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Highway Division

Newton-Weston Bridge Bundle, Replacement and Rehabilitation at I-90/I-95, Including Ramp G

Virtual Design Public Hearing

Zoom August 18, 2022 6:00 p.m.-8:00 p.m.

Project File No: 606783

Zoom controls

- Listen in Spanish and Chinese (Emily Getchell, Tina Wang)
- Drop down menu to check microphone and speakers
- Ask a question and share comments
- Raise your hand
- If you are unable to access the internet or are having technical problems, please call into the meeting at 646-876-9923, Webinar ID: 829 2096 0668

If you have trouble with the meeting technology during the presentation, please call:

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Closed captioning automatically generated by Zoom

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Public Meeting Notes and Procedures

Public Record

- The Massachusetts Department of Transportation may choose to retain and distribute the chat transcript or written record of this meeting.
- All written recordings and chat transcript will be considered a public record.
- Please use the Q&A feature for project related business only.

Important Notes

- Your microphone and webcam are automatically disabled upon entering the meeting.
- The meeting will be open to questions and answers at the end of the presentation.
- Please take time to respond to our survey at the end of the presentation. Your feedback is important.

Thank you for joining our meeting. We appreciate you participation!

Notice Of MassDOT Policy Diversity and Civil Rights

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All questions and comments are welcome and appreciated, however, we do request that you refrain from any disrespectful comments.

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Project Team

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- Bridge Owner and Project Proponent
- Project Manager: Valerie Kilduff
- Assistant Project Manager: Marco Pereira
- Producers: Kit McLewee and Hung Pham

GPI

- Design Consultants: John Watters and Mark Elder

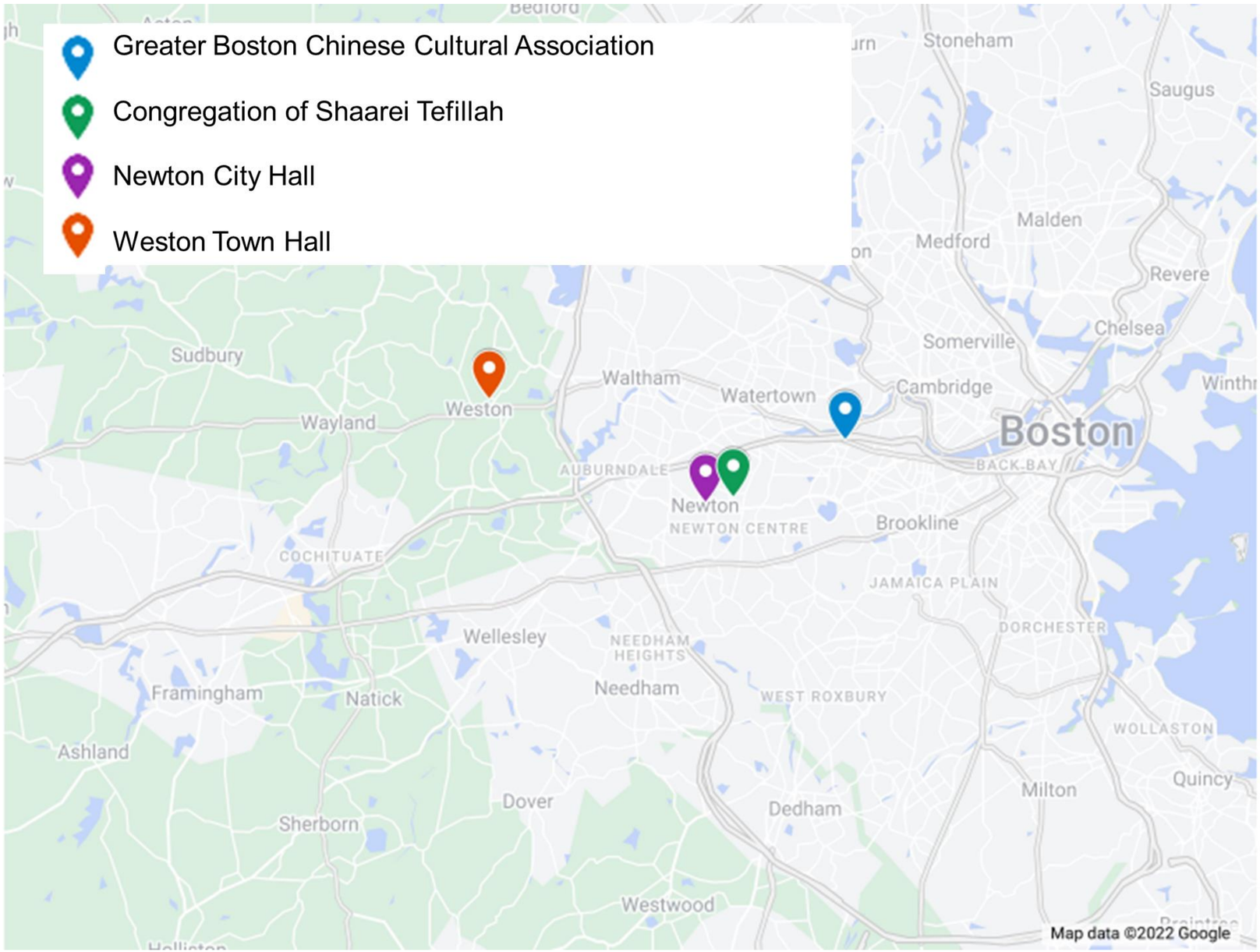
Howard Stein Hudson

- Public involvement

Outreach Conducted for the Design Public Hearing

- MassDOT created notice and flyer in English, Chinese and Spanish
- Both flyer and meeting notice posted on project page and MassDOT Events page
- Meeting notice published in local newspapers, cable access television:
    - The Patch
    - MetroWest Daily News
    - World Journal (Chinese)
    - El Planeta Publishing (Spanish)
    - The Boston Globe
  - Flyer and meeting notices shared with Town and City officials in Newton, Weston, Wellesley and Waltham, and other stakeholders.
- Flyer and meeting notices shared to GovDelivery project subscribers and stakeholder groups in Newton and Weston
- Hearing information shared through MassDOT's social media

Outreach Conducted for the Design Public Hearing



Agenda

01 Welcome and Opening Remarks

02 Project Overview

03 Existing Conditions

04 Project Goals

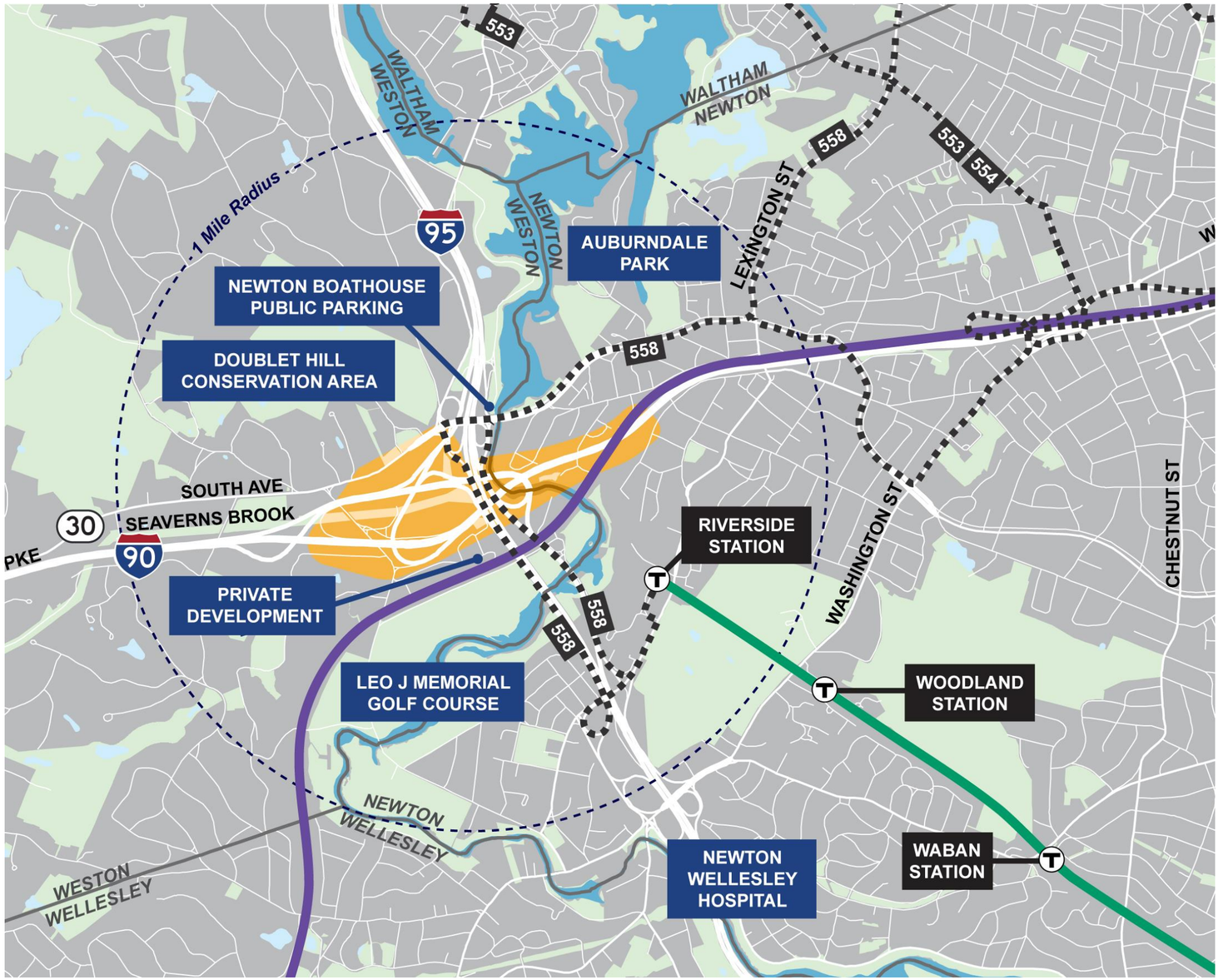
05 Impact to Abutters

06 Proposed Design

07 Construction Staging

08 Next Steps

09 Questions & Feedback



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Project Area

I-90 Newton-Weston

Project Area

I-90 Newton-Weston

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How Did We Get Here?

September
2013

Identification of needed investment per bridge inspection reports & past maintenance needs.

Engaged GPI for technical analysis.

June
2016

Consultant submits 7 Preliminary Concept Designs.

June
2018

Development of Bridge Type Study Reports and Geotechnical Investigations

January
2020

Preliminary concept plans submitted to MassDOT. Project development stalled due to need to secure funding

Winter
2022

Decision to move forward with replacement.

March
2022

Public information meeting

August
2022

Virtual Design Public hearing

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Why was this project initiated?

Existing Conditions

- **Bridge Deterioration**
  - Currently safe but deteriorating quickly
- **Interstate Vertical Clearance**
  - Existing 14’-10”
  - Desired 16’-6”
- **Roadway Safety**
  - Limited acceleration and deceleration lanes
  - Narrow/ substandard shoulders
- **Seismic Resiliency**
  - Substandard reinforcing details
  - Emergency route serving Boston and MetroWest

60-year-old concrete decks

I-90 over I-95 & Charles River

Multiple, spalls on deck

I-90 Over MBTA/CSX

Corrosion on deck

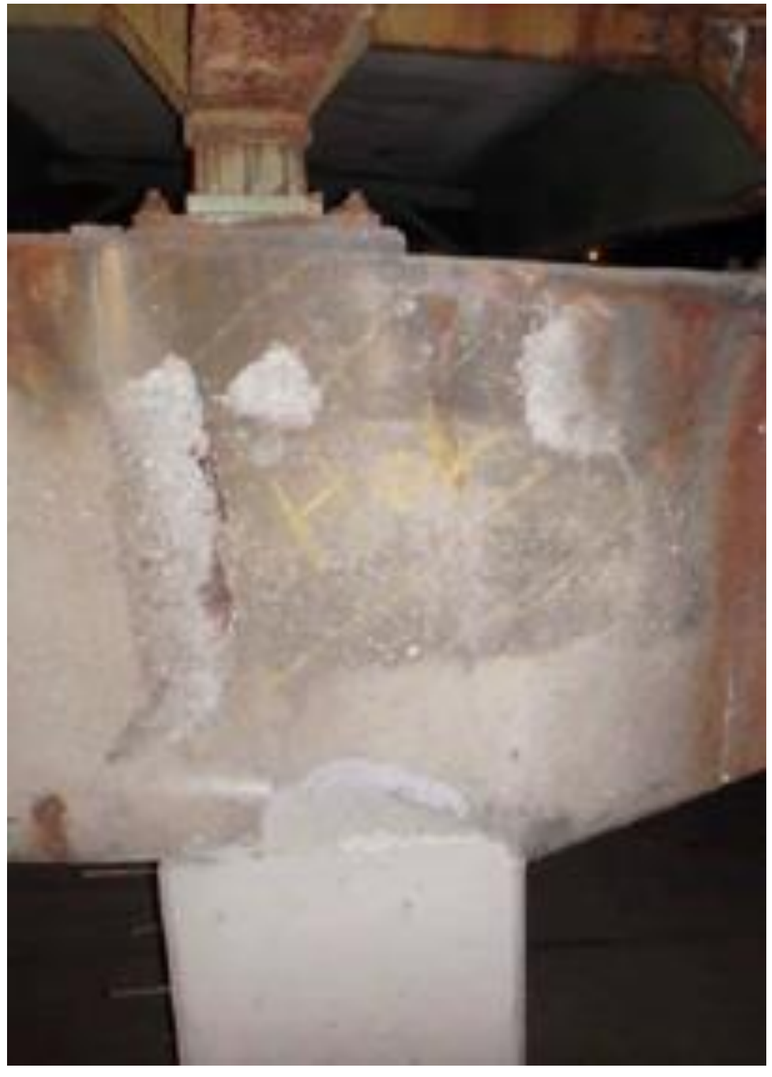
Ramp G-carries I-95 traffic to I-90 EB

Spalling and corrosion

I-90 over I-95 & Charles River

Heavy salt corrosion

Ramp G-carries I-95 traffic to I-90 EB



Spall exposing rebar

I-90 over I-95 & Charles River

Bridge barrier

I-90 over I-95 & Charles River

Bridge barrier

I-90 over I-95 & Charles River

Shoring towers

Ramp G south abutment

Steel losses

Ramp G-carries I-95 traffic to I-90 EB

Merges and Intersections

Ramp G, Ramp P, and Ramp K

Acceleration / Deceleration Lanes

I-90 Mainline

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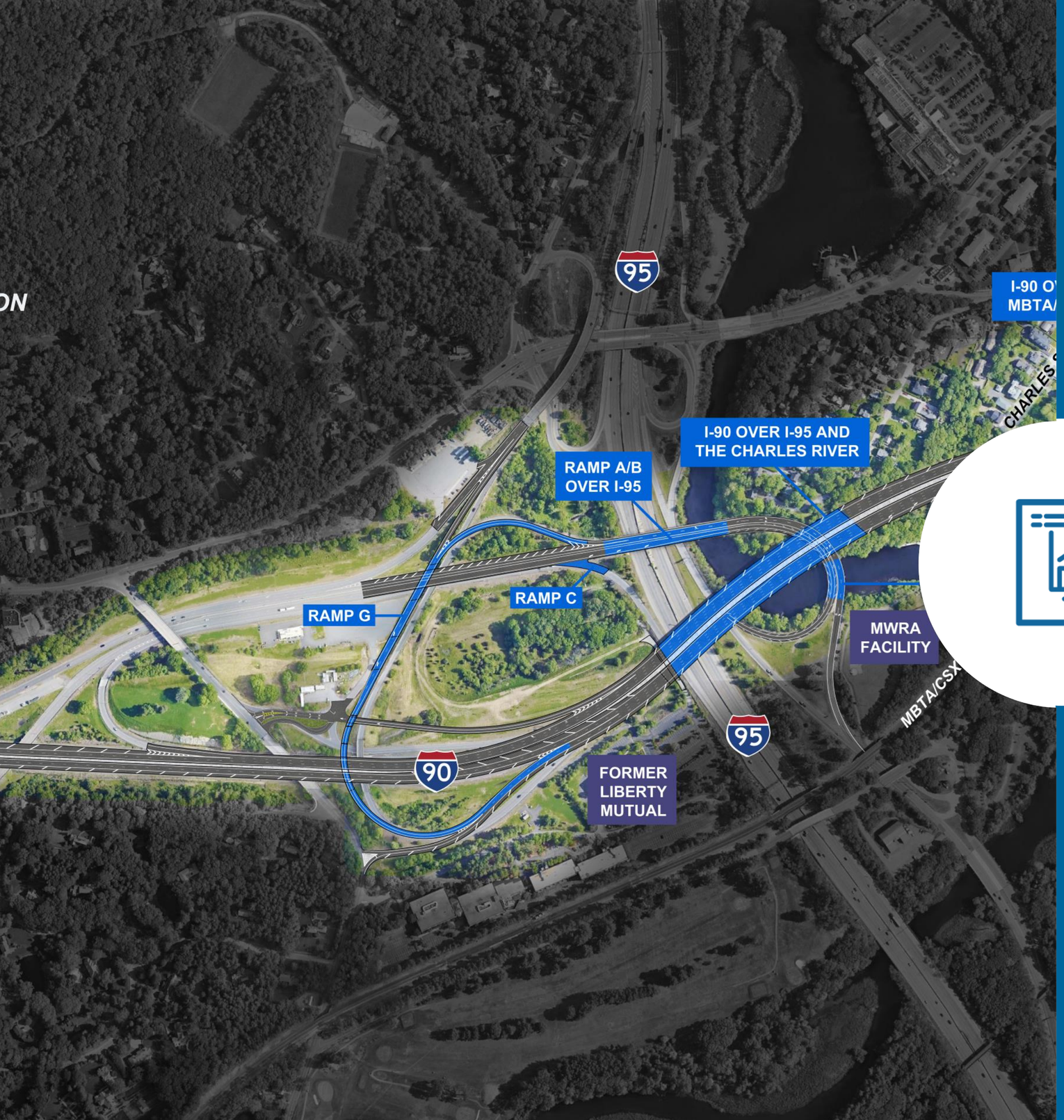


What do we want to accomplish?

Project Goals

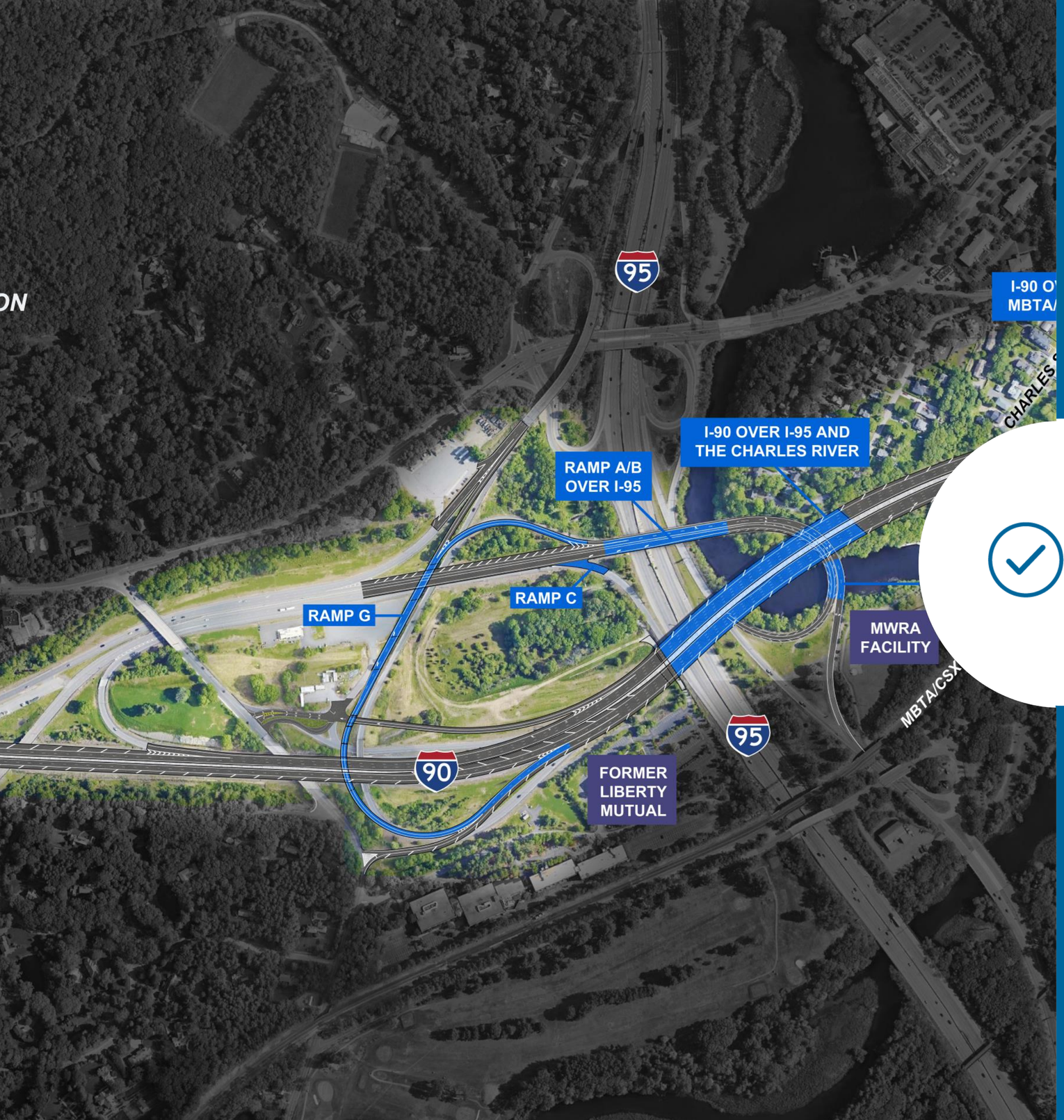
- **Bridge Safety** | Rehabilitations and Replacements
- **Roadway Safety** | Acceleration/Deceleration Lanes and Wider Shoulders
- **Vertical Clearance** | Improve Roadway Profile
- **Seismic Resistance** | Replace Bridge in conformance with Seismic Standards
- **Neighborhood Improvements** | Provide noise barriers
- **Stormwater Management** | Improve stormwater treatment
- **Minimize Environmental Impacts** | Respect and work in context

How will your property be impacted?

Preliminary Right of Way (ROW) discussion
25% Design Public Hearing

- **No takings are anticipated for this project at this time.**
  - While not expected, fee takings, permanent easements and/or temporary construction easements could become necessary if it is determined that proposed design requires access to areas outside the public right of way.
- Any affected property owners will be contacted by personnel from the MassDOT ROW Bureau or consultants representing the responsible agency.
  - Property owners are protected under Massachusetts General Laws, primarily Chapter 79.
- **Again, no takings are anticipated for this project at this time.**

At this stage of design, the Right of Way process has not been finalized. This meeting is an opportunity for the public to comment on any impacts to properties.



What is the Preferred Alternative?

Project Scope

Footprint alignment – partially South

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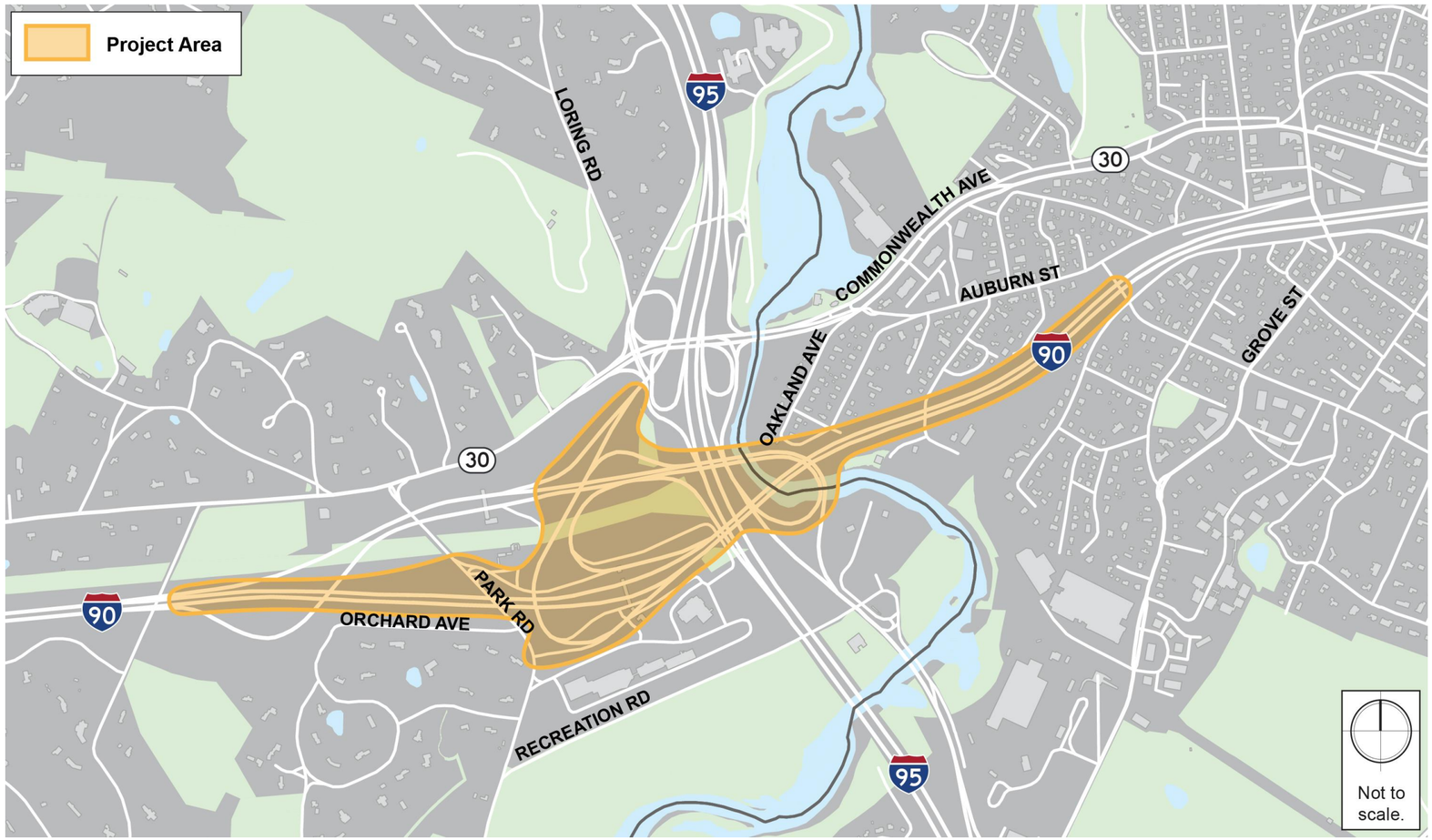
What are the environmental, cultural resource, and community impacts?

Environmental Permitting

- **MEPA Bridge Exemption**
  - Functional Replacement in Existing Footprint
- **Natural Resources**
  - Bordering Vegetated Wetlands, Charles River, Bank, Buffer Zone
- **MassDEP and ACOE Coordination**
- **Secure all needed permits and temporary access for construction - no permanent ROW impacts**

Other Considerations

- Coordination with MBTA to ensure effective commuter rail operation and passenger access to Riverside
- Stormwater management
- Coordination with other MassDOT projects
- Ensure continued east/west access for emergency services on I-90.



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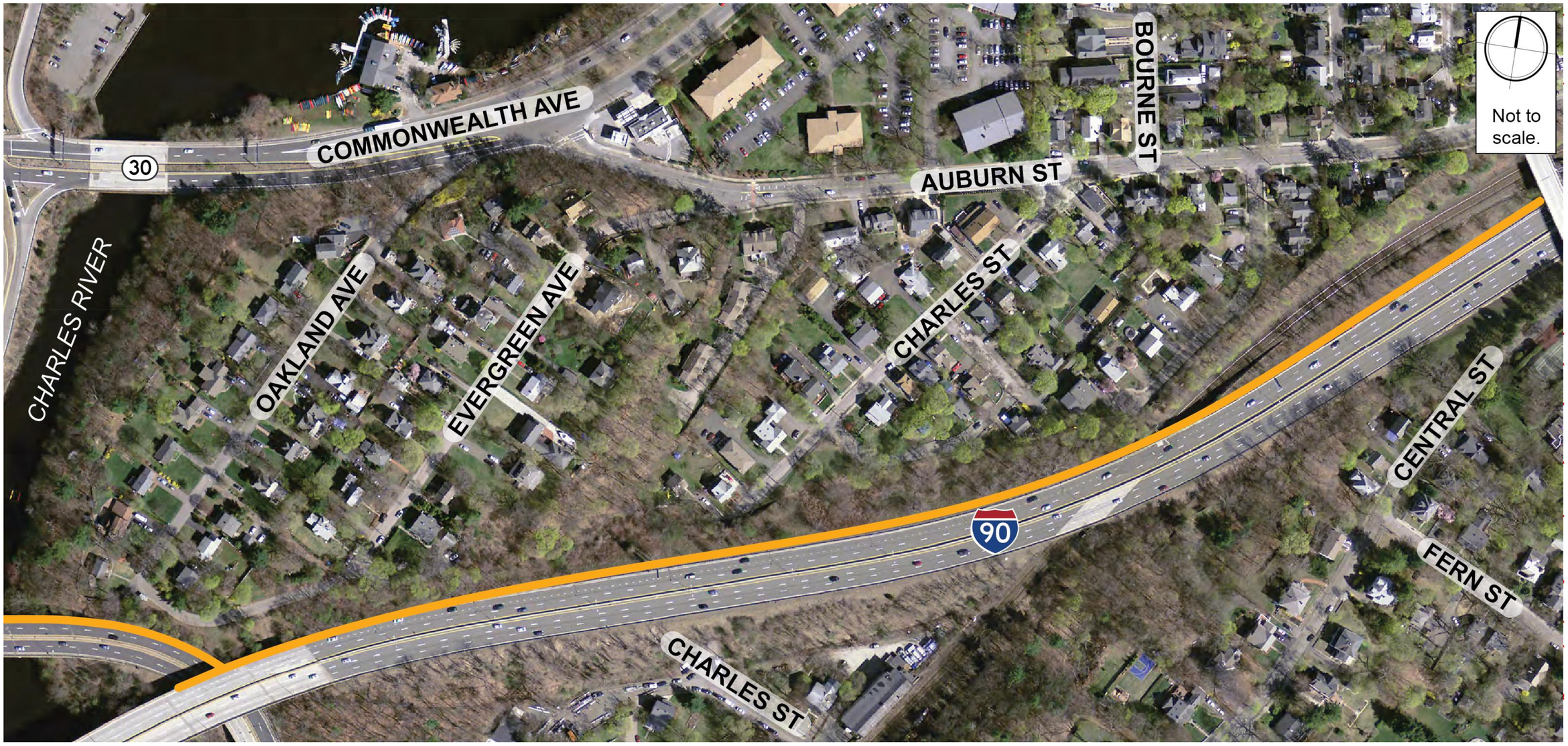
Recommended Noise Walls

Recommended Westbound barrier



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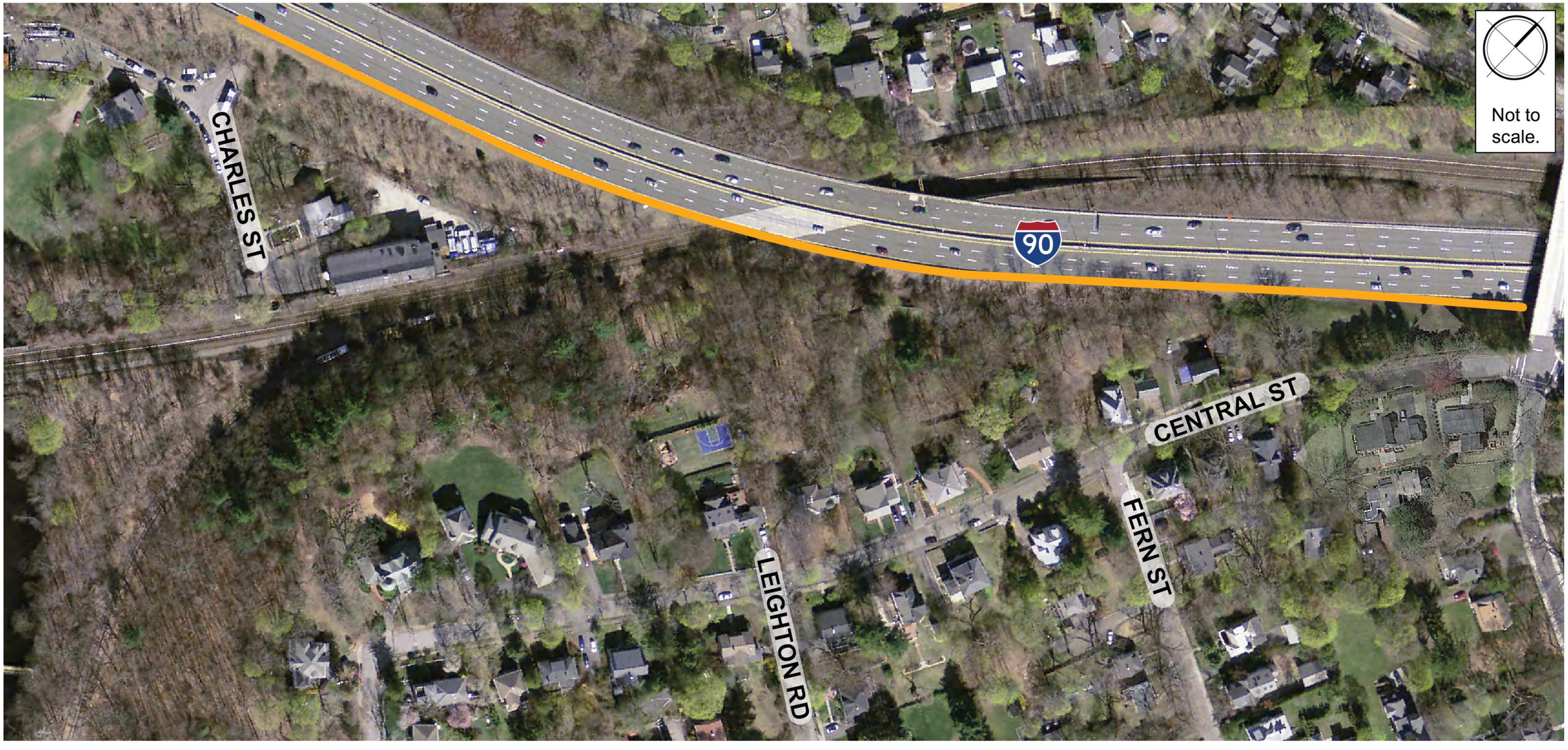
Recommended Noise Walls (2)

Recommended Eastbound Barrier



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What is the construction approach?

Proposed construction approach: Design Build

- Design-Build Best Value procurement
  - Short-List Best Qualified Teams
  - Shorten project duration
  - Promote innovation by teaming the engineer and the general contractor
- MassDOT's contract with the Design Builder will stipulate requirements for traffic management while also providing the DB flexibility to develop their own approach to staging.
- Incentives / Disincentives:
  - Ensures compliance with contract timelines

How will the road user be affected?

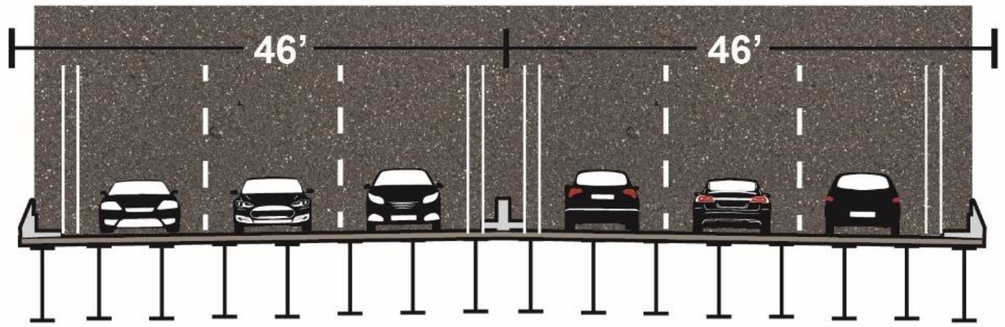
Potential Traffic Impacts

- **5 stages phased I-90 over I-95 bridge construction**
  - (Construction – Demo – Construction – Demo – Construction)
- **Maintain existing 3 lanes on I-90 throughout construction**
  - Travelling public: 160,000 on I-90 and Ramps
- **Lane shift on I-95 for pier work and bridge installation**
  - No construction lane reductions on I-95
  - Travelling public: 175,000 on I-95
- **Ramp G (From I-95 to I-90 Eastbound) built offline**
  - No construction lane reduction on Ramp G
  - Lesser impacts to other ramps
- **Accelerated replacement of I-90 over MBTA bridge**
  - I-90 reduced to 2 lanes (1 in each direction) for two extended weekends
- **Approximately 4.5 years total construction duration**

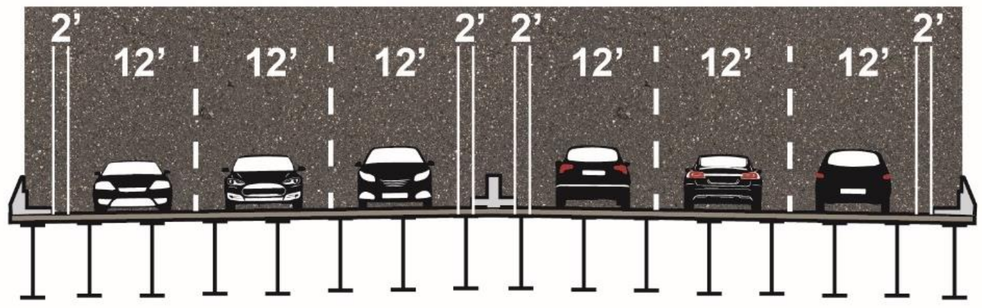
Anticipated Staging I-90

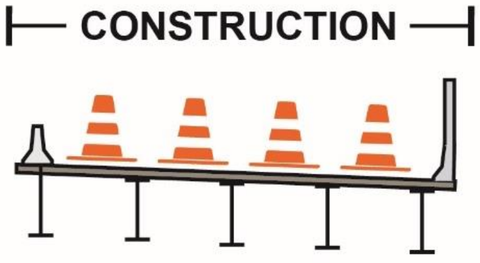
I-90 Mainline Bridge Construction- Looking Toward Boston (Eastbound)

Existing Cross Section

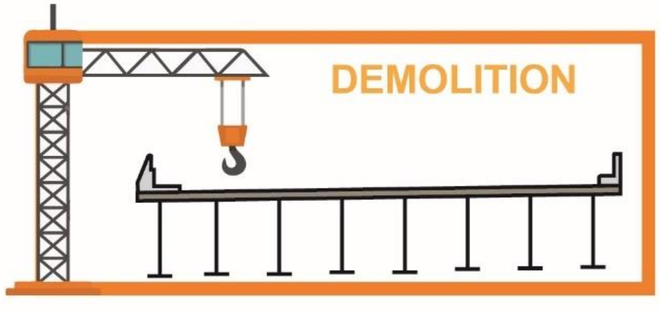


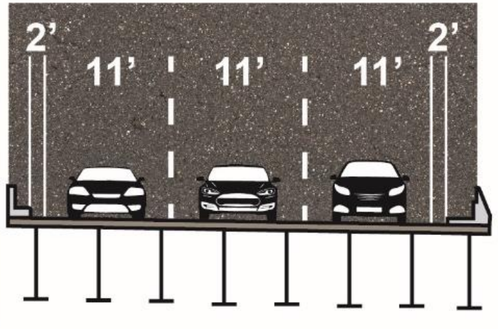
Stage 1 Construction

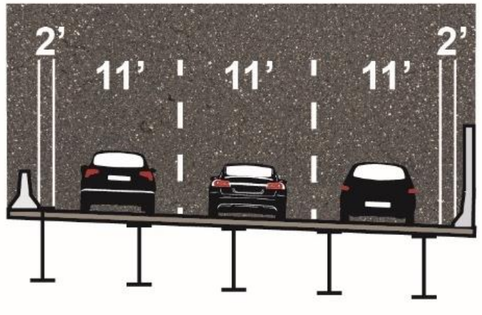




Stage 2 Demolition







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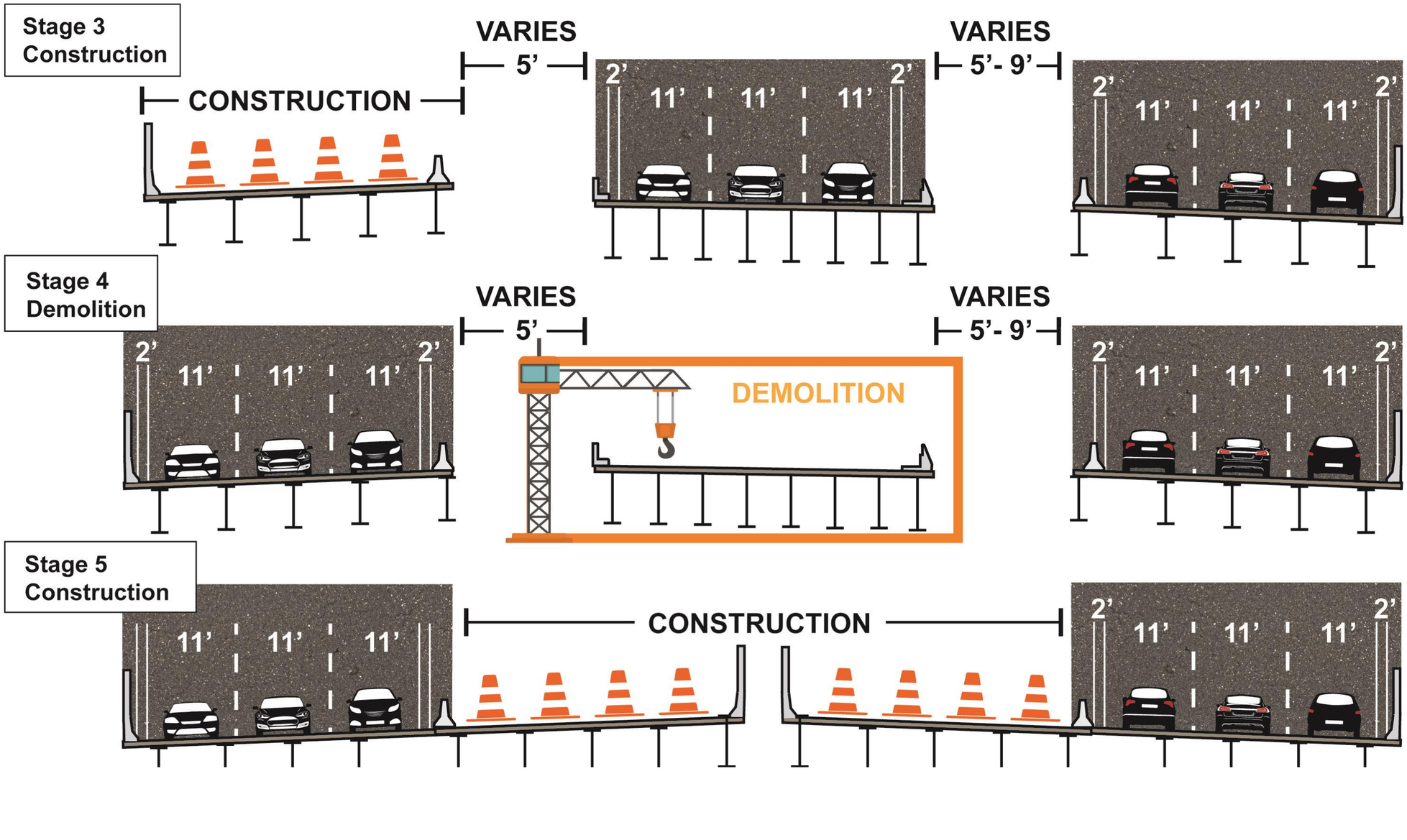
Anticipated Staging

I-90 Mainline Bridge Construction- Looking Toward Boston (Eastbound)



Our next steps

1

25% Base Technical Concept

July 2022

2

Design Public Hearing

August 2022

3

Design/Build Selection and Award

Target Date: Late 2022

4

Construction Starts

Target Date: Early 2023

5

Construction Complete

Target Date: 2027

How will we keep Public informed?

How will we keep you informed?

- Dedicated Project Website –
  - https://www.mass.gov/newton-weston-bridge-replacement-and-rehabilitation-at-i-90i-95
- Traffic impact advisories sent to project email subscribers
  - Subscribe to receive project updates
- “Megaphones” – Towns, Local community organizations
- Coordinate with navigation companies (Google Maps, Waze, etc.)
- Public Meeting prior to start of construction
- Project email address for two-way communication between the project team & community –
  - I-90Newton-Weston@dot.state.ma.us

QR code to project website

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Contact Information

To receive project updates, attend public information meetings, and get more information on the project, contact the team:

Valerie Kilduff, MassDOT, Design Build Project Manager

- Project email: I-90Newton-Weston@dot.state.ma.us
- Project Website: https://www.mass.gov/newton-weston-bridge-replacement-and-rehabilitation-at-i-90i-95

QR code to
project website

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Questions and discussion

Questions and answers

- “Raise your hand” to be unmuted for verbal questions

- Submit your questions and comments using the Q&A button

- Please state your name before your question

- Please share only 1 question or comment at a time, limited to 2 minutes, to allow others to participate

- To ask a question via phone, dial *9 and the moderator will call out the last 4-digits of your phone number and unmute your audio when it is your turn.

- Please take a few minutes to complete the survey after the meeting to let us know how your experience was with this virtual meeting.

All questions and comments are subject to disclosure for public records.
Please use these functions for project related business only.

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Thank you

Newton-Weston Bridge Bundle Replacement and Rehabilitation at I-90/I-95 Including Ramp G

Zoom: August 18, 2022

Project File No. 606783

Valerie Kilduff email: I-90Newton-Weston@dot.state.ma.us

Appendix – Traffic Terms

***Actuated Signals**: A traffic signal that uses some type of detection system to aid in effectively processing traffic. Layman's term = Smart Lights.

***Adaptive Signals:** Adjusts the timing of red, yellow and green lights to accommodate changing traffic patterns and ease traffic congestion.

***Capacity:** The theoretical or calculated value of how many vehicles can accommodate a specific area during a specified time period, usually measured as "vehicles per lane per hour" or "total vehicles entering an intersection per hour."

***Concurrent Pedestrian Phasing:** The crosswalk parallel to the current thru movement gets the walk.

***Crash Cluster:** A grouping of crashes that are combined into clusters based on fixed distance between crashes.

***Crash Rate:** Represents number of crashes per million entering vehicles.

***Cycle:** The total time to complete one sequence of signalization for all movements at an intersection. In an actuated controller unit, the cycle is a complete sequence of all signal indications.

***Cycle Failure:** When a traffic signal is unable to process the amount of vehicles queued at the intersection. Vehicles waiting at the back of the line will have to sit through multiple cycles before being able to proceed through the intersection.

***EPDO:** Equivalent Property Damage Only (EPDO) value. A severity weighted number representing crashes in a given location over a certain period of time.

***Exclusive Pedestrian Phase:** When actuated by a pedestrian, or in some urban cases always part of the signal cycle, all possible pedestrian movements are allowed. All vehicle movements get a red signal.

***HSIP:** Highway Safety Improvement Program (HSIP). Funding source for high crash locations. HSIP qualifications are top 5% crash locations in each Regional Planning Association (RPA).

***Level of Service:** Level of Service (LOS). A qualitative measure used to relate the quality of motor vehicle traffic service. LOS is used to analyze roadways and intersections by categorizing traffic flow and assigning quality levels of traffic based on performance measure like vehicle speed, density, congestion, etc.

***Lead / Lag:** Defines the left turn phasing in a signal. Lead/Lead = both direction left turn start before the thru movement. Lead/Lag = one direction gets the left before the thru while the other direction gets the left with the thru after the opposing directions traffic stops. Lag/Lag = both directions get the left after the thru movements go.

***PDO:** Property Damage Only (PDO). A crash that results only in property damage with no injuries.

***Phasing:** The right-of-way, yellow change, and red clearance intervals in a cycle that are assigned to an independent traffic movement or combination of traffic movements.

***Protected / Permissive Left:** Protected Left turn phasing is when a signal only allows lefts to occur when no conflicts exist (e.g. when the opposite direction has a red or when opposite thru traffic has a red and opposing left turns are allowed to go as well.) Protected permissive left is when a signal gives a protected phase and then permits lefts when the opposite direction has a green. Left turning vehicles must yield to the thru traffic. Permissive only is when left turning vehicles must always yield to thru opposing traffic.

***Queue:** Line of vehicles waiting at a traffic light. Queue length represents the total distance occupied by the vehicles waiting in line.

***RRFB:** Rectangular Rapid Flashing Beacon (RRFB). A type of enhanced pedestrian crossing device that employs traditional pedestrian crossing signs with flashing beacons, which should only flash when actuated by pedestrians, to alert drivers.

***Road User Cost:** Additional costs borne by motorists as a result of work zone activity. The computation process is based on the assessment of mobility, safety, environmental, business, and local community impacts resulting from the work zone activities of a roadway project.

***Split Phasing:** A type of signal phasing scheme which separates vehicle conflicts by assigning the right-of-way sequentially to the two opposing approaches.

***Travel Time Delay:** Calculated difference in time between the actual travel time through an area and what the travel time would be if there was no congestion.

***V/C (Volume / Capacity Ratio):** A ratio of the number of vehicles compared to the capacity or an intersection or road segment. A V/C over “1” means the intersection cannot handle the amount of vehicles entering and will result in cycle failure.

***Yellow / Red Clearance:** Amount of time given to the yellow timing and all red timing to ensure vehicles are adequately cleared from the intersection before conflicting movements can occur.

Appendix – Bridge Terms

***Abutment:** The end support of the bridge. Helps support lateral pressure.

***Bridge Inspection:** Bridge Inspections are done to assure the safety of the traveling public on bridges, achieve and maintain compliance with the National Bridge Inspection Standards (NBIS), and identifying deficiencies to determine maintenance activities on and/or rehabilitation/replacement of structures. Typically, routine bridge inspections are performed every two years.

***Deck:** Driving surface portion of the bridge, usually comprised of concrete.

***Deep Foundations:** A type of foundation that transfers the load of the bridge deep within the earth, sometimes to bedrock.

***Drilled Shaft:** Deep foundations that are created by drilling down and filling in with reinforced concrete.

***Driven Piles:** A column (either reinforced concrete or steel) that is driven into the ground meant to help support the weight of the bridge. Driven methods can be hammering or vibratory.

***Girder:** A large iron or steel beam or compound structure used for building bridges and the framework of large buildings.

***Load Rating:** Determines the safe load carrying capacity of newly built and existing bridges. Load ratings are performed to evaluate and determine substandard bridges requiring posting, and to provide a means of determining the bridges requiring rehabilitation or replacement. Additionally, FHWA requires reporting of bridge load ratings on an annual basis.

***Micropiles / Minipiles:** These are piles less than 12in in diameter and are drilled and grouted in place.

***Piers:** A solid support designed to sustain vertical pressure. Placed along the span of the bridge to support it.

***Span:** A length of bridge between piers or abutments.

***Superstructure:** Supports immediately beneath the driving surface, usually comprising of steel or concrete beams.

***Substructure:** Foundation and supporting columns and piers.

***Structurally Deficient:** A structurally deficient bridge is one for which the deck, the superstructure, or the substructure are rated in condition 4 or less on a scale of 0-9 (0 being the lowest rating, and 9 being the best rating). Structurally deficiency does not necessarily imply that a bridge is unsafe. It does, however, mean that a structure has deteriorated to the point of needing repairs to prevent vehicular weight restrictions on it.