



13. AIR QUALITY CONFORMITY

13.1. BACKGROUND

The Commonwealth of Massachusetts is classified as 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 this nonattainment classification, the 1990 Clean Air Act Amendments (CAAA) required the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), the two major precursors to ozone formation to achieve attainment of the ozone standard.

The CAAA also required Metropolitan Planning Organizations (MPOs) within nonattainment areas to perform conformity determinations prior to the approval of their Regional Transportation Plans (RTPs) and Transportation Improvement Programs (TIPs). The most recent conformity determination occurred on June 15, 2005, 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 2003 in Massachusetts (and their updates in some cases) were in conformity with the Massachusetts State Implementation Plan (SIP). A brief summary of major conformity

milestones in recent years is as follows (more details are provided in the 2003 RTP and related documents):

In September 2002, DEP submitted to EPA a revision to the Massachusetts SIP that included a revised one-hour ozone attainment demonstration for Eastern Massachusetts. This SIP revision included a 2007 mobile source emission budget for the Eastern Massachusetts Ozone Nonattainment Area. EPA found this emission budget adequate for conformity purposes under the one-hour standard in December 2002, and it became effective in January 2003.

In 2003, air quality analyses were conducted on behalf of all the 2003 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 Executive Office of Transportation found the emission levels from the 2003 Regional Transportation Plans to be in conformance with the SIP. Each MPO had certified (and continues to certify) that all activities outlined in its Plan and its TIP:

- 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; and,
- will not delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area.

In 2004, two eight-hour ozone non-attainment area designations for Massachusetts – classified as “moderate” – went into effect on June 15th, and were geographically identical to those of the previous one-hour standard: the Boston-Lawrence-Worcester (Eastern Massachusetts) Area, and the Springfield (Western Massachusetts) Area. Concurrent with those designations, EPA announced that the 1-hour ozone standard would be revoked as of June 15, 2005.

In 2005, updated air quality conformity analyses for the eight-hour ozone standard were performed for the 2003 RTPs and 2005-2009 regional TIPs. This was required to avoid a conformity lapse and a resulting potential delay or loss of federal transportation funding. On June 15, 2005, FHWA – in consultation with EPA New England and DEP – made a positive conformity finding for the eight-hour standard.

In July 2005, the Boston Region MPO proposed in their 2007-2010 TIP a reprogramming of several projects across analysis years. This action required a new conformity analysis to be undertaken. Note: Only the emission totals for the Boston Region MPO and the Eastern Massachusetts Nonattainment area were changed at that time. In March 2007, new emissions analyses for all regions were performed with updated emission factors, and the results are being used to demonstrate conformity for the Nantucket MPO and all other MPO regions in the Eastern Massachusetts Nonattainment Area.

Key elements of this 2007 RTP related to air quality conformity are as follows:

- This RTP is financially constrained.
- The RTP continues to include all regionally significant, non-exempt projects as contained in the previously endorsed plan.

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- All regionally significant projects included in the RTP have been included in the air quality analyses.
 - Based on the updated analysis, this RTP demonstrates air quality conformity.

13.2. 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.

13.3. AIR QUALITY CONFORMITY ANALYSIS

The conformity test is to show consistency with the motor vehicle emissions budgets set forth in the SIP. Specific information regarding the analysis methods, latest planning assumptions, and consultation procedures are all detailed in the RTP. The motor vehicle volatile organic compounds (VOC) and nitrogen oxide (NO_x) emissions for the Eastern Massachusetts Ozone Nonattainment Area include all the following MPOs:

- 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 are considered to be MPOs for planning purposes.

The Executive Office of Transportation, Office of Transportation Planning estimated the emissions for VOC and NO_x for all areas and all MPOs (emissions for the Boston Region were estimated by MPO staff and were included in the final totals). The VOC mobile source emission budget for 2007 for the Eastern Massachusetts One-Hour Ozone Nonattainment Area has been set at 86.700 tons per summer day and the 2007 mobile source budget for NO_x is 226.363 tons per summer day. As shown in Tables 1 and 2, the results of the air quality analysis demonstrate that the VOC and NO_x emissions from all Action scenarios are less than the VOC and NO_x emissions budgets for the Eastern Massachusetts Ozone Nonattainment Area:

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

Year	Nantucket Region Action Emissions	Eastern MA Action Emissions	Budget	Difference (Action – Budget)
2000	n/a	166.545	n/a	n/a
2007	0.0831	61.957	86.700	-24.743
2010	0.0773	49.718	86.700	-36.982
2020	0.0410	29.805	86.700	-56.895
2030	0.0437	28.714	86.700	-57.986

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

Year	Nantucket Region Action Emissions	Eastern MA Action Emissions	Budget	Difference (Action – Budget)
2000	n/a	287.877	n/a	n/a
2007	0.202	174.098	226.363	-52.265
2010	0.1756	129.201	226.363	-97.162
2020	0.047	45.439	226.363	-180.924
2030	0.0363	34.744	226.363	-191.619

In summary, the conformity determination has been prepared in accordance with EPA’s final conformity regulations. The Nantucket MPO has found the emission levels from this 2007 RTP – in combination with the emission levels from the other MPOs in its nonattainment area – demonstrate conformity with the SIP. Therefore, the implementation of the 2007 RTP is consistent with the air quality goals in the Massachusetts SIP.