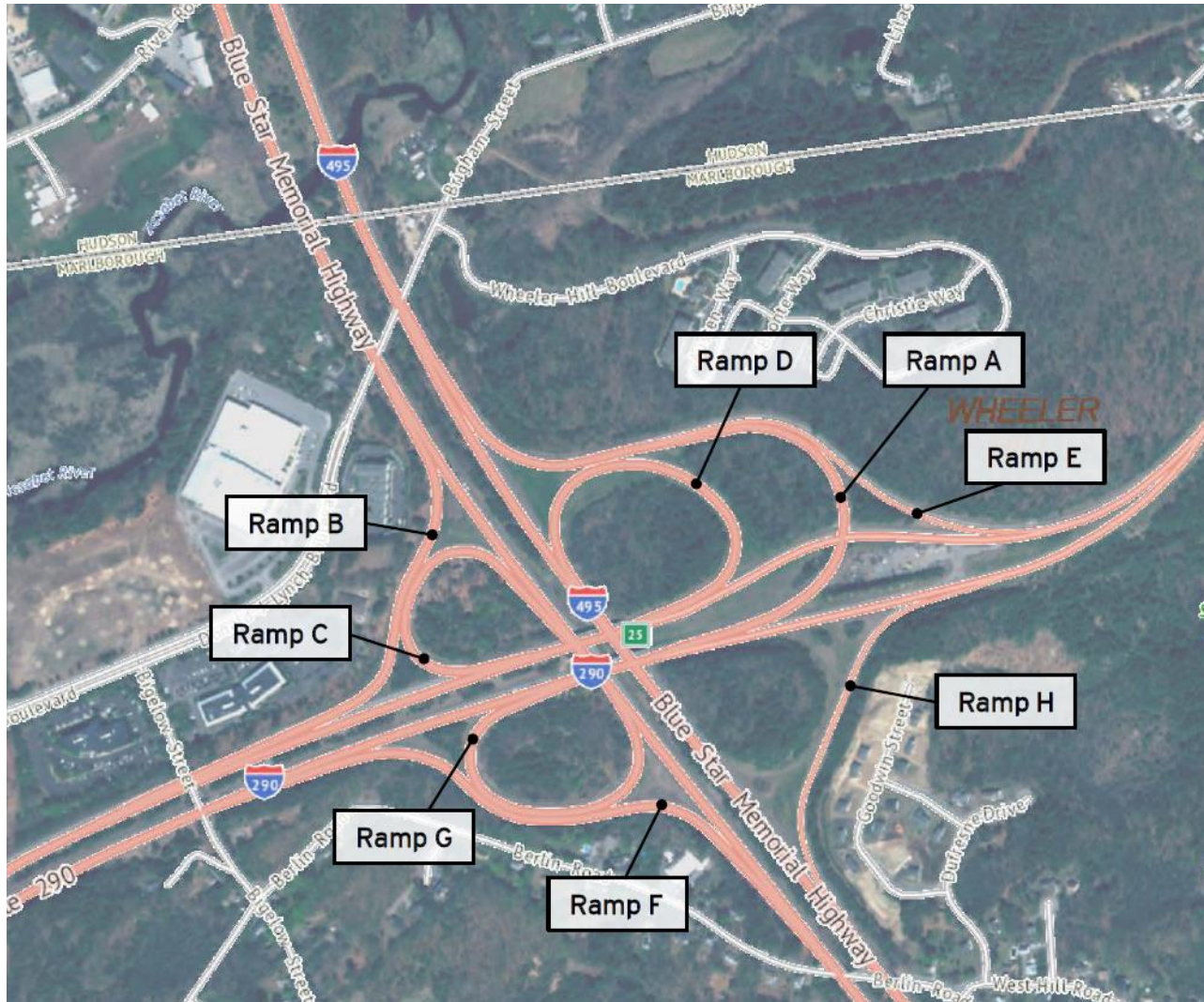


**Marlborough / Hudson  
Ramp Improvements and Related  
Work at I-495 SB to I-290 WB**

**Project Overview**

**October 2, 2019**

# Project Area



# Project Need

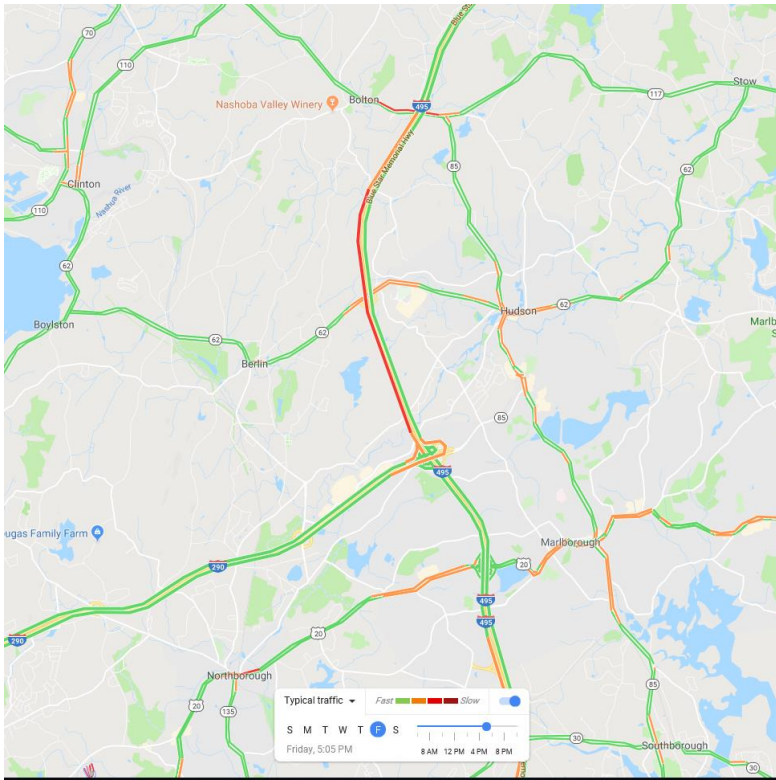
- Reduce congestion on I-495 southbound caused by ramp to I-290 westbound (Ramp B)
- Reduce congestion-related crashes
- Address geometric issues related to Ramp B
  - Deceleration lane length is substandard (~200 feet)
  - Current ramp design speed is 30 miles per hour

# Existing Traffic Operations

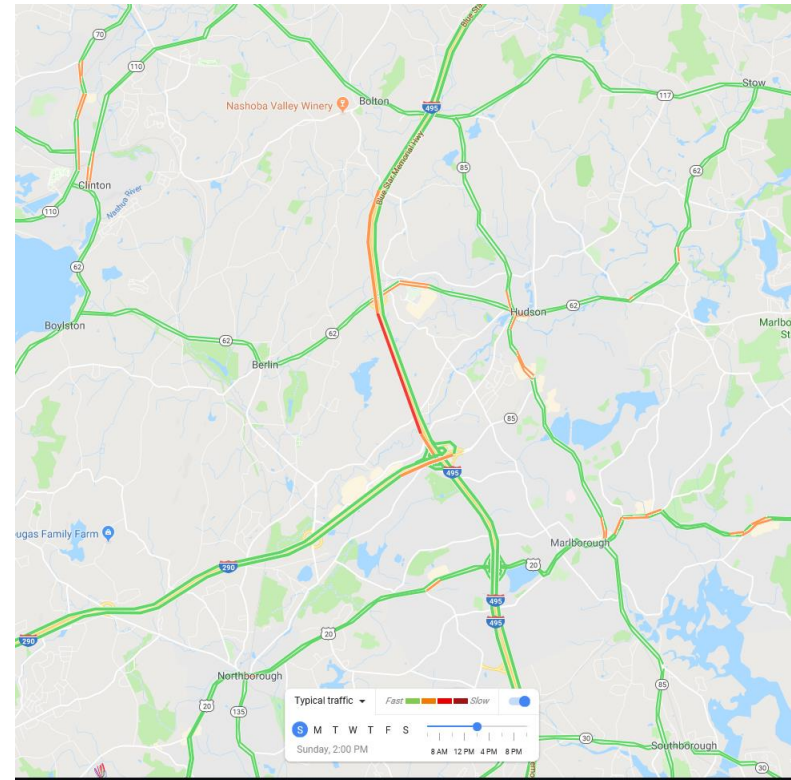
- The traffic analysis performed for existing conditions used Friday PM Peak Volumes from October 2017
- Existing operations on I-495 SB (Friday PM)
  - Delay is approximately **400 seconds**
  - 95<sup>th</sup> Percentile Queue = 12,430 feet (**2.35 miles**)



# Existing Traffic Operations



**Typical Friday PM Peak (5 PM)**



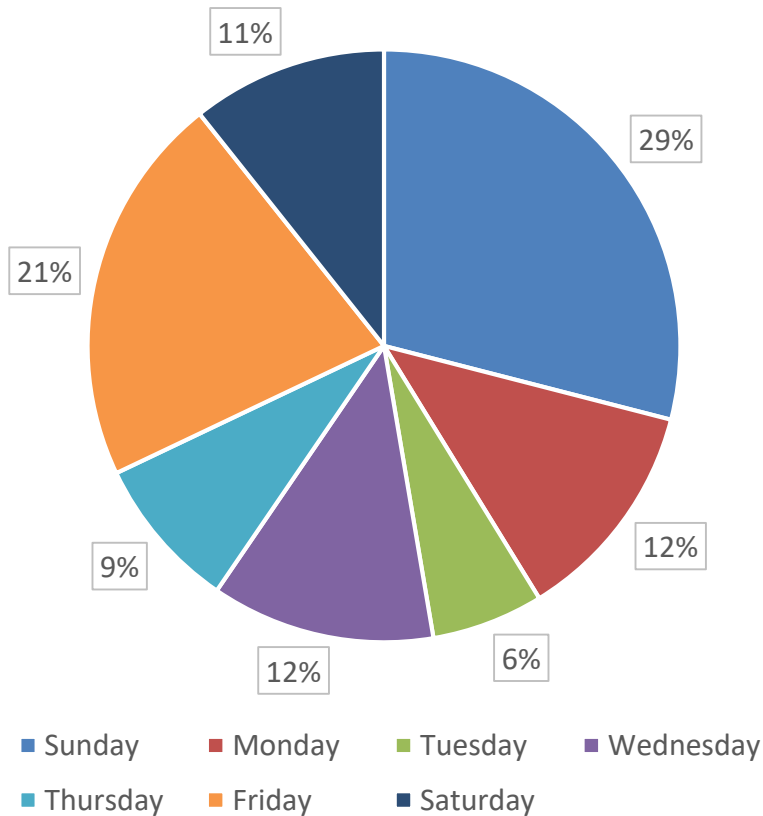
**Typical Sunday (2 PM)**

## Crash Summary (2016 – 2018)

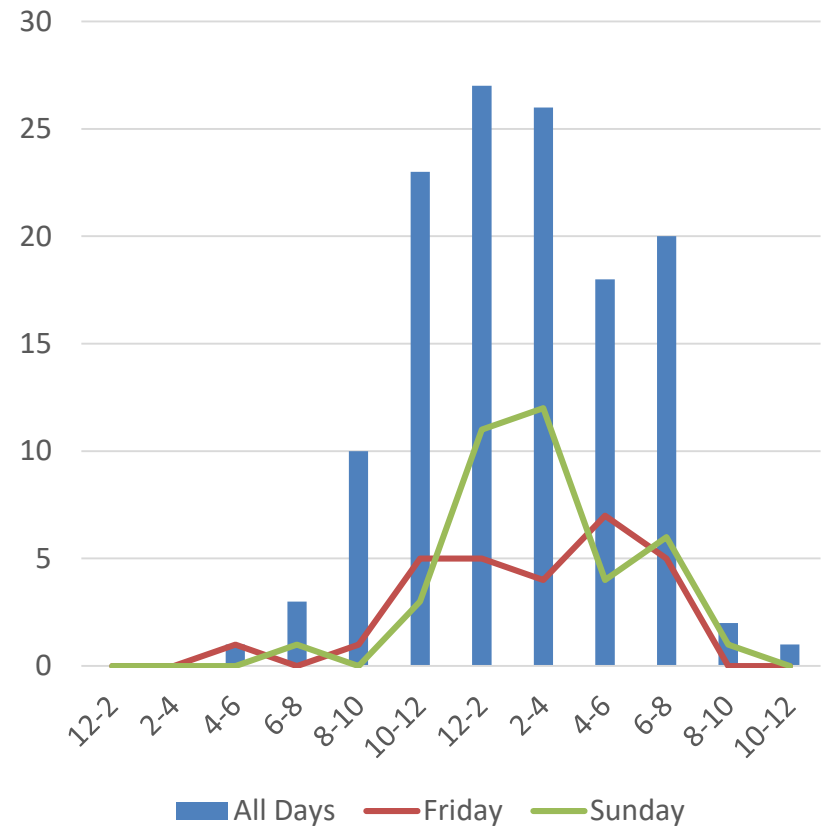
- Crash Cluster on I-495 southbound, just north of Donald Lynch Boulevard was identified
  - Crash data covers one mile long section of I-495 southbound from Ramp B gore north
- 131 Crashes in Cluster
  - 105 Crashes (80%) were rear-end type
  - 25 Crashes (19%) were injury crashes
- Crash Rate is much higher than Interstate average
  - Crash rate is **2.22** Crashes / Million Vehicle Miles Traveled (MVMT)
  - Interstate average crash rate in MA is **0.62** Crashes / MVMT

# Crash Summary (2016 – 2018)

Crashes by Day of Week



Crashes by Time of Day





# Phase 1 Improvements

- Extends the I-495 SB deceleration lane to 1,500 feet
- Does not address geometry on the off-ramp
- Proposes narrower lane and shoulder widths on I-495 southbound





## Phase 2 Improvements

- Builds off of Phase 1 improvements
- Widens Ramp B to two lanes and improves ramp geometry (45 MPH design speed)
- Low-speed travel lane on I-495 SB will allow drivers to continue on I-495 SB or exit towards I-290
- Additional lane on I-290 WB to allow acceleration



# Alternatives – Operations Analysis

	Delay	95 <sup>th</sup> Percentile Queue (feet)	Cost
<b>Existing</b>	Base: ~6.5 min.	Based: ~2.35 mi	
<b>Phase 1</b> – Extend Deceleration Lane on I-495 Southbound	38% Reduction	47% Reduction	\$700,000
<b>Phase 2</b> – Widen Ramp B to Two Lanes	97% Reduction	99% Reduction	\$6,500,000

## Benefits (When Phase 2 is Complete)

- Delay on I-495 SB reduced by **97%**
- 95<sup>th</sup> Percentile Queue reduced by **99%**
- Reduction in congestion will eliminate many of the rear-end type crashes on I-495 southbound

# Implementation Schedule / Process

- Phase 1 improvements will be completed this Fall
- Phase 2 Advertisement scheduled for May 16, 2020
- Phase 2 Construction expected to begin in September 2020
- Target date for having Phase 2 improvements open to traffic is May, 2021 (Prior to Memorial Day weekend)



# Project Schedule

**Begin Phase 1  
Construction**  
Oct. 2019

**End Phase 1  
Construction**  
Nov. 2019

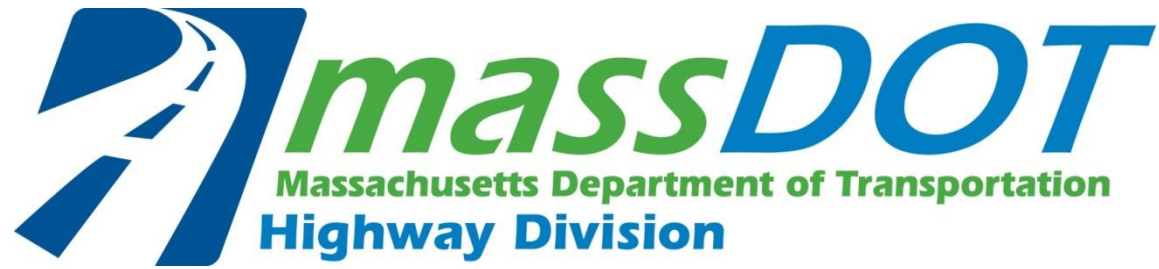
**25% Design  
Submittal**  
Nov. 2019

**Design Public  
Hearing**  
Dec. 2019

**100% Design  
Submittal**  
Mar. 2020

**Advertise for  
Construction**  
May 2020

**Construction  
Starts**  
Sept. 2020



**Questions / Comments  
/ Additional Discussion**

**Thank You**