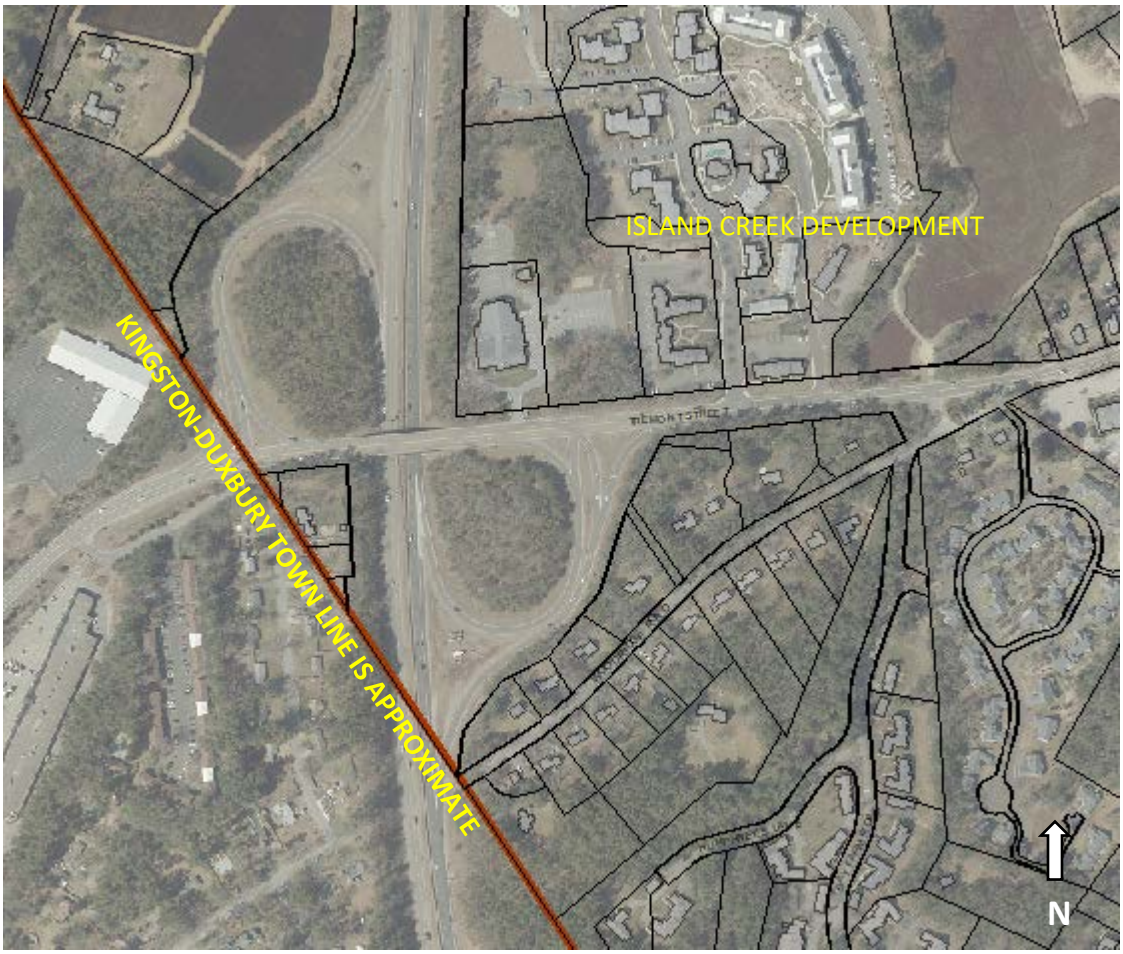
EXIT 10 IMPROVEMENTS - TALKING POINTS & CONTEXT

Prepared by Valerie Massard, Planning Director



- Kingston and Duxbury are proposing to evenly share the costs to do an estimated $470,000 engineering design and construction oversight package to signalize, widen, add crosswalks and manage traffic maneuvers to improve safety at this intersection. Each town has this on their spring town meeting warrant for 2020. Both towns agree that the town line runs through the intersection but the exact location is not known.
- This represents a $235,000 investment for each town, **and leverages $1.5-1.8 million in estimated construction costs** which come from the state and federal government once engineering is complete. It will improve safety and reduce the number of response calls to the intersection.
- The project was added to the Transportation Improvement Plan (TIP) making it eligible for these federal and state monies, by the Island Creek Development as required in their permit years ago.
- Kingston's Fire Department has a high number of response calls to this intersection due to crashes, and the Duxbury Fire and Police Chiefs, as well as Representative Cutler's office are in support of making improvements. Duxbury's Highway Safety Committee supports the improvements.
- Engineering can take 1-2 years to make it through the stages of approval, could make 2025 TIP.
- The engineering estimate was prepared by VAi Associates in 2019 with input from MassHighway District 5 and the OCPC MPC (TIP) as well as the two town's professional staff.

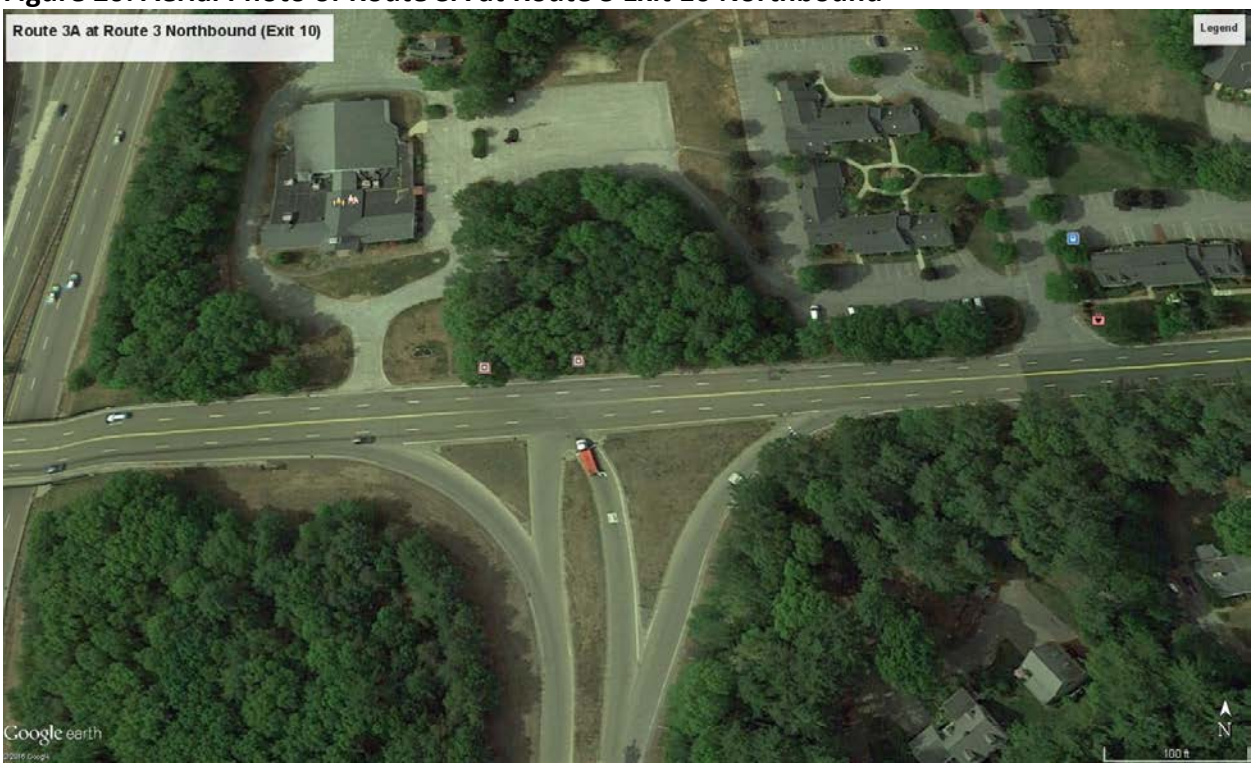
EXIT 10 IMPROVEMENTS - TALKING POINTS & CONTEXT

Prepared by Valerie Massard, Planning Director
EXCERPTS FROM 2017 Route 3A Corridor Study.
Duxbury Route 3A Corridor Study Pages 35-38, and Page 43:

Tremont Street (Route 3A) at Route 3 Northbound Ramps

The off-ramp from Exit 10 on Route 3 northbound meets Route 3A at a STOP sign controlled intersection, with a left turn lane and channelized right turn lane coming off of Route 3. Channelized right turn lanes are included for both the right turn from the off-ramp onto Route 3A eastbound, and for Route 3A eastbound onto Route 3 northbound. The left turn lane from the off-ramp is controlled by a STOP sign and painted stop line. The channelized right turns are controlled by YIELD signs and pavement markings. Route 3A in this section is a four-lane cross section, with two shared movement lanes of travel in each direction. Figure 20 contains an aerial image of the ramp.

Figure 20: Aerial Photo of Route 3A at Route 3 Exit 10 Northbound



Crash History and Crash Rate: According to MassDOT crash records, there were 7 reported crashes at the intersection of Route 3A at the Route 3 Northbound Ramps from 2012 through 2014. The crash rate based on this data set is 0.32 crashes per million entering vehicles, which is below the MassDOT District 5 average of 0.58/MEV.

Level of Service: The existing level of service at the ramp is "F" during both the morning and afternoon peak demand hours, with drivers experiencing significant delay attempting to turn left from the offramp onto Route 3A westbound. Without capacity improvements, the ramp is expected to operate at level of service "F" through 2020. Table 14 summarizes existing level of service, and forecasted level of service though 2020 with both no-build and conceptual traffic signal build scenarios.

Duxbury Route 3A Corridor Study Page 36

Table 14: Existing and Projected LOS at Route 3A and Route 3 Exit 10 Northbound

	2015 Existing		2020 No-Build		2020 Traffic Signal Build	
Location	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Route 3A at Route 3 Exit 10 Northbound Ramps	F	F	F	F	B	B

Identified Deficiencies: When asked where they experience congestion and where they perceive to be safety issues on the Route 3A Corridor, both ramps at Route 3A Exit 10 were a common answer for both. In particular regard to the southbound ramps, survey respondents indicated that making left turns from Route 3A westbound onto the on-ramp is challenging due to the volume and speed of cross traffic on Route 3A. Data from automated traffic recorders indicate the 85th percentile speed of oncoming traffic at this location is 41 miles per hour. This speed, combined with two opposing lanes of travel, may be a contributing factor in difficulty for drivers entering the on-ramp from the westbound (coming from Duxbury) direction.

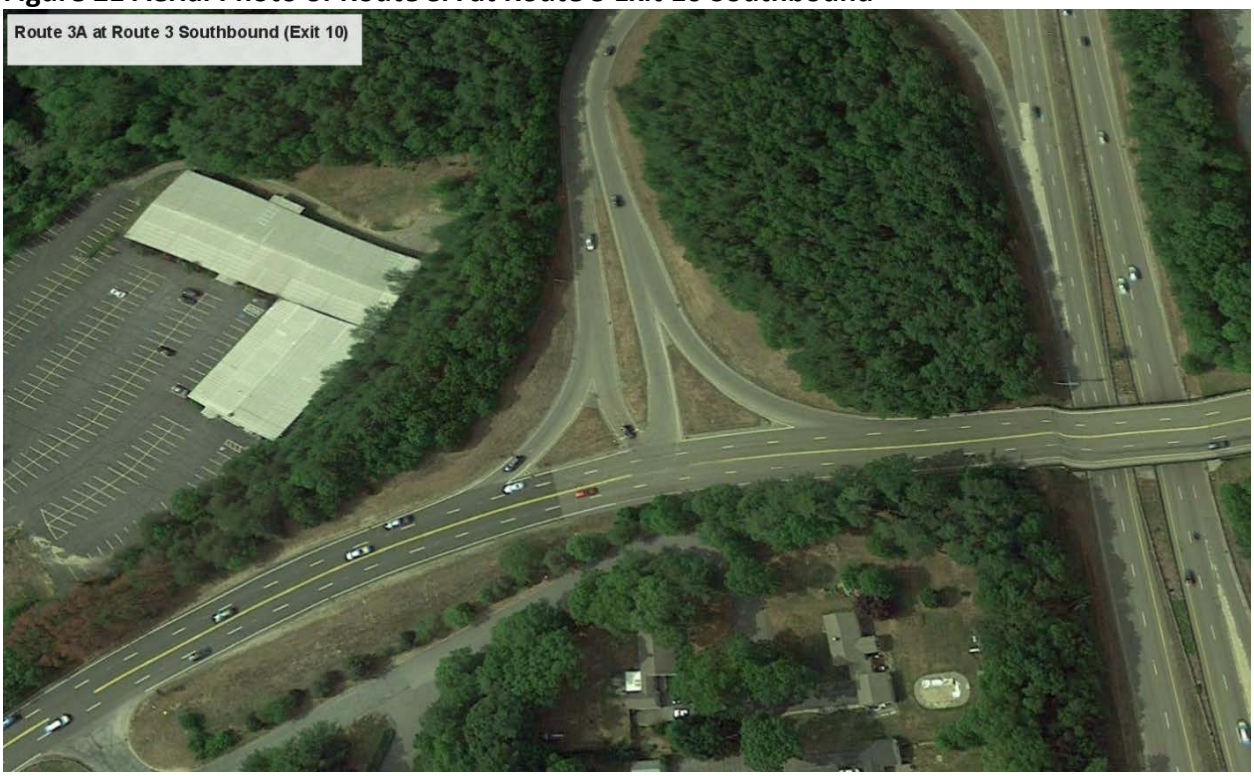
Tremont Street (Route 3A) at Route 3 Southbound Ramps

The off-ramp from Exit 10 on Route 3 southbound meets Route 3A at a STOP sign controlled intersection, with a left turn lane and channelized right turn lane coming off of Route 3. Channelized right turn lanes are included for both the right turn from the off-ramp onto Route 3A westbound, and for Route 3A westbound onto Route 3 southbound. The left turn lane from the off-ramp is controlled by a STOP sign and painted stop line. The channelized right turns are controlled by YIELD signs and pavement markings. Route 3A in this section is a four-lane cross section, with two shared movement lanes of travel in each direction. Figure 21 contains an aerial image of the ramp.

EXIT 10 IMPROVEMENTS - TALKING POINTS & CONTEXT

Prepared by Valerie Massard, Planning Director

Figure 21 Aerial Photo of Route 3A at Route 3 Exit 10 Southbound



Crash History and Crash Rate: According to MassDOT crash records, there were 17 reported crashes at the intersection of Route 3A at the Route 3 Southbound Ramps from 2012 through 2014. The crash rate based on this data set is 0.68 crashes per million entering vehicles, which is above the MassDOT District 5 average of 0.58/MEV.

Level of Service: The existing level of service at the ramp is "F" during both the morning and afternoon peak demand hours, with drivers experiencing significant delay attempting to turn left from the offramp onto Route 3A eastbound. Without capacity improvements, the ramp is expected to operate at level of service "F" through 2020. Table 15 summarizes existing level of service, and forecasted level of service though 2020 with both no-build and conceptual traffic signal build scenarios.

Table 15: Existing and Projected LOS at Route 3A and Route 3 Exit 10 Southbound

	2015 Existing		2020 No-Build		2020 Traffic Signal Build	
Location	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Route 3A at Route 3 Exit 10 Southbound Ramps	F	F	F	F	B	B

Identified Deficiencies: When residents were asked where they experience congestion and where they perceive safety issues are located on the Route 3A Corridor, both ramps at Route 3A Exit 10 were a common answer for both. In particular, survey respondents indicated that making left turns from the Route 3 southbound off-ramp onto Route 3A into Duxbury is

challenging due to the volume and speed of cross traffic on Route 3A. Analysis of available data supports these responses, indicating the intersection has a crash rate that is above the MassDOT District 5 average for un-signalized intersections, and has significant delays during the peak demand hours.

Route 3A at Route 3 Exit 10 Ramps

Identified Deficiencies: The interchange of Route3 Exit 10 and Tremont Street (Route 3A) has become a significant regional transportation connection due to residential and commercial growth in the area. The absence of traffic signals and the four-lane cross section of Route 3A through this interchange contributes to delays and an increased hazard factor for vehicles both entering and exiting Route 3.

Recommended Long-Term Improvements: The interchange of Route 3 Exit 10 and Tremont Street (Route 3A) should be signalized. This improvement is a priority of both the Towns of Duxbury and Kingston, and has been identified as a regional transportation priority in the Old Colony MPO's Long Range Regional Transportation Plan.