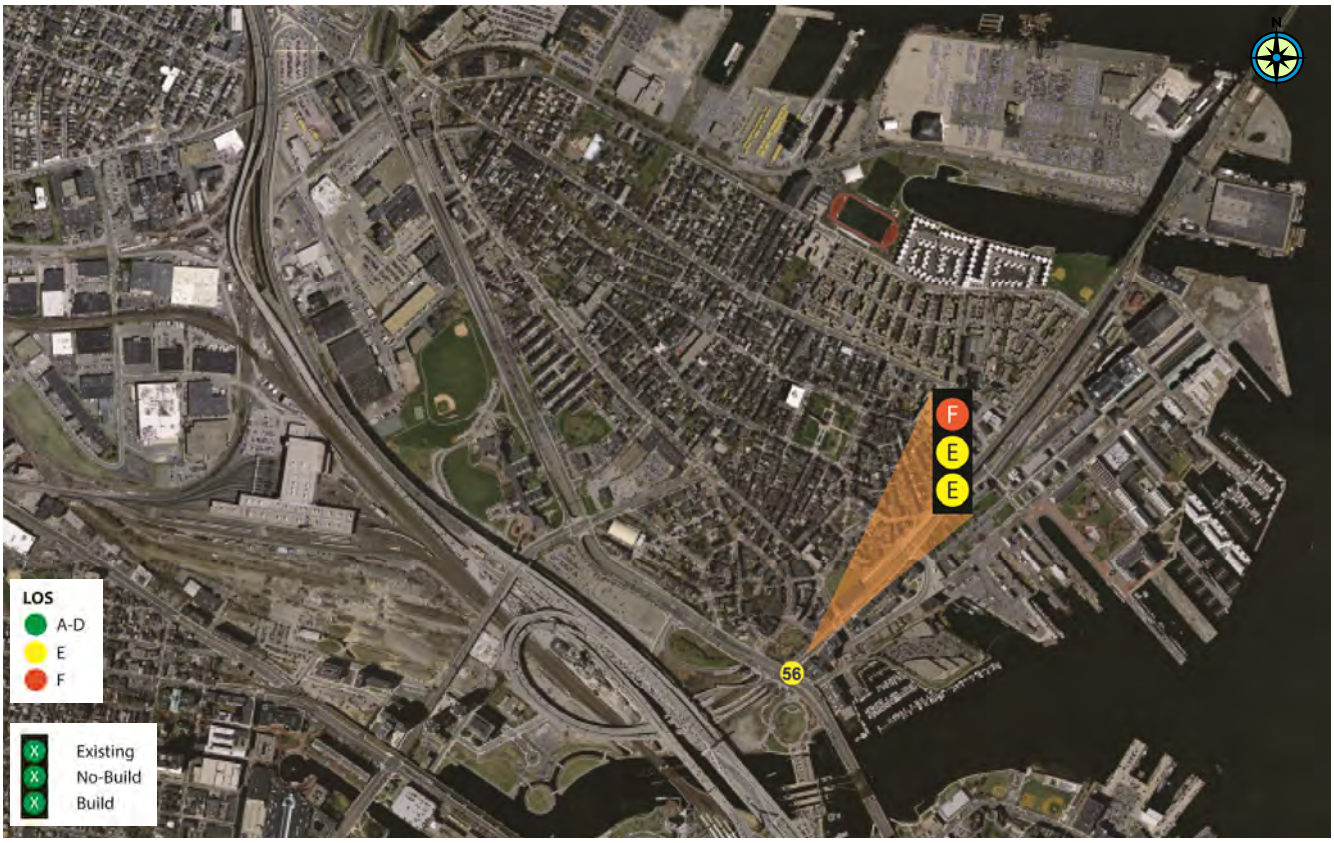
Boston – New Rutherford Avenue (Route 99)/Chelsea Street (City Square)
Capacity Analysis Summary – Friday p.m. Peak Hour



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