Effective Work Zone Project Management: Start to Finish
September 12, 2018
Agenda

• Introduction to Project
• Project Development
• Stakeholder Engagement
• Public Outreach Approach
• Evaluate Potential Impacts
• Reviewing Results
Background

- The bridge carries traffic on Commonwealth Avenue and the MBTA’s Green Line over Interstate 90 (Massachusetts Turnpike) as well as the MBTA Commuter Rail and Amtrak train tracks in Boston
- The bridge was originally constructed in 1965 and was structurally deficient
- The eastbound side of the bridge was replaced during the summer of 2017
- The westbound side of the bridge was replaced this summer
Project Location
$110 million project that is scheduled to be fully completed in the spring of 2019.

The project uses Accelerated Bridge Construction (ABC) to replace the superstructure over two intensive construction windows:

- **Summer 2017** (eastbound portion of the bridge) – complete
- **Summer 2018** (westbound portion of the bridge) – functionally complete

The Summer 2017 construction window occurred from July 26 – August 15 (20 days)

The Summer 2018 construction window occurred from July 26 – August 11 (15 ½ days)
• MassDOT decided Design-Build was the best contracting method for this superstructure replacement
• Use of Accelerated Construction Techniques were mandated in order to mitigate the potential impacts to vehicular traffic and public transit
• MassDOT worked hand and hand with design consultants to develop a “prescriptive” 25% design for use in the RFP
• The need to manage impacts to regional mobility and within the local community were major factors in constructability decisions
• Capacity loss on an Interstate Highway feeding the City of Boston and Logan International Airport was a major concern

• Required partnering with the MBTA to develop a plan on how to best address taking a major light rail transit line out of service for over 2 weeks

• Shutting down regional train service for two full weekends presented a challenge for accommodating displaced riders

• Bridge location on an urban street with retail, commercial, medical, entertainment and college land uses

Source: quora.com
Planning for Success

- Define the plan to address the impacts, be confident and sell it to internal Administration and Elected Officials
- Anticipate the tough questions and defend decisions made on constructability and managing traffic
- Analyze expected impacts to traffic operations and evaluate measures to mitigate those impacts
- Establish dedicated project working groups to work with D/B team:
  - Construction
  - Transportation
  - Public Outreach

Source: haci.saecsa.com
Transportation Working Group

- Led by MassDOT Traffic and Safety
- Construction staff were key players
- Design-Build Team Assistance
  - Design Consultant
  - Contractor
  - Public Outreach Sub
- **Stakeholders:** MBTA Bus and Transit Operations, Massport, City of Boston, City of Cambridge, Town of Brookline, TMAs, Boston University, Local Police Dept’s, Bike Advocates

Source: sustainableconversations.com
TWG: Regional Impacts

• Commonwealth Avenue is not just your typically urban street…the Green Line Rapid Transit Line runs right down the center of the road
• The Charles River is directly to the north of Comm Ave and the BU Bridge is one of main river crossings connecting to Cambridge
• Boston University is centrally located on either side of the bridge

Stakeholder Concerns

• How to detour traffic in a dense urban environment with lots of traffic
• Emergency Vehicle mobility
• How to address the displaced Green Line passengers
• Maintaining bike and ped mobility

Source: Pritchett Cartoons
Commonwealth Ave

Restricted access from Packard’s Corner to Kenmore Square (1.45 miles)

- Maintain access in two-directions for buses/emergency vehicles
- Maintain access for pedestrians, bicycles, abutters, local business
Comm Ave Vehicle Detours

Beginning Thursday, July 26 at 7:00 PM
Beginning Thursday, July 26 at 7:00 PM:

• Closed to vehicles
• Access is restricted to only pedestrians and bicycles
TWG: Bike and Ped Mitigation

• Comm Ave is a busy urban street network with high pedestrian activity
• The BU Bridge carries a significant volume of bicyclists to and from Cambridge and over the Comm Ave bridge
• Boston University students and faculty travel back and forth across the Comm Ave bridge several times a day

Stakeholder Concerns

• Need to ensure the pedestrians have access to the local businesses
• Maintain dedicated bicycle lanes
• Providing guidance to unfamiliar bicyclists and pedestrians
• Clearly marked detour routes
Encouraging Walking/Biking

- MassDOT/MBTA plan to utilize pedestrian and bicycle wayfinding signage to encourage active transportation, especially for short trips
- This will help optimize shuttle bus operations by shortening bus wait times and headways
- Goal is to ensure that people have options to get around the area

<table>
<thead>
<tr>
<th>Babcock Street</th>
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<tr>
<td>Agganis Arena</td>
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<tr>
<td>BU Bridge</td>
<td>11 MIN</td>
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<td>St. Mary’s Street</td>
<td>16 MIN</td>
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<td>Blandford Street</td>
<td>15 MIN</td>
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<tr>
<td>Kenmore/Fenway Park</td>
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<td>Agganis Arena</td>
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<td>Babcock Street</td>
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MassDOT partnered with the City of Boston and the Town of Brookline to provide additional temporary Blue Bikes stations on Comm Ave at Silber Way and Babcock Street during the shutdown.

Blue Bikes dropped their Single Trip Pass to $1 during the shutdown period to encourage Bike Share use.

Bike Valet service provided as follows:
- Commonwealth Ave at Babcock St – 7:30 to 10:30 AM
- Longwood and Binney - 8:30 to 10:30 AM
- Commonwealth Ave at Silber Way – 3:30 to 6:30 PM

Source: Boston Globe
Pedestrian Routes and Detours

The temporary walkway will be used to connect pedestrians to the BU Bridge. Westbound pedestrians must use the temporary crossings and walk on the eastbound side of Commonwealth Ave.
TWG: Transit Operations

- Green Line, B-Branch travels along Comm Ave and originates at Boston College in Chestnut Hill and ends in Downtown Boston (24 stops)
- The Route 47-Bus and the CT-2 (Crosstown) are primary MBTA bus routes and carry significant volumes of passengers
- Framingham/Worcester commuter rail line has moderate weekend use

Stakeholder Concerns

- Green Line passenger capacity versus shuttle bus capacity
- Delays with loading and unloading
- Daily bus routes modified by detours
- Impact of travel time increases on passenger satisfaction
Green Line – B Line Service

Green Line Light Rail Service Terminated Friday at 5:00 AM

- B-Line Service terminates at Babcock Street and Blandford Street
- Passengers transfer to shuttle bus for the duration of the Comm Ave Closure service
- Police Details and Customer Service personnel at stations to assist passengers
- Select stations would be closed due to construction operations
Weekends July 28-29 and August 4-5 (2018)

Free bus shuttles will replace Framingham/Worcester Commuter Rail train service between Framingham and Wellesley Farms. After Wellesley Farms, the shuttle bus will then continue nonstop to Riverside, where riders can connect to the Green D Line. In addition to the local shuttles, express shuttle service will be available between Framingham and Riverside.

Important to know
• Weekday train service on the Framingham/Worcester Line will run as usual.
• Station parking lots are expected to fill up early. Please plan ahead, car pool, or seek alternate routes.
Service impacts for two weekends: **July 28-29** and **August 4-5 (2018)**

- Shuttle bus service will run between South Station and Albany, NY, with stops in Springfield and Worcester.
- No service disruption on weekdays.

*Source: Local Motion Boston*
Beginning Thursday at 7:00 PM:

- MBTA Bus Routes CT2 and 47 will be detoured from normal route
- Route 57 bus will continue to run and make most of regular stops
• Commonwealth Avenue has a wide range of land use along the length of the corridor impacted by the bridge reconstruction
• Retail/commercial businesses need to be able to receive deliveries
• Patients/Clients need to be able to access medical/business services
• Parking Restrictions need planned out to not overburden business

Stakeholder Concerns

• Need to define detour routes for truck deliveries to access the businesses
• Ability for business owners, workers and clients to get to business
• Fear of losing customers due to difficulty in accessing business
A placard system was utilized for businesses and residents located within the traffic restricted area (between St. Paul Street and St. Mary’s Street) during the shutdown.

- Placards distributed to residents, employees and delivery vehicles.
- Boston University operations had dedicated placards for travel in bus/emergency vehicle lane.
Parking Restrictions

From Packard’s Corner to Harry Agganis Way
• Stakeholder working group initiated discussion on what level of police details were needed to provide traffic control at project intersections businesses.

• Joint meeting with Law Enforcement helped to refine Traffic Control Points that were adopted for project.
TWG: Interstate 90 Impacts

- I-90 reduced to 2 lanes in both directions from 9:00 PM on the Friday starting the project through 5:00 AM the following week Monday
- The I-90 Eastbound on-ramp from Cambridge/River Roads closed during this entire period and the I-90 Westbound Exit 20 off-ramp to Cambridge/River Roads closed intermittently during this timeframe

Stakeholder Concerns

- Massport questioned ability to get people and Logan Express Buses to the airport in timely fashion
- Emergency Vehicle mobility
- Shuttle bus operations for the commuter rail/Amtrak shutdown

Source: Boston Globe
Limits of the crossover are Allston Interchange and Beacon Street Overpass (~6600 feet)
Use of Movable Barrier
**I-90 Off-Peak Lane Reductions**

**Weekends**
- During I-90 EB Shift:
  - 9:00 PM Friday to 5:00 AM Monday
  - 1 eastbound lane open
  - 2 westbound lanes open
- During I-90 WB Shift:
  - 9:00 PM Friday to 5:00 AM Monday
  - 1 westbound lane open
  - 2 eastbound lanes open

**Weekdays**
- During I-90 EB Shift:
  - 7:00 PM to 5:00 AM
  - 1 eastbound lane open
  - 2 westbound lanes open
- During I-90 WB Shift:
  - 8:00 PM to 6:00 AM
  - 1 westbound lane open
  - 2 eastbound lanes open

*The I-90 lane reductions allow room for demolition and installation of new steel girders*

Demolition of deck above I-90 eastbound (all traffic is shifted to the westbound lanes)
Public Outreach and Communication

Focus on Public Engagement

• July 2018 Public Meetings
• May 2018 Public Meetings
• July 2017 Pre-Construction Public Meetings
• April/May 2017 Public Meetings
• June 2, 2016 Community Meeting

MassDOT Communications held frequent briefings for the press during the build up to the construction and all throughout the process.
Outreach Engagement

Pre-Closure:
- Public meetings and briefings for stakeholders
- Printed materials (brochures, flyers) available in multiple languages
- Door to Door Business Outreach
- Project Website
- Email to E-Zpass
- Email Red Sox season ticket holders
- Red Sox advertisements

During Closure:
- Email alerts
- Real Time Traffic Monitoring System active during shutdown
- Dedicated Project Email Address
- 24/7 Hotline for abutters (noise issues): 617-350-4004

Work Zone Safety Message:
- Be Patient
- Minimize Distractions
- Give your full attention to navigating through the work zone
- This is not the time to talk on a cellphone, text, or change the radio station
Tips for the Public

- **Reduce**
  - Avoid unnecessary travel if possible.
  - Plan ahead- take your summer vacation during this time.

- **Reroute**
  - Recognize that Commonwealth Avenue will be closed to vehicles and I-90 will have reduced capacity.
  - Use alternate routes to reach destinations throughout the region.

- **Re-mode**
  - Shift to active transportation including walking and biking
  - Take public transportation such as the MBTA Commuter Rail Worcester/Framingham line.
Evaluating the Impacts

**MassDOT Used the “Scare Tactic” to avoid the area**
- The message was that the travel delays on I-90 due to the loss of 50% of the lane capacity would create long queues and significant travel delays
- The Secretary of Transportation and Highway Administrator both echoed the same message, “avoid the area if you can, it is going to be bad”

**Media/Elected Officials Response**
- How bad will it be? What can be expected for travel time increases
- Any suggestions for best time to travel if you have to or potential for alternate routes?

**How did MassDOT respond?**
- Reached out to Kittelson Associates to assist with modelling the work zone impacts using the Free-Val Work Zone program