



Charles D. Baker, Governor
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Jonathan L. Gulliver, Highway Administrator



August 15, 2018

Matthew A. Beaton, Secretary
Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs (EOEEA)
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston MA 02114

Attn: Deirdre Buckley, Director

Re: Request for Advisory Opinion
2018/2019 South Boston Bypass Road/ High Occupancy Vehicle Pilot Re-Evaluation Program
South Boston, Massachusetts
EEA #4325

Dear Secretary Beaton:

The Massachusetts Department of Transportation (MassDOT) respectfully submits the enclosed Request for Advisory Opinion (RAO) and Technical Report to the Massachusetts Environmental Policy Act (MEPA) office. We submit this South Boston Bypass Road (SBBR) and High Occupancy Vehicle (HOV) Lanes 2018/2019 Pilot Re-Evaluation Program Technical Report to obtain MEPA's determination on our proposal to conduct a 12-month Pilot Re-Evaluation Program, temporarily modifying access restrictions on the SBBR and three components of the HOV system from I-93 to I-90 eastbound/Ted Williams Tunnel (see Figure 2-2 of Technical Report). This RAO is for temporary lifting of the restrictions to the SBBR and components of the HOV system for the 12-month Pilot Re-Evaluation Program period only from September 2018 through August 2019 (or for a 12-month period if the Pilot Program begins after September 2018).

Previous Pilot Program (2015/2016)

As part of the South Boston Waterfront (SBW) Sustainable Transportation Plan (STP), completed in January 2015, several transportation enhancements were considered to enhance mobility and access including methods to alleviate congestion in the South Boston neighborhood and provide additional access between the neighborhood and the waterfront. One such enhancement regarded modification of current access restrictions along the SBBR. The SBBR is currently limited to commercial traffic only from the I-93 Frontage Road system to West Service Road, providing a dedicated roadway for these vehicles, which reduces commercial vehicle use of South Boston's residential neighborhood streets. MassDOT lifted restrictions on the SBBR to detour traffic during the Callahan Tunnel Rehabilitation Project in 2013 and during a six-month pilot program in 2015 and 2016 to explore potential benefits and relieve congestion in the South Boston neighborhood.

The 2015/2016 Pilot Program resulted in little to no traffic impact and was well received by the public; however, the limited six-month timeframe did not fully allow for conclusive results on the benefits or impacts that a permanent restriction lift would have on commuters and the surrounding environment.

Proposed Pilot Program (2018/2019)

Given the growth in traffic volumes, increase in activity levels, and economic development since the 2015/2016 Pilot Program, MassDOT proposes to re-conduct the 2015/2016 Pilot Program for an extended 12-month period to gain a better understanding of the potential benefits and impacts that were difficult to conclude during the six-month 2015/2016 Pilot Program.

The 2015/2016 Pilot Program provided somewhat limited data on the potential for a permanent lifting of restrictions as mitigation given that the option to use the roadways, and when, may not have been communicated broadly enough to reach a majority of the traveling public. The 2015/2016 Pilot Program's allowance of general traffic on the SBBR eastbound (inbound) from the I-93 Frontage Road system to Cypher Street/Richards Street was restricted to 6:00-10:00AM and caused difficulty in messaging, driver confusion on utilization of the system, and the need for strict police enforcement. The goal of the 2018/2019 Pilot Program is to clearly communicate and engage the public of the modified use of the SBBR and the HOV system throughout its implementation so there will be the best opportunity to monitor full use of the facility under modified access restrictions. Allowing general traffic to access SBBR eastbound (inbound) from the I-93 Frontage Road system to Cypher Street/Richards Street 24 hours a day/ 7 days a week as part of the 2018/2019 Pilot Program will simplify the program and communication to the public. All other aspects of the 2018/2019 Pilot Program will be similar to that tested in 2015/2016, including lifting restrictions on portions of the HOV system. By opening the HOV lanes, it is anticipated that airport cut-through traffic will be essentially eliminated from influencing the SBBR during the lifting of restrictions as part of the pilot. The key motivation for the 2018/2019 Pilot Program is to fully assess the potential for the SBBR to mitigate recent and continued development and activity in South Boston and associated increased traffic volumes. Additionally, the 2018/2019 Pilot Program will continue to achieve the goal of the SBW STP in exploring the modification of access restrictions along the SBBR to enhance mobility and access within the South Boston Waterfront area and reduce congestion in the South Boston neighborhoods.

The proposed 2018/2019 Pilot Program would include the following components:

- **Cypher Street/Richards Street to West Service Road Access:** Travel would be unrestricted on the SBBR between Cypher Street/Richards Street and West Service Road during all time periods in both directions.
- **SBBR Eastbound (inbound) Access:** Travel would be unrestricted along the SBBR eastbound (inbound) direction from the I-93 Frontage Road system to Cypher Street/Richards Street during all time periods.

The current SBBR westbound (outbound) restriction (i.e., commercial vehicles only) from Cypher Street/Richards Street to the I-93 Frontage Road system would remain at all times. As noted, the SBBR commercial vehicle only restriction in the eastbound (inbound) direction from the I-93 Frontage Road system to Cypher Street/Richards Street would be lifted to allow general traffic 24-hours a day/ 7 days a week.

During the Callahan Tunnel Rehabilitation project in early 2014, access restrictions along the SBBR were also modified. An unintended consequence during that project was the over utilization of the SBBR for access to the Ted Williams Tunnel and Logan Airport by motorists not specifically displaced by the Callahan Tunnel closure. To mitigate this possibility and in an attempt to have the proposed modified access restrictions along the SBBR focused on enhancing access to the South Boston Waterfront area only, the SBBR/HOV Pilot

Re-Evaluation Program also proposes modifications to portions of the current HOV system (as was tested in 2015/2016).

To supplement the SBBR Pilot Program, MassDOT proposes unrestricted use (i.e., open to all vehicles) of the following three components of the HOV system to I-90 eastbound/Ted Williams Tunnel:

- I-93 northbound mainline,
- I-93 northbound Frontage Road, and
- Via Kneeland Street/Lincoln Street.

Lifting the current restrictions on these portions of the HOV system will require the unrestricted use on other associated portions of the HOV system due to the inability to enforce HOV restrictions on portions of the system. As a result, I-93 northbound mainline to South Station and Kneeland Street/Lincoln Street to I-93 southbound mainline would also be open to general traffic during the Pilot Program.

Allowing single occupancy vehicles to utilize the HOV lanes is intended to discourage drivers destined to Logan Airport from using the SBBR during the Pilot Program, thereby reducing the potential use of this roadway by regional traffic and targeting use of the SBBR by South Boston destined traffic only.

The attached technical report provides additional information on the SBBR and HOV restrictions, findings from the 2015/2016 Pilot Program, previously conducted and proposed outreach, and the proposed 2018/2019 Pilot Program and associated monitoring program.

Proposed Post 2018/2019 Pilot Re-Evaluation Program Evaluation

Upon completion of the Pilot Program, MassDOT will return to the existing conditions with the SBBR and HOV systems maintaining restricted use. Upon a complete and thorough evaluation of the Pilot Re-Evaluation Program, MassDOT may elect to pursue permanent implementation of one or all of the components of the proposed Pilot Program. If so, MassDOT will engage in the MEPA and National Environmental Policy Act process and work with Federal Highway on Congestion Mitigation and Air Quality Improvement funding to make the proposed changes permanent, including coordination with the Massachusetts Department of Environmental Protection and MEPA, as well as development of a Notice of Project Change.

2018/2019 Pilot Re-Evaluation Program Schedule

MassDOT will initiate the SBBR and HOV lane Pilot Program with approval no earlier than the beginning of September 2018 and it will continue until August 2019 (or for a 12-month period if the Pilot Program begins after September 2018). MassDOT will perform monitoring at key points throughout the Pilot Program, as defined in the RAO Technical Report.

Mr. Matthew A. Beaton


August 3, 2018

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Request

MassDOT is seeking approval to commence the Proposed Pilot Re-Evaluation Program. Thank you in advance for your review of this request. We look forward to receiving your determination.

Sincerely,

 FOR JONATHAN
Jonathan Gulliver Gulliver

Highway Administrator

cc: Neil Boudreau, Assistant Administrator of Traffic and Safety
Amy Getchell, MassDOT Highway Division
Michael Trepanier, MassDOT Highway Division

Enclosures:

South Boston Bypass Road (SBBR) and High Occupancy Vehicle (HOV) Lanes 2018/2019 Pilot Re-Evaluation Program Technical Report

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August 3, 2018
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**South Boston Bypass Road (SBBR) and High Occupancy Vehicle (HOV) Lanes
2018/2019 Pilot Re-Evaluation Program Technical Report**

South Boston Bypass Road (SBBR) and High Occupancy Vehicle (HOV) Lanes 2018/2019 Pilot Re-Evaluation Program

Technical Report

PREPARED FOR

Massachusetts Department of
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PREPARED BY



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August 3, 2018

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Introduction

The Massachusetts Department of Transportation (MassDOT) is submitting a Request for Advisory Opinion (RAO) to the Massachusetts Environmental Policy Act (MEPA) Office in a letter dated August 15, 2018 related to a proposed 2018/2019 Pilot Program modifying access restrictions along the South Boston Bypass Road (SBBR) and Interstate-93 (I-93) High Occupancy Vehicle (HOV) Lanes. MassDOT prepared this technical report to provide additional information supporting the proposed 2018/2019 Pilot Re-Evaluation Program and RAO. MassDOT requests MEPA's determination on the proposal to conduct a Pilot Re-Evaluation Program that will temporarily modify access restrictions on the SBBR and three HOV system components to I-90 eastbound/Ted Williams Tunnel (TWT). This proposed 12-month Pilot Re-Evaluation Program is intended to build upon the similar six-month 2015/2016 Pilot Program. The program is anticipated to commence on 9/3/2018 and terminate on 8/31/2019.

As part of the Final Environmental Impact Report (FEIR) issued in 1986 for the Third Harbor Tunnel/Central Artery Tunnel (CA/T) Project, the Massachusetts Department of Public Works proposed the SBBR become a limited access route for CA/T construction vehicles and become a South Boston commercial vehicle route to be used after the completion of the tunnel project. MEPA approved the temporary expanded use of the SBBR for taxis, commercial limousines, and buses in 1995.

On October 17, 2013, MassDOT submitted an RAO to MEPA to provide unrestricted use of the SBBR for 2.5 months as mitigation during completion of the Callahan Tunnel rehabilitation work. The Callahan Tunnel rehabilitation was a public safety need due to poor concrete deck and road wearing surface condition, corrosion of curb line and gutter inlets, and wall panel system failure. MassDOT analyzed various construction methods and

ultimately determined that full tunnel closure for 2.5 months was the preferred and safest alternative. The MEPA office approved the temporary lifting of the restriction during the Callahan Tunnel rehabilitation project. The SBBR was opened to all vehicles during the Callahan Tunnel project and restrictions were put back in place following completion of the rehabilitation.

In January 2015, The South Boston Waterfront (SBW) Sustainable Transportation Plan (STP) recommended exploring the modification of access restrictions along the SBBR to enhance mobility and access within the South Boston Waterfront area and decrease congestion in South Boston neighborhoods. The SBBR provides a dedicated roadway for commercial traffic from the I-93 Frontage Road system to West Service Road, reducing commercial vehicle use of South Boston's residential neighborhood streets. The SBBR serves as a connection between I-93, the Massport Haul Road, and I-90's TWT. The approval to lessen access restrictions during the 2014 Callahan Tunnel Rehabilitation project resulted in the over-utilization of the SBBR for airport access/egress, unrelated to traffic displacement from the Callahan Tunnel closure. This resulted in including lifting of access restrictions along the HOV system as part of the 2015/2016 Pilot Program to specifically target airport related traffic.

The six-month pilot program implemented the following components:

- Morning Peak Period SBBR Eastbound (inbound) Access: Travel was unrestricted during the morning peak period only (6:00 AM to 10:00 AM) on the SBBR eastbound (inbound) direction from the I-93 Frontage Road system to Cypher Street/Richards Street.
- Cypher Street/Richards Street to West Service Road Access: Travel was unrestricted on the SBBR between Cypher Street/Richards Street and West Service Road during all time periods in both directions.

The SBBR westbound (outbound) restriction, commercial vehicles only, from Cypher Street/Richards Street to the I-93 Frontage Road system remained in effect throughout the pilot program. Additionally, the SBBR commercial vehicle only restriction in the eastbound (inbound) direction from the I-93 Frontage Road system to Cypher Street/Richards Street remained in effect for all other times of the day outside the morning peak period (6:00 AM to 10:00 AM).

To discourage drivers traveling from I-93 northbound to Logan Airport and locations beyond from using the unrestricted SBBR inbound access during the Pilot Program, MassDOT also implemented unrestricted use, allowing single occupancy vehicles, of the following three components of the HOV system to I-90 eastbound/TWT to supplement these restrictions:

- I-93 northbound mainline.
- I-93 northbound Frontage Road.
- Via Kneeland Street/Lincoln Street.

By lifting the current restrictions on portions of the HOV system stated above, single occupancy vehicles were allowed the HOV system and were able to access all connected portions of the system. Therefore, unrestricted use on associated portions of the HOV system was required due to system connectivity and the difficulty of enforcing HOV

restrictions. As a result, two current additional HOV lanes/movements were also open to general traffic during the 2015/2016 Pilot Program:

- I-93 northbound mainline to South Station.
- Kneeland Street/Lincoln Street to I-93 southbound mainline.

MassDOT submitted an RAO to the MEPA office on June 15, 2015 requesting permission to implement the six-month 2015/2016 Pilot Program as detailed above. MEPA approved the RAO on August 10, 2015. The 2015/2016 Pilot Program was monitored through a comprehensive data collection program conducted at important milestones (1.5 months after implementation, program mid-point, post-program). Informal continuous monitoring and data collection along the SBBR was conducted throughout the 2015/2016 Pilot Program and after its completion to aid in evaluating the effectiveness of the program through temporary installation of radar, microwave, and Bluetooth devices.

MassDOT collected traffic volumes, travel times, and noise measurements in September 2015/October 2015 and in December 2015 during the 2015/2016 Pilot Program. Additional data was also collected in March/April 2016 after completion of the pilot to compare results. Safety data was collected throughout the 2015/2016 Pilot Program and compared to data collected for six months after the pilot completion.

Traffic

Volumes

As part of the 2015/2016 Pilot Program, traffic volume shifts were assessed at 22 roadways/intersections within South Boston at select monitoring time periods (see above), and throughout (by means of temporarily installed devices) the SBBR.

The following changes in usage were observed during the Pilot Program:

Local Roadways

- SBBR between Frontage Road and Richards Street/Cypher Street.
 - Eastbound (inbound): Increases of 65 to 70 percent were observed in the morning peak hour due to the unrestricted access during this time period. Minimal increases were observed in the evening peak hour when restrictions were in effect. Volumes were still significantly below the capacity of the roadway.
 - Westbound (outbound): With restrictions in effect at all times, minimal increases were observed at all times.
- SBBR between Cypher Street/Richards Street and West Service Road.
 - Increases of 10 to 20 percent were observed in the morning peak hour and 15 to 20 percent in the evening peak hour. The similarity in the shifts in volumes during both time periods were due to the unrestricted access in both directions along this segment. Volumes were still significantly below the capacity of the roadway.

- A Street and Cypher Street did not experience significant changes in traffic volumes during the morning and evening peak hours.

HOV Lanes

- Increases of approximately 300 vehicles (a 6 percent increase) were observed during the morning and evening peak hours. Volumes on the HOV lanes were still significantly below the capacity of the roadway.
- The implemented unrestricted use of the HOV system, allowing single occupancy vehicles to use sections of the HOV system to I-90 eastbound/TWT, helped discourage drivers traveling from I-93 northbound to Logan Airport and beyond from using the unrestricted SBBR.

Heavy Vehicles

- No significant changes were observed in heavy vehicle use along the SBBR.

Travel Times

Traffic times were collected continuously along the SBBR throughout the 2015/2016 Pilot Program. Travel times were also collected using field observations along three different routes – general traffic and HOV lanes from I-93 northbound to the TWT, SBBR, and Silver Line from the Silver Line Way Station to Logan Airport Terminal A.

The following changes in travel times were observed during the 2015/2016 Pilot Program:

SBBR – Between I-93 Frontage Road and the Ramp A/I-90 Tunnel Entrance

- Travel times remained largely unchanged when the commercial vehicle only restrictions were lifted.

I-93/I-90 – From I-93 Northbound Exit 20 to I-90 Exit 26

- Significant travel time savings were observed when using HOV lanes as opposed to the general traffic lanes.
- Travel time data indicates HOV lanes continued to be underutilized during the evening peak period.

Silver Line – From Silver Line Way Station to Logan Airport Terminal A

- Travel times remained essentially the same during the morning peak hour and for one monitoring period during the evening peak hour.
- Travel times increases were noted during the December 2015 monitoring when severe congestion was observed along I-93 and I-90.

Operational Elements

Capacity analyses were conducted to establish operating conditions at study intersections. A summary of the results is as follows:

- The majority of the study area intersections operated at Level of Service (LOS) D or better when the 2015/2016 Pilot Program was not in place.
- Two locations, the I-93 northbound Frontage Road/ Massachusetts Avenue Connector and A Street/ West 2nd Street intersections operated at LOS E when the 2015/2016 Pilot Program was not in place.
- While a number of study area intersections experienced a slight increase in delay under the 2015/2016 Pilot Program, none of the increases were above 10 seconds. Five intersections were projected to experience a drop in LOS; however, all of these intersections were projected to operate at LOS D or better under the 2015/2016 Pilot Program.

In addition to the intersection capacity analyses, an evaluation of the I-90 eastbound corridor was conducted to determine if the opening of the SBBR or HOV lanes affected I-90 or the HOV system. This evaluation was conducted using a VISSIM traffic simulation for the morning and evening peak hours. In general, the following conditions were observed both with and without the 2015/2016 Pilot Program in place:

- Minimal queueing along the I-90 eastbound mainline and ramps occurred during the morning peak hour.
- The typical back of the I-90 eastbound mainline rolling queue extended to the I-90 eastbound Exit 25 off-ramp during the weekday evening peak hour.
- During the evening peak hour, the rolling queue on the I-90 eastbound mainline and heavy volume on the I-93 northbound to I-90 eastbound on-ramp results in a rolling queue on the I-93 northbound to I-90 eastbound on-ramp extending back to:
 - The West Fourth Street underpass (September/October 2015 Pilot Program).
 - The I-93 northbound mainline (December 2015 Pilot Program).
 - The I-90 eastbound on-ramp (Non-Pilot Conditions).

Safety

A safety evaluation was conducted for a six-month period prior to 2015/2016 Pilot Program (August 2014 through February 2015) as well as during the duration of the 2015/2016 Pilot Program. MassDOT crash data indicated that eight crashes were recorded prior to the Pilot Program compared to five crashes recorded during the Pilot Program. Although traffic volume increases were observed, the crash data showed that the lifting of restrictions along the SBBR and the HOV lanes did not appear to have any adverse impacts.

Noise

MassDOT's Noise Abatement Policy and Federal Highway Administration's (FHWA) Traffic Noise Model was utilized to evaluate sound levels at nearby sensitive receptors. It was found that the increase in traffic will increase sound levels by up to three decibels at the nearby noise sensitive areas during the morning peak period. The changes in traffic on the SBBR associated with the 2015/2016 Pilot Program resulted in one additional impacted receptor location. However, sound levels were only calculated to increase approximately two dB(A) to approximately three dB(A) during the 2015/2016 Pilot Program, which is

below MassDOT's noise impact criteria of a 10 dB(A) increase. It was concluded that there are no impacts to sensitive receptors associated with traffic changes along the HOV system due to portions of the HOV system being in a tunnel system. Additionally, the segment of the HOV roadway that parallels I-93 and is not part of the tunnel system is expected to result in negligible impacts since the traffic utilizing the HOV lane were already traveling on the I-93 corridor.

Air Quality

A microscale (including carbon monoxide (CO)) and mesoscale (including volatile organic compounds (VOC), nitrogen oxides (NO_x) and carbon dioxide (CO₂)) analysis was conducted to evaluate the air quality impacts of the 2015/2016 Pilot Program on the Boston/South Boston area. Minimal effects on air quality were observed for both microscale and mesoscale levels. The results indicated that VOC and NO_x emissions were reduced by the lifting of restrictions conducted from the Pilot Program. The annual CO₂ generations were estimated to be reduced in the mesoscale area compared to the current operation procedures due to lower idle emissions from reduced delay or congestion. Additionally, the microscale level showed very little to no air quality impacts as a result of the 2015/2016 Pilot Project.

Monitoring

MassDOT collected traffic volumes, travel times, and noise measurements in September 2015/October 2015 and in December 2015 during the 2015/2016 Pilot Program. Traffic volume, speed and limited Origin-Destination (O-D) data was collected along the SBRR throughout the Pilot Program through the use of temporarily installed sensors/devices. Data was also collected in March/April 2016 after completion of the Pilot Program to compare results. Safety data was collected throughout the 2015/2016 Pilot Program and compared to data collected for six months after the pilot completion.

Outreach

Outreach was a critical factor in developing and monitoring the 2015/2016 Pilot Program. As part of the SBW STP, discussion was included on the operations of the SBRR and alternatives considering access restrictions. Stakeholder meetings with MassDOT, the Massachusetts Bay Transportation Authority (MBTA), Massport, Massachusetts Convention Center Authority (MCCA), the Seaport Transportation Management Association (TMA) and the Port Access Group (PAG), as well as public workshops and public information sessions, were conducted.

The public had the opportunity to comment during the six-month 2015/2016 Pilot Program and a total of 17 emails and four phone calls were received. Many comments expressed satisfaction with the 2015/2016 Pilot Program and the temporary lift of HOV lane restrictions. One commenter mentioned that the lift of HOV lane restrictions seemed to relieve congestion at Exit 20. Two other commenters noted that the commuting time improved by up to an hour. A fourth commenter also recommended that HOV lanes could allow use by commercial vehicles to provide better access to Boston-Logan Airport.

2

2018/2019 Pilot Re-Evaluation Program

2.1 Purpose

The 2015/2016 Pilot Program resulted in little to no traffic impact and was well received by the public; however, the limited six-month timeframe did not fully allow for conclusive results on the benefits or impacts that a permanent restriction lift would have on commuters and the surrounding environment. Given the growth in traffic volumes, increase in activity levels, and economic development since the 2015/2016 Pilot Program, MassDOT proposes to re-evaluate the 2015/2016 Pilot Program for an extended 12-month period to gain a better understanding of the potential benefits and impacts that were difficult to conclude during the six-month 2015/2016 Pilot Program.

The 2015/2016 Pilot Program provided somewhat limited data on the potential for a permanent lifting of restrictions as the option to use the roadways may not have been communicated broadly or clearly enough to reach a majority of the traveling public. The goal of the 2018/2019 Pilot Re-Evaluation Program is to clearly communicate and engage the public of the modified use of the SBBR and the HOV system throughout its implementation so there will be the best opportunity to monitor full use of the facility under modified access restrictions. By opening the HOV lanes, it is anticipated that airport cut-through traffic will be essentially eliminated from influencing the SBBR. Additionally, the limited morning peak period (6:00 AM to 10:00 AM) allowance of general traffic along the SBBR eastbound (inbound) from the I-93 Frontage Road system to Cypher Street/Richards Street in the 2015/2016 Pilot Program caused some confusion and unease in drivers regarding how and when to use the SBBR. The 2018/2019 Pilot Re-Evaluation Program proposes 24-hour unrestricted access to general traffic for this eastbound (inbound) portion of the SBBR to

allow for simpler messaging and communication to the public, reduce confusion, and alleviate strict police enforcement that was previously required in the 2015/2016 program outside of the specific restriction-lift timeframes.

A key motivation for the 2018/2019 Pilot Re-Evaluation Program is to fully assess the potential for the SBBR to mitigate recent and continued development and activity in South Boston and associated increased traffic volumes. Additionally, the 2018/2019 Pilot Re-Evaluation Program will continue to achieve the goal of the SBW STP in exploring the modification of access restrictions along the SBBR to enhance mobility and access within the South Boston Waterfront area and reduce congestion in the South Boston neighborhoods.

2.2 Study Area

The study area will be the same as for the 2015/2016 Pilot Program. This study area, shown in Figure 2-1, was determined from information acquired during the closure of the Callahan Tunnel in December 2013 through March 2014, the SBW STP, and input from the PAG, DEP, and MEPA. The study area consists of the SBBR roadway, the I-93 northbound/ Frontage Road northbound/Kneeland Street HOV lanes, I-90 eastbound between I-93 and the TWT, and 22 South Boston roadways/intersections.

2.3 Traffic and Safety

To mitigate potential impacts related to the 2018/2019 Pilot Re-Evaluation Program, MassDOT will follow the same procedure as the 2015/2016 Pilot Program by:

- Conducting a comprehensive monitoring program during the 2018/2019 Pilot Re-Evaluation Program. MassDOT anticipates increasing the number of specific monitoring periods during the Pilot Re-Evaluation Program to three (versus two completed in 2015/2016) to include: Fall (October) 2018, Spring (March/April) 2019, and Summer (June) 2019. As with the previous 2015/2016 pilot, the data collection program will be repeated after the 2018/2019 Pilot Re-Evaluation Program concludes to establish data for comparison. Crash occurrences will be closely monitored, and mitigations measures will be evaluated if an increase is observed.
- Evaluating performance measures throughout the program.
- Implementing real time traffic management system during the program, including volume and speed sensors along the SBBR and portable message boards to convey restrictions and allowances for travel.
- Implementing a comprehensive police deployment and Incident Response Operations (IRO) plan during the program. Monitoring of speed limits will be closely observed as part of the police deployment plan.

Restrictions, as shown in Figure 2-2, will include:

- 24-hour unrestricted access to the SBBR between Cypher Street/Richards Street intersection and the West Service Road in both directions.

- 24-hour unrestricted access to the SBBR eastbound (inbound) from the I-93 Frontage Road system to Cypher Street/Richards Street.
- Unrestricted use (i.e., open to single occupancy vehicles) of the I-90 eastbound/TWT HOV system including its three components, namely (1) the I-93 northbound mainline HOV connection, (2) the I-93 northbound Frontage Road HOV connection and (3) the Kneeland Street/Lincoln Street HOV connection to I-90 eastbound/TWT. By lifting the current restrictions on portions of the HOV system stated above, single occupancy vehicles are now in the HOV system and will be able to access all connected portions of the system. Therefore, unrestricted use on associated portions of the HOV system was required due to system connectivity and the inability to enforce HOV restrictions. As a result, two current additional HOV lanes/movements would also be open to general traffic during the Pilot Re-Evaluation Program including I-93 northbound HOV to South Station and Kneeland Street/Lincoln Street HOV to I-93 southbound mainline.

2.4 Monitoring

MassDOT will follow the 2015/2016 Pilot Program monitoring procedure of collecting data during the 2018/2019 Pilot Re-Evaluation Program and after the Pilot Re-Evaluation Program has been completed. This monitoring program is detailed in Figure 2-3.

Data will be collected continuously along SBBR using temporary volume, speed and O-D (limited) collection devices. Additional volume, speed, travel time, noise, etc. data will be collected at three distinct points during the 2018/2019 Pilot Re-Evaluation Program; Fall (October) 2018, Spring (March/April) 2019, and Summer (June) 2019. A "post" monitoring program will collect similar data following completion of the pilot during the Fall (October) of 2019 to allow for comparisons. The elements of the monitoring program will include:

Vehicular Traffic Counts

Traffic counts will be conducted at the same locations as those identified for the 2015/2016 Pilot Program and illustrated in Figure 2-3. Counts will include:

- Automatic traffic recorder (ATR) traffic volume counts for a continuous 7-day period (with vehicle classification).
- Weekday morning (6:00 AM to 10:00 AM) and evening (3:00 PM to 7:00 PM) peak period turning movement/classification counts (TMC).
- Continuous volumes, speeds and O-D (limited) data monitoring along SBBR.

Travel Time Runs

Travel time runs will be collected using field observations at the following routes:

- General traffic: I-93 northbound to TWT (from I-93 Exit 20 to I-90 Exit 26), via both the general purpose lanes and the HOV lane.
- Commercial traffic: SBBR from the I-93 Frontage Road to Ramp A/Tunnel entrance. Travel times will also be collected using Bluetooth readers on the SBBR.

- Silver Line: from Silver Way Station to Logan Airport Terminal A.

Safety Evaluations

Crash data will be collected, evaluated and analyzed during the Pilot Re-Evaluation Program and compared to non-pilot conditions. The evaluation will focus on number/severity of crashes, truck involvement and other factors relevant to the allowance of mixed traffic on the SBBR and single occupancy traffic on the HOV lanes.

Noise Analysis

The noise assessment will incorporate a noise monitoring program to collect representative level data during three scenarios (twice during the Pilot Re-Evaluation Program and the Non-Pilot Re-Evaluation Program/existing conditions). VHB will conduct a noise assessment following MassDOT's Type I and Type II Noise Abatement Policies and Procedures. The measured data will be used to establish sound levels during each scenario and to assist in the development of the traffic noise model for determining sound levels at nearby sensitive receptor locations within the study area. The noise monitoring program will focus on the potential noise impacts associated with the redirected traffic traveling on the SBBR since the HOV system network of roadways is insulated from noise sensitive areas, as the portions of the roadways through the noise sensitive areas are in a tunnel system.

VHB will conduct noise monitoring at two locations, including 31 West Fifth Street and Flaherty Park at the intersection of "B" Street and West Third Street. Noise measurements will be conducted for a 24-hour period at Flaherty Park during each Pilot Re-Evaluation Program scenario. Measurements at West Fifth Street will be conducted with staff attending the equipment due to risk of interfering with data collection and vandalism. West Fifth Street measurements will occur from 6:00 AM to 10:00 AM and 3:00 PM to 7:00 PM to capture peak period noise levels. VHB will analyze the sound data collected and summarize the results.

VHB will conduct an analysis of the sound levels associated with the various traffic conditions of Pilot Re-Evaluation Program Project (Pilot Re-Evaluation Program and Non-Pilot Re-Evaluation Program). VHB will use FHWA's Traffic Noise Model (TNM) Version 2.5 to analyze sound levels at the nearby sensitive receptor locations. The model input parameters will include roadway geometry, peak hour traffic volumes, vehicle mix, and travel speeds. Since the physical geometry and layout of the SBBR is not being altered, the noise analysis will evaluate the change in sound levels at the sensitive receptor locations due to the shifts in vehicular traffic.

Figure 2-4 illustrates the noise monitoring and receptor locations for the 2018/2019 Pilot Re-Evaluation Program.

Air Quality Analysis

The previous 2015/2016 Pilot Program demonstrated that implementing the elements of the program reduced areawide precursors to ozone, VOCs and NO_x, as well as reduced greenhouse gases/CO₂. VHB will conduct a microscale (hotspot) analysis to confirm that the NAAQS (National Ambient Air Quality Standards) are not exceeded at critical intersections. In addition, a mesoscale (regional) ozone and Greenhouse Gas (GHG) analysis will be conducted

to potentially highlight the regional benefits of implementing the Pilot Re-Evaluation Program.

The microscale analysis will determine the Pilot Re-Evaluation Program's impact on the CO NAAQS. The analysis/screening will be performed for the three Pilot Re-Evaluation Program scenarios (twice during the Pilot Re-Evaluation Program and the Non-Pilot Re-Evaluation Program/existing condition). VHB will prepare input files for the latest version of the EPA's MOVES 2014 emission factor model incorporating Massachusetts specific emission reduction programs. Emission factor modeling will be conducted to generate emission factors. The microscale analysis will calculate the worst-case CO concentrations at up to four intersections (determined based on the traffic operations analyses) to determine the maximum 1-hour and 8-hour CO concentrations at sensitive receptor locations. The EPA CAL3QHC Version 2 model will be utilized for this analysis.

The mesoscale analysis will determine the ozone precursors of VOCs and NO_x as well as mobile source GHG. VHB will assemble all relevant traffic data (including but not limited to roadway and intersection traffic counts and travel time runs) for input data for the ozone and mobile source GHG analysis. VHB will use the MOVES model, developed by EPA's Office of Transportation and Air Quality (OTAQ), to estimate emissions for mobile source ozone and GHG emissions related to the Pilot Re-Evaluation Program. VHB will conduct the mesoscale analysis to estimate emissions of VOC, NO_x and GHG under the three Pilot Re-Evaluation Program scenarios (two Pilot Re-Evaluation Program and Non-Pilot Re-Evaluation Program scenario).

Figure 2-5 illustrates the air quality receptor locations for the 2018/2019 Pilot Re-Evaluation Program.

2.5 Pilot Re-Evaluation Program Evaluation

MassDOT proposes to follow the 2015/2016 Pilot Program performance metrics for the 2018/2019 Pilot Re-Evaluation Program. These metrics would assess the benefits, impacts, and negative results the 2018/2019 Pilot Re-Evaluation Program has on mobility, reliability, and safety. If an evaluation threshold is exceeded, consideration will be given to suspend the 2018/2019 Pilot Re-Evaluation Program. As stated in the 2015/2016 Pilot Program, the performance measures and evaluation thresholds include:

Vehicular Traffic

Establish traffic volume shifts on key roadways including the SBBR, HOV lanes, I-93 and I-90 mainline, HOV and ramps, I-93 Frontage Roads, and select South Boston corridors.

Evaluation Threshold: A comparison of volumes observed during the Pilot Re-Evaluation Program versus existing conditions indicates volumes in excess of the established roadway's capacity.

Travel Time

Identify travel time changes along key routes for general, commercial, and Silver Line traffic.

Evaluation Threshold: A comparison of actual travel time during the Pilot Re-Evaluation Program versus existing conditions indicates a notable increase in travel time. MassDOT will coordinate and communicate with impacted users of these facilities to evaluate whether this increase represents a hardship to a degree that would lead to consideration of cancelling the program.

Operational Elements

Establish operational impacts (changes to delay, LOS and/or queuing) at critical intersections/ramps.

Evaluation Threshold: A comparison of intersection delay, queuing and LOS during the Pilot Re-Evaluation Program versus existing conditions indicates a change in delay that results in a drop in LOS to overall LOS E (55 seconds per vehicle) or LOS F (80 seconds per vehicle) and/or observed queuing that extends through adjacent locations. (Existing locations that provide for LOS E or F during peak periods will be evaluated based on the queuing criteria detailed above).

Air Quality

Quantify air quality impacts (changes to CO) at critical intersections/ramps.

Evaluation Threshold: Intersections that exceed the NAAQS standard for 1 hour and/or 8 hour CO and that degrade to LOS E or F during the Pilot Re-Evaluation Program. Vehicular traffic counts and travel times will be used to conduct a regional (mesoscale) air quality analysis post Pilot Re-Evaluation Program.

Noise

Quantify noise impacts (changes to hourly Leq) at sensitive receptor locations.

Evaluation Threshold: An increase greater than 10 dB(A) (MassDOT noise impact criteria) in noise levels versus existing conditions.

Safety

Safety impacts (increases in crashes) at critical intersections/roadways.

Evaluation Threshold: MassDOT will closely monitor the crash occurrence along the SBBR and the HOV system during the Pilot Re-Evaluation Program. If a marked increase in crash frequency and/or severity is noted MassDOT will evaluate potential mitigation measures and if these actions fail to address the situation MassDOT will consider canceling the program.

2.6 Regulatory Overview

MassDOT will coordinate with the Federal Highway Administration (FHWA) on this Pilot Re-Evaluation Program. As part of the 2015/2016 Pilot Program, MassDOT submitted an RAO to MEPA and prepared a technical report for approval. This approach will be followed for the 2018/2019 Pilot Re-Evaluation Program. During the 2015/2016 Pilot Program, MassDOT and MassDEP determined that the HOV lanes included in the Pilot Program are not covered by 310 Code of Massachusetts Regulations (CMR) Section 7.37. The SBBR and HOV lanes, however, were constructed as mitigation commitments associated with the CA/T project. Any

permanent lifting of restrictions would require a Notice of Project Change under MEPA, as well as a National Environmental Policy Act (NEPA) Re-evaluation. Funding for the HOV lanes was provided by FHWA through the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. If the restrictions are permanently lifted from the HOV lanes, MassDOT will coordinate with FHWA on the future reallocation of CMAQ funds.

3

Infrastructure

3.1 South Boston Bypass Road

The SBBR is a two-lane, limited access roadway maintained by MassDOT providing a connection from the regional highway system (I-93) to the South Boston industrial properties and Logan Airport/Route 1A/East Boston via I-90/TWT. The roadway is limited to commercial truck traffic and buses only and serves to divert these vehicles from travelling on South Boston's residential neighborhood streets. The majority of the SBBR was built within a depressed railroad right-of-way (it is adjacent to Track 61) and was designed to reduce emissions from idling vehicles. The SBBR has an alarm and spill collection system to address the potential for accidents involving hazardous cargo.

The SBBR was proposed and constructed as a mitigation measure associated with the CA/T project. The SBBR served the purposes of:

- Mitigating construction traffic during the CA/T construction phase.
- Providing an improved truck and commercial service vehicle route after the CA/T was completed.
- Reducing both construction and commercial traffic from South Boston's local and residential streets.
- Improving air quality.

The SBBR is approximately 1.3 miles in length from the I-93 Frontage Road in the west to the I-90/TWT portal to the east. The roadway consists of two 12-foot wide travel lanes (one in

each direction) with two 6-foot wide shoulders, dependent on location along the SBBR. The posted speed limit along the SBBR is 30 miles per hour.

Intersections

The majority of the SBBR within the study area is grade-separated and therefore does not intersect South Boston streets. Existing traffic control at the five intersections along the SBBR within the study area is noted below:

- I-93 Frontage Road southbound at the SBBR – signalized.
- I-93 Frontage Road northbound at the SBBR – signalized.
- SBBR at Cypher Street/Richards Street – signalized.
- SBBR at West Service Road – signalized.
- SBBR at Massport Haul Road/I-90 Ramps – signalized.

An additional intersection along the SBBR is located at an MBTA property driveway (Haul Road) west of Dorchester Avenue. The MBTA driveway at this intersection is blocked with jersey barriers. (This blocked intersection was not included in the 2015/2016 pilot analysis.)

Capacity

A comparison between SBBR's capacity and its traffic volumes indicates that significant excess capacity is available (see Table 1). Based on an evaluation of the existing roadway geometry, traffic control, and demand characteristics, the eastbound capacity (i.e., one direction) of the SBBR within the study area is approximately 1,340 vehicles per hour during the morning peak hour and 1,600 vehicles per hour during the evening peak hour. The westbound capacity of the SBBR within the study area is approximately 1,400 vehicles per hour during the morning peak hour and 1,540 vehicles per hour during the evening peak hour.¹ The higher evening capacity is reflective of the reduced number of heavy vehicles on the SBBR during the evening. *[The maximum capacity for a two-lane highway is 1,700 passenger vehicles per hour per lane direction or 3,400 vehicles per hour total both directions.² These ideal capacities are adjusted for various factors such as the percent of heavy vehicles, lane width (if less than 12 feet), clear shoulder width (if less than six feet), grades, etc.]*

¹ South Boston Bypass Road Access Restriction Modification Memorandum; Vanasse & Associates, Inc. (VAI) September, 6, 2013.

² 2010 Highway Capacity Manual; Transportation Research Board; Washington, D.C.

Table 1 SBBR Traffic Volume Summary

Location	Daily ^a Weekday	Weekday Morning Peak Hour (9:00 – 10:00 AM)			Weekday Evening Peak Hour (3:00 – 4:00 PM)			
		Capacity ^b	Volume ^c	K Factor ^d	Capacity	Volume	K Factor	
SBBR (under West 2nd St)	EB	2,240	1,340	160	7.1%	1,600	110	4.9%
	WB	<u>1,745</u>	<u>1,400</u>	<u>115</u>	<u>6.6%</u>	<u>1,540</u>	<u>145</u>	<u>8.3%</u>
	Total	3,980	2,740	275	6.9%	3,140	255	6.4%

Source: Based on automatic traffic recorder (ATR) counts conducted by MassDOT in March 2013.

a average daily traffic (ADT) volume expressed in vehicles per day

b Based on data presented in South Boston Bypass Road Access Restriction Modification Memorandum; Vanasse & Associates, Inc. (VAI); September 6, 2013.

c peak period traffic volumes expressed in vehicles per hour

d percent of daily traffic that occurs during the peak period

Drainage

Drainage along the SBBR is collected through three subsurface closed drainage systems. The first drainage network starts at the crest of the bridge at the Amtrak tracks and travels west towards Frontage Road. Scuppers are located approximately every 200 feet and are connected to drain leaders at the piers. All of the stormwater from these drain leaders connect into Widett Circle which eventually discharges to the Roxbury Conduit/Fort Point Channel.

The second drainage network, which is from the Amtrak tracks to Summer Street Overpass, is made up of two main lines that come from different directions draining to a low point at the Dorchester Avenue underpass. The system is a network of deep sump catch basins with hoods directed to manhole structures. Across from West Service Road, a 20,000-gallon oil-water separator was constructed. At the Dorchester Avenue underpass, a grit/rack structure and a pump station was constructed to pump the stormwater through a force main to the Roxbury Conduit/Fort Point Channel.

The third drainage network, which is from the Summer Street Overpass to the I-90 on ramp, drains to the east through a series of deep sump catch basins with hoods directed to manhole structures. All of the stormwater from this network discharges directly to the Boston Harbor in South Boston.

3.2 High Occupancy Vehicle Lanes

A network of HOV-only on- and off-ramps connect traffic to/from I-90, I-93, South Station, and surface streets: an HOV lane from the I-93 northbound mainlanes to I-90 eastbound (toward the TWT); from I-93 northbound Frontage Road to I-90 eastbound; from Kneeland Street/Lincoln Street to I-93 southbound (toward the Southeast Expressway) and to I-90 eastbound (toward the TWT); and from both I-90 eastbound and westbound to the South Station bus terminal. Only three components of the HOV system were part of the 2015/2016

pilot program, namely those providing access to I-90 eastbound (toward the TWT): from I-93 northbound mainline, I-93 northbound Frontage Road, and Kneeland Street/Lincoln Street.

The HOV lane from the I-93 northbound mainline to I-90 eastbound starts approximately at the Massachusetts Avenue connector. This is a limited access facility maintained by MassDOT, separated from the unrestricted traffic by a concrete median. The roadway consists of an approximate 18-foot travel lane with two, approximately two-foot shoulders. In the vicinity of West Fourth Street/East Berkley Street, it splits into two lanes: the right one leading to South Station, while the left one leads to I-90 eastbound. A 45-miles per hour speed limit sign is posted near Albany Street/ Randolph Street.

Access to the HOV system from I-93 northbound Frontage Road originates at the Frontage Road/West Fourth Street/West Broadway signalized intersection. This is a limited access facility maintained by MassDOT, which merges with the mainline HOV lanes approximately 650 feet to the north. This roadway consists of an approximate 17-foot wide travel lane with two, approximately 2-foot wide shoulders. No posted speed limit signs are present.

Access to the HOV system from Kneeland Street/Lincoln Street starts at the signalized intersection of Kneeland Street at Lincoln Street, and crosses the South Station connector at a signalized intersection, from which it can also be accessed. The roadway has two approximate 12-foot lanes with two approximately two-foot shoulders prior to its split, where one lane proceeds to I-93 southbound and one lane proceeds to I-90 eastbound. Approximately 375 feet after the split, the I-90 eastbound HOV lane merges with the I-93 northbound HOV lanes. No speed limit signs were observed.

After the I-93 northbound and Kneeland Street/Lincoln Street HOV lanes merge, two approximate 12-foot wide lanes with two, approximately 2-foot wide shoulders are present into the tunnel under the Fort Point channel where they again merge into one 12-foot lane with a two-foot shoulder on the right side and a seven-foot wide shoulder on the left side. The HOV lane is separated from the general traffic lane by a concrete median. These same characteristics are present along the remainder of the HOV lane until it merges with I-90 eastbound mainline traffic in South Boston. The posted speed limit on this section of the HOV is 35 miles per hour.

Three components of the HOV system to I-90 eastbound/TWT were part of the 2015/2016 Pilot Program: ramp access to the HOV system from I-93 northbound mainline, I-93 northbound Frontage Road, and Kneeland Street/Lincoln Street.

Lifting the current restrictions on the three components of the HOV system listed above will also require the unrestricted use on associated portions of the HOV system due to system connectivity and the inability to enforce HOV restrictions (i.e., once a single occupancy vehicle is in the system it will have access to all connected portions of the system). As a result, two current additional HOV lanes/movements would also be open to general traffic during the pilot program:

- I-93 northbound mainline to South Station.
- Kneeland Street/Lincoln Street to I-93 southbound mainline.

Similar to the SBBR in South Boston, these HOV lanes were constructed as a mitigation measure associated with the CA/T project.

Capacity

Capacity of the I-90/TWT HOV lane is estimated to be 1,800 vehicles per hour (see Table 2), indicating that significant excess capacity exists.

Table 2 HOV Lanes Traffic Volume Summary

Location	Capacity (vph) ^a	Weekday Morning Peak Hour Estimated Volume ^b	Weekday Evening Peak Hour Estimated Volume
I-93 NB Mainline HOV	1,800	70	130
I-93 NB Frontage Rd HOV	1,800	70	80
Kneeland St/ Lincoln St HOV	<u>1,800</u>	<u>15</u>	<u>115</u>
Combined I-90 EB HOV	1,800	155	325

^a Based on 2000 HCM Exhibit 25-3: Approximate Capacity of Ramp Roadways for a Single Lane Ramp

^b Total HOV Volume in Evening Peak Hour based on counts conducted by VHB for Mohegan Sun Massachusetts Casino application in December 2013. Other volumes estimated based on CTPS 2013 model and the evening peak hour count.

3.3 Roadway System Modifications

A few notable roadway-related modifications were implemented in the South Boston Waterfront area since the 2015/2016 Pilot Program.

➤ AET Implementation

MassDOT implemented All-Electronic Tolling (AET) in October 2016, impacting the Boston Harbor tunnel crossings, which use the EZPass toll collection system. This effort included demolishing the toll booths at the Sumner Tunnel toll plaza and the TWT Toll Plaza, and I-90. Sumner and Williams Tunnels were \$3.50/\$3.00 cash/EZpass to travel westbound, until October 2016, when it switched to gantries (\$1.50 each direction for EZPass MA holders). (This did not result in any change in the total toll charges for use of tunnel.)

➤ “Performance Parking” Pilot Program

The City of Boston conducted a Performance Parking pilot study in 2017 to test variable parking rates at on-street parking meters in the South Boston Waterfront and the responding parking demand. During the one-year pilot, parking meter rates in the area were adjusted according the average occupancy of the parking spot. Results indicated that there was a one percent increase in parking availability and a substantial decrease in

illegal parking. The performance parking pilot also increased parking availability for neighborhood residents, as illegal parking in resident spots declined by 35 percent.

On July 2, 2018, the City of Boston raised fines for parking in violation of eleven regulations. The fines to be increased reflect those violations that: most negatively impact Boston residents, are most frequently violated, and are a source of traffic congestion and safety issues on Boston's streets.

➤ Thomas Butler Freight Corridor (2017) Construction

In September 2017, Massport completed the \$75 million Thomas Butler Freight Corridor, a dedicated roadway which includes a 500-foot long bridge over the Reserved Channel to remove Conley Terminal container truck traffic from South Boston neighborhood streets. This project is an important component for future anticipated activity at the port: with the ongoing Boston Harbor Dredging Project, the Reserve Channel, where Conley Container Terminal is located, will be accessible to 12,000-TEU³ ships up from the current 8,500-TEU ships.

In addition to recent roadway changes, a few ongoing/planned modifications on local and regional roadways may have some impact to South Boston traffic in the near-term.

➤ Adaptive Signal Control Installation

MassDOT, in partnership with City of Boston and Massport, is embarking on the installation of adaptive signal controls at almost 40 intersections in South Boston. These "smart signals" automatically adjust timing in ways that respond better to the vehicle volumes and traffic flows. State-of-the art signals are able to give green lights to arriving transit and emergency vehicles, calculate green wave patterns that allow people biking and driving to stop less frequently, communicate with autonomous cars, and give more walk time at crossings when sidewalk crowding is an issue.

➤ Tobin Bridge Deck Repair and Chelsea Viaduct Rehabilitation

Repair work on the Tobin Bridge deck has begun, with temporary lane closures on Route 1 expected through 2020. MassDOT is coordinating the Chelsea Viaduct work (to begin in 2019) with the Tobin project's construction period to shorten the overall period of traffic impacts.

➤ North Washington Street Bridge Construction

MassDOT will soon commence work on the North Washington Street Bridge Replacement Project. MassDOT expects the construction to span early fall 2018 through at least 2022, during which traffic disruptions and temporary changes to travel patterns are expected. Ultimately, the new bridge will have restored vehicle lanes, a dedicated bus lane, physically separated bicycle lanes, and wide sidewalks that serve the Freedom Trail.

³ Twenty-foot Equivalent Unit (TEU), a measure used to describe a ship's cargo carrying capacity.

3.4 Transit System Modifications

Since the 2015/2016 Pilot Program, two notable transit-related modifications were implemented to improve travel to and from the South Boston Waterfront area.

In 2016, MCCA, working with the Seaport TMA and major local employers, initiated a shuttle service that consolidated various employer-run private shuttles for their employees. The shuttles now transport employees from both North Station and South Station to their work destinations in the Seaport district.

Recently, in April 2018, the MBTA introduced its new Silver Line service, SL3, by operating a route to East Boston and Chelsea from South Station via the Transitway. The SL3 serves the City of Chelsea (including a connection at the commuter rail station on the Newburyport/Rockport line) at four stations along a dedicated, bus-only route, and East Boston at Airport Station (which offers a connection to the Blue Line and Massport's airport shuttles).

In addition, the MBTA has implemented a few changes to its Route 7 bus service, which connects the South Boston neighborhood to Boston's financial district via Summer Street, by increasing the number of morning inbound and evening outbound trips. The MBTA and the City of Boston continue to explore how to best use Summer Street to enhance bus service.

3.5 Other South Boston Transportation Activities

A few ongoing transportation-related activities are worth noting, as these could have an effect on traffic and travel patterns in the South Boston Waterfront area.

Massport is constructing the South Boston Waterfront Transportation Center (SBWTC), a facility that will provide nearly 1,600 new parking spaces and add multi-modal amenities for the Seaport at Waterside Place. The \$75 million project includes the construction of a nine-level, 650,000 square foot parking garage partially over the existing Interstate 90 tunnel structure built by the CA/T on Massport's Core Block parcel in South Boston.

Testing of new Red Line train cars along Track 61 (between Cypher Street and the delivery train tracks at Cabot Yard) will begin in 2019. The project includes adding a 6,000 square foot vehicle shed at the southeast corner of Cypher Street at the SBBR. Within the shed, employees will test HVAC, utilities, make minor modifications, test communications and security. Traffic disruptions from the testing process are not expected.

The effect of ride-hailing services (provided by transportation network companies (TNCs), such as Uber and Lyft, on traffic and travel behavior is not fully understood. However, the increases in travel that occur using this mode cannot be ignored. According to data released by the Massachusetts Department of Public Utilities (DPU), in the year 2017 a total of 34.9 million rides originated in Boston (and 35.2 million rides were destined for Boston)—the most of any municipality in the state. That equates to nearly 100,000 trips a day in the city. Over 14 percent of air passengers traveling to Logan Airport used a TNC for their ground-access trip, according to Massport's 2016 triennial Logan Airport Air Passenger Survey.

4

Economic Development and Growth

4.1 Land Use and Development

The Fort Point Channel area, Fan Pier, Seaport Square, Commonwealth Flats, Boston Marine Industrial Park, and the D Street corridor, are among the development areas with parcels still undergoing changes in land use (Figure 4-1). From the construction of new buildings to the rehabilitation of existing buildings, new offices, hotels, stores, restaurants, and residences are being added to the South Boston Waterfront neighborhood (aka Seaport district).

Since the last pilot of the SBBR and HOV ramps, in 2016 and 2017 real estate developers opened 1.5 million square feet of new commercial office space, adding to the inventory of 9.5 million square feet of commercial real estate available in the Seaport district.⁴ Presently, an additional 6.1 million square feet of new office, hotel, residential, and retail space is under construction.⁵ According to the BPDA, while the Back Bay commercial district continues to have the highest commercial rents, on average, the Seaport District has had the most square footage added since 2014, and it accounts for nearly 15 percent of Boston's commercial

⁴ Figures from: Boston Planning & Development Agency (BPDA), Research Division, *Boston's Economy Report*, May 2018.

⁵ BPDA Development website www.bostonplans.org/projects/development-projects; and MassBuilds website www.massbuilds.com.

office space inventory. In addition, the Seaport has experienced decreasing vacancy rates for its commercial development: reduced from 7.3 percent (FY 2016, 4th Quarter) to 5.5 percent (FY 2017, 4th Quarter).

City-wide jobs located in Boston have risen to their highest level since employment data became available in 1969. From 2015 to 2016, Boston's total payroll and non-payroll jobs increased 3.2 percent to 794,038, continuing the trend of strong job growth since 2010.⁶ The number of jobs in the Seaport has increased year-after-year over the past several years; most recent figures place that figure at over 41,500 primary jobs in Seaport.⁷ About 32 percent of payroll jobs are in professional, scientific and technical services—the highest share [of those job categories] among Boston neighborhoods. BPDA estimates that almost 80 percent of the jobs are held by commuters from outside Boston.⁸

4.2 Activity Levels

By reviewing activity levels at various Massport facilities, we can see that the region's economic activity continues to grow. In 2017, Logan Airport air passenger levels hit a record 38.4 million, a 6 percent increase from 2016. In anticipation of current demands and continued growth in air travel, Massport opened three new gates in Terminal E last year and it continues its Terminal E modernization project. The Flynn Cruiseport at Black Falcon Terminal handled over 388,000 passengers during the 2017 cruise ship season, an increase of 25 percent over 2016's levels. The Port of Boston's Conley Terminal processed over 270,000-TEU⁹ shipping containers, an increase of 9 percent over 2016.

4.3 Traffic Activity & Safety

All the economic growth occurring in South Boston has translated into traffic volume increases, which are putting additional pressure on the already congested roadway network. Since the previous 2015/2016 Pilot Program, increases in traffic volumes were observed on A and D Streets during the morning and evening peak hours. Streets that had lower levels of traffic volumes prior to developments, such as Richards and Cypher Streets, experienced even higher growth in traffic volumes.

Peak hour volume increases were also observed on the SBBR, with the highest increases occurring on the segment between Cypher Street/Richards Street and West Service Road.

Tables 3 and 4 illustrates volume growth trends since the previous Pilot Program.

⁶ Boston Planning & Development Agency (BPDA), Research Division, *Boston's Economy Report*, May 2018.

⁷ A "primary job" for an individual is defined as the job that earned the individual the most money; constructed this way, the number of primary jobs should be equal to the number of workers. Source: U.S. Census, LEHD Origin-Destination Employment Statistics (LODES).

⁸ *Commuter Flows—Employment and Residence Patterns in Greater Boston*, Boston Redevelopment Authority Research Division, August 2016.

The primary data for this report come from the Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) data from the U.S. Census Bureau, covering period 2011-2014.

⁹ Twenty-foot Equivalent Unit (TEU).

Table 3 SBBR Morning and Evening Peak Hour Traffic Volume Growth (2016 to 2017)

Location	Traffic Volumes		Change
	March/April 2016	June 2017	
SBBR, west of West 2nd St			
<i>AM Peak Hour</i>			
Eastbound	185	175	-10 (-5%)
Westbound	<u>90</u>	<u>110</u>	<u>20 (22%)</u>
Total	275	285	10 (4%)
<i>PM Peak Hour</i>			
Eastbound	110	130	20 (18%)
Westbound	<u>70</u>	<u>85</u>	<u>15 (21%)</u>
Total	180	215	35 (19%)
SBBR, east of Cypher St/ Richards St			
<i>AM Peak Hour</i>			
Eastbound	310	435	125 (40%)
Westbound	<u>250</u>	<u>410</u>	<u>160 (64%)</u>
Total	560	845	285 (51%)
<i>PM Peak Hour</i>			
Eastbound	245	555	310 (127%)
Westbound	<u>375</u>	<u>535</u>	<u>160 (43%)</u>
Total	620	1,090	470 (76%)
SBBR, west of Haul Road/ I-90 Ramps			
<i>AM Peak Hour</i>			
Eastbound	335	335	0 (0%)
Westbound	<u>245</u>	<u>310</u>	<u>65 (27%)</u>
Total	580	645	65 (11%)
<i>PM Peak Hour</i>			
Eastbound	670	785	115 (17%)
Westbound	<u>265</u>	<u>235</u>	<u>-30 (-11%)</u>
Total	935	1,020	85 (9%)

Table 4 Local Streets Morning and Evening Peak Hour Traffic Volume Changes (2016 to 2017)

Location	Traffic Volumes		Change
	March/April 2016	June 2017	
A St, east of Richards St			
AM Peak	795	890	95 (12%)
PM Peak	880	840	-40(-5%)
D St, east of Cypher St			
AM Peak	515	560	45 (9%)
PM Peak	430	595	165(38%)
Richards St, south of A Street			
AM Peak	235	330	95 (40%)
PM Peak	230	475	245(107%)
Cypher St, south of SBBR			
AM Peak	380	555	175 (46%)
PM Peak	380	565	190(51%)

In addition to the local street network, the regional roadway system has also experienced increases in traffic volumes. Most of these roadways (e.g., I-90) are already operating at or near capacity during the peak periods, therefore minimal additional traffic can be accommodated at these times. However, daily traffic volume data (shown in Table 5 below) indicate that volumes observed in 2018 for the I-90/TWT and the Sumner/Callahan Tunnels were higher than those recorded in 2017.

Table 5 Regional Roadways Daily Traffic Volumes (2017 to 2018)

Location	Traffic Volumes		Change
	April 2017	April 2018	(2017 - 2018)
Ted Williams Tunnel (AET 14)			
2-way traffic	95,470	97,690	2,220 (2%)
Sumner/Callahan Tunnels (AET 16)			
Northbound (Callahan)	31,905	33,670	1765 (6%)
Southbound (Sumner)	<u>36,615</u>	<u>39,650</u>	<u>1,390 (8%)</u>
Total	68,520	73,320	4,800 (7%)

Source: MassDOT. Traffic Volume Portal

As can be seen in Table 6 (below), the trend on the SBBR has shown a decrease in the number of reported crashes in the past few years.

Table 6 SBBR Crashes (2014 to 2016)

Year	Number of Crashes
2014	16 (4 during Callahan Tunnel Closure)
2015	10 (4 during Pilot Program)
2016	7 (0 during Pilot Program)

Source: MassDOT Crash Data Portal

5

Outreach

5.1 South Boston Waterfront Sustainable Transportation Plan (SBW STP)

The SBW STP conducted a substantial public outreach effort, which included discussions regarding operations along the SBBR and various alternatives on access restrictions. Stakeholder meetings with MassDOT, the MBTA, Massport, MCCA, the Seaport TMA, and PAG, as well as public workshops and public information sessions, were completed. Discussions were related to where the restrictions should be lifted on the SBBR, and the time of day restrictions. There was general support from the public and stakeholders to modify access restrictions on the SBBR, indicating that this could alleviate congestion in neighborhoods and provide additional access between the neighborhood and the waterfront. Those in support of keeping the restrictions referenced the limited number of access points to the port and the lack of freight-rail connections.

5.2 2015/2016 Pilot Program Public Outreach Results

The 2015/2016 Pilot Program was discussed with MassDOT and the PAG on February 11, 2015 where goals were presented, and the HOV lane and restriping was proposed. MassDOT requested feedback from the PAG on the traffic monitoring program and on travel time projections and thresholds. Key success indicators were also discussed, as well as available traffic and cargo data, time of year traffic and cargo volume peaks. Additional outreach to particular areas of the South Boston residential community was recommended by the PAG. MassDOT held nine additional meetings or conference calls with the PAG to provide status

updates, present initial results, and obtain feedback. On April 5, 2016, MassDOT held a Public Information Meeting to present background and project process information, as well as preliminary findings from the SBBR and HOV Pilot Program results and next steps.

During the six-month 2015/2016 Pilot Program, a total of 17 emails and four phone calls were received. Many comments expressed satisfaction with the 2015/2016 Pilot Program and the temporary lift of HOV lane restrictions. One commenter mentioned that the lift of HOV lane restrictions seemed to relieve congestion at Exit 20. Two other commenters noted an improvement of up to an hour in commuting time. A fourth commenter also recommended that HOV lanes could allow use by commercial vehicles to provide better access to Boston-Logan Airport.

5.3 2018/2019 Pilot Re-Evaluation Program Outreach

For the 2018/2019 Pilot Re-Evaluation Program, MassDOT will conduct outreach with regulatory agencies, SBBR users, seaport area businesses and residents, and the public to both raise awareness of the program as well as to report back on usage and traffic associated with the program. MassDOT will seek input from seaport businesses, the MBTA, the City of Boston, Massport (including tenants), A Better City, MCCA, the Seaport TMA, and PAG, as well hold public workshops and public information sessions.

Specific community outreach will include these neighborhoods and municipalities:

- › South Boston.
- › The South Shore (Braintree, Cohasset, Duxbury, Hanover, Hingham, Holbrook, Hull, Marshfield, Norwell, Pembroke, Rockland, Scituate, and Weymouth).
- › West Roxbury.
- › Jamaica Plain.
- › Milton.

Other organizations MassDOT will engage with include:

- › Boston Marine Park Business Association.
- › Mass Commute.
- › South Boston Chamber of Commerce.
- › Boston Chamber of Commerce.
- › South Shore Chamber of Commerce.
- › Milton Chamber of Commerce.

MassDOT will use variable message boards, digital billboards, advertisements on commuter rail trains, website postings, and printed media, such as local newspapers, to advertise the changes to the roadway restrictions as proposed in the 2018/2019 Pilot Re-Evaluation Program. MassDOT will also provide information in the form of written notices to neighborhood associations such as City Point, West Broadway, SVLENA (St. Vincent's Lower End), Dorchester Heights, Gate of Heaven, Andrew Square, Cityside, and Fort Point.

6

Conclusion

The request to the MEPA office on determination to implement a 12-month Pilot Re-Evaluation Program lifting traffic restrictions on the SBBR and HOV system includes:

- Allowing unrestricted 24-hour access to the SBBR between Cypher Street/Richards Street intersection and the West Service Road in both directions at all times.
- Allowing unrestricted 24-hour access to the SBBR eastbound (inbound) from the I-93 Frontage Road system to Cypher Street/Richards Street.
- Allowing unrestricted use (i.e., open to single occupancy vehicles) of the I-90 eastbound/ TWT HOV system including its three components, namely (1) the I-93 northbound mainline HOV connection, (2) the I-93 northbound Frontage Road HOV connection and (3) the Kneeland Street/Lincoln Street HOV connection to I-90 eastbound/TWT. Lifting the current restrictions on the portions of the HOV system listed above will also require the unrestricted use on associated portions of the HOV system due to system connectivity and the inability to enforce HOV restrictions (i.e., once a single occupancy vehicle is in the system it will have access to all connected portions of the system). As a result, two current additional HOV lanes/movements would also be open to general traffic during the Pilot Re-Evaluation Program including I-93 northbound HOV to South Station and Kneeland Street/Lincoln Street HOV to I-93 southbound mainline.

The extended time (12-months) of the 2018/2019 Pilot Re-Evaluation Program will allow for greater and clearer public outreach and messaging of the details of the program, as well as

more comprehensive collection/evaluation of results to assess the impacts the lifting of restrictions have on traffic operations and safety within South Boston. This is especially important given the increased traffic activity and economic growth in the Seaport area since the 2015/2016 pilot. MassDOT would like the opportunity to assess if an increased utilization of the SBBR and HOV lanes will help accommodate and mitigate the growth rates experienced within South Boston. The limited morning peak period allowance of general traffic along the SBBR eastbound (inbound) from the I-93 Frontage Road system to Cypher Street/Richards Street in the 2015/2016 Pilot Program caused confusion and unease in drivers on how and when to use the SBBR. The proposed 24-hour unrestricted access of this inbound (eastbound) portion of the SBBR for the 2018/2019 Pilot Re-Evaluation Program will allow for simpler messaging and communication to the public, reduce confusion, and alleviate strict police enforcement that would have been required to monitor the specific timeframes (outside of the 6:00 AM-10:00 AM window). Additionally, a refined public communication approach will lead to a more successful utilization of the unrestricted SBBR and HOV system for a comprehensive data set and determination on the success or failure of this action.

Although Air and Noise analyses concluded little to no significant impact due to the 2015/2016 Pilot Program, additional data collection will allow for the conclusiveness of these findings. The previous Pilot Program demonstrated that implementing the elements of the program reduced areawide precursors to ozone, VOCs and NO_x, as well a reduced greenhouse gases/CO₂. VHB will conduct a microscale (hotspot) analysis to confirm that the NAAQS are not exceeded at critical intersections. In addition, a mesoscale (regional) ozone and GHG analysis will be conducted to potentially highlight the regional benefits of implementing the Pilot Re-Evaluation Program. The major contributor to noise levels from roadway traffic is typically associated with trucks (one truck at 55 miles per hour = 28 cars at 55 miles per hour). Since SBBR is currently used by trucks (commercial vehicles), introducing additional passenger cars to the corridor should have minimal impact to existing levels. Additionally, doubling the number of noise sources would generally increase sound levels by three decibels.

This Pilot Program will also aid in mobility and access enhancements within the South Boston Waterfront area, a goal of the SBW STP.

As part of the 2018/2019 Pilot Re-Evaluation Program, MassDOT will:

- Conduct a comprehensive Monitoring Program during and after the Pilot Re-Evaluation Program.
- Conduct a comprehensive public outreach effort to ensure the public is aware of the access restriction modifications for full implementation of the SBBR and HOV system.
- Establish Performance Metrics to evaluate the success of the Pilot Re-Evaluation Program
- Establishing Evaluation Thresholds that if exceeded, would result in consideration for the termination of the Pilot Re-Evaluation Program.

- Implement geometric and signal improvements to optimize operations prior to the Pilot Re-Evaluation Program, if necessary.
- Implement extensive signage and striping modifications, real time traffic management and incident response operation plans prior to Pilot Re-Evaluation Program.
- Provide a comprehensive Police Deployment plan throughout the study area to facilitate traffic flow, enhance safety and enforce remaining access restrictions.

Figures

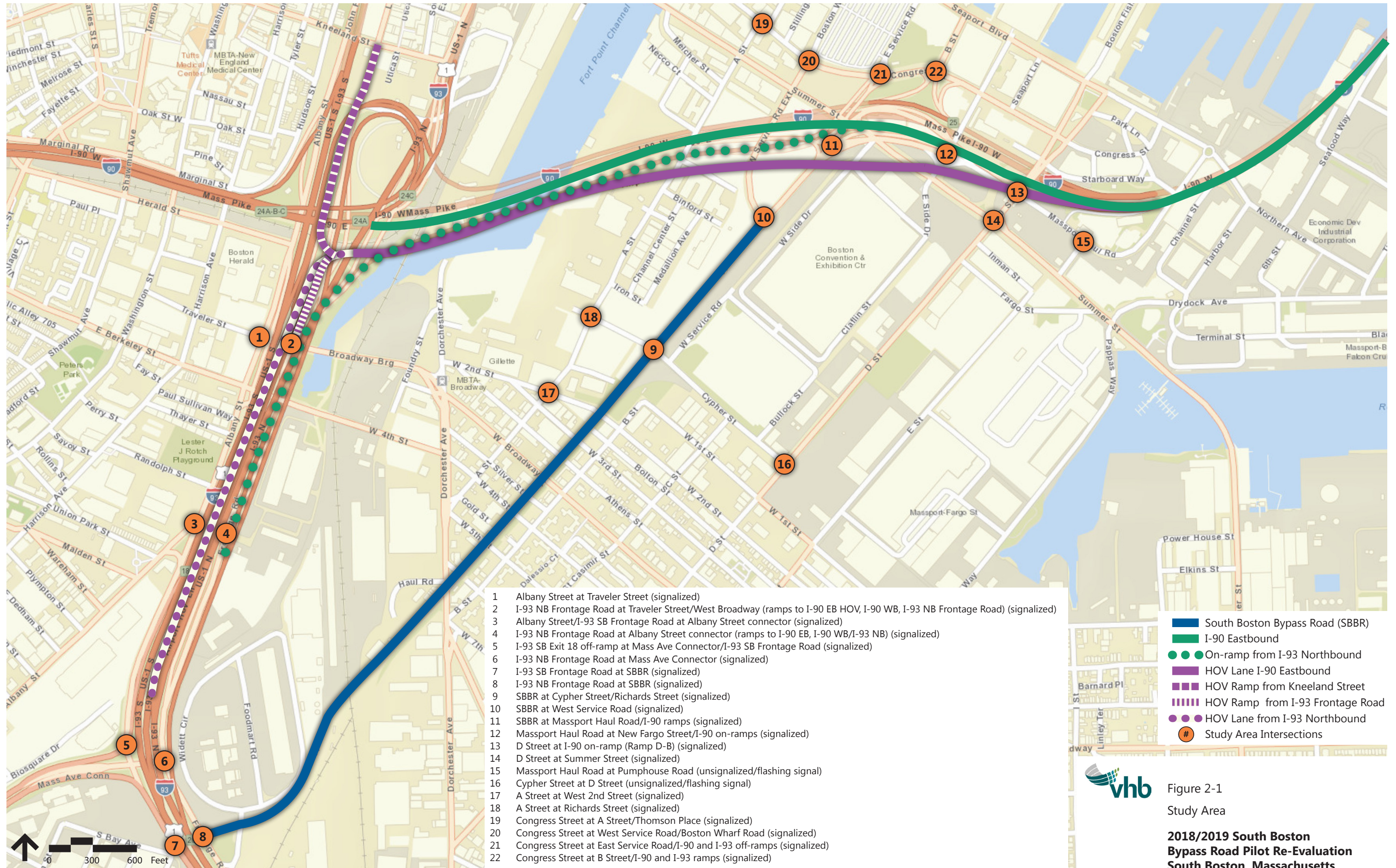


Figure 2-1
Study Area

**2018/2019 South Boston
Bypass Road Pilot Re-Evaluation
South Boston, Massachusetts**

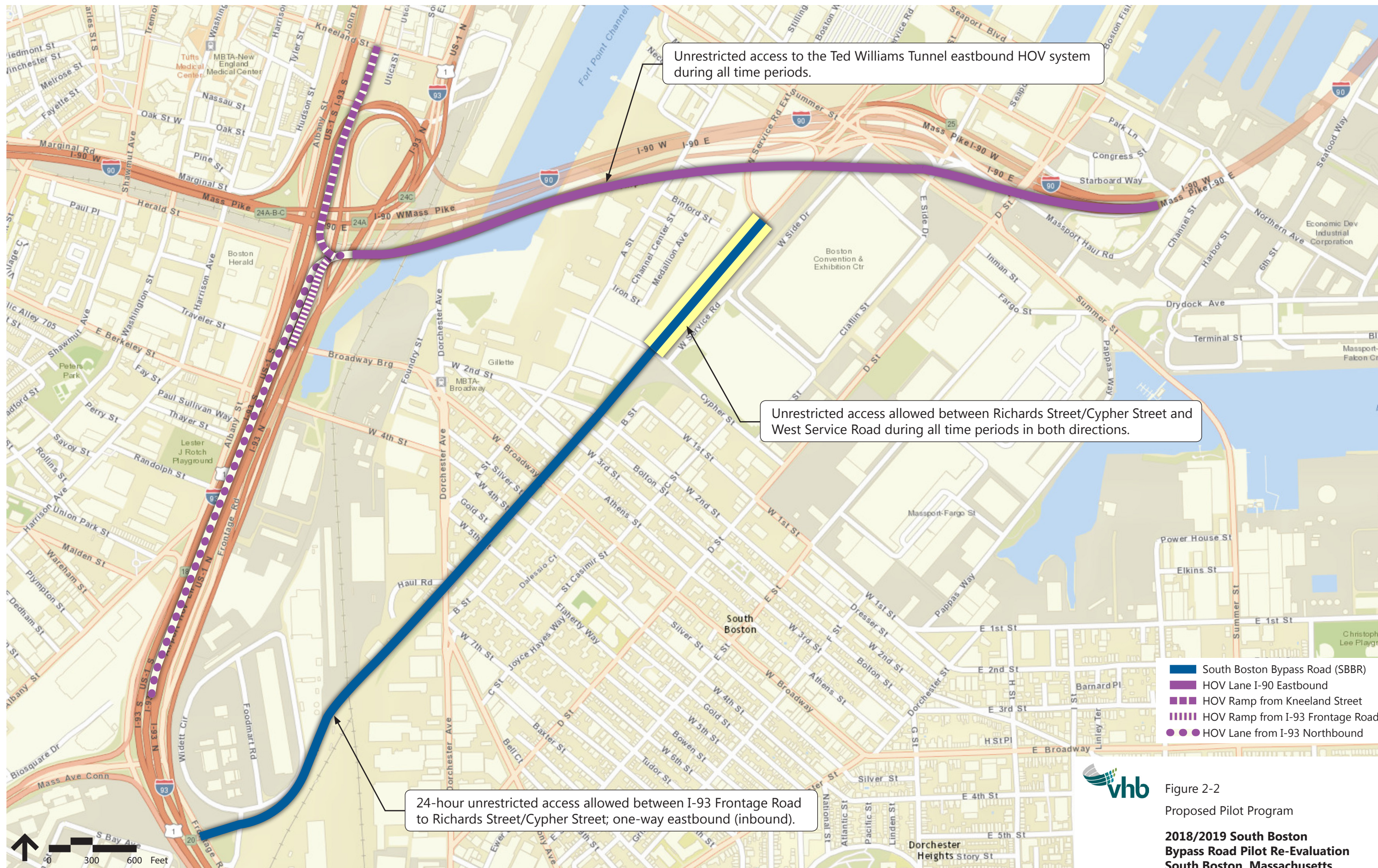
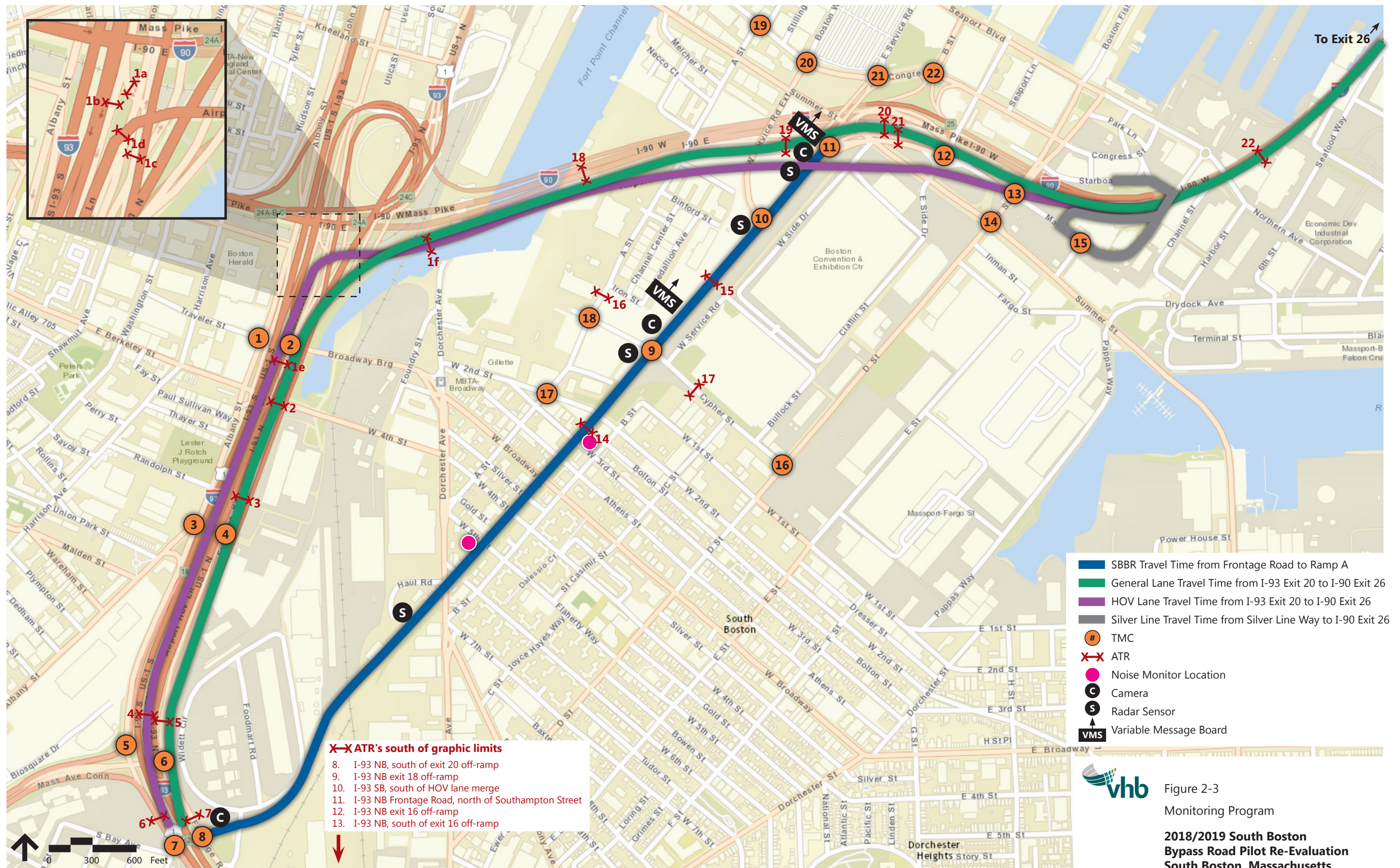



Figure 2-2
Proposed Pilot Program
2018/2019 South Boston Bypass Road Pilot Re-Evaluation South Boston, Massachusetts




Figure 2-3
 Monitoring Program
2018/2019 South Boston Bypass Road Pilot Re-Evaluation
 South Boston, Massachusetts

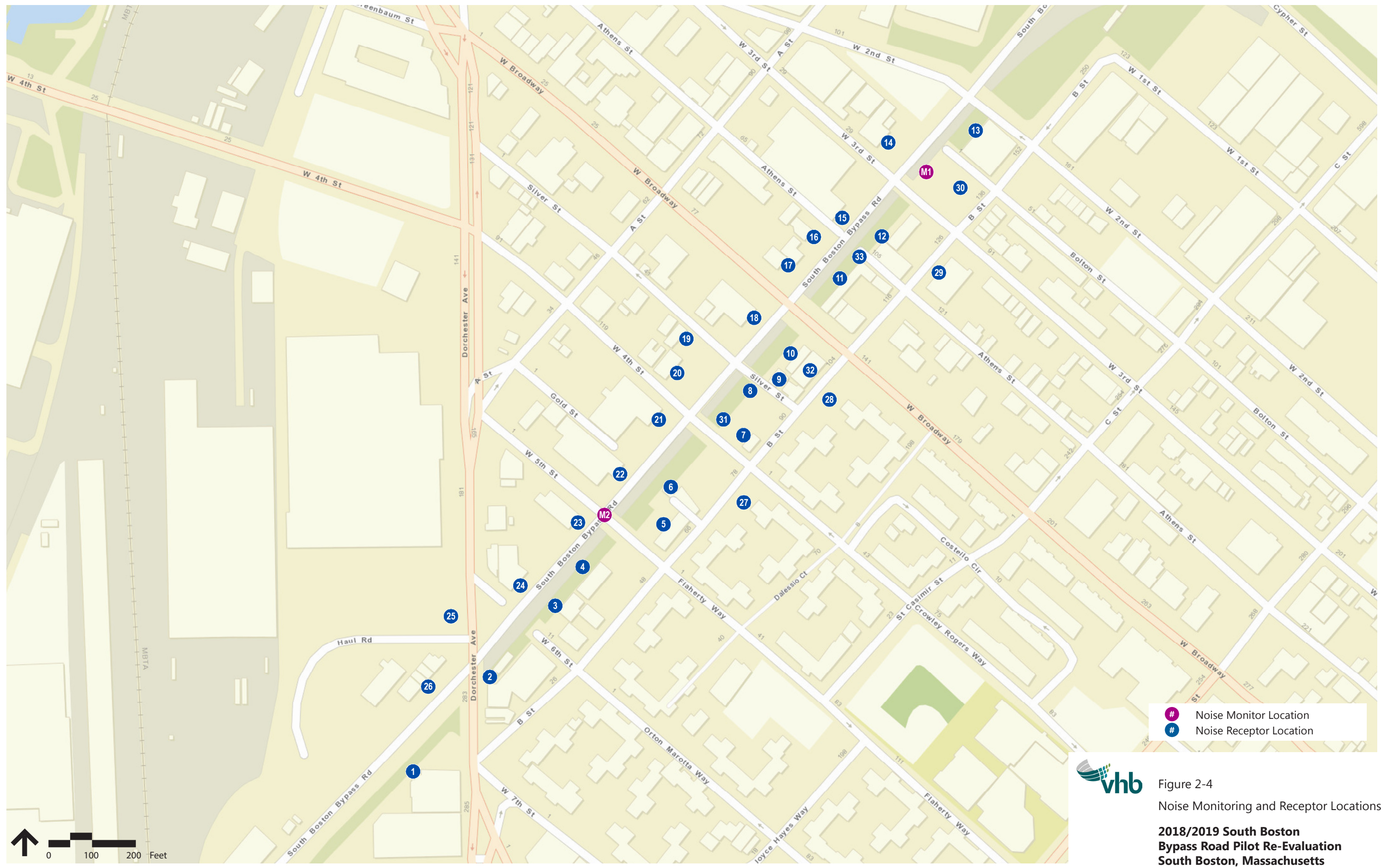


Figure 2-4
Noise Monitoring and Receptor Locations
**2018/2019 South Boston
Bypass Road Pilot Re-Evaluation
South Boston, Massachusetts**

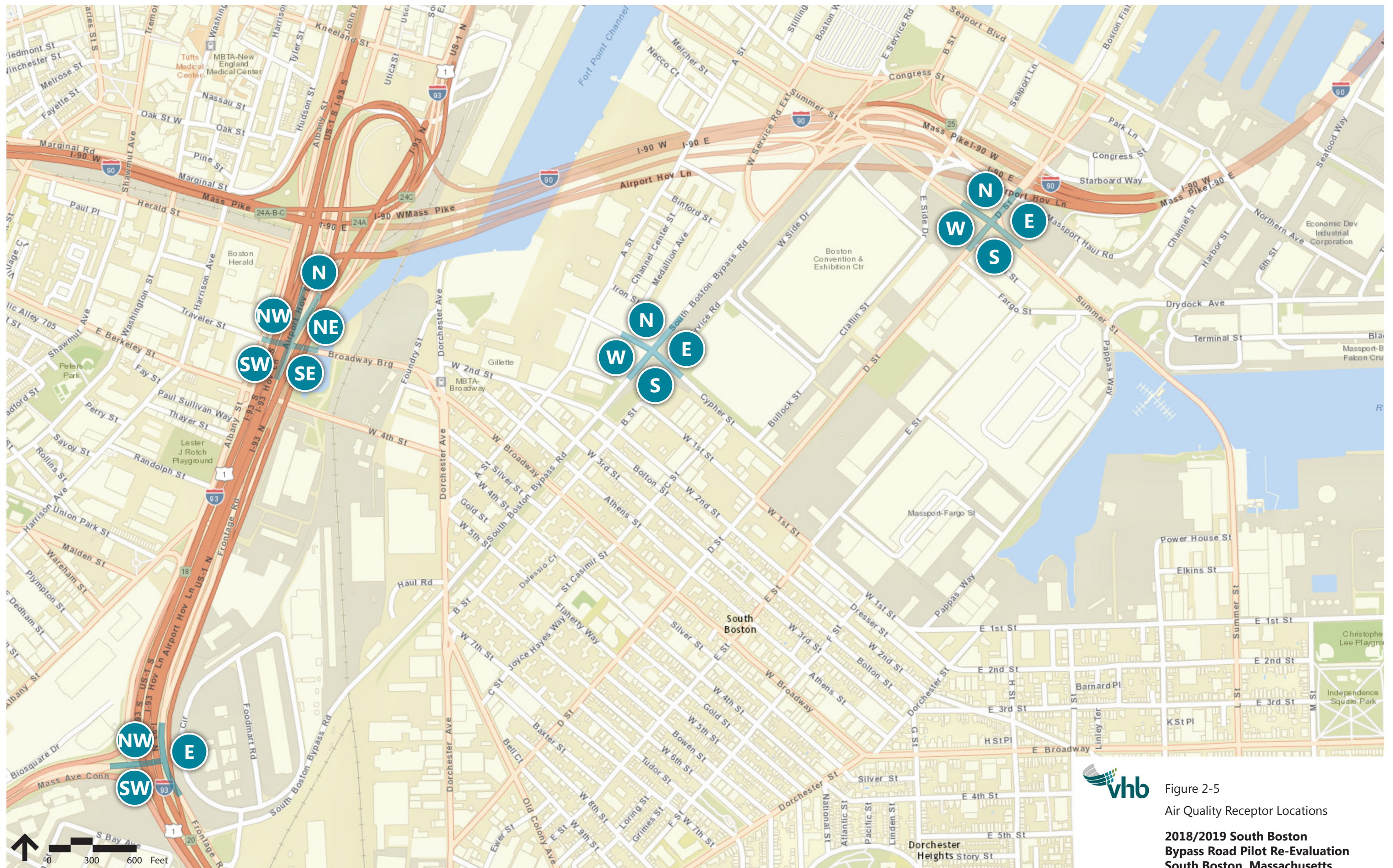


Figure 2-5
Air Quality Receptor Locations
**2018/2019 South Boston
Bypass Road Pilot Re-Evaluation
South Boston, Massachusetts**

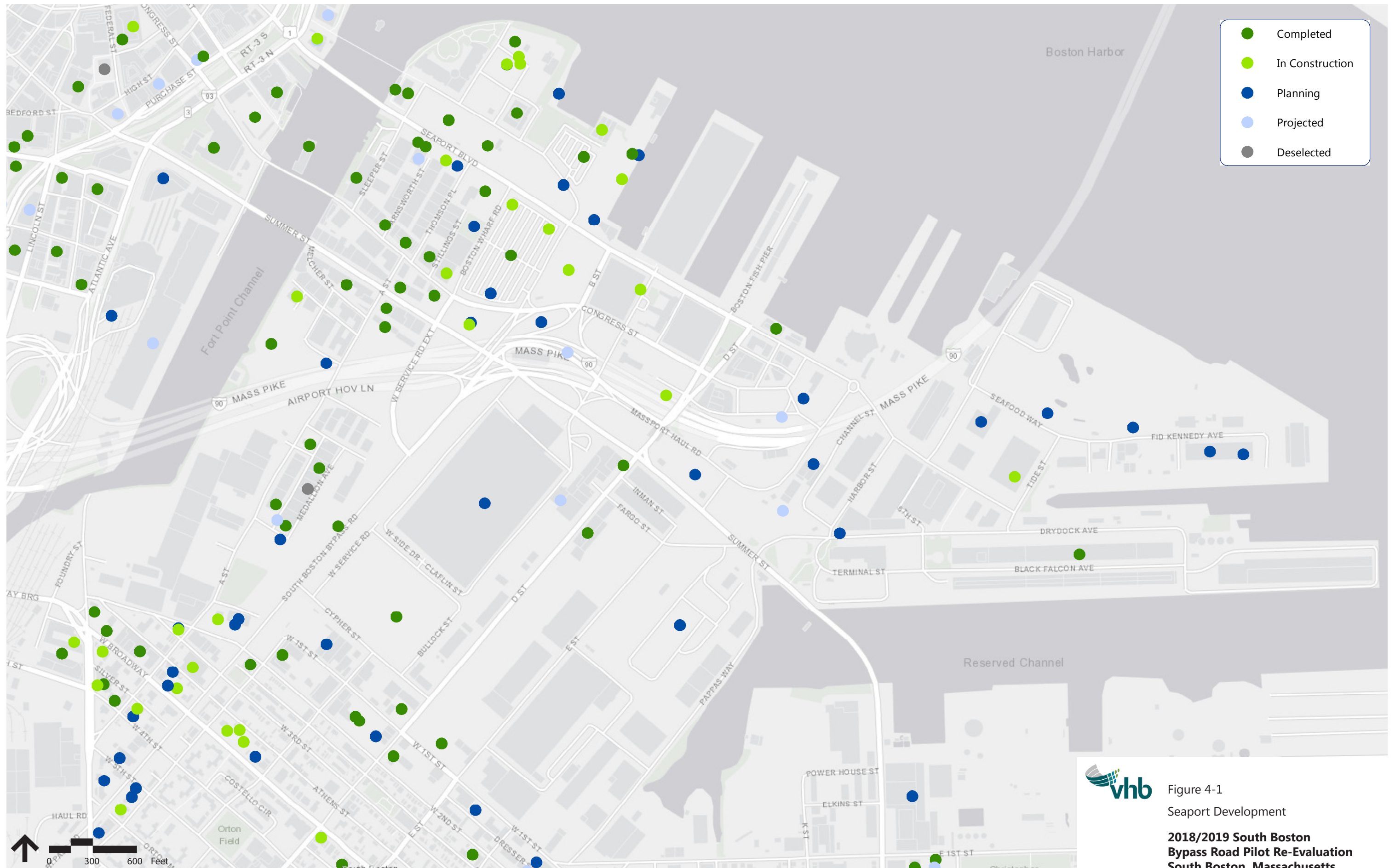


Figure 4-1
Seaport Development
**2018/2019 South Boston
Bypass Road Pilot Re-Evaluation
South Boston, Massachusetts**

Source: Data provided by MassBuilds website www.massbuilds.com in July 2018 representing recent and anticipated future development trends