# MassDOT's Transportation Choice and Healthy Transportation Policy Initiatives

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**Michelle Danila, Complete Streets Engineer, MassDOT**

ACEC

**April 2018**

North Street, Pittsfield


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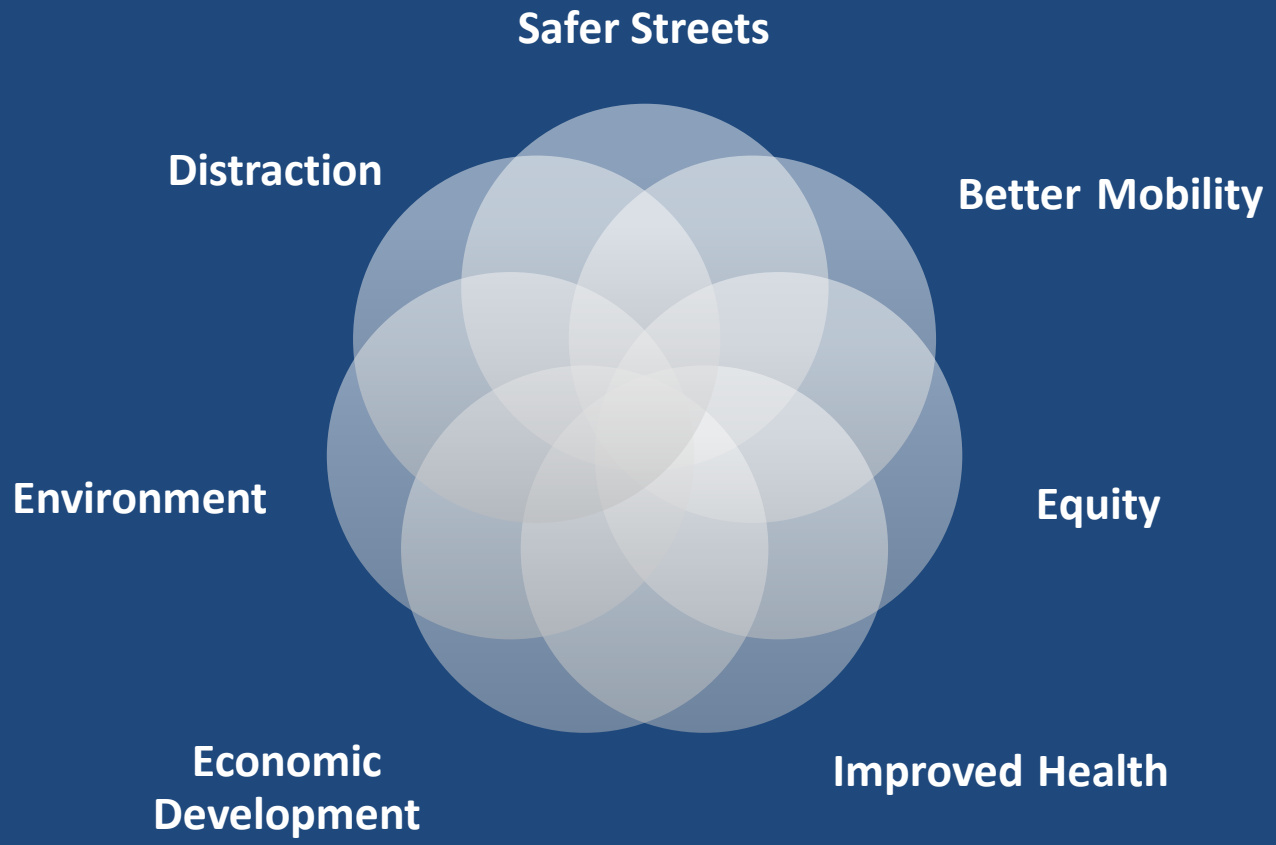
# Why provide choices in transportation?

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# Transportation Choices Discussion


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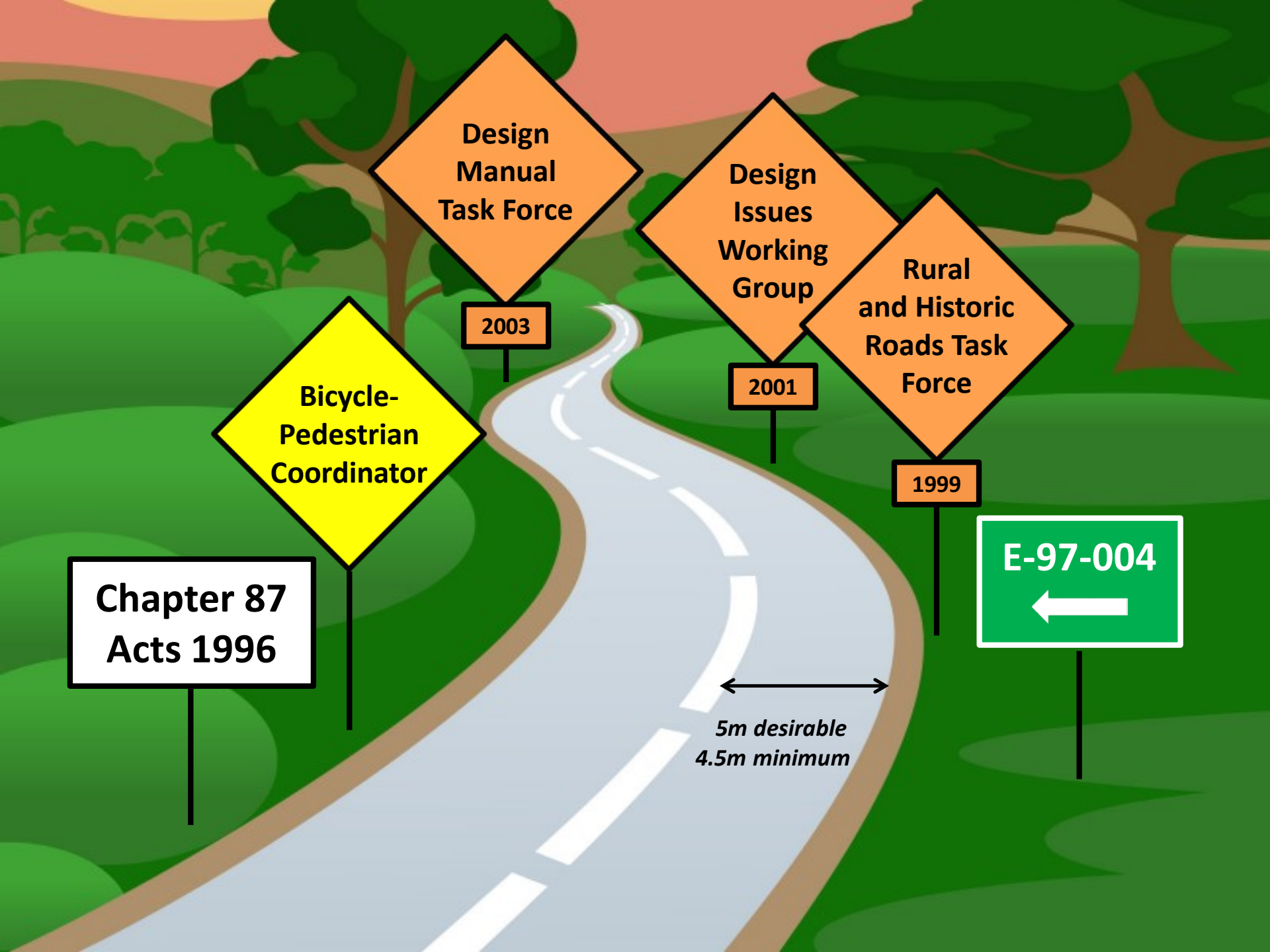
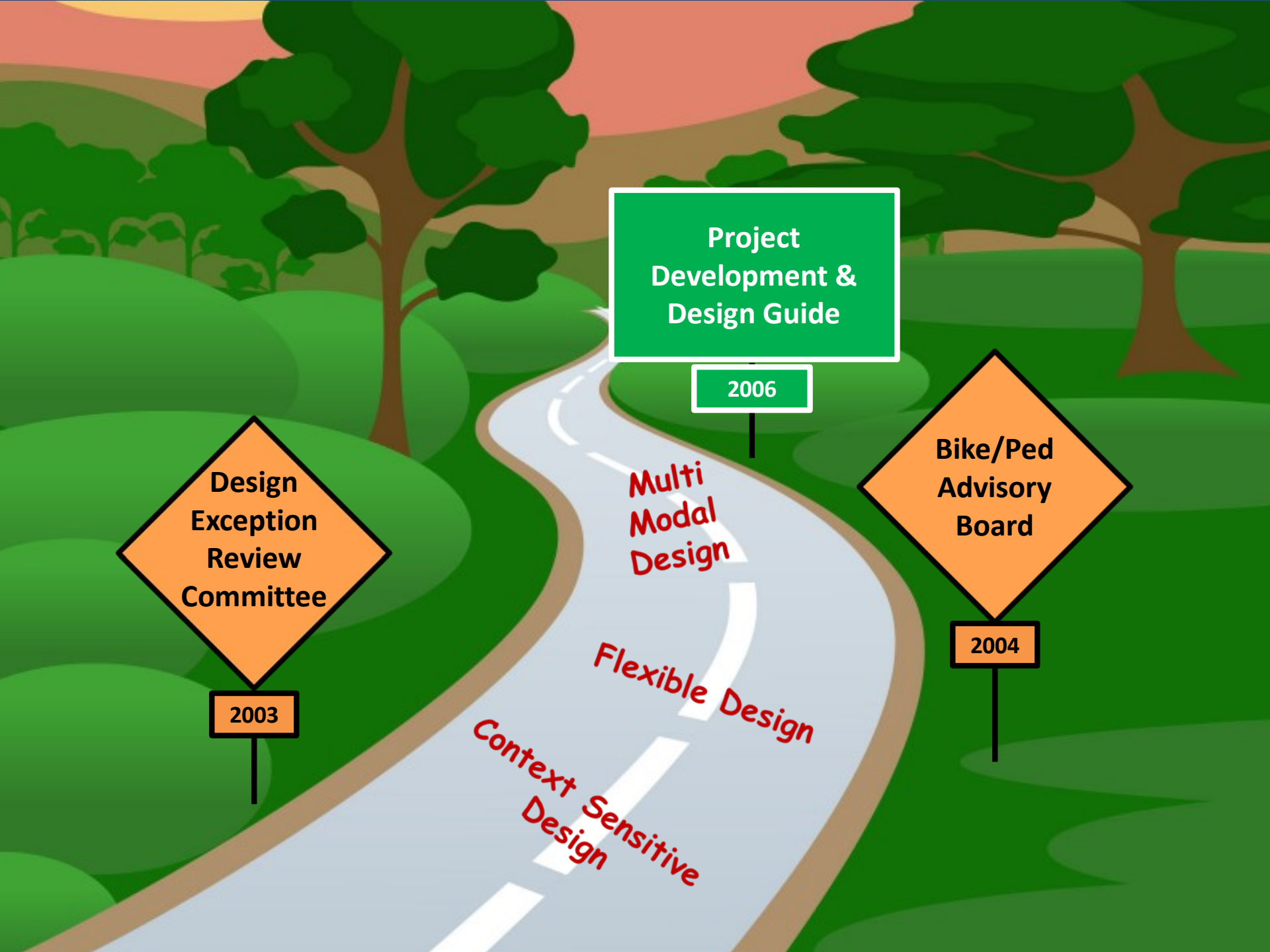
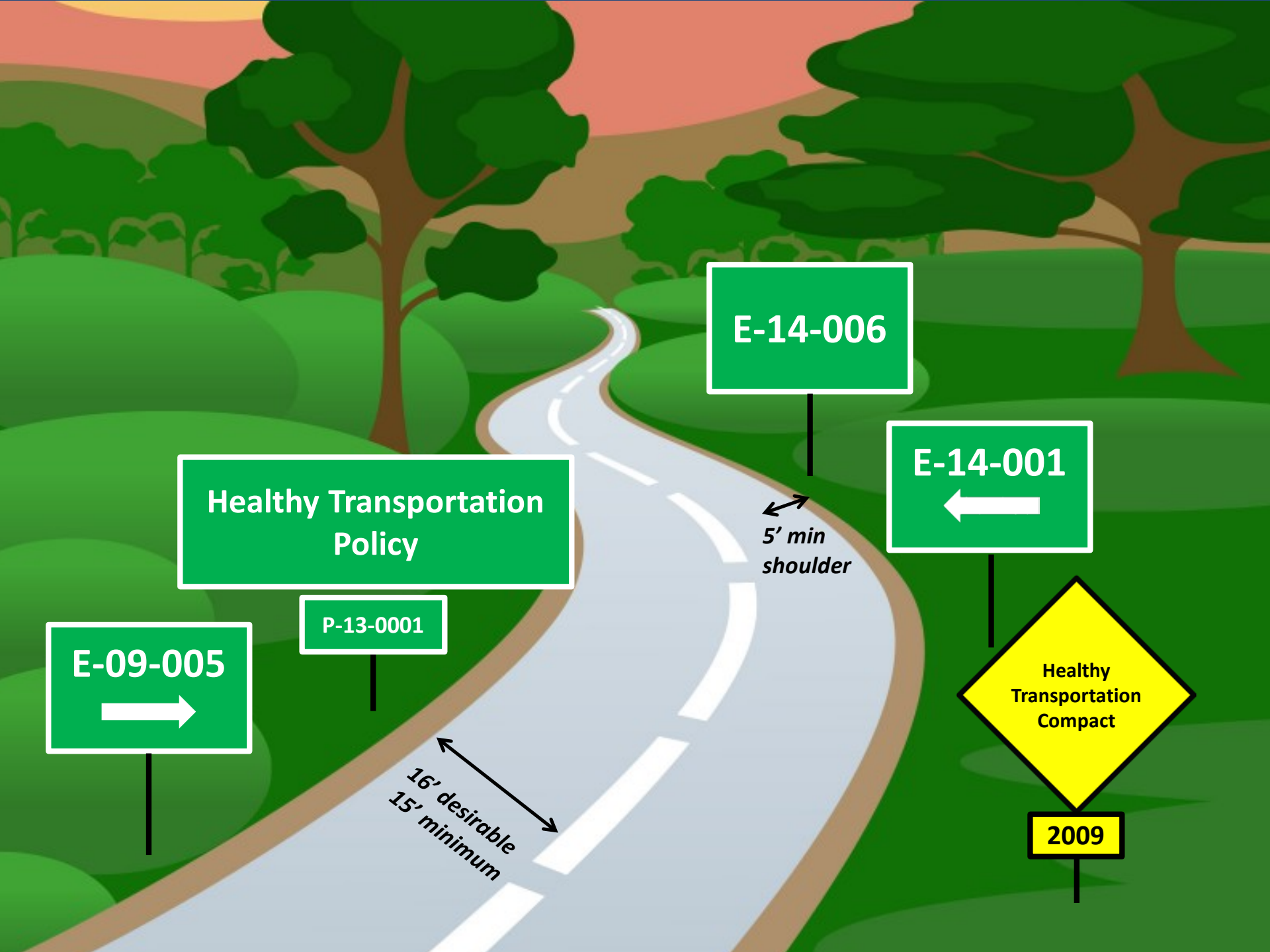
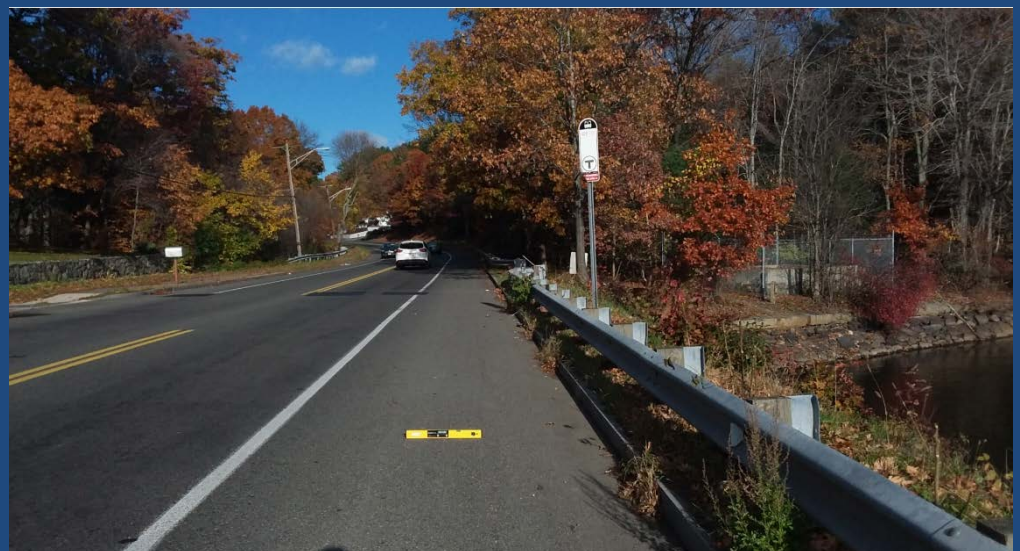

Design Manual Task Force
2003
Design Issues Working Group
2001
Rural and Historic Roads Task Force
1999
Bicycle-Pedestrian Coordinator
Chapter 87 Acts 1996
E-97-004
5m desirable
4.5m minimum


Project Development & Design Guide
2006
Design Exception Review Committee
2003
Bike/Ped Advisory Board
2004
Multi Modal Design
Flexible Design
Context Sensitive Design


E-14-006
E-14-001
Healthy Transportation Policy
P-13-0001
E-09-005
5' min shoulder
16' desirable
15' minimum
Healthy Transportation Compact
2009

# Policies impacts transportation infrastructure & choices…



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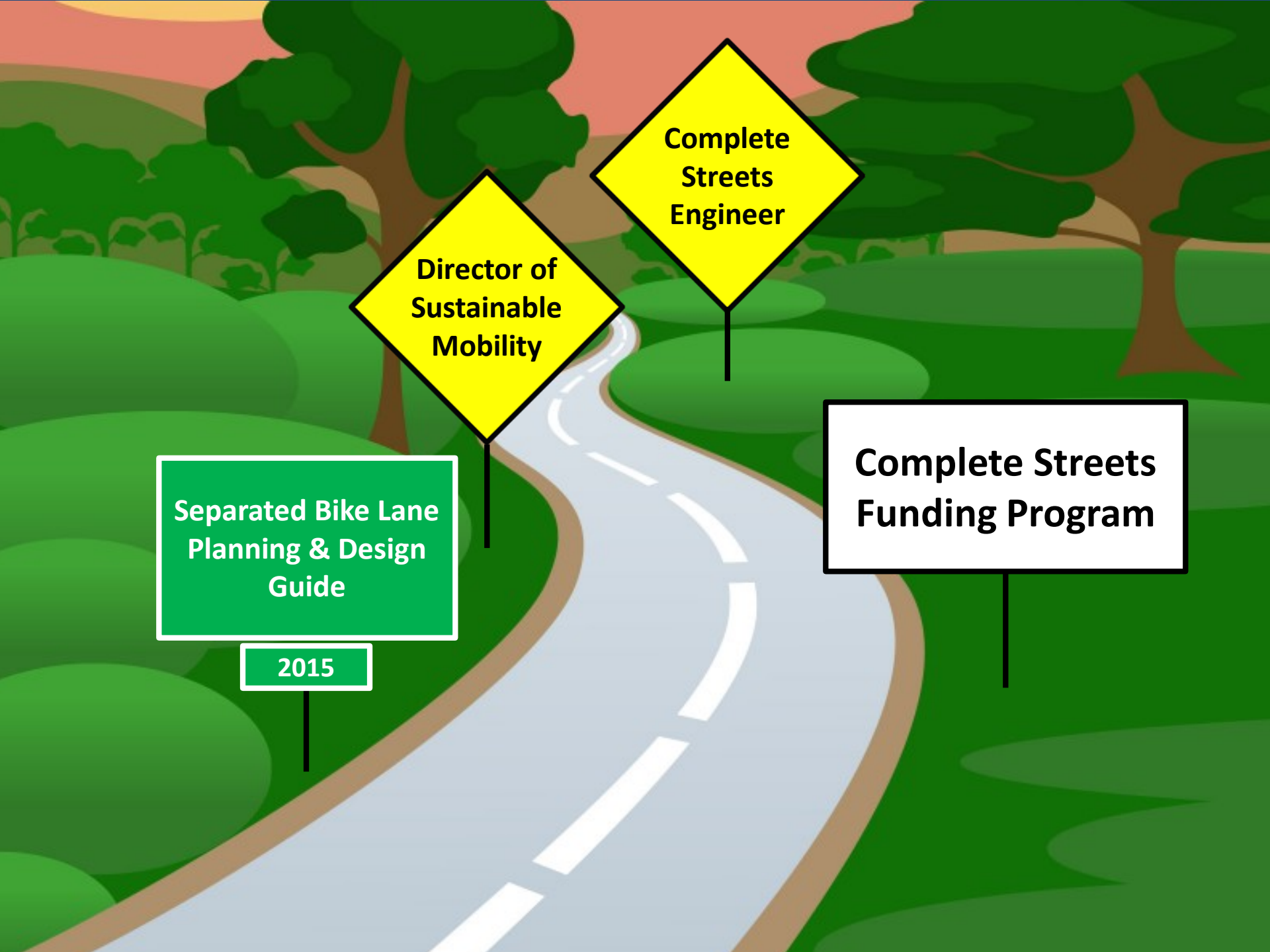
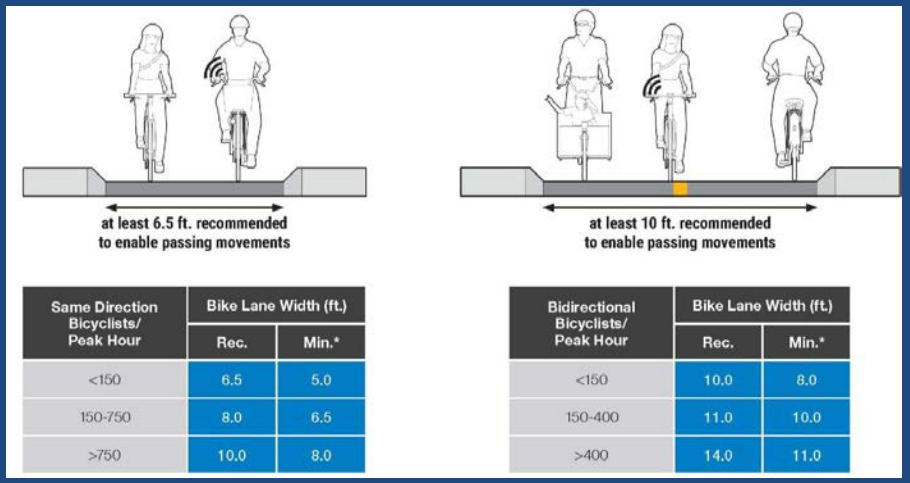
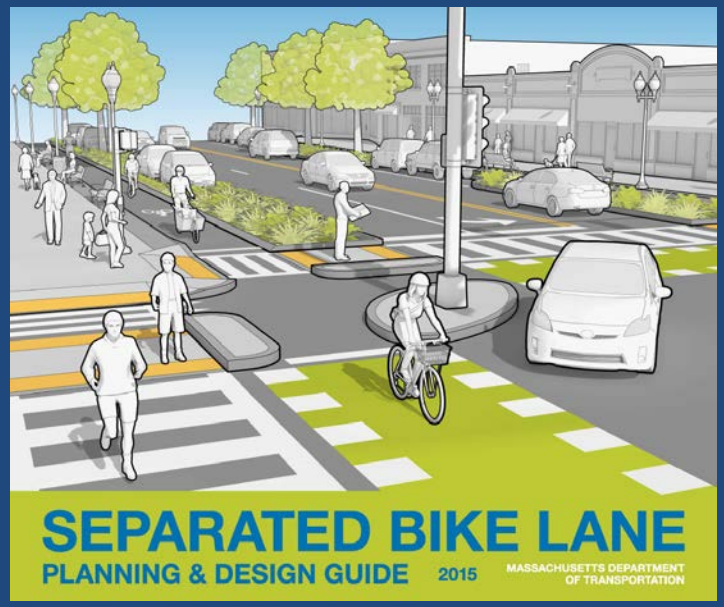

Complete Streets Engineer
Director of Sustainable Mobility
Complete Streets Funding Program
Separated Bike Lane Planning & Design Guide
2015

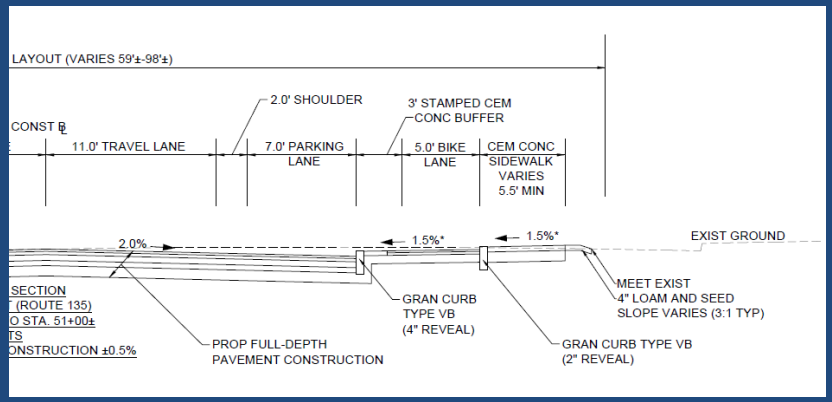
# Guidance & Implementation




| Same Direction Bicyclists/ Peak Hour | Bike Lane Width (ft.) | |
|---|---|---|
| | Rec. | Min.* |
| <150 | 6.5 | 5.0 |
| 150-750 | 8.0 | 6.5 |
| >750 | 10.0 | 8.0 |

| Bidirectional Bicyclists/ Peak Hour | Bike Lane Width (ft.) | |
|---|---|---|
| | Rec. | Min.* |
| <150 | 10.0 | 8.0 |
| 150-400 | 11.0 | 10.0 |
| >400 | 14.0 | 11.0 |




*Route 135, Hopkinton*

*Highland Avenue & Needham Street, Newton & Needham*

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MassDOT's Healthy Transportation Policy Directive requires all state transportation projects to increase biking, transit, and walking options.

September 2013

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# Healthy Transportation Policy Effectiveness

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## What can we do?


Trainings about best practices in roadway design


Update Engineering Design Directive

Update/develop Performance Measures


Improve Complete Streets Review process

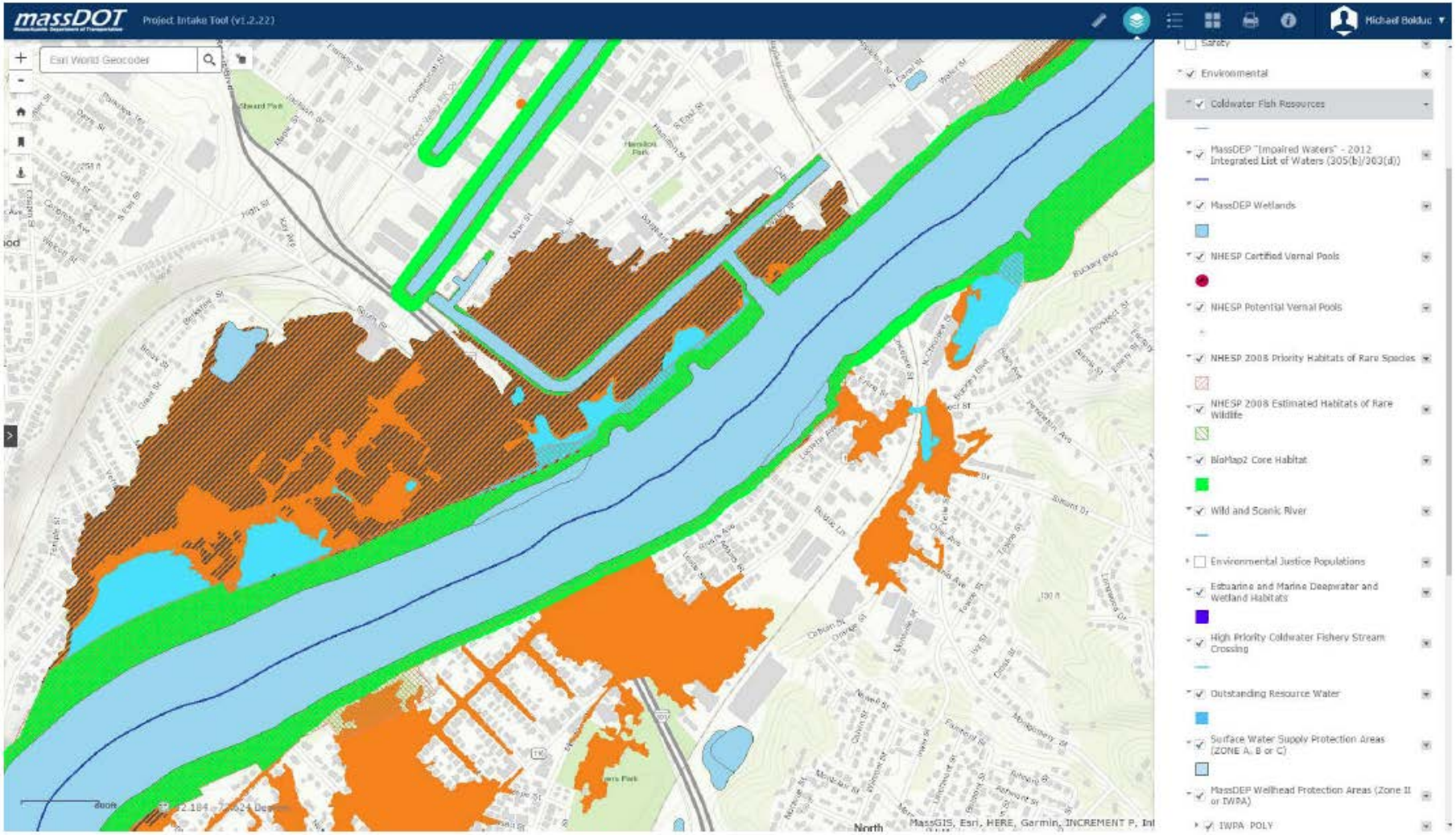

Rethink project delivery process to get better projects from the start


Develop pro-active ways to upgrade infrastructure for walking, bicycling, and transit without link to another need

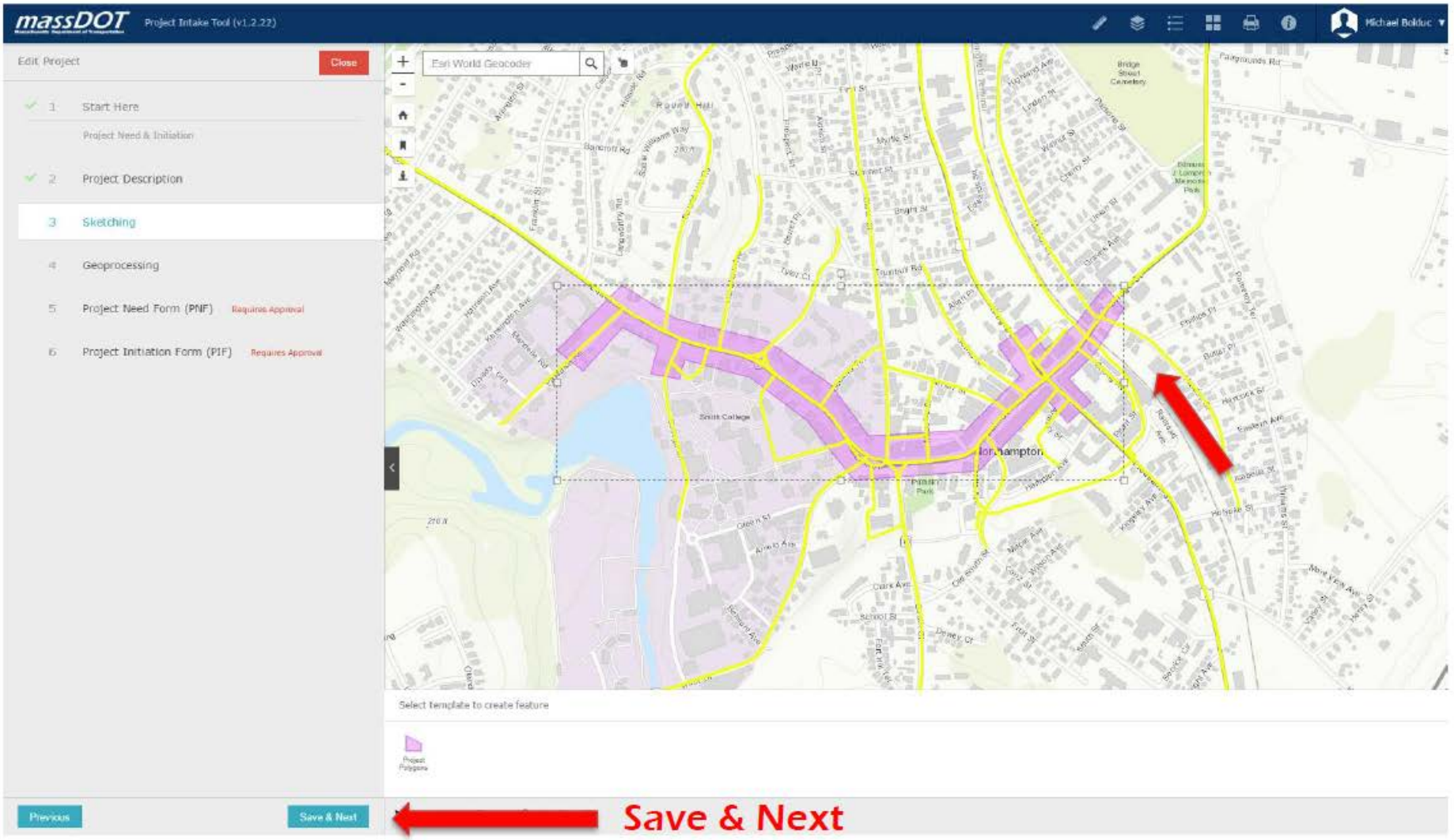

Integrate transit in to roadway projects

Update the Healthy Transportation Policy

# Project Initiation



# Project Scoring

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# Project Approach

- Be creative
- Be flexible + innovative
- Focus on comfort
- Engage the public
- Test pilots & do demonstrations
- Develop resources & tools

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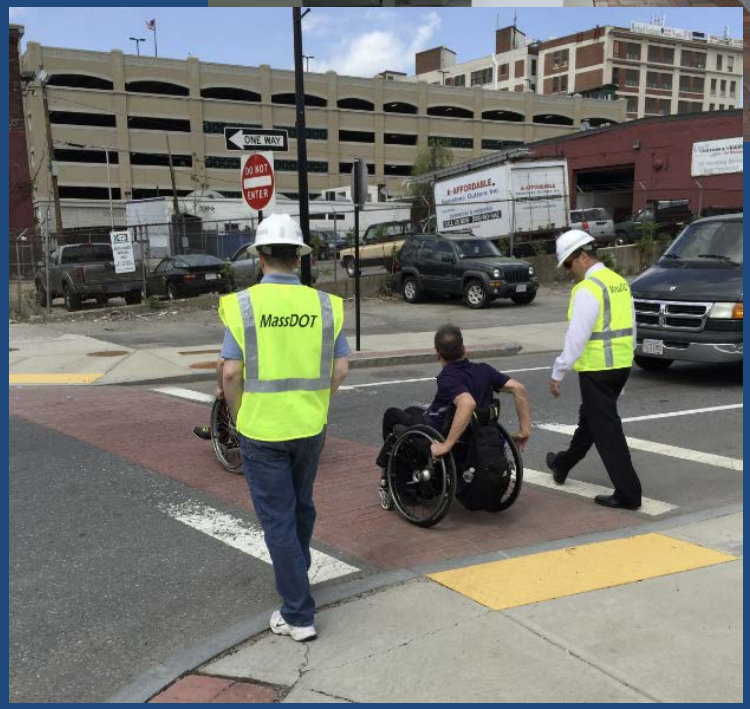
# Design Considerations

- Address gaps
- Eliminate barriers
- Safety + High crash locations
- Transit access
- Path network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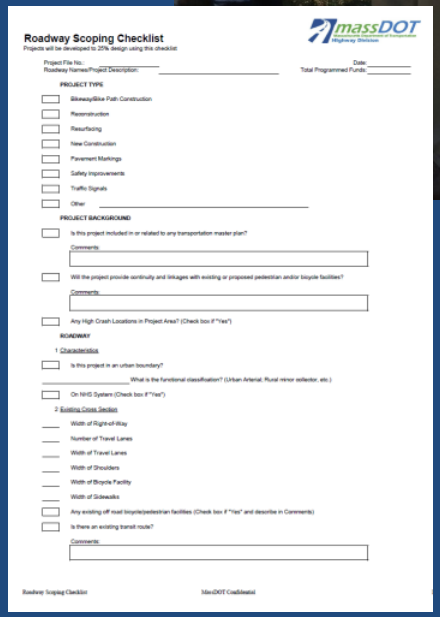
# Roadway Scoping Checklist

- Project kick-off meeting
- Define scope for the project
  - What are the project limits?
  - Is an RSA needed?
  - Is a DER needed?
  - What permits are necessary?
  - Etc.
- Discuss cross section
- Goal to reduce scope changes



Roadway Scoping Checklist

Projects will be developed to 25% design using this checklist

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Project File No.: _____ Date: _____

Roadway Names/Project Description: _____ Total Programmed Funds: _____

PROJECT TYPE

- Bikeway/Bike Path Construction
- Reconstruction
- Resurfacing
- New Construction
- Pavement Markings
- Safety Improvements
- Traffic Signals
- Other _____

PROJECT BACKGROUND

- Is this project included in or related to any transportation master plan?
  Comments:
- Will the project provide continuity and linkages with existing or proposed pedestrian and/or bicycle facilities?
  Comments:
- Any High Crash Locations in Project Area? (Check box if "Yes")

ROADWAY

1 Characteristics

- Is this project in an urban boundary?

_____ What is the functional classification? (Urban Arterial, Rural minor collector, etc.)

- On NHS System (Check box if "Yes")

2 Existing Cross Section

- ____ Width of Right-of-Way
- ____ Number of Travel Lanes
- ____ Width of Travel Lanes
- ____ Width of Shoulders
- ____ Width of Bicycle Facility
- ____ Width of Sidewalks
- Any existing off road bicycle/pedestrian facilities (Check box if "Yes" and describe in Comments)
- Is there an existing transit route?

Comments:

Roadway Scoping Checklist MassDOT Confidential

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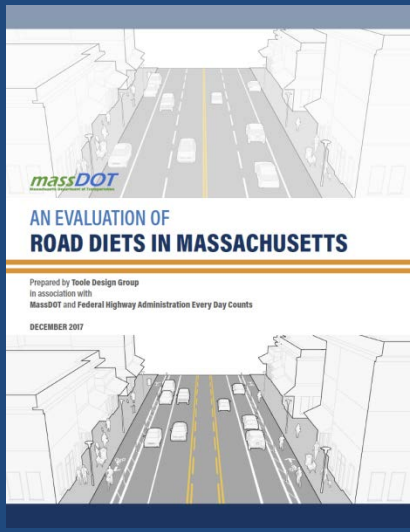
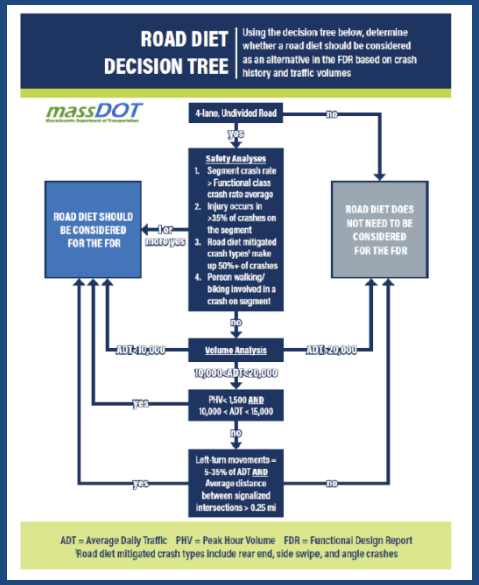
# Complete Streets Checklist

- Internal to MassDOT
- Improve reviewer consistency
- Asks reviewer to consider all elements:
  - Is it possible to remove one or more travel lanes?
  - Does the sidewalk connect with other pedestrian facilities?
  - Is the bicycle facility appropriate for the traffic speed and volumes of the roadway?
  - Is there any type of transit on the street?

# Road Diets

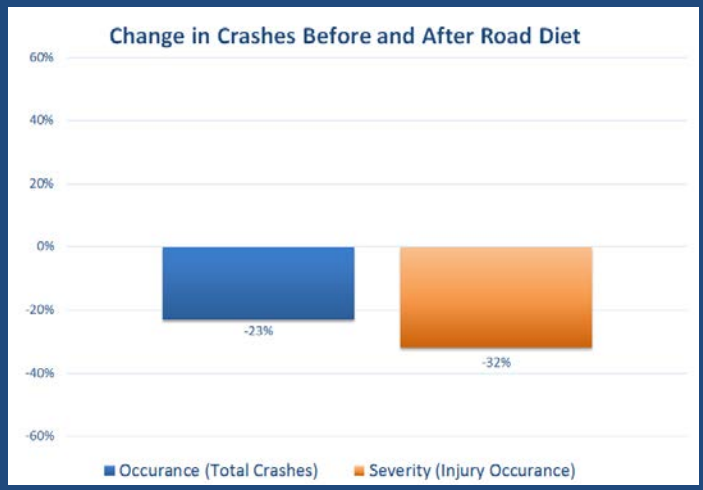
- Can be a low-cost redesign
- Reduction in frequency and severity of crashes
- Reallocates space to other users





*Nonantum Road*

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# Path Guide

- Less of a Guide, More of a Tool
- Transparency of Process
- Consistency in Designs
- Avoid Reinventing the Wheel
- Agency Coordination


## SO YOU WANT TO BUILD A PATH

ow that the next town over has a other section of the same railroad, line. How can Juliana, Bryan, and her to build a shared use path?

the basics on how a path project sh. Every path has its own history, ial to serve a community. Advocates without a technical background, can derstand what to expect along the e for a successful path.

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**Shared Used Path Design Guide**
**Cost Estimator**

**PROJECT INPUTS - PAGE 1 OF 2**

| | PROJECT DESCRIPTION | INPUT | CLICK INFO |
|---|---|---|---|
| 1 | What year is the project expected to begin construction? | 2019 | |
| 2 | Should the estimate include cost of engineering design and/or traffic control? | Both | |
| 3 | How many distinct segments of path are there? (differing exist. or prop. conditons) | 4 | |
| | *Input a number between 1 and 4.* | | |

| | | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|---|---|---|---|---|---|
| 4 | What is the length of the segment of trail? *(in feet)* | 200 ft | 2,000 ft | 600 ft | 500 ft |
| 5 | What are the existing conditions of the area? | Roadway | Clear, flat | Wooded/hilly | Clear, flat |
| 6 | What type of trail is being proposed? | Roadway Sidepath | Rail Trail (w/ exist. ties) | Rail Trail | Rail Trail |
| 7 | What material will the shared used path be? | Concrete | Asphalt | Asphalt | Unpaved/Soft |
| 8 | What material will the shoulders be? | Concrete | Unpaved/Soft | Unpaved/Soft | Unpaved/Soft |
| 9 | What is the width of the trail? *(Range: 10 ft to 14 ft)* | 8 ft | 10 ft | 10 ft | 10 ft |
| 10 | Will a separate equestrian trail be provided? | No | No | No | Yes |

*Clear out any extra data shown in red*

| | | | |
|---|---|---|---|
| 11 | What percent of the total length has unavoidable environmental resource areas? *(wetlands)* | 4% | |
| | *Please consult the MassGIS website to locate wetlands in the area* OLIVER | | |
| 12 | Are there steep separations or resource areas that may require retaining walls? | Yes | |
| 13 | Is the ROW constrained in any locations? | Some of the length | |
| 14 | How many crossings with roadways are there? | 3 | |
| | *Please fill in the information in the chart on the next page.* | | |
| 15 | How many crossings are there over bodies of water? | 1 | |
| | *Please fill in the information in the chart on the next page.* | | |
| 16 | How many crossings are there with a active railroads? | 0 | |
| | *Please fill in the information in the chart on the next page.* | | |
| 17 | Will the project require lighting? | No | |
| 17a | *If not along the entire length, what length requires lighting?* | 0 ft | |
| 17b | *If there is lighting, should security be included?* | Yes, full length | |
| 18 | Will the project include landscaping & amenities? | Minimal | |
| 19 | How many parking spaces will be provided? | 25 | |
| 19a | *Will the parking lot be made of porous material?* | No, typ. asphalt | |



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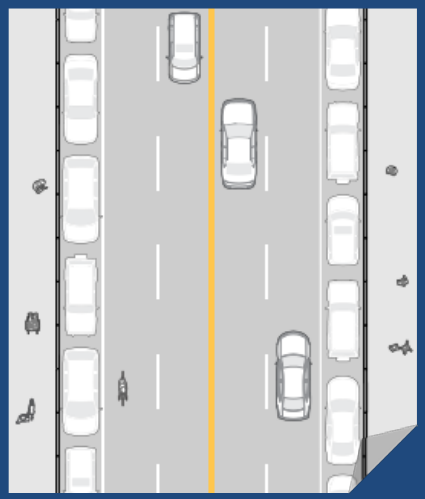
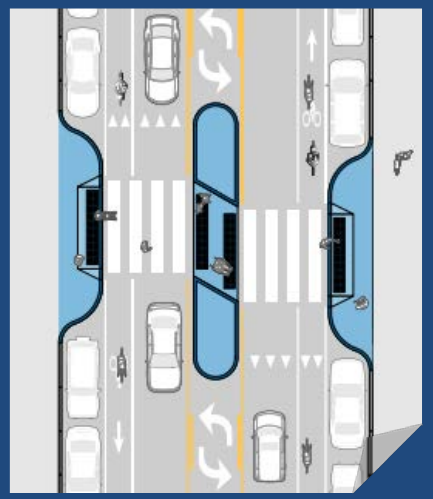
# Pedestrian Safety

- Conducted focus group
  - Aim to educate
  - Identify barriers
  - Proven countermeasures
- Pedestrian Facility Guide
  - Understanding pedestrians
  - Types of crossings
  - Design principles
  - Crossing enhancements





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# Complete Streets Funding Program

- Aimed to provide funding for local roads
- Incentivizes adoption of CS policies and best practices
- Tiered Framework


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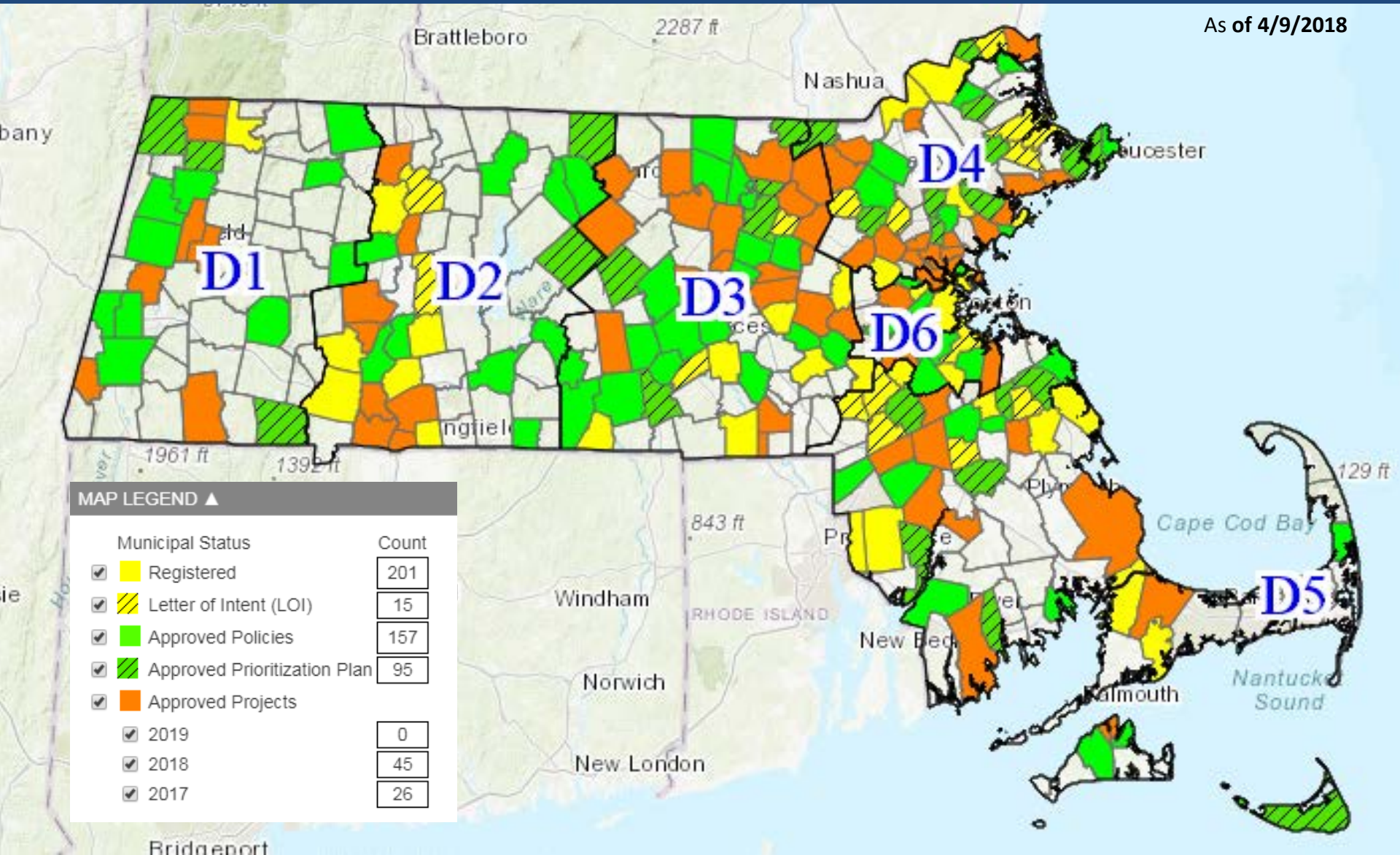
# Complete Streets Funding Program

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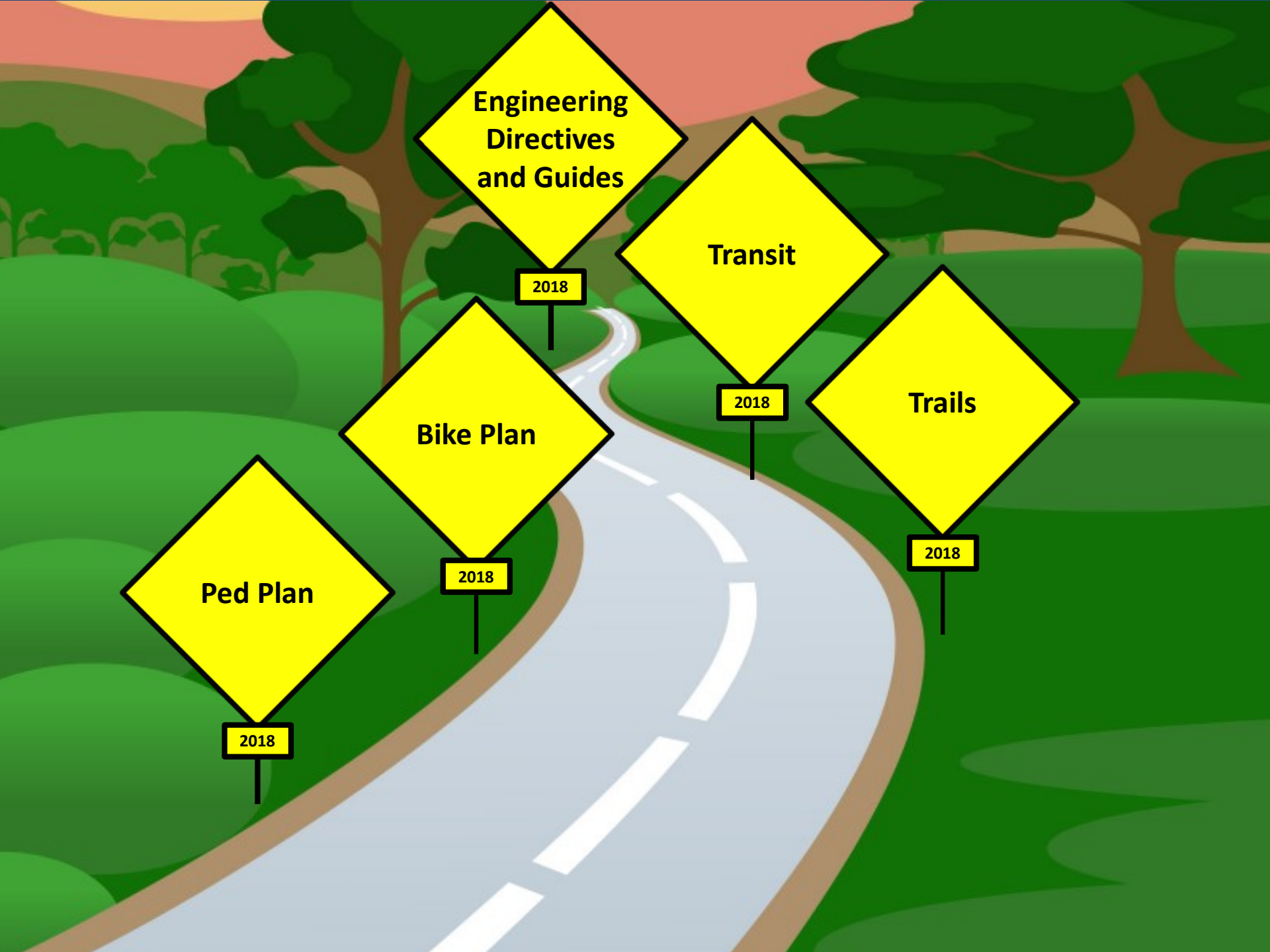
Engineering Directives and Guides
2018
Transit
2018
Trails
2018
Bike Plan
2018
Ped Plan
2018

# Can you imagine a road that just . . . ends?




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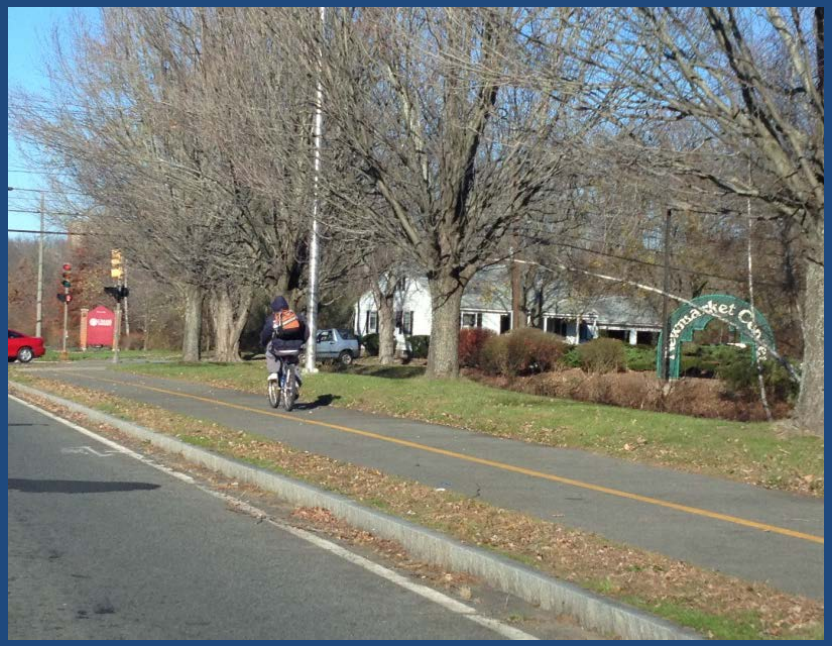


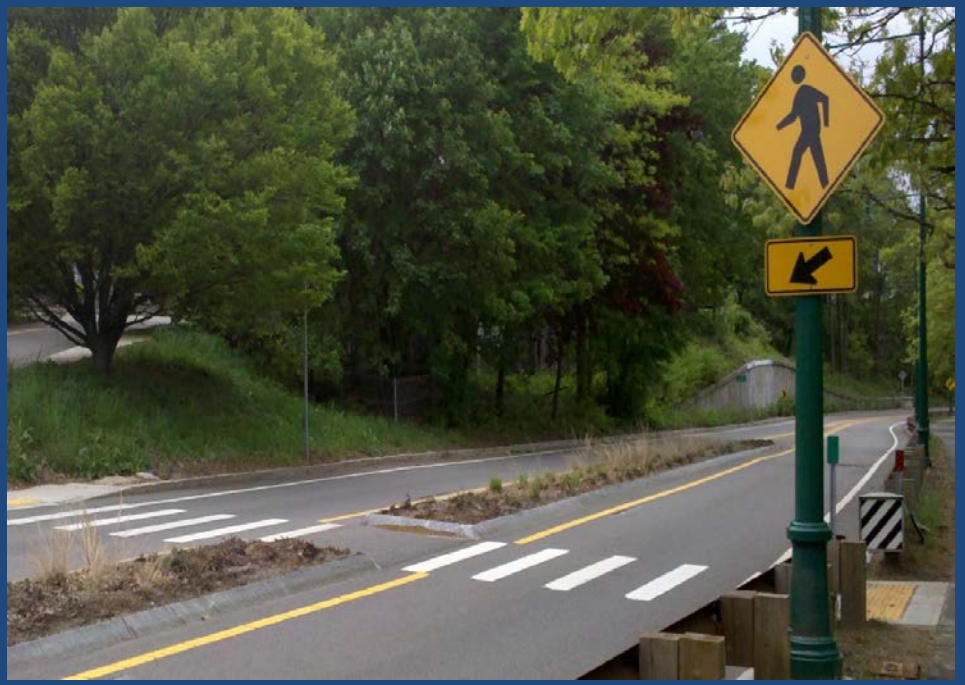

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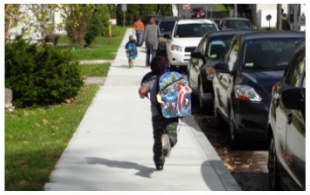
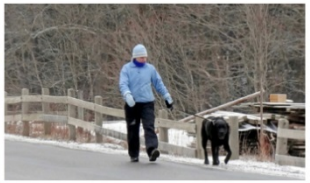
# MASSACHUSETTS PEDESTRIAN TRANSPORTATION PLAN





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## MUNICIPAL RESOURCE GUIDE FOR WALKABILITY

**SEPTEMBER 2017**


## What Makes a Walkable Environment?

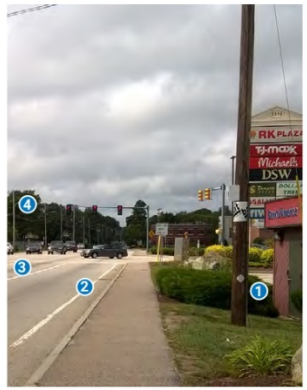
### Walkable Mixed-Use Area


1. Mix of uses with entrances directly facing the sidewalk
2. Parked cars provide a buffer from traffic
3. Windows at eye level
4. Street trees
5. Street furniture zone for seating, utilities, and other objects

### Walkable Rural Area


1. Landscape buffer provides separation from traffic
2. Narrow travel lanes and shoulder provide a traffic calming effect
3. Meets preferred minimum width of **6 feet**

### Less Walkable




1. Low-density land use and large building setback
2. No buffer between people walking and traffic
3. Multiple lanes of high-speed traffic
4. Highway-scale lighting

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# Statewide Bike Plan





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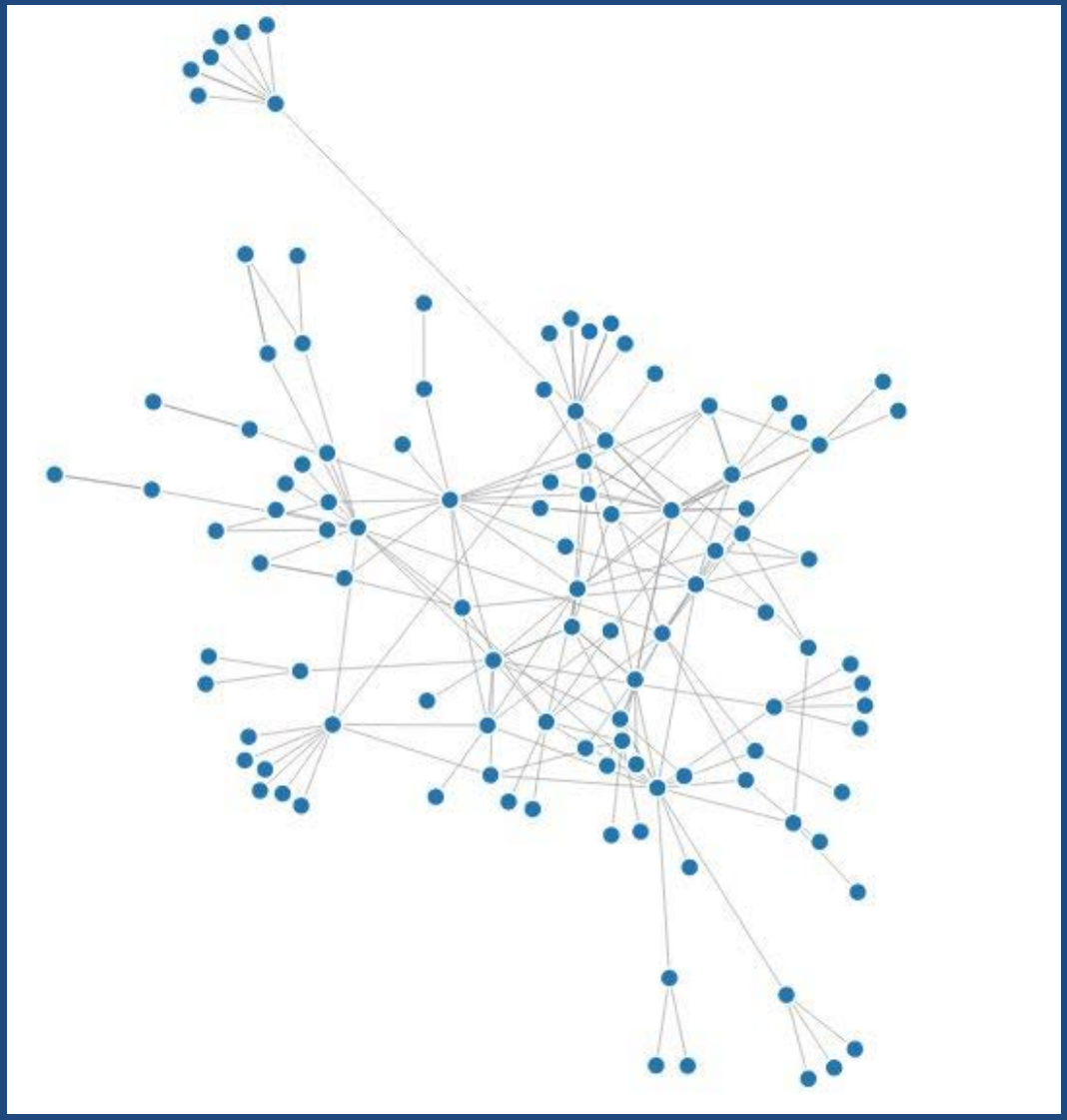
# Networks



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# Building Networks: Northampton

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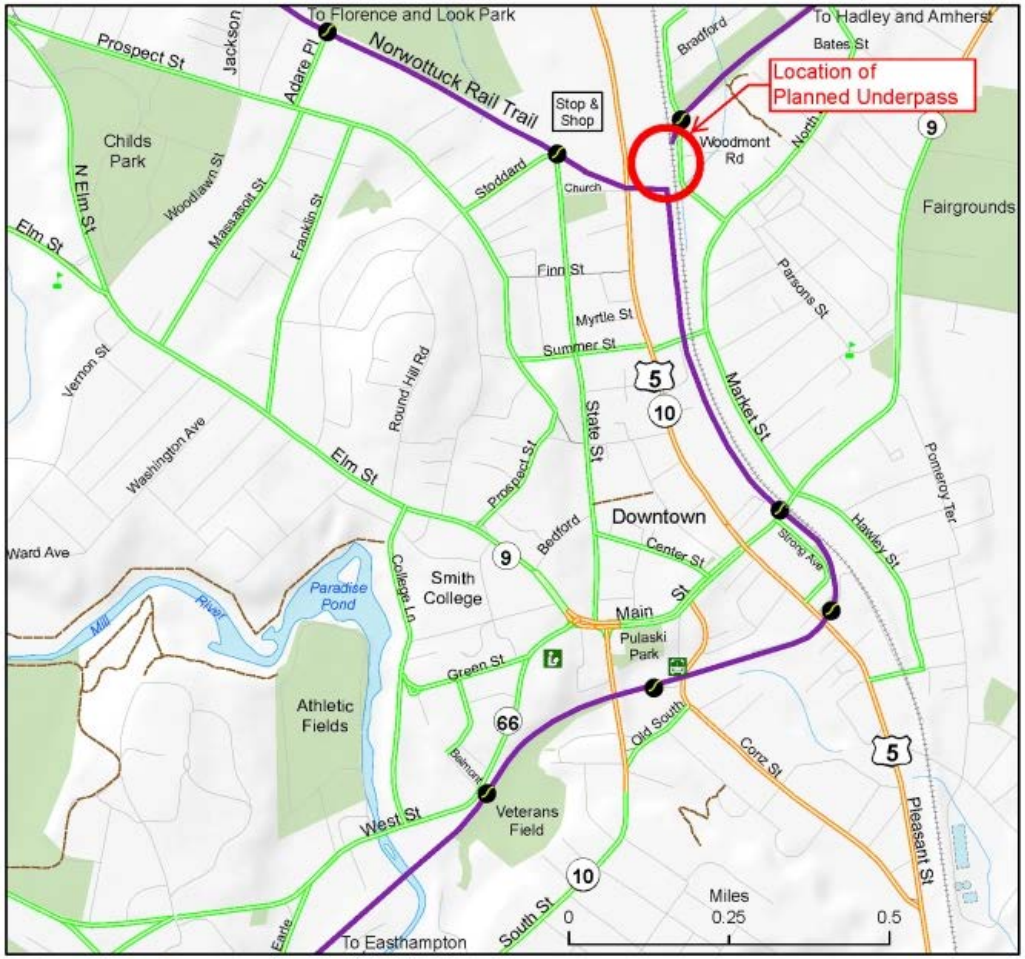
# Building Networks: Trails





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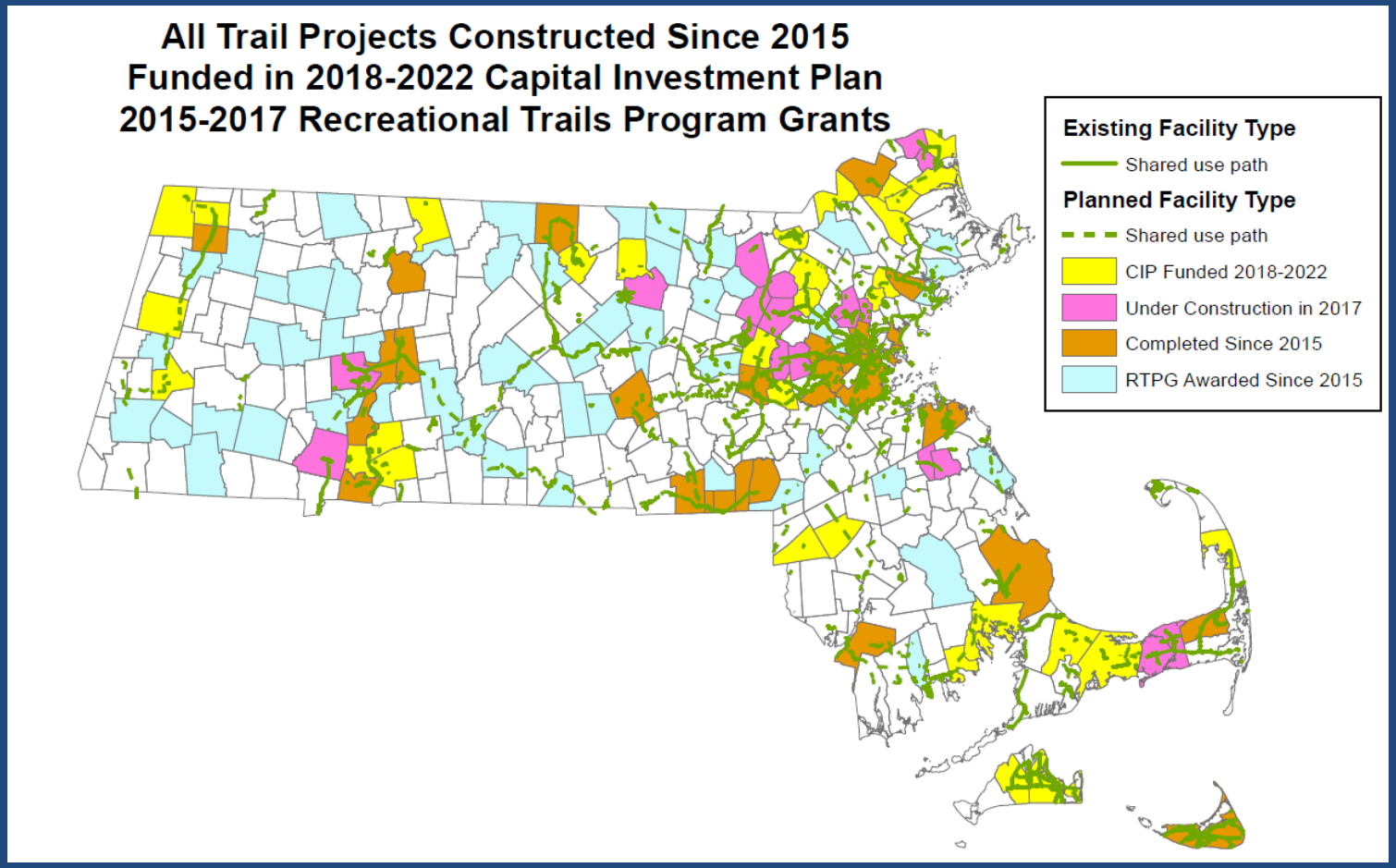
# Administration Commitments to Trail Networks




The Administration has either constructed or funded an additional 150 miles of paved trails, adding to the current inventory of 565 miles of paved trails. DCR owns approximately 200 miles of those trails.

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# Engineering Directives

**Design Criteria for Roadway Cross Section Elements** — Draft - June 6, 2017

| Roadway Type | Project Type | Controlling Criteria Elements: Left (Inside) Shoulder | Travel Lane | Right (Outside) Shoulder | Healthy Transportation Elements: Bicycle Accom. | Sidewalk |
|---|---|---|---|---|---|---|
| Interstate | Non-3R | 4' (to 12') | 12' | 10' (to 12') | N/A | N/A |
| Interstate | 3R | 3.5' offset | 12' | 10' (to 12') | N/A | N/A |
| Freeway | All | 4' | 12' | 10' | N/A | N/A |
| Any NHS | Design Sp ≥ 50 | 2' offset | 12' | 8' | See below | See below |
| Any NHS | Design Sp < 50 | 2' offset | 11' | 4' | See below | See below |

| Roadway Type | Area Types: Primary Area Type | Sub Area Type | Controlling Criteria Elements: Travel Lane | Right (Outside) Shoulder | Healthy Transportation Elements: Bicycle Accom. | Sidewalk |
|---|---|---|---|---|---|---|
| Arterial | Rural | Natural | 11' | 4' | | |
| | Rural | Village | 10' | 4' | 4' | 5'+ |
| | Rural | Developed | 10' | 4' | 4' | 5' |
| | Suburban | Low Density | 11' | 4' | 4' | 5' |
| | Suburban | Town Center | 10' | 4' | 5' | 5'+ |
| | Suburban | High Density | 10' | 4' | 5' | 5' |
| | Urban | Park | 11' | 4' | 5' | 5'+ |
| | Urban | Residential | 10.5' | 4' | 5' | 5'+ |
| | Urban | Business | 10.5' | 4' | 5' | 6.5'+ |
| Collector | Rural | Natural | 11' | 4' | | |
| | Rural | Village | 10' | 4' | 4' | 5'+ |
| | Rural | Developed | 10' | 4' | 4' | 5' |
| | Suburban | Low Density | 11' | 4' | 4' | 5' |
| | Suburban | Town Center | 10' | 4' | 5' | 5'+ |
| | Suburban | High Density | 10' | 4' | 5' | 5' |
| | Urban | Park | 11' | 4' | 5' | 5'+ |
| | Urban | Residential | 10.5' | 4' | 5' | 5'+ |
| | Urban | Business | 10.5' | 4' | 5' | 6.5'+ |
| Local | Rural | Natural | 9' | 2' | | |
| | Rural | Village | 9' | 2' | | |
| | Rural | Developed | 9' | 2' | | |
| | Suburban | Low Density | 9' | 2' | | |
| | Suburban | Town Center | 10' | 2' | | 5' |
| | Suburban | High Density | 10' | 2' | | 5' |
| | Urban | Park | 9' | 2' | | 5' |
| | Urban | Residential | 10' | 2' | | 5' |
| | Urban | Business | 10' | 2' | | 5' |

**Legend Color Key**

Green Numbers = Increase over existing value

Red Numbers = Decrease below existing value

Green Shaded Boxes = New requirement where currently none

Red Shaded Boxes = Removed requirement where currently exists

**Special Conditions and Rules**

1. On Arterial and Collector roads with on-street parking, the parking lane satisfies the requirement for an outside shoulder. However, a minimum 5' bicycle lane is also required in these locations.
2. Separated bicycle lanes and/or off-road paths satisfy the requirement for bicycle accommodation. In these locations, a minimum 2' outside shoulder is required (Non-NHS).
3. On Arterial and Collector roads with posted or statutory speed limits below 35 mph, a mimimum 4' outside shoulder is required for bicycle accommodation.

**Additional Considerations/Questions**

1. All 3R and other project type exemptions still apply. Need to try to clarify what constitutes 3R work.
2. No special rules for bridge projects. Bicycle and Pedestrian accommodation criteria is based on Roadway Type and Area Types.
3. Need to develop a consistent or systematic method of determining Area Types.
4. Consider "urbanized" locations that don't require sidewalks. Consider locations where one sidewalk may suffice.
5. Consider additional HTP exemption categories for Footprint Bridge, Bridge Preservation and Pavement Preservation projects.

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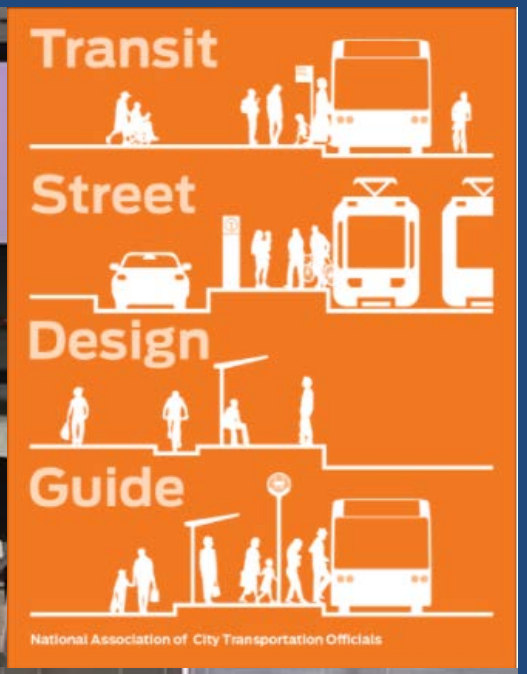
# Transit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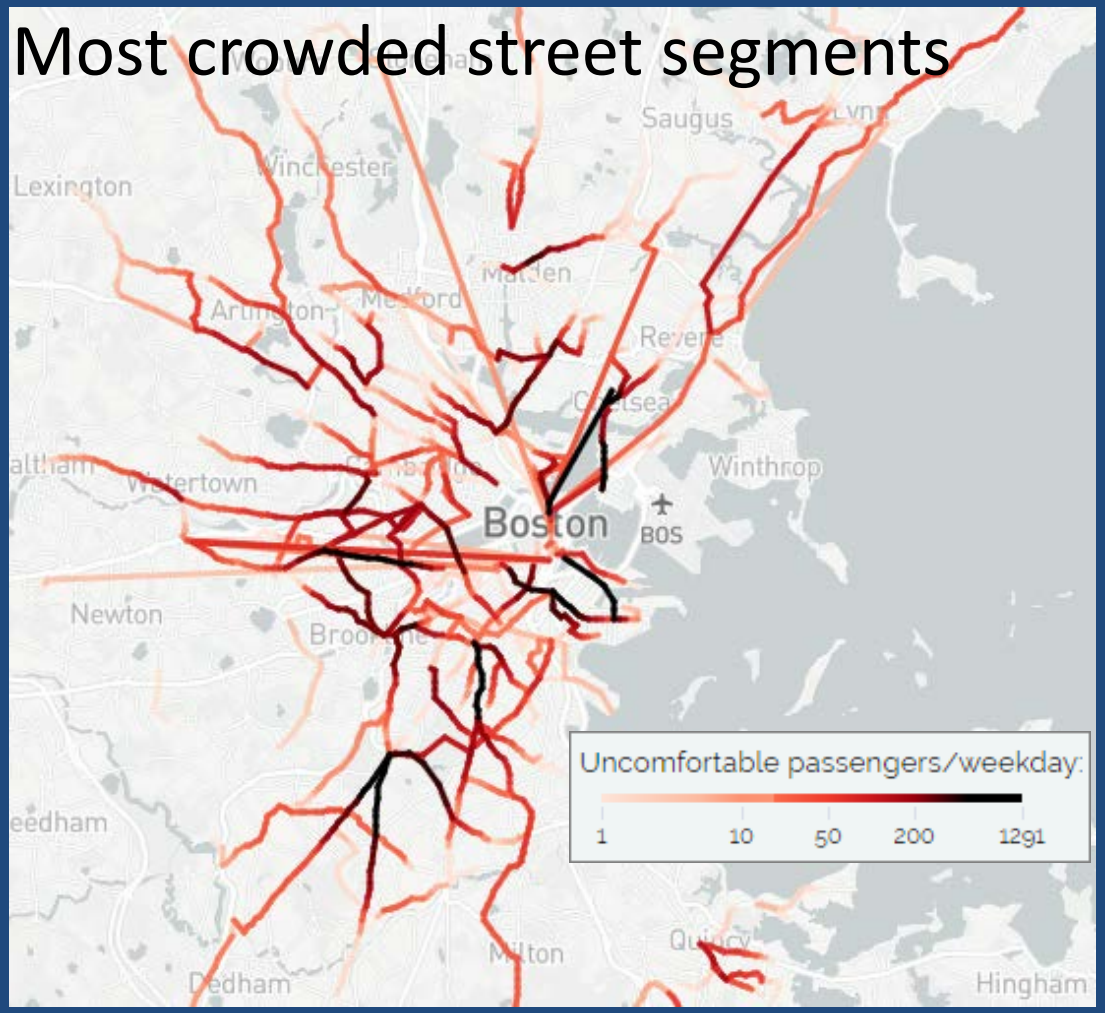
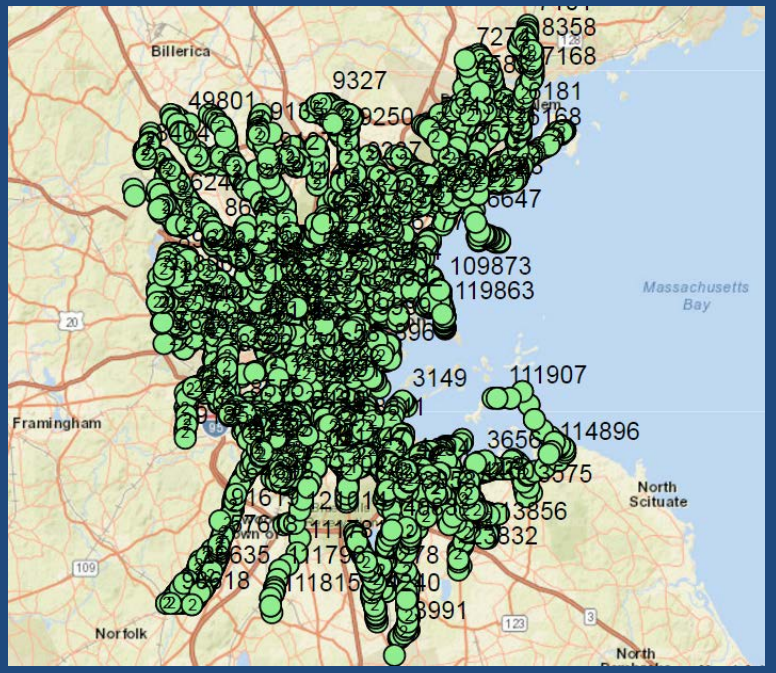
# Transit



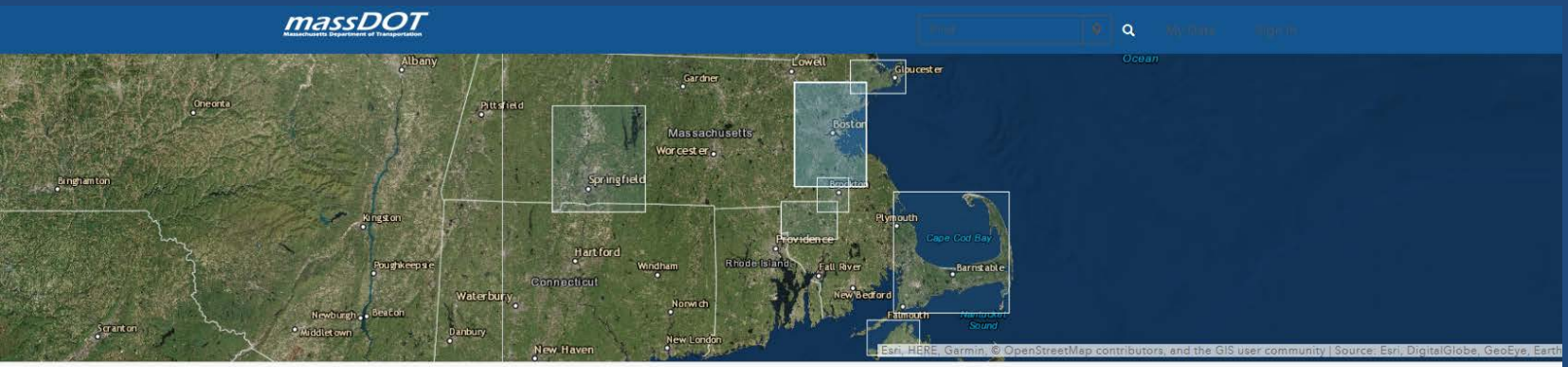

**51**
Towns

**184**
Routes

**7643**
Bus Stops

massDOT
Massachusetts Department of Transportation

# GeoDOT / GIS / Tools




## Filter By

Tags

- Bus Routes (11)
- Massdot (10)
- Mbta (5)
- Bus Stops (4)
- Mbta Bus Ridership (4)

More

Source

- Massachusetts geoDOT (11)

Content Type

- spatial dataset (11)

1 - 10 of 11 results

Relevance

### MBTA Bus Ridership By Intersection 2016

Shared by massDOT_GIS

The organization that shared this dataset did not provide a description.

No license specified | 2/15/2018 | Spatial Dataset | 7,678 Rows

### MBTA Routes

Shared by massDOT_GIS

This polyline data layer contains the Massachustts Bay Transportation Authority bus routes. Production The data was obtained from the GTFS feeds on the MassDOT Developers page which were processed into KML files using the python GTFS toolkit. All data is in WGS84. Status This data is current as of July 1st, 2014.

Custom License | 2/15/2018 | Spatial Dataset | 947 Rows

### GATRA Routes

Shared by massDOT_GIS

This polyline data layer contains the Greater Attleboro-Taunton Regional Transit Authority bus routes. Production The data was obtained from the GTFS feeds on the MassDOT Developers page which were processed into KML files using the python GTFS toolkit. All data is in WGS84. Status This data is current as

Custom License | 3/31/2016 | Spatial Dataset | 29 Rows

### MBTA Bus Ridership by Stop 2016

Shared by massDOT_GIS

The organization that shared this dataset did not provide a description.

No license specified | 2/15/2018 | Spatial Dataset | 31,789 Rows

### VTA Routes

Shared by massDOT_GIS

This polyline data layer contains the Martha's Vineyard Transit Authority bus routes. Production The data was obtained from the GTFS feeds on the MassDOT Developers page which were processed into KML files using the python GTFS toolkit. All data is in WGS84. Status This data is current as of August 22nd, 2012.

Custom License | 2/15/2018 | Spatial Dataset | 21 Rows


IDEAS?!
?
2040
?
2030
?
2020

# Discussion

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