



# 16

## Conformity







## **Air Quality Conformity Determination Montachusett (MPO) 2012 Regional Transportation Plan**

### **Introduction**

The 1990 Clean Air Act Amendments (CAAA) require Metropolitan Planning Organizations within ozone nonattainment areas to perform air quality conformity determinations prior to the approval of Regional Transportation Plans (RTPs) and Transportation Improvement Programs (TIPs). Conformity is a way to ensure that federal funding and approval goes to those transportation activities that are consistent with air quality goals. This section presents information and analyses for the air quality conformity determination for the 2012 Regional Transportation Plan of the Montachusett MPO, as required by Federal Regulations 40 CFR Parts 51 and 93, and the Massachusetts Conformity Regulations (310 CMR 60.03). This information and analyses include: regulatory framework, conformity requirements, planning assumptions, emissions budgets, and conformity consultation procedures.

### **Background**

The Commonwealth of Massachusetts is classified as serious nonattainment for ozone, and is divided into two nonattainment areas. The Eastern Massachusetts ozone nonattainment area includes Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Suffolk, and Worcester counties. Berkshire, Franklin, Hampden, and Hampshire counties comprise the Western Massachusetts ozone nonattainment area. With these classifications, the 1990 Clean Air Act Amendments (CAAA) required the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NOx), the two major precursors to ozone formation to achieve attainment of the ozone standard.

In April 2002, the cities of Lowell, Waltham, Worcester and Springfield were re-designated to attainment for carbon monoxide with EPA-approved limited maintenance plans. In April 1996, the communities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Quincy, Revere, and Somerville were classified as attainment for carbon monoxide (CO). Air quality conformity analysis must still be completed in these communities, as they have a carbon monoxide maintenance plan approved into the state implementation plan (SIP). The year 2010 carbon monoxide motor vehicle emission budget established for the Boston CO attainment area with a maintenance plan is 228.33 tons of carbon monoxide per winter day.

A prior conformity determination for all RTPs occurred in 2007, when the Federal Highway Administration (FHWA) – in consultation with the Environmental Protection Agency (EPA New England) and the Massachusetts Department of Environmental Protection (DEP) – confirmed that all 13 of the RTPs for the year 2007 in Massachusetts were in conformity with the Massachusetts State Implementation Plan (SIP). A summary of major conformity milestones in recent years is as follows:

Between 2003 and 2006, several new conformity determinations were made that were



triggered by various events, including: The 2003 regional transportation plans, a change in designation from the one-hour ozone standard to an eight-hour ozone standard, and various changes to regional TIPs that involved reprogramming transportation projects across analysis years.

In 2007, air quality analyses were conducted on behalf of all the 2007 Regional Transportation Plans (RTPs), the purposes of which were to evaluate the RTPs' air quality impacts on the SIP. Conformity determinations were performed to ensure that all regionally significant projects were included in the RTPs. The Massachusetts Department of Transportation found the emission levels from the 2007 Regional Transportation Plans to be in conformance with the SIP.

On April 2, 2008, EPA found that the 2008 and 2009 motor vehicle emissions budgets (MVEBs) in the January 31, 2008 Massachusetts 8-hour ozone State Implementation Plan revision were adequate for transportation conformity purposes. The submittal included 2008 and 2009 MVEBs for the Boston-Lawrence-Worcester (Eastern Massachusetts) and Springfield (Western Massachusetts) 8-hour ozone nonattainment areas. Massachusetts submitted these budgets as part of the 8-hour ozone attainment demonstration and reasonable further progress plan for both nonattainment areas, and as a result of EPA's adequacy finding, these budgets were required to be used for conformity determinations. EPA later determined (in 2010) that only the most recent MVEBs - 2009 - be used for future conformity determinations.

In 2010, air quality analyses were conducted on behalf of all the 2011-2014 Regional Transportation Improvement Programs (TIPs), the purposes of which were to evaluate the TIPs' air quality impacts on the SIP. Conformity determinations were performed to ensure that all regionally significant projects were included in the TIPs. The Massachusetts Department of Transportation found the emission levels from the 2011-2014 TIPs to be in conformance with the SIP. On November 15, 2010, EPA confirmed that both the Eastern and Western Massachusetts Non-Attainment areas collectively demonstrated transportation conformity, with concurrence from Massachusetts DEP on 11/23/10. On December 22, 2010, FHWA and FTA determined that the TIPs were in conformity with the Clean Air Act and the EPA conformity regulations (40 CFR Part 51).

## **Conformity Regulations**

The CAAA revised the requirements for designated MPOs to perform conformity determinations by ozone non-attainment area for their RTPs and TIPs. Section 176 of the CAAA defines conformity to a State Implementation Plan to mean conformity to the plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of the standards. The Montachusett MPO must certify that all activities outlined in the 2012 Montachusett Regional Transportation Plan:

will not cause or contribute to any new violation of any standard in any area



will not increase the frequency or severity of any existing violation of any standard in any area  
will not delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area

The federal conformity regulations from EPA set forth requirements for determining conformity of Transportation Plans, Transportation Improvement Programs, and individual projects. The requirements of the conformity analysis are summarized below and will be explained in detail in this conformity determination:

- ◆ Conformity Criteria
  - *Horizon Years*
  - *Latest planning assumptions*
  - *Latest emission model used*
  - *Timely implementation of transportation control measures (TCMs)*
  - *Conformity in accordance with the consultation procedures and SIP revisions*
  - *Public Participation Procedures*
  - *Financially Constrained Document*
- ◆ Procedures for Determining Regional Transportation Emissions
- ◆ The Conformity Test
  - *Consistent with emission budgets set forth in SIP*
  - *Contribute to reductions in CO nonattainment areas*

In addition, the regulations set specific requirements for different time periods depending on the timeframe of the Commonwealth's SIP submittals to EPA. These periods are defined as follows:

**Control Strategy Period:** Once a control strategy SIP has been submitted to EPA, EPA has to make a positive adequacy determination of the mobile source emission budget before such budget can be used for conformity purposes. The conformity test in this period is consistency with the mobile source emission budget.

**Maintenance Period** is the period of time beginning when the Commonwealth submits and EPA approves a request for redesignation to an attainment area, and lasting for 20 years. The conformity test in this period is consistency with the mobile source emission budget.

## Horizon Year Requirements

Horizon years for regional and state model analyses have been established following 40 CFR 93.106(a) of the Federal Conformity Regulations. The years for which the regional and state transportation models were run for ozone precursor emission estimates are shown below:

- 2010: Milestone Year – This year is now being used by the statewide travel demand model as the new base year for calculation of emission reductions of VOCs and NOx.
- 2016: Milestone Year and Analysis Year: This year is used to show conformity with the existing emission budgets for ozone precursors in Western Massachusetts.
- 2020: Analysis Year



- 2025: Analysis Year
- 2035: Horizon Year – last forecast year of the regional transportation plan

### **Latest Planning Assumptions**

Section 93.110 of the Federal Conformity Regulations outlines the requirements for the most recent planning assumptions that must be in place at the time of the conformity determination. Assumptions must be derived from the estimates of current and future population, households, employment, travel, and congestion most recently developed by the MPO. For the 2012 Montachusett Regional Transportation Plan and other regional plans, the MassDOT developed a series of forecasts – in cooperation with all the MPOs – that represent the most recent planning assumptions for all of Massachusetts.

### **Transit Operating Policy Assumptions**

For the (Region) MPO, the operating policies and assumed transit ridership have not changed since the conformity determination prepared for the 2007 Transportation Plan.

### **Latest Emissions Model**

Emission factors used for calculating emission changes were determined using MOBILE 6, the model used by DEP in determining motor vehicle emission budgets. Emission factors for motor vehicles are specific to each model year, pollutant type, temperature, and travel speed. MOBILE 6 requires a wide range of input parameters including inspection and maintenance program information and other data such as anti-tampering rates, hot/cold start mix, emission failure rates, vehicle fleet mix, fleet age distribution, etc. The input variables used in this conformity determination were received from DEP and approved by EPA.

### **Timely Implementation of Transportation Control Measures**

Transportation Control Measures (TCMs) have been required in the SIP in revisions submitted to EPA in 1979 and 1982. All SIP TCMs have been accomplished through construction or through implementation of ongoing programs. All of the projects have been included in the Region's Transportation Plan (present of past) as recommended projects or projects requiring further study.

DEP submitted to EPA its strategy of programs to show Reasonable Further Progress of a 15% reduction of VOCs in 1996 and the further 9% reduction of NOx toward attainment of the National Ambient Air Quality Standards (NAAQS) for ozone in 1999. Within that strategy there are no specific TCM projects. The strategy does call for traffic flow improvements to reduce congestion and, therefore, improve air quality. Other transportation-related projects that have been included in the SIP control strategy are listed below:

- Enhanced Inspection and Maintenance Program
- California Low Emission Vehicle Program



- Reformulated Gasoline for On- and Off-Road Vehicles
- Stage II Vapor Recovery at Gasoline Refueling Stations
- Tier I Federal Vehicle Standards

## **Consultation Procedures**

The final conformity regulations require that the MPO make a conformity determination according to consultation procedures set out in the federal and state regulations, and the MPO must also follow public involvement procedures established under federal metropolitan transportation planning regulations. The consultation requirements of both the state and federal regulations require that the (Region) MPO (and all other MPOs), MassDOT, Mass. DEP, US EPA - Region 1 and FHWA – Massachusetts Division, consult on the following issues:

- *Selection of regional emissions analysis models including model development and assessment of project design factors for modeling*
- *Selection of inputs to the most recent EPA-approved emissions factor model*
- *Selection of CO hotspot modeling procedures, as necessary*
- *Identification of regionally significant projects to be included in the regional emissions analysis*
- *Identification of projects which have changed in design and scope*
- *Identification of exempt projects*
- *Identification of exempt projects that should be treated as non-exempt because of adverse air quality impacts*
- *Identification of the latest planning assumptions and determination of consistency with SIP assumptions*

These issues have all been addressed through consultation among the agencies listed above.

## **Public Participation Procedures**

Title 23 CFR Section 450.322 and 310 CMR 60.03(6)(h) require that the development of the Regional Transportation Plan, TIP, and related certification documents provide an adequate opportunity for public review and comment. Section 450.316(b) also establishes the outline for MPO public participation programs.

The Montachusett MPO's Public Participation Program (PPP) was formally adopted was formally adopted on June 13, 2007 and amended on April 5, 2010. The development and adoption of this program conforms to the requirements of the section. It guarantees public access to the 2012 Regional Transportation Plan and all supporting documentation, provides for public notification of the availability of the 2012 Regional Transportation Plan and the public's right to review the document and comment thereon, and provides a 30-day public review and comment period prior to the adoption of the 2012 Regional Transportation Plan and related certification documents by the MPO. The Amended PPP allows for an abbreviated public comment period for the Transportation Improvement Program (TIP), Unified Planning Work Program (UPWP) or Regional Transportation Plan (RTP) for a period of



not less than ten (10) days under what the MPO considers to be extraordinary circumstances. The PPP will continue to be reviewed and updated as needed in response to requirements and/or changes due to the passage of SAFETEA-LU and any future federal authorizing legislation.

On July 22, 2011 a public notice was advertised in the Fitchburg & Leominster Sentinel & Enterprise informing the public of its right to comment on the document. Notices also ran in the Gardner News and the papers of Nashoba Publishing (Shirley Oracle, Ayer Public Spirit, Harvard Hillside, Pepperell Free Press, Townsend Times, and Groton Landmark) on July 22, 2011. On August 24, 2011, the Montachusett MPO voted to approve the 2012 Regional Transportation Plan and its conformity determination. This allowed ample opportunity for public comment and MPO review of the draft document. These procedures comply with the associated federal requirements.

Additionally, notices and draft documents were made available on the MRPC website at [www.mrpc.org](http://www.mrpc.org) for review and download.

Prior to the start of the 30 day public review and comment period, an announcement memo in both English and Spanish was distributed to all members of the MRPC transportation matrix covering some 300 plus individuals, organizations and agencies.

## **Financial Consistency**

Title 23 CFR Section 450.322 and 40 CFR 93.108 require the 2012 Montachusett Regional Transportation Plan to “be financially constrained by year and include a financial plan that demonstrates which projects can be implemented using current revenue sources and which projects are to be implemented using proposed revenue sources.”

The 2012 Plan is financially constrained to projections of federal and state resources reasonably expected to be available during the appropriate time frame. Projections of federal resources are based upon the estimated apportionment of the most recent federal authorizations, as allocated to the region by the state or as allocated among the various MPOs according to federal formulae or MPO agreement. Projections of state resources are based upon the allocations contained in the current Transportation Bond Bill and historic trends. Therefore, the 2012 Plan substantially complies with the federal requirements relating to financial planning.

## **Model Specific Information**

40 CFR Part 93.111 of the federal regulations outlines requirements to be used in the network-based transportation demand models. These requirements include modeling methods and functional relationships to be used in accordance with acceptable professional practice and reasonable for purposes of emission estimation. MassDOT, on behalf of the Montachusett MPO, has used the methods described in the conformity regulations in the analysis of this 2012 Regional Transportation Plan.





## Highway Performance Monitoring System Adjustments

As stated in EPA guidance, all areas of serious ozone and carbon monoxide nonattainment must use FHWA's Performance Monitoring System (HPMS) to track daily vehicle-miles of travel (VMT) prior to attainment to ensure that the state is in line with commitments made in reaching attainment of the ambient air quality standards by the required attainment dates. MassDOT provided HPMS information to DEP. DEP used this information in setting mobile-source budgets for VOC, NO<sub>x</sub>, and CO in all SIP revisions prior to 1997. DEP has since revised its VOC and NO<sub>x</sub> budgets using transportation-demand model runs. However, the models must still be compared to HPMS data since HPMS remains the accepted tracking procedure as outlined in the regulations.

The conformity regulations require that all model-based VMT be compared with the HPMS VMT to ensure that the region is in line with VMT and emission projections made by DEP. An adjustment factor that compares the 2010 HPMS VMT to the 2010 transportation model VMT has been developed. This adjustment factor is then applied to all modeled VOC and NO<sub>x</sub> emissions for the years 2016 through 2035 to ensure consistency with EPA-accepted procedures.

$$\frac{\text{2010 HPMS VMT}}{\text{2010 Modeled VMT}} = \text{Adjustment factor} = 1.142 \text{ for Montachusett for VOC and NO}_x$$

HPMS adjustment factors, calculated on a regional basis, are applied to the model output of future scenarios, and they change as base-year models are updated or improved, or as HPMS data is revised or updated. The latest factors for Eastern Massachusetts are as follows:



REGION	2010 HPMS VMT (miles)	Travel Demand Model VMT (miles)	HPMS/Model Conversion Factor
Cape Cod	6,869,000	4,456,118	1.541
Central Massachusetts	14,564,000	11,924,422	1.221
Martha's Vineyard	266,000	224,944	1.183
Merrimack Valley	9,353,000	9,143,834	1.023
Boston	60,751,000	71,225,035	0.853
Montachusett	5,015,000	4,392,193	1.142
Nantucket	153,000	71,899	2.128
Northern Middlesex	6,523,000	6,735,326	0.968
Old Colony	6,883,000	6,549,927	1.051
Southeastern Massachusetts	14,710,000	13,745,040	1.070

**Eastern MA**

125,087,000	128,468,738	0.974
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**State Total**

148,937,000	142,159,733	1.048
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### Changes in Project Design since the Last Conformity Determination Analysis

The Commonwealth requires that any change in project design from the previous conformity determination for the region is identified. Changes that have occurred since the last conformity determination in 2010 are as follows:

- The modeled base year has changed from 2007 to 2010.
- A new analysis year has been included in the conformity determination. An air quality analysis has been completed for 2016. This complies with EPA's Transportation Conformity Rule Restructuring Amendments (40 CFR Part 93.118, expected to become effective August 2011) which states that "if the attainment date has not yet been established, the first analysis year must be no more than five years beyond the year in which the conformity determination is being made." (2011 base to 2016 analysis year).
- Emission factors have been developed for 2010, 2016, 2020, 2025, and 2035 using Mobile 6.2 with inputs approved by MassDEP and US EPA.
- New HPMS adjustment factors have been developed for the new 2010 base year.

### Procedures for Determining Regional Transportation Emissions

The federal conformity regulations set specific requirements for determining transportation



emissions, which are estimated from a combination of emission rates, HPMS volume data, and travel demand model projections. Travel demand models use estimates of population, households, and employment to project future travel volumes and patterns. Chapter 3 of the Plan presents these estimates as part of the existing and future regional transportation system.

Only “regionally significant” projects are required to be included in the travel demand modeling efforts. The final federal conformity regulations define regionally significant as follows:

***Regionally significant:*** *a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sport complexes, etc., or transportation terminals as well as most terminals themselves) and would be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.*

In addition, specific classes of projects have been exempted from regional modeling emissions analysis. The categories of exempt projects include:

- *Intersection channelization projects*
- *Intersection signalization projects at individual intersections*
- *Interchange reconfiguration projects*
- *Changes in vertical and horizontal alignment*
- *Truck size and weight inspection stations*
- *Bus terminals and transfer points*

Previous conformity amendments now allow traffic signal synchronization projects to be exempt from conformity determinations prior to their funding, approval or implementation. However, once they are implemented, they must be included in conformity determinations for future plans and TIPs

The milestone and analysis year transportation model networks are composed of projects proposed in this RTP. Projects in these networks consist of all in-place regionally significant projects that can reasonably be expected to be completed by a given analysis/horizon year with consideration of available funding commitments. This project group would include, but not be limited to, regionally significant projects where at least one of the following steps has occurred within the past three years:

- Comes from the first year of a previously conforming TIP,
- Completed the NEPA process, or
- Currently under construction or are undergoing right-of-way acquisition

A complete listing of future regionally significant projects for the entire Eastern Massachusetts



Ozone Non-Attainment Area is provided below:

### Regionally Significant Projects Included in the Regional Transportation Models for the Eastern Massachusetts Ozone Non-Attainment Area

<b>Analysis Year</b>	<b>Community</b>	<b>Description of Projects Under Construction – Boston Region</b>
2016	Bedford, Burlington	Middlesex Turnpike Improvements Phases 1 and 2
2016	Bellingham	Pulaski Boulevard
2016	Boston	Fairmount Line Improvements, including new stations
2016	Boston	East Boston Haul Road/Chelsea Truck Route (new grade separated roadway)
2016	Concord, Lincoln	Route 2/Crosby's Corner (grade separation)
2016	Danvers	Route 128/Route 35 and Route 62
2016	Hudson	Route 85 (capacity improvements from Marlborough TL to Rt 62)
2016	Marshfield	Route 139 Widening (to 4 lanes between School St. and Furnace St.)
2016	Quincy	Quincy Center Concourse, Phase 2 (new roadway: Parking Way to Hancock
2016	Randolph to Wellesley	Route 128 Additional Lanes
2016	Somerville	Assembly Square Orange Line Station
2016	Somerville	Assembly Square Roadways (new and reconfigured)
2016	Weymouth, Hingham, Rockland	South Weymouth Naval Air Station Access Improvements
2016	Regionwide	1000 Additional Park and Ride Spaces
<b>Analysis Year</b>	<b>Community</b>	<b>Description of Recommended Plan Projects– Boston Region</b>
2016	Beverly	Beverly Station Commuter Rail Parking Garage
2016	Boston	Conley Haul Road
2016	Salem	Salem Station Commuter Rail Parking Garage Expansion
2016	Somerville, Cambridge, Medford	Green Line Extension to Medford Hillside/Union Square
2016	Weymouth	Route 18 Capacity Improvements
2020	Bedford, Burlington, Billerica	Middlesex Turnpike Improvements Phase 3 – widening Plank St. to Manning Rd.
2020	Boston	Sullivan Square/Rutherford Avenue Improvements
2020	Hanover	Route 53 Final Phase (widening to 4 lanes between Rt 3 and Rt 123)
2020	Salem	Bridge Street (widening to 4 lanes between Flint and Washington St.)
2020	Somerville, Medford	Green Line Extension to Mystic Valley Parkway (Route 16)
2025	Canton	I-95 (NB)/Dedham Street Ramp/Dedham Street Corridor (new ramp with widening on Dedham St. from I-95 to University Ave.)
2025	Canton	I-95/I-93 Interchange (new direct connect ramps)
2025	Newton, Needham	Needham Street/Highland Avenue (includes widening Charles River Bridge)
2025	Woburn	Montvale Avenue (widening between Central St. to east of Washington St.)
2025	Woburn	New Boston Street Bridge (reestablish connection over MBTA Lowell line)
2035	Braintree	Braintree Split - I-93/Route 3 Interchange
2035	Framingham	Route 126/135 Grade Separation
2035	Reading, Woburn, Stoneham	I-93/I-95 Interchange (new direct connect ramps)
2035	Revere, Malden, Saugus	Route 1 (widening from 4 to 6 lanes between Copeland Circle and Rt. 99)
2035	Wilmington	Tri-Town Interchange (new "Lowell Junction" interchange on I-93 between Route 125 and Dascomb Rd.)
<b>Analysis Year</b>	<b>Community</b>	<b>Project Description - Cape Cod Region</b>
2020	Barnstable	Yarmouth Rd. /Rt 28 (widening to 4 lanes) with Hyannis Access Improvements
2025	Bourne	Route 6 Exit 1 WB on-ramp changes and interchange improvements
2035	Bourne	Route 25 Access Ramp widening / Belmont Circle two-way travel
2035	Capewide	Daily Passenger Rail Service: Hyannis to Buzzard's Bay, Middleborough
2035	Mashpee	Mashpee Rotary Ring Roads (connectors, Great Neck Rd, Routes 28 and 151)



<b>Analysis Year</b>	<b>Community</b>	<b>Project Description - Central Massachusetts Region</b>
2016	Northborough	Rt 20 Church to South, signal coordination in corridor
2016	Shrewsbury/Worcester	Rt 9 Bridge over Lake Quinsigamond: widening, additional lane each direction
2016	Auburn	Rt 12/20 to Auburn TL capacity improvements and raised median
2016	Worcester	Lincoln/Highland/Pleasant Streets intersection corridor improvements, minor widening, select signal coordination
2016	Worcester	Route 20 Widening to a consistent 4 lanes
2020	Charlton, Oxford	Route 20 Widening to a consistent 4 lanes
2025	Westborough, Hopkinton	I-90/I-495 and I-495/Rt 9 Interchange Improvements (CD or frontage roads)
2035	Worcester	Route 122/122A Madison St/Chandler St. Kelley Square to Pleasant St: various improvements and signal coordination
2035	Worcester	I-290 Hope Ave. (to full interchange and roundabout at Webster and Hope)
2035	Millbury, Sutton	Route 146 Improvements: Route 122A to Central Turnpike
<b>Analysis Year</b>	<b>Community</b>	<b>Project Description – Martha's Vineyard Region</b>
n/a	n/a	none
<b>Analysis Year</b>	<b>Community</b>	<b>Project Description – Merrimack Valley Region</b>
2016	Amesbury	Route 110 from I-495 to I-95 (widen from 2 lanes to 4)
2020	Newburyport, Amesbury	I-95 over Merrimack River (Whittier Bridge widening from 6 to 8 lanes)
2020	Methuen	Route 110/113 (Methuen Rotary – new interchange ramps at I-93)
2025	Lawrence, North Andover	Route 114 (widening from I-495 to Waverly Road)
2035	Andover	Tri-Town Interchange (new "Lowell Junction" interchange on I-93 between Route 125 and Dascomb Rd.) and I-93 widening to 4 lanes in each direction from new interchange/current "lane drop" area to I-495.
<b>Analysis Year</b>	<b>Community</b>	<b>Project Description – Montachusett Region</b>
2016	Fitchburg/Westminster	New Wachusett Commuter Rail Station
2016	Ayer to South Acton	Fitchburg Line Commuter Rail Improvements (double track)
2020	Leominster	Route 13 Hawes St. to Prospect St. (some widening, new signals, etc)
2025	Athol	New Interchange on Route 2 at South Athol Road
<b>Analysis Year</b>	<b>Community</b>	<b>Project Description – Nantucket Region</b>
n/a	n/a	none
<b>Analysis Year</b>	<b>Community</b>	<b>Project Description – Northern Middlesex Region</b>
2016	Westford	Route 110 Minot's Corner to Nixon widen to 4 lanes
2020	Billerica	Middlesex Turnpike Improvements Phase 3 – widening Plank St. to Manning Rd.
2035	Tewksbury	Tri-Town Interchange (new "Lowell Junction" interchange on I-93 between Route 125 and Dascomb Rd.) and I-93 widening to 4 lanes in each direction from new interchange/current "lane drop" area to I-495.
2035	Westford	I-495 at Boston Road (Exit 32) widening of on and off ramps
2035	Lowell, Tewksbury, Chelmsford, and Westford	I-495 Additional travel lane each direction between Exits 32 and 35 and between Exits 37 and 40
2035	Lowell	Wood Street, Rourke Bridge: new bridge, widening and corridor improvements



<b>Analysis Year</b>	<b>Community</b>	<b>Project Description – Old Colony Region</b>
2016	Abington	Route 18 - Widening to 4 Lanes from Route 139 to Highland Rd.
2020	Brockton	Route 123 - Widen from Route 24 to Angus Beaton Drive
2020	Bridgewater	Route 24 - Add Northbound Slip Ramp from Route 104 WB to Route 24 NB
2020	Plymouth	Route 3 - Add Northbound on-Ramp at Long Pond Road (Exit 5)
2020	Plymouth	Long Pond Road Bridge widening (Exit 5)
2025	Brockton	Main Street, Warren Avenue, Spring Street, West Elm Street, Belmont Street - Reestablish Two-Way Circulation
2025	West Bridgewater	Route 106 - Widening from 2 to 4 Lanes between Route 24 and Route 28
2035	Plymouth	Route 3 – Add NB Off-ramp to Plimouth Plantation Hwy (Exit 4)
2035	Plymouth	Route 25 - Add New Interchange Before Exit 1 and connect to Bourne Road
2035	West Bridgewater	Route 28, Route 106, Central Square Signal and intersection coordination
<b>Analysis Year</b>	<b>Community</b>	<b>Project Description – Southeastern Massachusetts Region</b>
2016	Fall River, Somerset	New Brightman Street Bridge - capacity improvements to 4 lane divided facility
2016	Fall River	Route 79/Davol Street (interchange improvements and new traffic circulation)
2016	Freetown	Route 24 - New Interchange (Exit 8 ½)
2016	Mansfield	Route 140 / I-495 New Southbound On-Ramp
2020	Dartmouth	Route 6 (Faunce Corner Rd) / I-195 Interchange - Bridge Widening to 5 Lanes
2035	Taunton	Route 24 / 140 - Interchange Reconstruction

## Air Quality Conformity Analysis

The emissions from the following MPOs have been combined to show conformity with the SIP for the Eastern Massachusetts Ozone Nonattainment Area:

- Cape Cod MPO
- Central Massachusetts MPO
- Merrimack Valley MPO
- Boston MPO
- Montachusett Region MPO
- Northern Middlesex MPO
- Old Colony MPO
- Southeastern Region MPO
- Martha's Vineyard Commission\*
- Nantucket Planning and Economic Development Commission\*

\* These regions do not contain any official urbanized areas, but are considered to be MPOs for planning purposes.

Using the latest planning assumptions, the Massachusetts Department of Transportation, Office of Transportation Planning, in coordination with MPO staff, estimated the emissions for VOC and NO<sub>x</sub> for all MPOs in Eastern Massachusetts through a combination of the statewide and Boston Region travel demand models. The VOC mobile source emission budget for 2009 and beyond for the Eastern Massachusetts Nonattainment Area has been set at 63.50 tons per summer day and the 2009 (and beyond) mobile source budget for NO<sub>x</sub> is 174.96 tons per summer day. As shown in Tables 1 and 2, the results of the air quality analysis demonstrate



that the VOC and NOx emissions from all Action scenarios are less than the VOC and NOx emissions budgets for the Eastern Massachusetts Nonattainment Area:

**TABLE 1**  
**VOC Emissions Estimates for the Eastern Massachusetts Ozone**  
**Nonattainment Area**  
 (all emissions in tons per summer day)

Year	(MPO) Action Emissions	Eastern MA Action Emissions	Budget	Difference (Action – Budget)
2010	n/a	64.974	n/a	n/a
2016	1.4149	36.232	63.50	-27.268
2020	1.2487	32.386	63.50	-31.114
2025	1.1609	30.988	63.50	-32.512
2035	1.1806	31.063	63.50	-32.437

**TABLE 2**  
**NOx Emissions Estimates for the Eastern Massachusetts Ozone**  
**Nonattainment Area**  
 (all emissions in tons per summer day)

Year	(MPO) Action Emissions	Eastern MA Action Emissions	Budget	Difference (Action – Budget)
2010	n/a	178.925	n/a	n/a
2016	2.5075	66.219	174.96	-108.741
2020	1.6275	45.188	174.96	-129.772
2025	1.2162	36.521	174.96	-138.439
2035	1.0375	29.038	174.96	-145.922

The Montachusett MPO has conducted an air quality analysis of the 2012 Montachusett Regional Transportation Plan and its latest conformity determination. The purpose of the analysis is to evaluate the air quality impacts of the Plan on the SIP. The analysis evaluates the change in ozone precursor emissions (VOCs, and NOx) due to the implementation of the 2012 Montachusett Regional Transportation Plan. The modeling procedures and assumptions used in this air quality analysis follow guidance from EPA and the Commonwealth and are consistent with all present and past procedures used by the Massachusetts DEP to develop and amend the SIP.



MassDOT has found the emission levels from all MPOs in Eastern Massachusetts – including from the 2012 Montachusett Regional Transportation Plan – to be in conformance with the SIP according to conformity criteria. Specifically, the following conditions are met:

- The VOC emissions for the Action (build) scenarios are less than the 2009 VOC motor vehicle emission budget for analysis years 2016 through 2035.
- The NOx emissions for the Action (build) scenario are less than the 2009 NOx motor vehicle emission budget for analysis years 2016 through 2035.

In accordance with Section 176(c)(4) of the Clean Air Act as amended in 1990, the MPO for the Montachusett Region has completed its review and hereby certifies that the 2012 Montachusett Regional Transportation Plan and its latest conformity determination satisfies the conformity criteria where applicable, and therefore conditionally conforms with 40 CFR Parts 51 and 93, and 310 CMR 60.03, and is consistent with the air quality goals in the Massachusetts State Implementation Plan.