



# Concrete Pavement Solutions

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*massDOT*  
**Transportation** MassDOT-Highway Design  
**Innovation**  
CONFERENCE

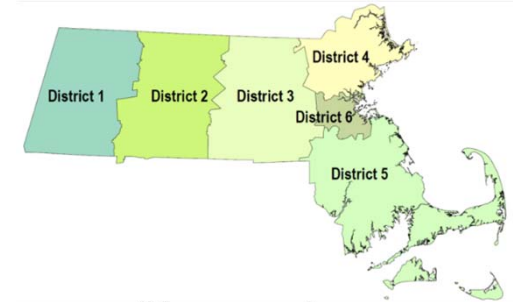
**massDOT**  
Massachusetts Department of Transportation  
Highway Division

# Concrete Pavement Solutions

## Background

Why:

- Concrete pavement have shown to provide longer life cycles to roadways.
- Choosing the appropriate locations for concrete pavement would enable MassDOT to extend the life of its roadways.
- Efficient use of capital would enable to better maintain the Commonwealth's roadways.



# Concrete Pavement Solutions

## Background

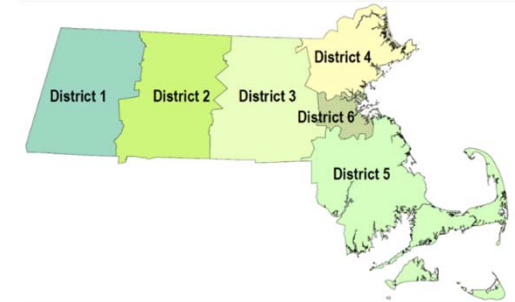
Who:

MassDOT:

- Highway Design
- Pavement Engineer
- 6 Districts

Concrete Industry:

- MACAPA
- ACPA-NYS



# Concrete Pavement Solutions

## Criteria for Concrete Pavement Project Selection



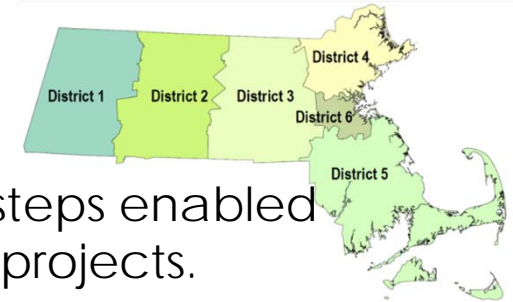
Establish best criteria to select the best projects that could benefit the installation of concrete pavement.

Criteria:

- High ADT
- High Truck Percentage
- High Turning Vehicle Volume
- Long Queuing Lengths
- Minimum Utility Relocation
- Available ROW for Construction Staging
- No or Minimum ROW Impacts

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## Screening Process of Already Funded Projects



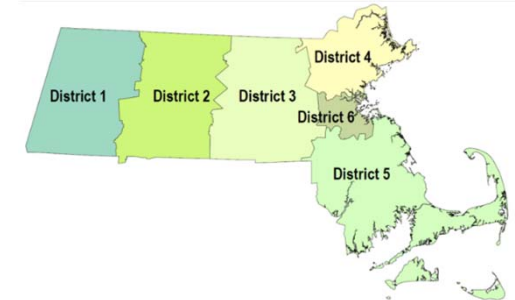
Once the criteria was established, the following steps enabled MassDOT to come up with a shortlist of potential projects.

- The Districts investigated all design projects in the current TIP that coincide with the Criteria of Concrete Pavement Projects Selection.
- MassDOT Highway Design reviewed and screened the proposed locations.
- Projects selected along with the MassDOT Pavement Engineer, the Districts designers, the consultants, the Concrete Industry Representatives including Bill Cuerdon and Craig Dauphinais here today.

# Concrete Pavement Solutions

## Projects were Selected in the Following Districts

- District 2
- District 3
- District 4
- District 6



# Concrete Pavement Solutions



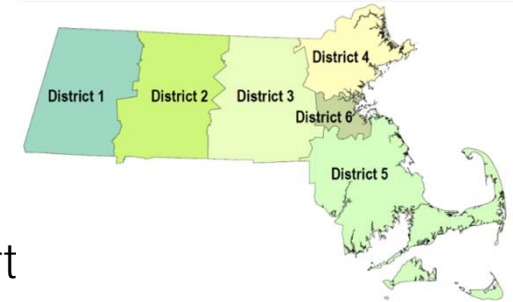
## Site Visit in District 2

- May 30<sup>th</sup>, 2018
- District 2-Project 604209-Holyoke-West Springfield-Rehabilitation of Route 5 (Riverdale Road), from I-91 (Interchange 13) to Main Street in Holyoke & from Elm Street to North Elm Street in West Springfield (3.2 Miles).
- This project was a good candidate because Route 5 (Riverdale Street) is a 70-year old concrete pavement road that is at its terminal service life.
- The signalized Intersections of Route 5 (Riverdale Street) at Brush Hill Ave, Wayside Ave and Ashley Ave are recommended for reconstruction with concrete pavement. These intersections meet the criteria for concrete pavement such as:
  - High truck volume
  - High turning volume
  - Long queuing lengths.
  - The current designer is HNTB and the ad date is 11/20/2021



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## Site Visit in District 4



- November 14, 2018
- District 4-Project 608494-Newbury-Newburyport Resurfacing & Related Work on Route 1
- 2 Intersections were identified as potential locations:
  - the Intersection of Route 1 at State Street (The Newburyport Roundabout)
  - the Intersection of Route 1 at Hanover Street and Middle Road.
- The intersections of Route 1 at State St (the Newburyport Roundabout). The location seems ideal with ADT of 11,500 vpd in 2017. The truck percentage is estimated at 4.0% trucks or 460 tpd. Although the concrete industry representative found the location ideal for a concrete intersection solution, the Town of Newburyport has different plans for the location.



# Concrete Pavement Solutions

## Site Visit in District 4



A second location is just southerly of the rotary, the intersection of Route 1 at Hanover St and Middle Road. This is an existing signalized intersection. The location seemed an appropriate location with:

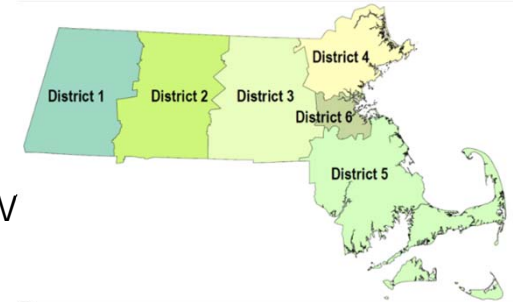
- minimum utility relocation
- wide state right-of-way availability
- full depth reconstruction pavement for the intersection

Design Appropriate:

- The design can be done by District 4 in-house design staff
- The survey can be provided by on-call surveying contracts
- The concrete pavement design can be provided by the concrete industry once a curb and tie plan is furnished.

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## Site Visit in District 6



- District 6- Project 608484 Canton-Milton-Roadw on Route 138
- Three intersections were visited along Route 138.
  - Route 138 Washington St at Royall St and Blue Hill Road. The ADT is approximately 32,783 vpd and the truck percentage is approximately 6% or 1,990 tpd
  - Route 138 (Turnpike St) at Washington St.
  - Route 138 (Turnpike St) at Randolph St
- The District 6 site visit determined that the project of Route 138 was not an appropriate candidate for concrete intersections upgrades as the intersections themselves were in good shape, there were utility conflicts and right-of-way takings would be required.

# Concrete Pavement Solutions

## Introduction to Concrete Industry

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