



# Construction Coordination & Management Planning MassDOT-Highway/MBTA

Arizona State University Special Summit:  
Building a Shared Map of the Nation's Infrastructure

May 1, 2018



Purpose

Challenges

Approach

Results

- Data & Mapping 2018 only
- 2018 Focus Hot Spot Analysis
- Metro North Sample Area
- 2018 Mitigation & Communication Strategy
- Planning for 2019 and beyond
- Next Steps



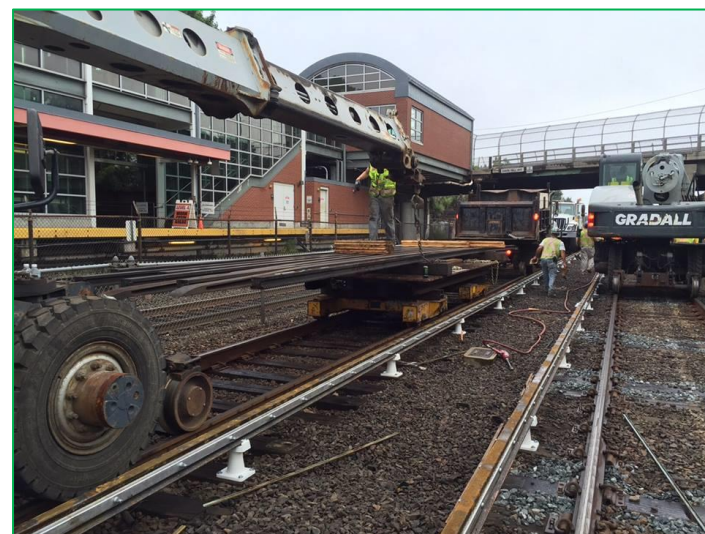
## Project Purpose

### **Investment in Infrastructure:**

MassDOT / MBTA expects to invest billions in capital over the next few years to improve safety and the state-of-good repair in the Commonwealth.

It includes the design and construction of projects that will upgrade roadways, bridges, sidewalks, multi-use paths, subways, commuter rail, bus operations and transit systems.

In 2018 alone, the investment is in excess of \$2.5 billion in transportation infrastructure -- the largest amount ever invested in capital improvements to modernize and improve the reliability of transportation infrastructure.





## Project Purpose



### **Maintenance and Growth:**

**With over 1,000 public and private projects are planned and/or programmed for construction in MA, particularly in Metro-Boston area with an initial focus on 2018-2022**



### **The Goal: Plan Ahead**

**Minimize impacts to communities and the traveling public with effective construction coordination, clear communication, and detailed outreach and mitigation planning.**

## Organization

- MassDOT Highway and MBTA/Rail have own methods and techniques to manage, construct, mitigate and communicate projects
- Municipalities have varying capacity and resources
- Utilities are emergency focused and independent entities
- Development has its own process and requirements

## Data

- Highway has mature project data intake system
- MBTA is developing ebuilder – projects are not geo-coded.

## Types of Project

- Linear (signal upgrades) vs Location Specific (bridge/station)
- Regional vs Local projects
- Construction Periods – peak vs non-peak for planning and contracting



**Data Collected & Analyzed:** As of February 13<sup>th</sup> collected and analyzed transit and highway project data: **1,045 projects for 2018-2022** and **246 projects for 2018**.

Geo-coded available MBTA and Commuter Rail projects. Modeled project data: profiles, schedules and resources

**Joint Teams Identified Impacts:**

Reviewed projects by peak, non-peak, diversion and/or capacity impacted projects, impacts on bus network, resources constraints and opportunities to combine project resources



### Re-Sequenced Project Schedules:

Coordinated and re-sequenced projects. Adjusted linear projects to maximize resources, minimize impacts and reduce conflicts and costs.

### Communications and Outreach

**Plan:** Implement lessons learned and best practices from past projects.

Operationalize a **dashboard on our GeoDOT site** with a website resource to communicate and plan current and future construction activity.





Preliminary project data collected for **1,090 planned projects** with an initial focus on **2018-2022**:

- 530 MassDOT Highway
- 225 MBTA / Commuter Rail
- 345 Other

## Project Types

Type	Number	Percent of Total
Roadway	400	36%
Bridge	130	12%
Transit *	225	21%
Ped/Bike	30	3%
Utilities	65	6%
Development	190	17%
Other	60	5%

\*Transit includes 58% Subway, 22% Commuter Rail, 4% Bus, 9% Other and 7% TOD projects.

## Projects in the database can be filtered based on:

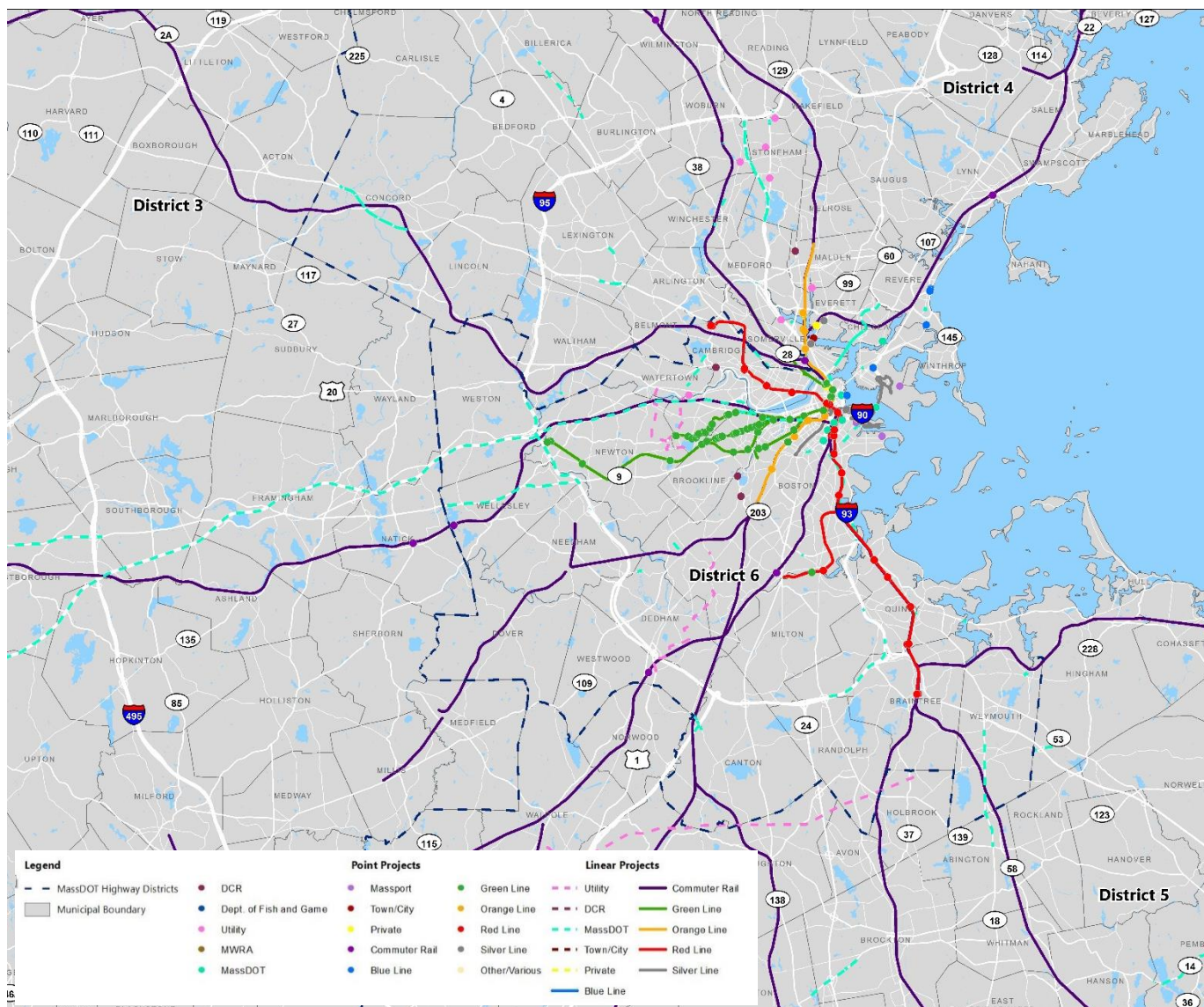
- Anticipated construction year(s)
- Anticipated impacts (capacity reductions, diversions, service interruptions, parking impacts)
- Geographic proximity of projects
- Owner/Proponent & City/Town
- Highway, MBTA and Commuter Rail Projects
- Ad Date, Bid Open Date, Contract Start Date, Completion Date
- Total Construction Cost
- Peak, Non-Peak, Saturday and Sunday time periods
- Resiliency, and more....

*Based on evolving project database using available information from MassDOT, MBTA, DCR, Massport, municipalities, utilities and/or private developments as of February 13, 2018. Database shall continue to be refined and expanded as information is available.*



# Metro Boston Projects – 2018 Only

As of February 13, 2018



## 246 Total Projects Reviewed

Owner/Proponent	Number	Percent of Total
MassDOT Highway	74	30%
MBTA	146	59%
Other	26	11%
Project Type	Number	Percent of Total
Roadway	49	20%
Bridge	27	11%
Transit *	146	59%
Ped/Bike	3	1%
Utilities	11	5%
Development	3	1%
Other	7	3%

\*Transit includes 75% Subway, 6% Commuter Rail, 3% Bus, 9% Transit TOD, and 7% Other projects.

***Of the 246 projects in the 2018 data based only 115 projects had joint impacts.***

***Three Hot Spot Areas Selected*** for Focused Analysis and Mitigation Planning

- #1 – Mystic River – Metro North
- #2 - Fenway/Weston – Metro West
- #3 – Quincy Bay – Metro South

### ***Preliminary Overview***

- Hot Spot location with Project lists
- Draft schedule of 2018 construction
- Joint - capacity Impacts
- High Level Traffic/Diversion analysis – constraints/opportunities





# 2018 Metro Boston Projects with Impacts Hot Spots

**115 Projects with  
Impacts Reviewed**



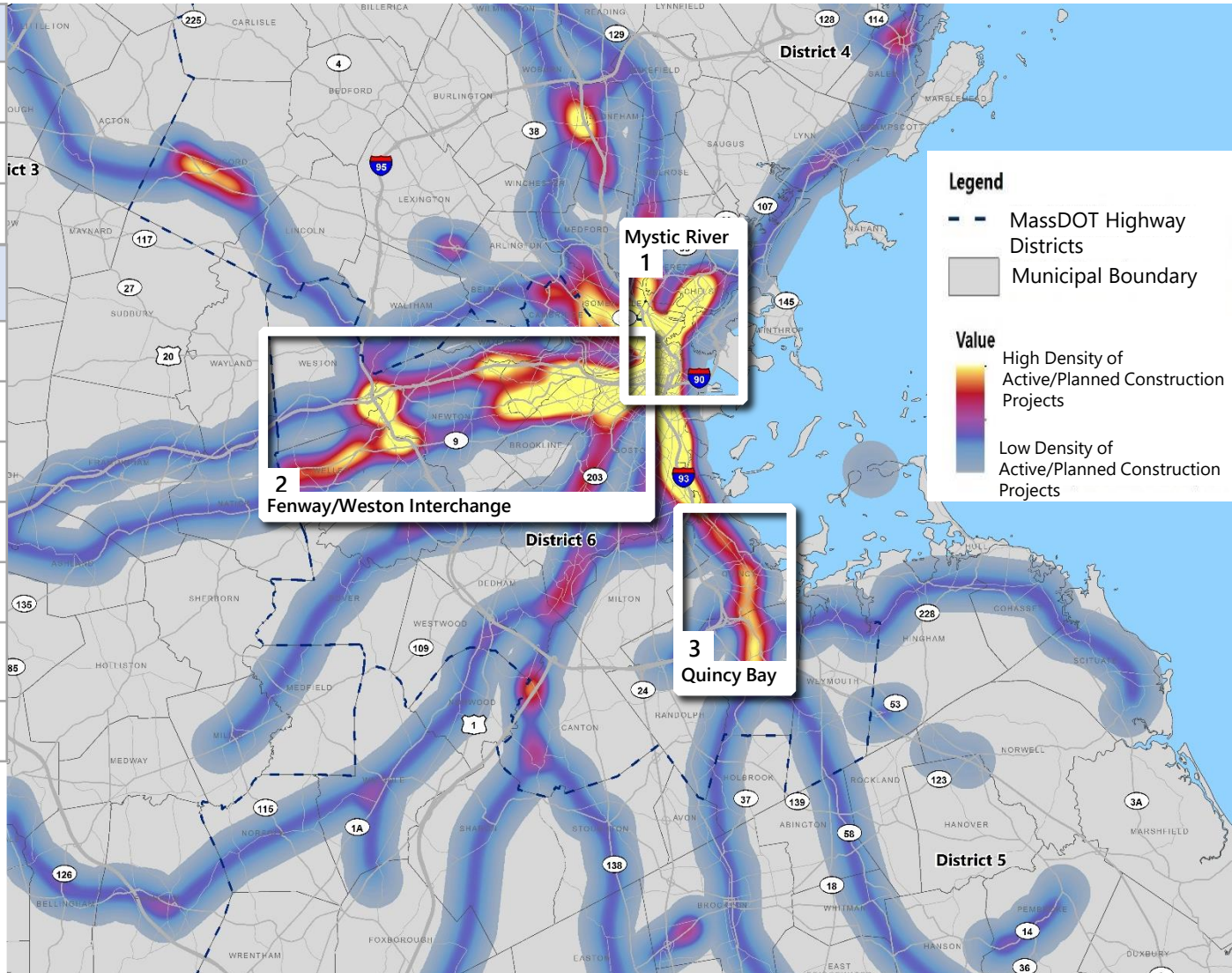
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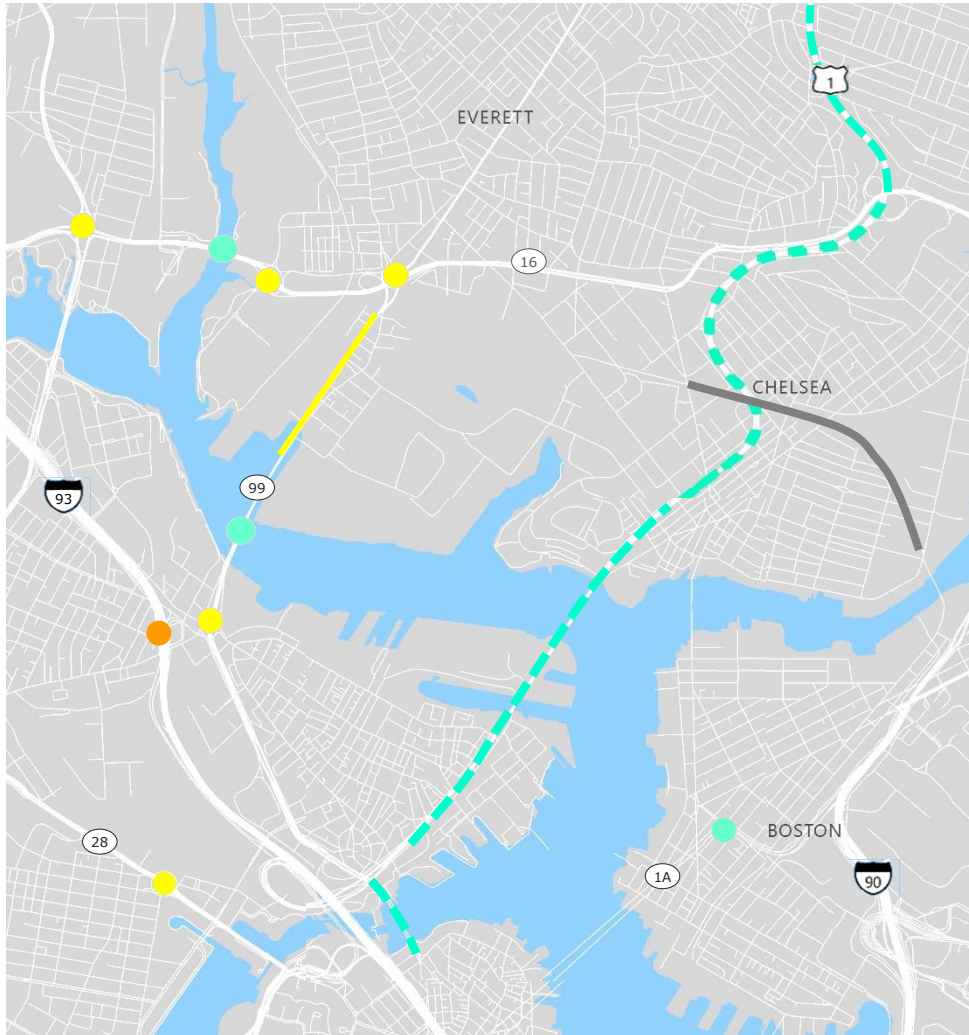
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**Highway & transit  
projects with roadway  
lane closures, transit  
service disruptions/  
diversions, and/or  
parking impacts during  
all time periods.**



**PRELIMINARY DATA: SUBJECT TO CHANGE**

# 2018 Hot Spot #1: Mystic River Project Owner



## **MBTA (2)**



Sullivan Square Lower  
Busway

Silverline Gateway Phase 1

## **Private (2)**



Wynn Casino Mitigation

North Point Route 28  
Improvements (Phase 1)

## **MassDOT (7)**



North Washington Street Bridge

Woods Memorial Bridge  
(Revere Beach Parkway Bridge  
Replacement)

Route 1 Resurfacing and Related  
Work

Tobin Bridge Deck Rehabilitation

Tobin Bridge Painting & Repairs

Sumner Tunnel Legacy Toll Plaza  
30 Demolition

Alford Street (Route 99) Bridge  
(City of Boston Bridge)



Projects in grey have schedule flexibility.



## 2018 Hot Spot #1: Mystic River Anticipated Schedule

**11 Projects**  
As of February 13, 2018



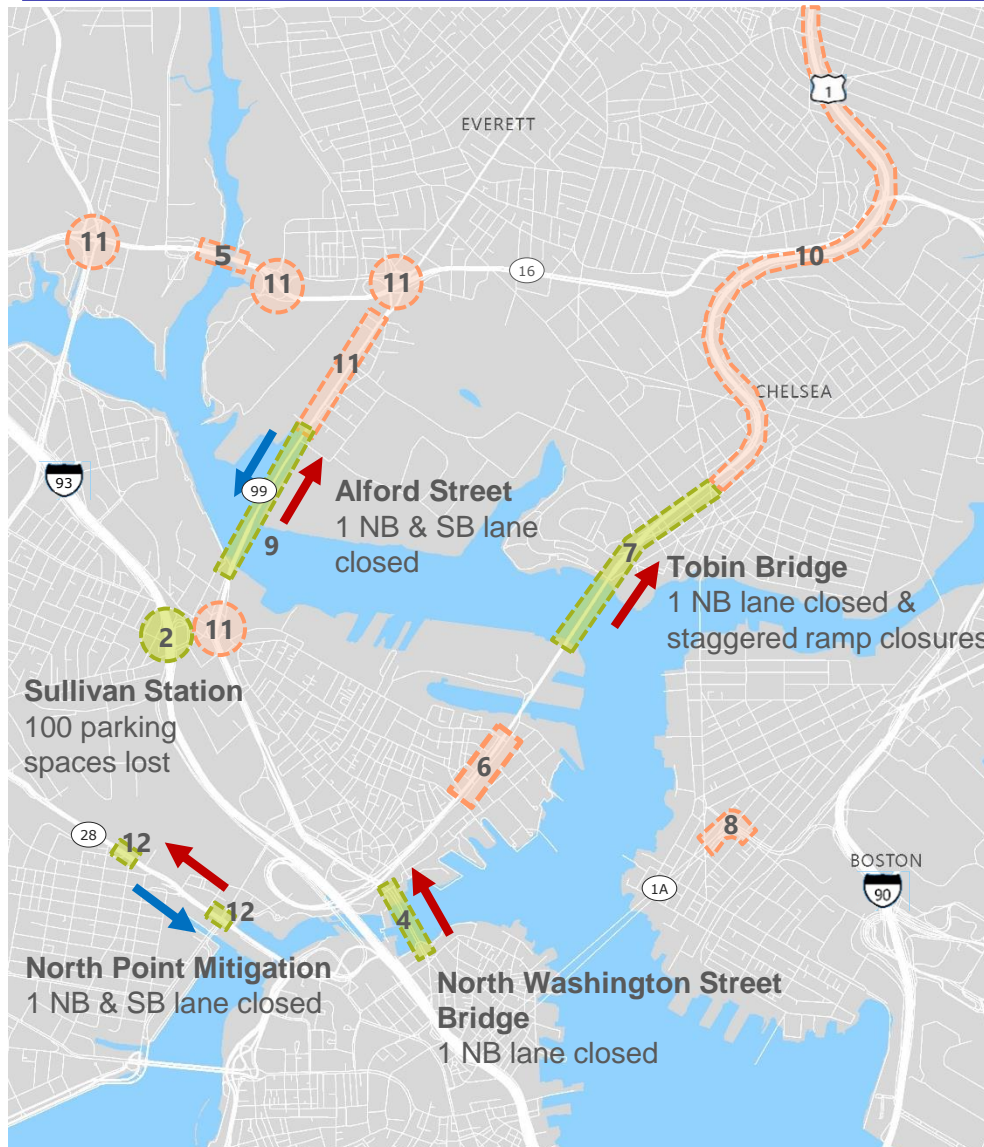
Active Construction with Track/Lane Impacts - 24 hours  
Active Construction with Track/Lane Impacts - Off-Peak Hours Only

[illegible]

\*Dates subject to change based on available resources, weather, emergencies, etc.

# 2018 Hot Spot #1: Mystic River Transportation Schedule Impacts

**11 Projects**  
As of February 13, 2018



- Alford Street Bridge will impact the Charlestown Bus Yard
- Tobin Bridge Closures will have operational impacts to the MBTA Bus Route #111
- Additional MBTA Bus operational/routing impacts related to North Washington Street, Alford Street and North Point Mitigation

↑ Northbound from Boston  
↓ Southbound to Boston

*Numbers refer to project descriptions on previous slide*

■ Active Construction with Track/Lane Impacts - 24 hours  
■ Active Construction with Track/Lane Impacts - Off-Peak Hours Only

# 2018 Hot Spot #1: Mystic River Project Detail

**11 Projects**  
As of February 13, 2018



Project ID	Project Name	Owner Proponent	Type of Project	Peak Weekday Impacts <sup>1</sup>	Off-Peak Weekday Impacts	Weekend Impacts <sup>2</sup>	Impacts	Bus Routes Impacted	Comments
100022	Silverline Gateway Phase 1	MBTA	Transit Bus	No	No	No			Opening April 2018
100523	Sullivan Square Lower Busway	MBTA	Transit Bus	Yes	Yes	Yes	100 parking spaces will be lost from March until August	86, 89, 90, 91, 92, 93, 95, 101, 104, 105, 109, 194, 747	
604173	North Washington Street Bridge	MassDOT	Bridge	Yes	Yes	Yes	1 lane closed NB. Pedestrian access will be provided on one side only.	92, 93, 111, 194, 426, 428	
604660	Woods Memorial Bridge (Revere Beach Parkway Bridge Replacement)	MassDOT	Bridge	No	Yes	No	Only off-peak lane closures in 2018.	97, 99, 106, 110, 112	15 mo ahead of schedule. Full beneficial use by summer 2018.
605957	Tobin Bridge Deck Rehabilitation	MassDOT	Bridge	Yes	Yes	Yes	1 NB lane closed for 3 years (2018-2022). Additional staggered ramp closures.	111, 426, 428	Everett St On-Ramp (April - May), Beacon St (May - July), 4th Street (Nov), Arlington Off-ramp NB also happening but staggered.
605960	Tobin Bridge Painting & Repairs	MassDOT	Bridge	No	Yes	No	Tobin Night / Off-Peak lane closures only	111, 426, 428	
608656	Demolition of Legacy Toll Plaza 30 Along I-90 (Sumner Tunnel)	MassDOT	Roadway	No	Yes	No	Sumner Tunnel and Ramps have Night / Off-Peak lane restrictions	117, 434, 450	
100012	Alford Street (Route 99) Bridge	MassDOT	Bridge	Yes	Yes	Yes	1 lane closed in each direction from 10/1/18 to 3/30/19.	104, 105, 109	City of Boston owns the Bridge & completed the design. Work will be done in two 10 hour shifts for 7 days a week.
607174	Route 1 Resurfacing and Related Work	MassDOT	Roadway	No	Yes	No	Night / Off-Peak lane closures only	111, 426, 428	
100011	Wynn Casino Mitigation	Wynn	Development	No	No	No	Minor lane shifts only	92, 93, 97, 99, 100, 104, 105, 106, 108, 109, 110, 112, 134, 194,	Improvements to Wellington Circle, Santilli Circle, Sweetser Circle, Lower Broadway and Sullivan Square
100035	NorthPoint - Route 28 Improvements (Phase 1)	NorthPoint	Development	Yes	Yes	Yes	Lane reductions during construction.	69, 80, 87, 88	Reduced vehicular capacity in final condition.

<sup>1</sup> Peak Periods are 6:00 - 10:00 AM and 3:00 - 7:00 PM.

<sup>2</sup> Weekend capacity constraints provided were not broken down for Saturday and Sunday.

## 2018 Mitigation and Communication Strategy

### Suite of Tools

**Communications Public Outreach:** Engage communities *early and often*

*Transitioning from single project to multi-project/program planning and messaging.*

- **Coordinated Social Media:** Expand and coordinate use of alerts for both highway and transit
- **Expansion of Project Impact Data Exchange** with Apple, Google, WAZE, etc. Exchange of data to monitor results.
- **Expand use of Branded notifications:** banners, signage, VMS boards, media outlets
- **Expand use of Wayfinding Signage:** Safely direct and channel modal options, bike, walking, transit, parking, etc.
- **Ongoing coordination** between Highway and MBTA on impacted bus routes (111, 92, 93, etc.)

**Mission Critical:**  
**Share and build off best practices and lessons learned.**





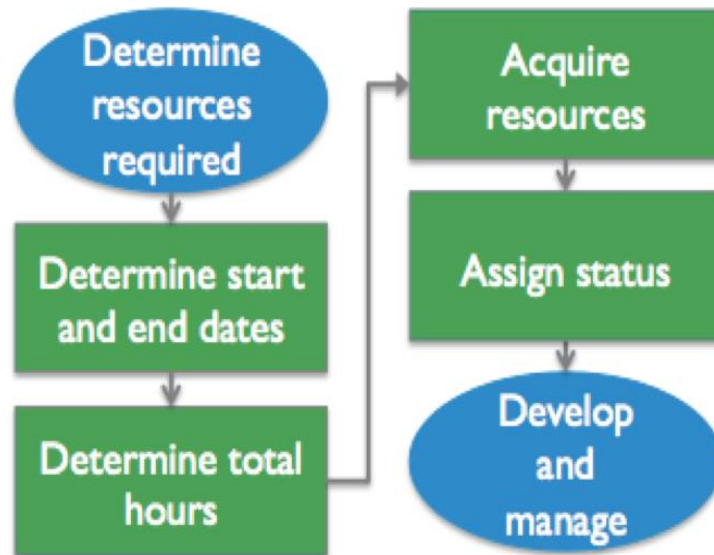


## Resource Planning



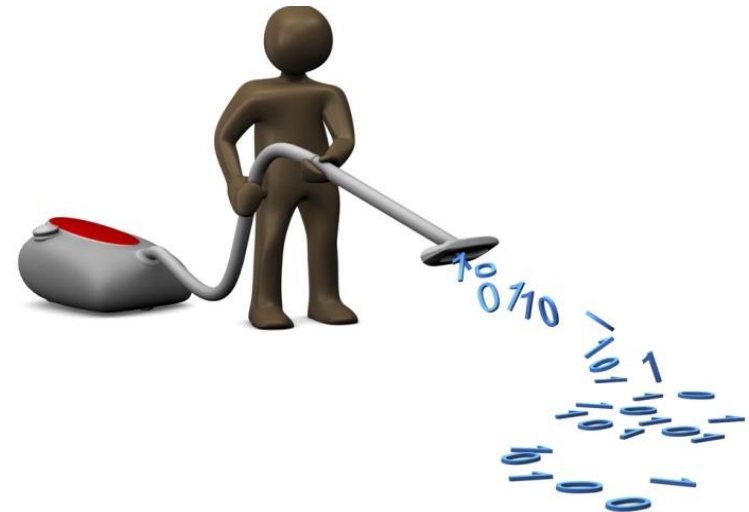
- Develop **joint inter-agency communication** strategies for local and regional impacted areas
- Identify opportunities to **incentivize alternative modes** or fee/pricing strategies to decrease demand use of highways / transit facilities
- Investigate **methods to capture costs of mitigation** to guide decision making: contracts, buses, signage, communication tools, details and flaggers, real-time traffic monitoring, etc.

### Resource Plan Process



## Next Steps

- Go Live with “PlanAhead” web site with links to agency websites.
- Develop Playbook to institutionalize process
- Prepare for June (post CIP/SIP) data refresh.
- Conduct workshop to analyze and mitigate 2019 project impacts (June)
- Drill down into each 2019 hot spot area to identify local and regional project impacts on traffic and transit capacity



The PlanAhead Portal

[Plan Ahead](#)

The actual address is: <http://mass.gov/massdot/planahead>

***Please Notice:***

***This site is still under development and therefore not accessible at this time.***





How to Access the other critical data

[Engage Project Impact Review](#)

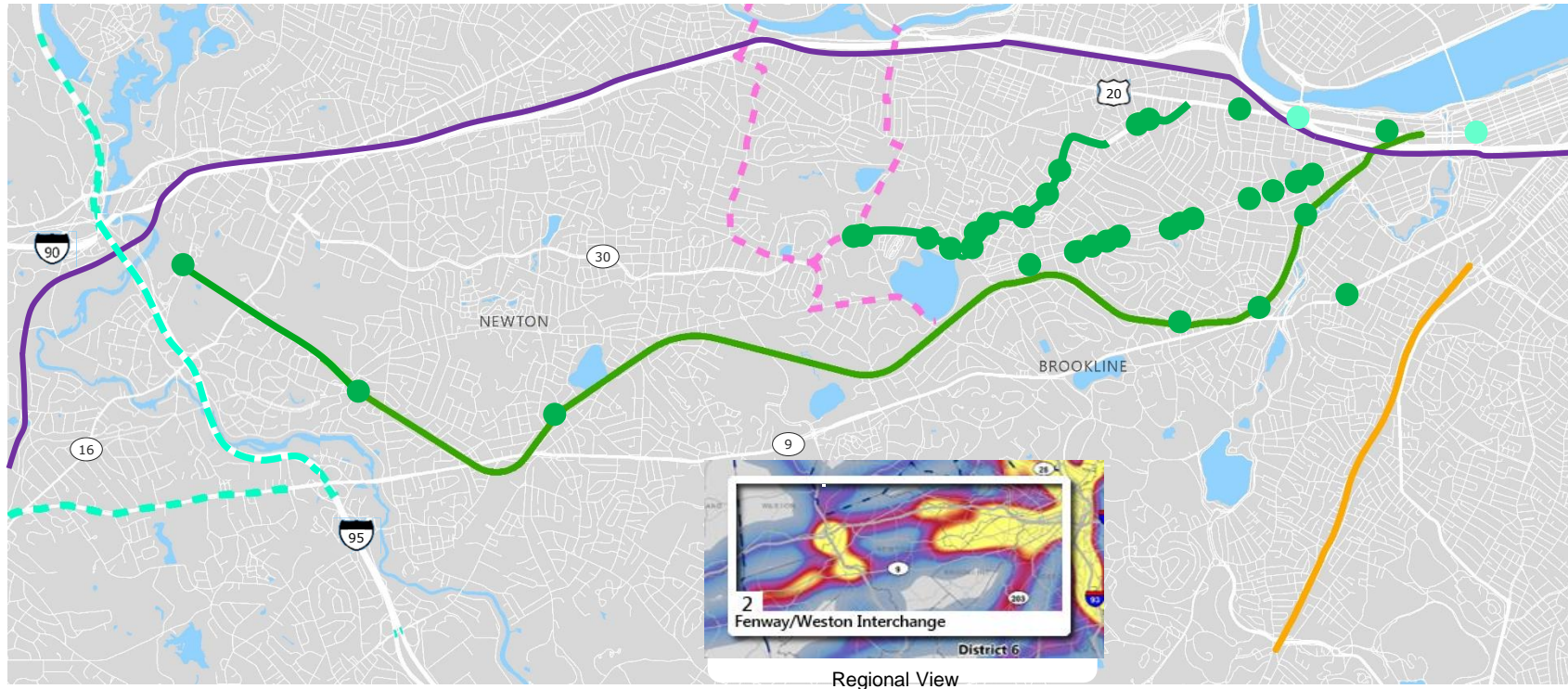
Actual address: <http://gis.massdot.state.ma.us/engage/projectimpact/>





# 2018 Hot Spot #2: Fenway/Weston Interchange Project Owner

**46 Projects**  
As of February 13, 2018



## MBTA (38)

- Green Line Track Infrastructure Restoration
  - B Line (4 locations)
  - D Line (6 locations) – (flexible on locations)
- Green Line (Non-GLX) Grade Crossings (25 locations)  
(flexible on locations)
- Reservoir and Riverside Signal Imp. (flexible on locations)
- Fenway Portal Flood Protection
- Direct Fixation - Orange Line Southwest Corridor (On-Call)  
(flexible on locations)

## MassDOT (5)

- Commonwealth Avenue over I-90 Deck Replacement (Phase 2)
- Mass Ave (Route 2A) over Comm Ave Bridge Replacement
- I-95/Route 128 Add-a-Lane (6 Bridges)
- I-95 Pavement Resurfacing
- Route 9 Resurfacing

## Commuter Rail (2)

- Positive Train Control (Worcester Line)
- Worcester Line CP6

## Utility (1)

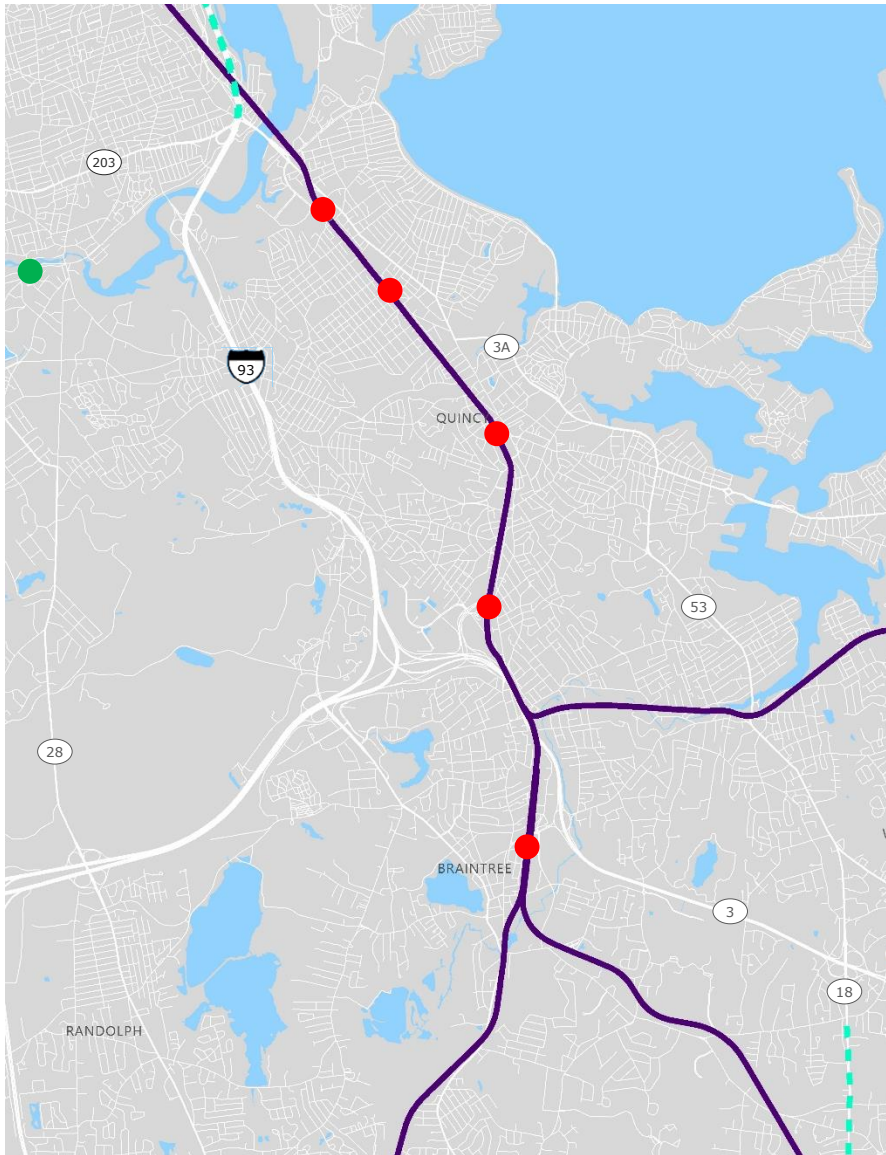
- MWRA Water Main Rehabilitation  
(Boston: Brighton, Newton, Watertown)

Projects in grey have schedule flexibility.



# 2018 Hot Spot #3: Quincy Bay Project Owner

**7 Projects**  
As of February 13, 2018



## MBTA (4)



- South Shore Garages (Braintree & Quincy Adams)
- Wollaston Station / Quincy Center Garage Demolition
- Green Line (Non-GLX) Grade Crossings (Mattapan Trolley)  
(flexible on locations)
- North Quincy TOD Redevelopment

## Commuter Rail (1)

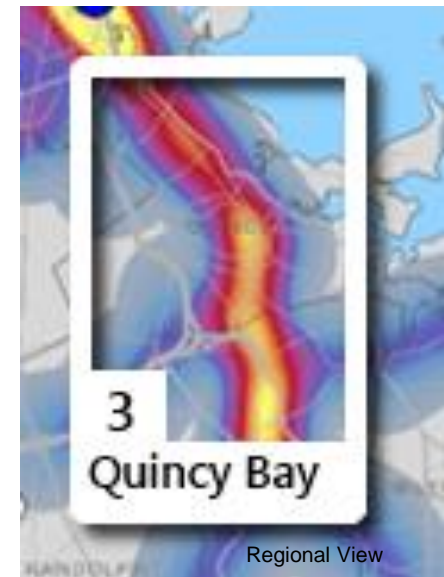


- Positive Train Control

## MassDOT (2)



- Route 18 Reconstruction
- I-93 Highway Lighting System Replacement



Regional View  
Projects in grey have schedule flexibility.