

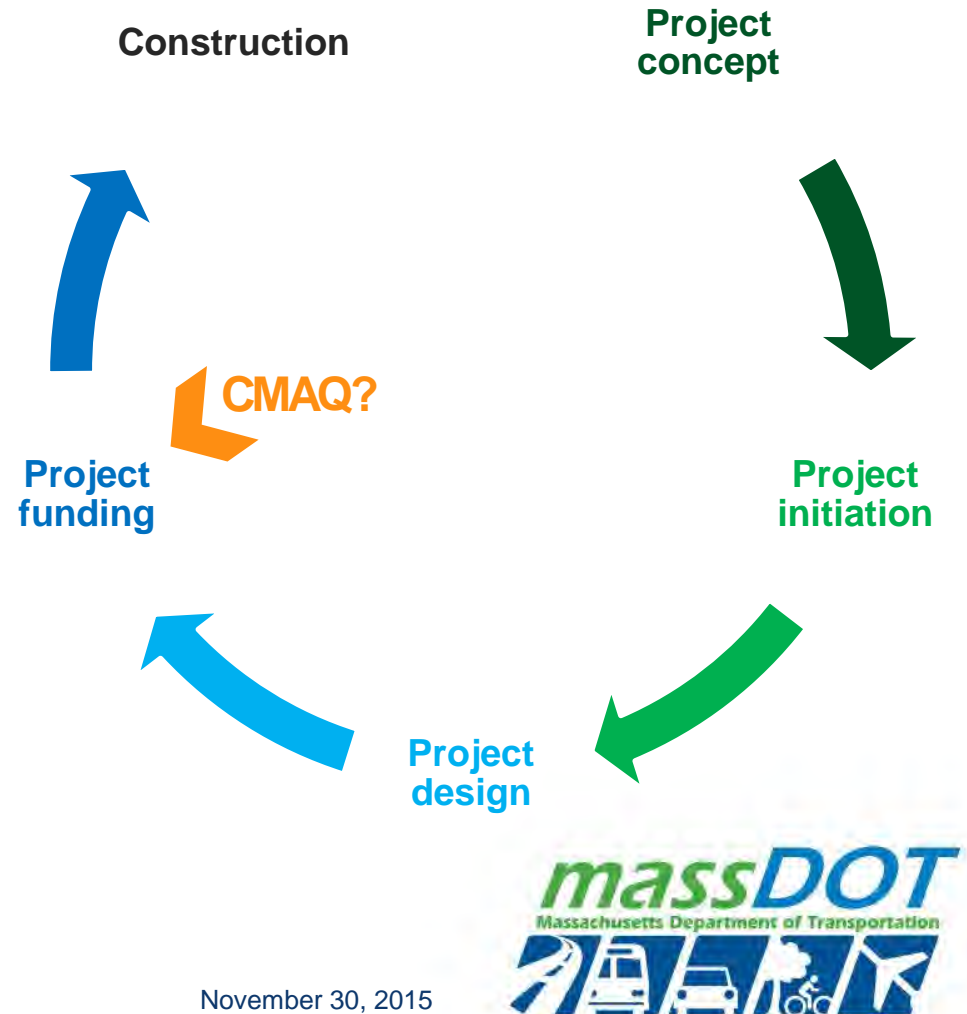
Federal Funding Opportunities for Trails

Federal funding sources

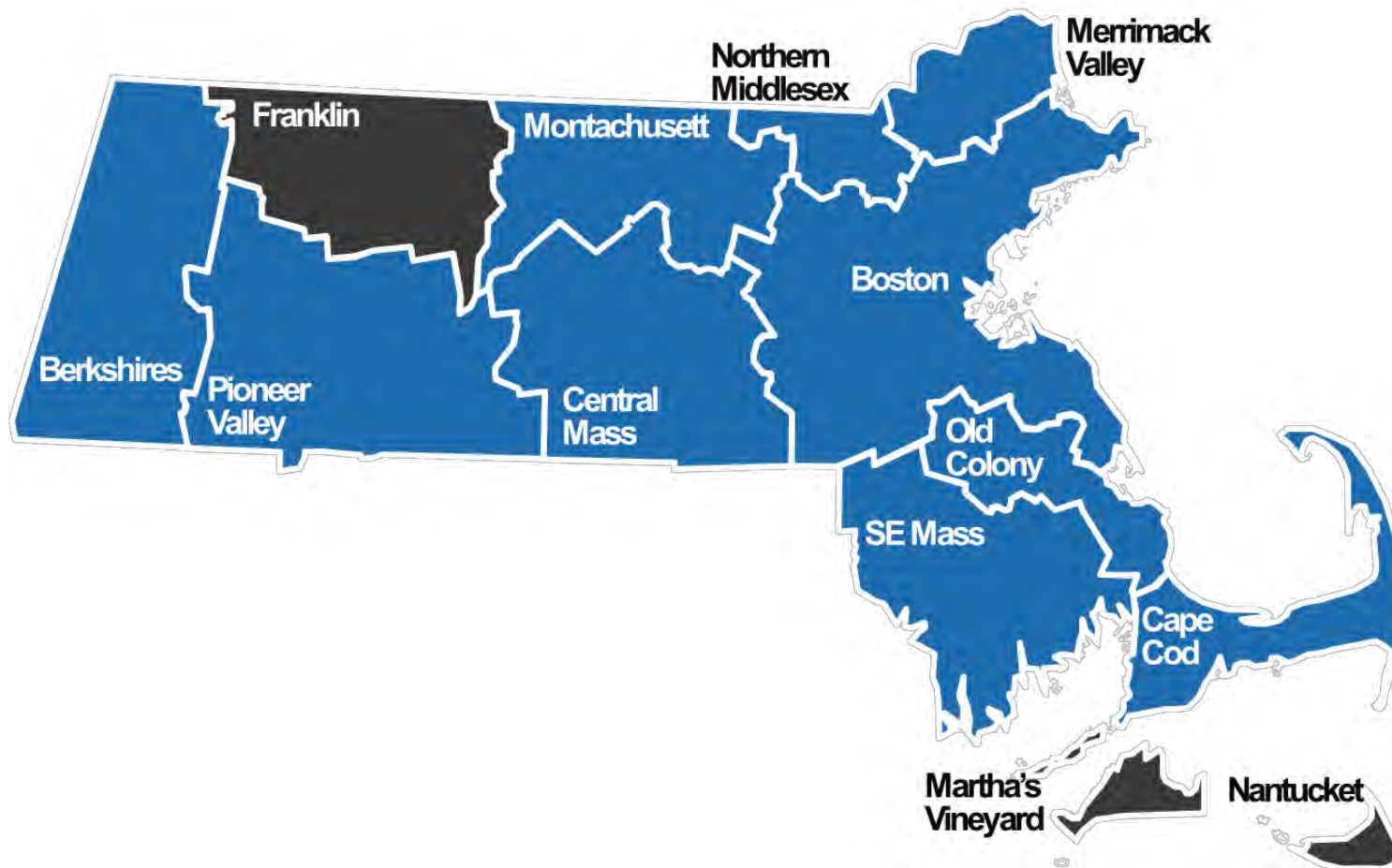
- Congestion Mitigation Air Quality Program (CMAQ)
- Transportation Alternatives Program (TAP)
- Surface Transportation Program (STP)

Project development and funding

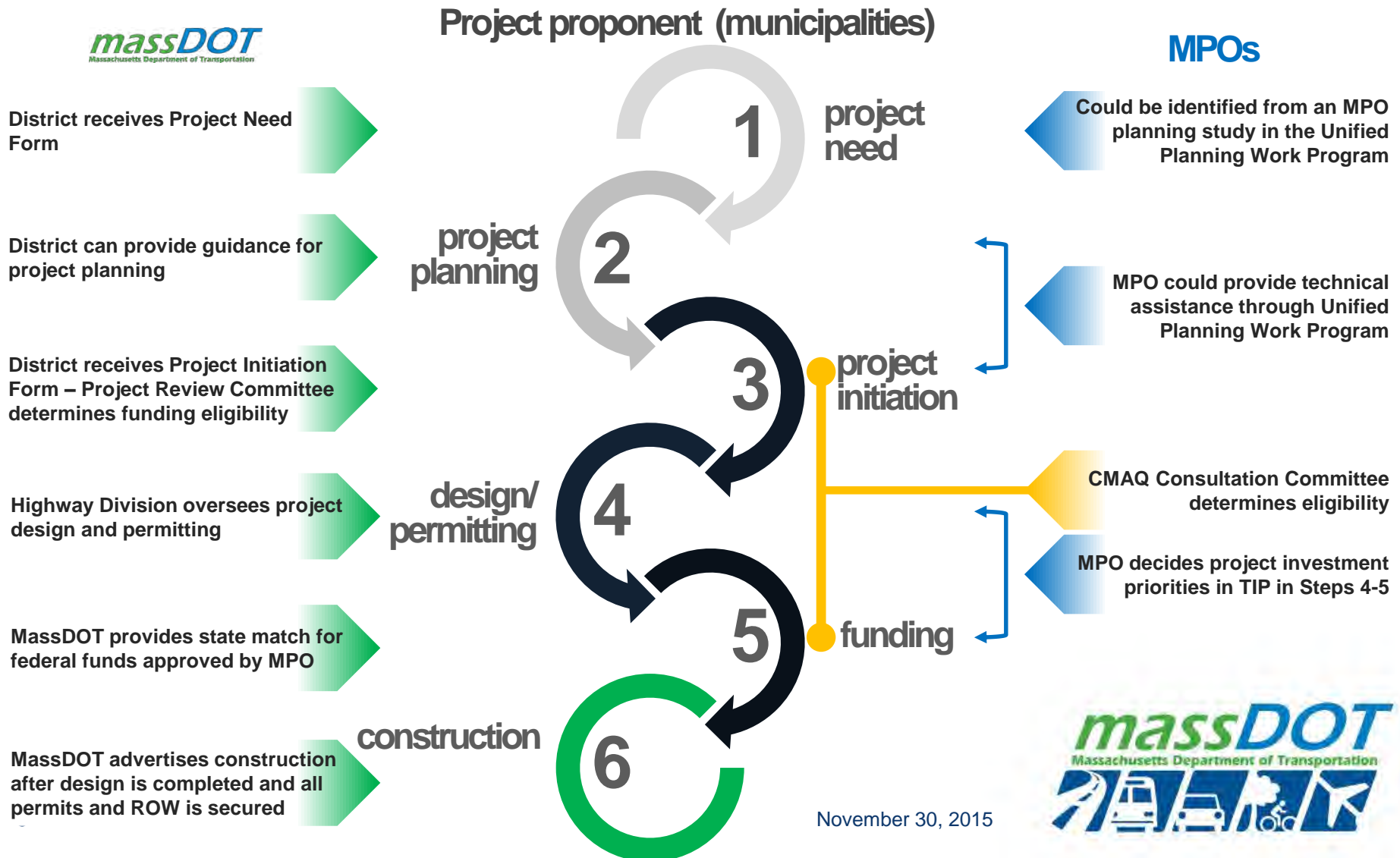
- Federally funded projects are developed through the Highway Divisions' project development process
- All projects must be on a MPO's TIP
- Need to determine if project is eligible for CMAQ



MPOs in Massachusetts



Project development overview



What is CMAQ?

- The CMAQ program provides a flexible transportation funding source for projects and programs to help meet the requirements of the Clean Air Act.
- The CMAQ program supports two important goals of the Department of Transportation: improving air quality and relieving congestion.



CMAQ eligibility

■ Three Primary Areas of Eligibility:

- Type of Project

- Emissions Reduction

- Location in or benefitting a nonattainment or maintenance area

■ Projects must be included in a Metropolitan Planning Organization's (MPO)'s TIP, and/or the State Transportation Improvement Program.



What projects are eligible?

- Projects that improve vehicular traffic flow
- **Bicycle transportation and pedestrian facilities and programs**
- Ridesharing, pricing, and relative outreach activities
- Alternative fuel projects
- Installation of advanced truck stop electrification systems
- Transit investments, including transit vehicle acquisitions, construction of new facilities or improvements to facilities that increase transit capacity
- Vehicle inspection/maintenance programs
- Diesel Retrofits





CMAQ funded project **Border-to-Boston Salisbury**



CMAQ funded project **Columbia Greenway Westfield**



CMAQ funded project **Ashuwillticook** **Berkshires**

CMAQ consultation

- CMAQ Consultation Committee is responsible for determining whether a project shows an air quality benefit and is eligible for CMAQ funding
- The committee is composed of: MassDOT, DEP, FHWA, EPA , MPO Staff
- Each project proponent must quantitatively analyze the project for air quality benefit
- Once a project is determined eligible for funding, the MPO or MassDOT may consider programming in the TIP/STIP

CMAQ Air Quality Analysis Worksheet for Bicycle and Pedestrian Project

FILL IN SHADED BOXES ONLY

TIP YEAR: 2016

MPO: Boston Region **Municipality:** Natick

Project: Cochituate Rail Trail Phase 2

Step 1: Calculate Estimated Reduction in Vehicle Miles Traveled (VMT):
If VMT reduction per year is known then go to Step 2B. If not proceed with Step 1:

A. Facility Length (L): 2.4 Miles

B. Service Area Radius (R): 1.0 Miles (Default = 1 Mile)

C. Service Area of Community(ies) (SA): $L * 2R = SA$ 4.8 Sq. Miles

D. Total Land Area of Community(ies) (T): 15.08 Sq. Miles

E. Service Area % of Community(ies) Land Area (LA): $SA / T = LA$ 31.8%

F. Total Population of Community(ies) (TP): 33,006 Persons

G. Population Served by Facility (P): $LA * TP = P$ 10,506 Persons

H. Total Number of Households in Community(ies) (HH): 13,406 HH

I. Number of Households Served by Facility (HS): $LA * HH = HS$ 4,267 HH

J. Total Number of Workers Residing in Community(ies) (W): 24,452 Persons

K. Workers Per household (WPHH): $W / HH = WPHH$ 1.82 Persons

L. Workers in Service Area (WSA): $HS * WPHH = WSA$ 7,783 Persons

M. Population Density of the Service area (PD): $P / SA = PD$ 2,189 Persons Per Sq. Mile

N. If the bicycle and pedestrian commuter mode share is known, enter the percentage at the right. (BMS) 2.0%
If not, use the 2000 US Census Journey to Work data to determine the mode share and enter the percentage to the right.

O. Bike and Ped. Work Utilitarian Trips (BWT): $WSA * BMS = BWT$ 156 One-Way Trips

P. Bike and Ped. Non-Work Utilitarian Trips (BNWT): $BWT * 1.7 = BNWT$ 265 One-Way Trips
(Latest planning assumptions estimate non-work utilitarian trips to be 1.7 times the work utilitarian.)

Step 2: Calculate the VMT Reduction Per Day:

A. $((2 * BWT) + (2 * BNWT)) * (0.5 * L) = VMTR$ 1008.7 VMTR Per Day

B. $VMTR * \text{Operating Days Per Year} = 1,008.7 * 200 = 201,739 \text{ VMTR Per Year}$
If the Vehicle Miles Traveled Reduction is known enter in the box to the right.
Note: A manual entry of the VMTR will override the calculated cell.

Step 3: MOVES 2014 Emission Factors for Urban Unrestricted PM:
Note: Use 35 MPH as a default if average speed is not known. Speed Used: 35 MPH

2016 Auto Summer VOC Factor grams/mile	2016 Auto Summer NOx Factor grams/mile	2016 Auto Summer CO Factor grams/mile	2016 Auto Summer CO2 Factor grams/mile
0.047	0.163	2.460	378.555

Step 4: Calculate emissions reductions in kilograms per year (Seasonally Adjusted):

Summer VOC	Summer NOx	Summer CO	Summer CO2
9.6	33.4	505.6	77,805.0

Step 5: Calculate cost effectiveness (first year cost per kg of emissions reduced)

Emission	Project Cost	Emission Reduction in kg per year	First year cost per kilogram
Summer VOC	\$5,400,000	9.6 =	\$561,396
Summer NOx	\$5,400,000	33.4 =	\$161,682
Summer CO	\$5,400,000	505.6 =	\$10,680
Summer CO2	\$5,400,000	77,805.0 =	\$69

Spreadsheet Template Prepared by the Office of Transportation Planning



Additional resources for CMAQ

- FHWA Air Quality Guidance

https://www.fhwa.dot.gov/environment/air_quality/cmaq/policy_and_guidance/

- MassDOT State Transportation Improvement Program (STIP)

<http://www.massdot.state.ma.us/planning/Main/StatewidePlans/StateTransportationImprovementProgram.aspx>



What is TAP?

- The TAP program provides the Commonwealth with a small pot of funds for improvements mostly to non-motorized transportation networks
- Funding is split 3-ways
 - Statewide competitive program
 - MPO competitive program
 - Recreational Trails Program (DCR)



What are the rules for TAP?

- Nor MassDOT or MPOs may be project sponsors
- Projects must come from local governments, DCR, transit agencies, or schools
- Projects must be chosen through a competitive process

What is the competitive process?

■ MassDOT funds:

- Safe Routes to School projects are prioritized
- Schools are chosen on a competitive basis

■ MPO funds:

- MPOs use their Transportation Evaluation Criteria to award TAP funds to projects with TAP eligible elements

TAP project eligibility

Construction of:

on or off road
trails

scenic
opportunities

sidewalks

bike
paths

upgrades
for ADA

turnouts

overlooks

viewing
areas

Community
improvements:

advertising
control

historic
preservation

vegetation
management

Safe Routes
to School:

infrastructure

education /
planning

coordinator

and more...





TAP funded project **Safe Routes to School infrastructure projects**

Additional resources for TAP

■ FHWA TAP Guidance

<https://www.fhwa.dot.gov/map21/guidance/guidetap.cfm>

■ MassDOT State Transportation Improvement Program (STIP)

<http://www.massdot.state.ma.us/planning/Main/StatewidePlans/StateTransportationImprovementProgram.aspx>

What is STP?

- STP funds are the most flexible, but most sought after through the TIPs
- 27 eligible project types including construction of bicycle and pedestrian infrastructure
- MPOs most often program STP funds towards standard roadway improvements



Additional resources for STP

■ FHWA STP Guidance

<https://www.fhwa.dot.gov/map21/factsheets/stp.cfm>

■ MassDOT State Transportation Improvement Program (STIP)

<http://www.massdot.state.ma.us/planning/Main/StatewidePlans/StateTransportationImprovementProgram.aspx>

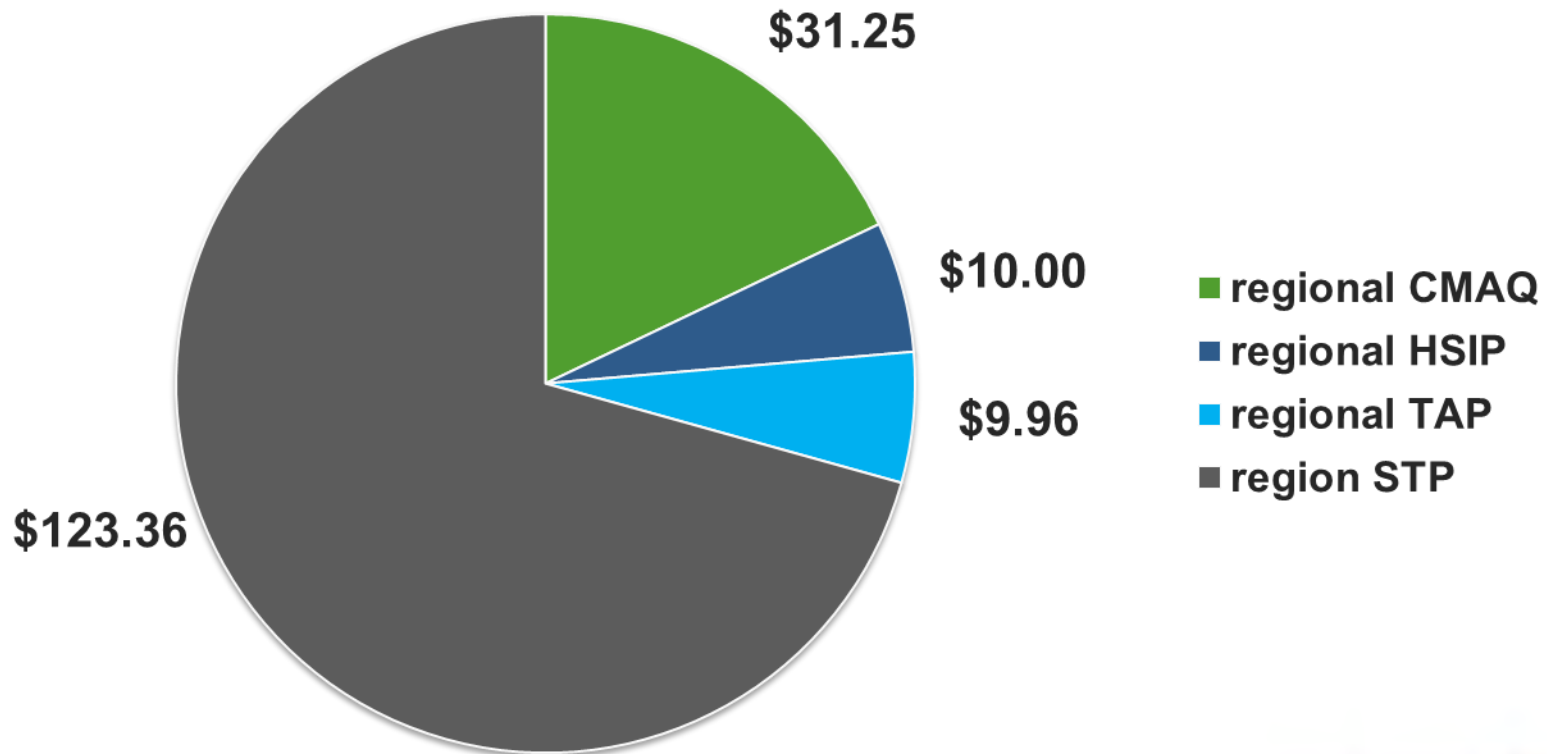
CMAQ / TAP/ STP funding

- Each MPO is allocated funds to prioritize in their TIP
- MassDOT also has a Statewide CMAQ program
 - Alternative fuels
 - Construction of shared-use paths
 - Bay State Greenway
 - Travel demand management
 - ITS
 - Transit
- \$189 million in 2016-2019 STIP for bicycle and pedestrian improvements vs. \$79 million in 2010-2013 STIP



CMAQ / TAP / STP funding

about \$175 million per year for the MPOs to prioritize



(federal fiscal year 2016, in millions)

