

**MASSDOT - HIGHWAY DIVISION**  
**Project Need Form**

This form is intended to provide preliminary information about the proposed project. It is not expected that all information that is asked for is available or known but applicants are encouraged to complete the form as fully as possible.

Proponent: David H. Knowlton, P.E. Title: City Engineer / DPS Director  
Municipality: Salem Organization: Department of Public Works  
PNF completed by: Lori Aho Title: Director of Municipal Services, VHB  
Phone: 603-391-3943 Email: Laho@vhb.com  
Date: 10/9/2018

**Part I – Facility Location and General Information**

Municipality: Salem, MA  
Primary Roadway(s) or Facility: Boston Street  
MassDOT District: 4 MPO Region: Boston MPO

Estimated project limits by mile marker, station or other distinguishing landmarks such as cross street(s).  
**Please include a locus map of the potential project location.**

Route/Street ID	Begin	End	Total Mileage
Boston Street	Peabody Town Line	Essex Street	0.80 Miles (+/-)
Essex Street	Warren Street	North Pine Street	0.12 Miles (+/-)

Is the location in an urban or rural area? ☒ Urban ☐ Rural

What is the federal functional classification of the road? Identify each section.

☐ Interstate ☐ Urban Collector ☐ Rural Major Collector  
☒ Urban Principal Arterial ☐ Rural Principal Arterial ☐ Rural Minor Collector  
☐ Urban Minor Arterial ☐ Rural Minor Arterial ☐ Other Classification \_\_\_\_\_

Is the proposed project on the National Highway System? ☒ Yes ☐ No

Who owns the roadway/facility? If multiple owners, please give the ownership percentage for each.

☐ MassDOT \_\_\_\_\_% ☒ City or Town 100 \_\_\_\_\_%  
☐ Other State Agency \_\_\_\_\_% ☐ Other \_\_\_\_\_%

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**Project Need:** Briefly describe or characterize, in general terms, the primary project need or goal (e.g. rehabilitate a roadway, improve safety at an intersection, reduce corridor congestion, improve pedestrian facilities, or provide bike accommodation).

The goal of this project is to improve complete streets design elements along the roadway, including the provision of dedicated bicycle facilities, improved intersection safety, and an evaluation of pedestrian crossings along the corridor, which currently consist of numerous striped crosswalks (both controlled and uncontrolled) that are not ADA compliant and frequently do not provide curb ramps. These improvements will also enhance mobility between the neighborhood and the Route 465 bus.

### Part II: Project or Program Description

Provide whatever information is available to characterize the existing, general attributes of the facility.

CHARACTERISTIC	DATA	Comments
Number of Lanes	2	
Lane Width	Varies	37'-55' pavement cross section. Includes parking and turn lanes in some areas
Shoulder Width	n/a	
Sidewalk Availability/Width	6-10 feet	
Existing Right of Way	Varies	
Annual Daily Traffic (ADT)	17,500 – 22,300 vpd	
Percent Truck Traffic	Approx. 4%	
Daily Bicycle Traffic	1 – 5 bicyclists	Weekday PM peak hour volumes
Daily Pedestrian Traffic	2 – 21 pedestrians	Weekday PM peak hour volumes
Traffic Control (signal, flash, signs, etc.)	Signals and Signs	
Roadway Lighting	Cobra Head Street Lighting	
Posted Speed Limit	25 mph	Posted on Western end of project / Citywide speed limit
Transit Routes & Facilities	MBTA Route 465	

Deleted: bicyclists

**In what type of area is the project located:** *Project limits may include more than one type of area. For a definition of areas, please refer to Chapter 3 of the Guidebook.*

- |   |  |
|---|--|
| <input type="checkbox"/> Rural Natural        | <input type="checkbox"/> Suburban High Density               |
| <input type="checkbox"/> Rural Village        | <input type="checkbox"/> Suburban Village/Town Center        |
| <input type="checkbox"/> Rural Developed      | <input checked="" type="checkbox"/> Urban Residential or CBD |
| <input type="checkbox"/> Suburban Low Density |  |

### How does the roadway/facility function in the community?

- ☐ High-speed, primary corridor with limited access  
☒ Moderate speed, major corridor between towns/regions  
☐ Low to moderate speed corridor between towns/regions  
☐ Moderate speed, major street connecting residential areas to a town center or major connector  
☐ Low to moderate speed street connecting residential areas with other streets  
☐ Primarily or exclusively a residential street  
☐ Exclusive pedestrian/bicycle facility

**Regional Considerations:** Identify any regional use of the roadway (Characterize how neighboring communities use the roadway, what kind of link it provides to major arterials or highways).

Boston Street is a major primary arterial that changes names to Main Street in Peabody, with direct connections to Peabody Center, Route 128 (2.3 miles west) and Route 1 (4.3 miles west). Boston Street is one of two direct connections between downtown Salem and the Interstate system.

**Part III: Identification of Problem, Need or Opportunity**

**A. Condition of Existing Facilities - Problem, Need, or Opportunity**

1. **Primary Asset:** Please describe the condition of the roadway, path, or other horizontal facility, such as type and extent of cracking, ride-ability, utility patching or other surface defects such as rutting, raveling, shoving, bleeding, etc. This may be based on visual inspection or automatic detection methods. Describe any roadway sub-base issues. Include any PMS (Pavement Management System) ratings, PCI (Pavement Condition Index) data and/or photos, if available.

The roadway is generally in fair condition, with evidence of alligator cracking and substantial utility patching (particularly to the north). Pavement appears to be rutted in some areas with raveling noted along the eastbound travel lane.

2. **Preventive Maintenance:** Describe any repair or preventive maintenance to the roadway or appurtenances. Include the extent of the work (resurfacing, rehabilitation, reconstruction or replacement) and when the last repair was done.

Geometry improvements at the Aborn Street and Boston Street intersection were completed approximately 10-years ago. No other improvements, besides utility improvements, have been made since.

3. **Other Existing Assets:** Please describe the condition of facility appurtenances, such as signs, signals, lighting, median barriers, retaining walls, noise barriers, guardrail, pavement markings, curbing, landscaping, fences, ITS components, etc.

Upon initial review, all appurtenances appear to be generally in fair condition. Pavement marking are worn in some locations, the majority of the corridor has sub-standard curb reveal, and traffic signals are post mounted or use type 1 mast arms with 8" lenses. Street trees appear to be in good to fair condition, but excessive weed growth was noted.

4. **Drainage System:** Please describe any specific concerns related to the existing drainage system. If there is a history of flooding in the project area, describe the potential solutions under consideration, such as increased maintenance, repair/replacement of drainage infrastructure, raising the vertical profile, or culvert replacement, etc. List any opportunities for improving storm water management, including drainage outfalls, within the project limits.

There are no drainage system concerns regarding flooding. New catch basins will be deep sump wherever possible to improve treatment.

5. **Bridges:** If the project/program includes a bridge or bridges, please describe the condition, such as bridge ratings, dates of inspection, weight restrictions, closings, structural adequacy, functional obsolescence, condition of other bridge elements, etc. Identify the bridge location and ID number (if known).

N/A

Commented [DM1]: City to provide input

Commented [DM2]: City to provide input

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**6. Existing Utilities:** Identify and locate any underground utilities (water, sewer, gas, other) and overhead utilities (electric phone, cable). Identify any larger utility appurtenances, above ground or underground, such as cabinets or vaults. Identify any active or inactive railroad crossings.

Underground utilities are prevalent throughout the corridor, the City is making improvements to its water system as needed, in anticipation of the roadway TIP improvements. The Gas distribution system is currently being replaced by National Grid Gas. Above ground utility wires are primarily carried on the eastbound side of the street, running to the westbound side of the street when providing a connection into the adjacent neighborhood or to a westbound cobra head light. As such, utility poles are noted along both sides of the roadway. Traffic signal cabinets and emergency call boxes are also located along the roadway.

Commented [CL3]: Does the city have information that can be provided?

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### B. Mobility - Problem, Need, or Opportunity

**1. Motor Vehicle Mobility and Congestion:** Please describe any existing or prospective highway congestion issues or bottlenecks. Identify the nature and extent of congestion, including when it occurs and whether there is queuing. Include any traffic analysis, including LOS (Level of Service) data or travel times, if available. Please describe any need or opportunity for greater connectivity or improved access along the corridor or to particular points along the facility. Identify any missing connection or constraint in access that could be improved for greater motor vehicle mobility.

There are congestion issues located along this stretch of roadway. The intersection of Boston Street at Bridge Street / Proctor Street / Goodhue Street specifically experiences congestion issues, with the intersection experiencing an overall LOS D during the weekday evening peak hour with queues of 400 feet or more on the westbound and southbound approaches. Queues of over 400 feet are also reported on the approaches at the intersections of Boston Street at Nichols Street / Grove Street and Boston Street at Essex Street during the weekday morning and weekday evening peak hours. In addition, delays of over 120 seconds (LOS F) are reported on the stop-controlled approaches of Aborn Street and Pope Street. This corridor provides direct connectivity between downtown Salem in the east and downtown Peabody and Route 128 / I-95 in the west.

**2. Pedestrian Mobility and Accommodations:** Please describe the condition of any existing pedestrian facilities. Include the limits and width of any existing sidewalks and identify any obstructions. Note if the existing sidewalks are ADA/AAB compliant. In addition, please characterize the pedestrian need, including any indication that pedestrians use the corridor beyond existing sidewalks (rutted paths, pedestrian using the roadway shoulder, etc.).

Sidewalks of adequate width (5' or greater) are present along the corridor. They are primarily concrete and in good condition. Sections that are constructed of asphalt or pavers tend to be in fair condition but are not as prevalent along the corridor. Although utility poles, sign posts and other obstructions exist along the corridor, there is a clear-zone free of obstructions for pedestrian travel. The narrowest point of the Boston Road corridor, between Grove Street and Bridge Street, (adjacent to the current, redeveloped Flynntan warehouse) has sidewalks constructed of asphalt in poor conditions with noticeable pitting and breakage on the westbound side of the street only. Apart from the Flynntan warehouse property, sidewalks along the westbound side of the roadway are in better condition than the eastbound side.

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There are a number of crosswalks across Boston Street. The majority of curb ramps are not ADA/AAB compliant and, although some are signalized, most midblock pedestrian crossings have no curb ramps or are placed in locations where a pedestrian would cross into a driveway apron or where the curb reveal is less than 1 foot. Although pedestrians will cross the street in locations where crosswalks are not present, there is no evidence of rutted paths and no use of the roadway shoulder by pedestrians, as full sidewalk exists along the entire length. Pedestrian volumes at the midblock crossings range from 0 to 16 pedestrians an hour during the weekday morning and weekday evening peak hours.

There is an existing crosswalk on the southern leg of Essex Street, that crosses through the brick island. On the northern leg, there is no crosswalk.

**3. Bicycle Mobility and Accommodations:** Please describe the existing bike accommodation (5' minimum shoulder width, bike lane, or shared use path), including the limits and width of any existing facility. In addition, please characterize existing bike traffic, and condition of any bike racks or other associated appurtenances. Identify if project location is included in any local, regional or state bicycle routes.

Under existing conditions, bicyclists share the road with vehicles and the project location is not included in any local, regional, or state bicycle routes. Existing bicycle volumes along the corridor range from 0 to 2 bicyclists in the weekday morning peak hour and from 1 to 5 bicyclists in the weekday evening peak hour. The Salem Bike Advisory Committee is currently updating the 2010 Bike Master Plan. Components related to the Boston Street corridor will be incorporated in the Boston Street TIP improvements and reviewed with the Advisory Committee moving forward. Bike accommodations will be considered for the approximate 600' of work proposed on Essex Street.

**4. Transit Mobility and Accommodations:** Please describe the existing transit accommodations (bus stops, bump outs, shelters, transit signal prioritization), include known bus routes and providers. In addition, please characterize existing transit usage, and other known obstructions.

MBTA Bus Route 465 travels down Boston Street. Bus stops are located on either side of the roadway at Pope Street and Nichols Street. No bus shelters or benches are provided at any of these stops. MBTA Bus Route 465 has an overall ridership of approximately 415 riders on a typical weekday and 265 on a typical Saturday.

**5. Connectivity:** Please describe any need or opportunity for greater connectivity or improved access along the corridor or to particular points along the facility. Identify any missing connection or constraint in access that could be improved for greater bicycle or pedestrian mobility.

There is a need to improve bicycle access along the corridor and may expand in the future to connect to downtown Peabody and points west.

## C. Safety - Problem, Need, or Opportunity

**1. Motor Vehicle Safety:** Please describe any safety concerns on the facility. Please note the presence of any MassDOT crash clusters, regionally identified high-crash locations, or any other documented need for improvements. Provide any crash history within the project limits, including number and severity of crashes, type of crashes and whether there have been any fatalities. Include the calculated crash rate, if available. If the project location contains any MassDOT identified crash clusters, a Road Safety Audit will need to be conducted prior to making a 25% submission.

The intersection of Boston Street at Goodhue Street/Bridge Street/Proctor Street is currently listed as HSIP eligible on MassDOT's website. South of this project's limits, Essex Street from May Street to Jackson Street is also identified as HSIP eligible. Should this project be progressed through the Transportation Improvement Program, roadway safety audits (RSAs) would be required at these locations. Five of the intersections along the corridor have calculated crash rates higher than the district average: Boston Street at Aborn Street (0.63), Boston Street at Nichols Street / Grove Street (0.92), Boston Street at Bridge Street / Proctor Street / Goodhue Street (1.14), Boston Street at Pope Street (0.61) and Boston Street at Essex Street (0.85). The majority of crashes along the corridor were angle or rear-end crashes resulting in property damage only. No fatal crashes were reported along this corridor.

**2. Safety for Other Users:** Please describe adjacent significant activity centers (schools, senior centers, places of assembly, industrial operations, or parks) and describe any safety issues for other users such as pedestrians, bicyclists, persons with disabilities, transit riders, trucks, school children, etc.

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Please note the presence of any MassDOT bike or pedestrian clusters, or any other documented need for improvements. If the project location contains any MassDOT identified crash clusters, a Road Safety Audit will need to be conducted prior to making a 25% submission.

At the eastern end of the project limits, Splaine Park is located about 350' south of the Boston Street corridor and the Bowditch School is located about 550' north. The Salem Dog Park is located less than one-third mile north on Bridge Street and Mack Park is located less than one-third mile north on Goodhue Street. There are no MassDOT bike or pedestrian clusters along the corridor.

**3. Evacuation Routes:** Please describe whether there are any known evacuation routes identified at the state, local or private level.

The Boston Street corridor is not listed as an official evacuation route for the City, however, it is one of the six (6) entrance corridors into/out of the City and would be an essential route during any emergency

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### D. Economic Development - Problem, Need, or Opportunity

**1. Economic Impact on a City, Town, or Village Center:** Identify if the project is located within a city/town/village center, an area  $\geq 5000$  population per square mile, or if the roadway provides an important connection to a city/town/village center or population center. If the roadway is a high truck ADT corridor, please note and provide documentation. Identify any economic needs or opportunities that can benefit from the project.

The Boston Street corridor provides a direct connection from Downtown Salem to Downtown Peabody and Route 128 / I-95. In addition, the corridor is located in an area with a population greater than 5,000 people per square mile.

**2. Priority Development Areas:** Identify any Priority Development Areas (PDAs) that benefit from the project. (Examples of PDAs are Designated Growth Districts, 43D Priority Development Sites, Brownfields Redevelopment Sites, Mill Revitalization Districts (MRD), or Undeveloped Land Zoned Industrial or Commercial). Identify any needs for improved access to services, industry clusters, or job creation in the project area or opportunities for improvement.

Just to the north of the corridor is the North River Canal Priority Development Area, located on either side of the North River Canal (as defined by the Metropolitan Area Planning Council).

**3. Local Economic Considerations:** Identify needs or opportunities to fill vacant storefronts or office spaces in city/town/village center, or the need for any amenities that improve accessibility, wayfinding, pedestrian accommodations, or beautification of a city/town/village center with the intent of attracting consumers.

Commented [DM5]: City to provide input

There are numerous developments currently ongoing along the corridor, from the Essex Street end to mid-corridor. Developments include numerous new housing units and a Senior Center. Throughout the corridor, Numerous store front improvements and other economic development projects are expected in

anticipation of, or as a result of, the proposed Boston TIP improvements.

**E. Environmental & Health Effects - Problem, Need, or Opportunity**

**1. Air Quality and Greenhouse Gases:** Describe any opportunities to meet the State goals of improving Air Quality and reducing Greenhouse Gas emissions in the area. Please note any bottlenecks or congestion corridors that can be improved via improved traffic operations, as well as transit, bicycle, and pedestrian infrastructure that can be expanded (please reference section B: Mobility). For more information on MassDOT Greenhouse Gas Reduction and Air Quality standards, please use the following link: [MassDOT Greenhouse Gas Reduction](#)

The project will include improved bicycle facilities, which will improve air quality and reduce greenhouse gas emissions in the area by providing enhanced opportunities for residents to travel the corridor via bicycle.

**2. Stormwater Improvements/Impaired Waterbodies:** Identify any impaired waterbodies or TMDL watersheds for nutrients near the project, and any stormwater runoff issues associated with the project.

The North River, which runs east/west about 600 feet to the north of the study area, is listed as a category 5 impaired waterbody. The impaired waterbody has a TMDL for fecal coliform.

**3. Wetland(s) and Resource Areas:** Identify any wetlands, watersheds, or resource areas adjacent to the project, along with their current condition. Identify any opportunities to provide wetland restoration to a degraded wetland resource area.

N/A

**4. Wildlife Habitat(s):** Identify any priority habitats within a ½ mile of the project limits. (Examples of priority development areas include: Core Habitat and Critical Natural Landscape, Coldwater fisheries, diadromous fish runs, Vernal Pools, and NHESP Priority and Estimated Rare species habitat).

N/A

**5. Resiliency:** Indicate whether the project is located in a 100-year flood zone. Identify any failing culverts or headwalls, and any evidence of stream bed or stream bank erosion, scour, or any hydraulic restrictions at bridges or culverts.

The project is located approximately 100 feet south of a 100-year flood zone that includes most of Bridge Street, Goodhue Street, and the North River. The project itself is not located in a 100-year flood zone.

**6. Historic/Cultural/Archaeological Resource(s):** Identify any National Register listed or eligible properties in the area, any nearby Open Space, or any potential 4(f) or Article 97 protected land in the area.

Yes, the entire project area is an historic district listed in the National Register of Historic Places (Source: MACRIS). Project will require notification to MHC and Certificate of Appropriateness from LHDC.

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**7. Hazardous Materials:** Identify any hazardous materials or sites adjacent to the project. Discuss if the project will involve handling hazardous materials or on any adjacent properties.

N/A

### F. Social Equity - Problem, Need, or Opportunity

**1. Environmental Justice:** Identify if the project is located in, or within a ¼ mile of, an Environmental Justice area. Indicate any documented need to improve the environmental impacts, safety, sustainability, or mobility of the EJ community. Please note that the proponent is encouraged to fully engage any EJ communities to assess any problems, needs, or opportunities for improvement in the area.

The project is within a ¼ mile of two environmental justice areas. The area north of Boston Street throughout the study area is a minority environmental justice area and the area south of Boston Street from Pope Street to Essex Street is a minority and low-income environmental justice area.

**2. Title VI:** Identify if the project is located in, or within a ¼ mile of, a Title VI area. Identify any documented need or opportunity to improve the access, safety, sustainability, or mobility to the Title VI community through public outreach. Please note that the proponent is encouraged to fully engage Title VI communities to assess any problems, needs, or opportunities for improvement in the area.

The project is within a ¼ mile of two Title VI areas. The area north of Boston Street throughout the study area is a minority and limited English proficiency Title VI area and the area south of Boston Street from Pope Street to Essex Street is a minority, limited English proficiency, and low-income Title VI area.

**3. Regional Equity:** Please note the last project the proponent initiated seeking Federal Transportation Funds, along with the year initiated. If any projects have been constructed using Federal Transportation Funds in the last 5 years, please identify along with the year completed. If the area is located in a rural area, discuss the importance of any potential improvements to the community or region.

Commented [DM6]: City to provide input

The City and MassDOT are currently completing the Canal Street Corridor Improvements, which utilized Federal Transportation Funds. The project included an off-road Shared-Use Path, the final phase of the SUP improvements is currently being bid by MassDOT to contractors. Construction is expected to start in the Spring of 2019.

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### G. Planning and Public Outreach - Problem, Need, or Opportunity

**1. Describe any Public Outreach that has occurred.** Include any public informational meetings, local mailings, workshops, planning documents, etc., where the proposed improvements were specifically presented to abutters, businesses and/or the general public. Please note any local support or opposition to the project, including any local advocacy groups.

Commented [DM7]: Has there been any other public outreach for the project?

A stakeholders meeting for the project occurred on October 2, 2017. Another stakeholder update meeting is scheduled for November, 2018.



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2. Describe any special needs that need to be accommodated to fully engage the public with respect to public outreach

N/A

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3. Identify any local or regional planning documents that identify the problem, need or opportunity outlined within this PNF.

The City is currently developing a complete streets assessment for Boston Street that includes public outreach (one public information meeting).

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4. Identify efforts to coordinate with relevant government agencies, including RTA(s), DCR, regulatory agencies, or neighboring municipalities.

N/A

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**Thank you for completing this form. Please submit the PNF to the Regional MPO/RPA and the MassDOT Highway Division District office.**