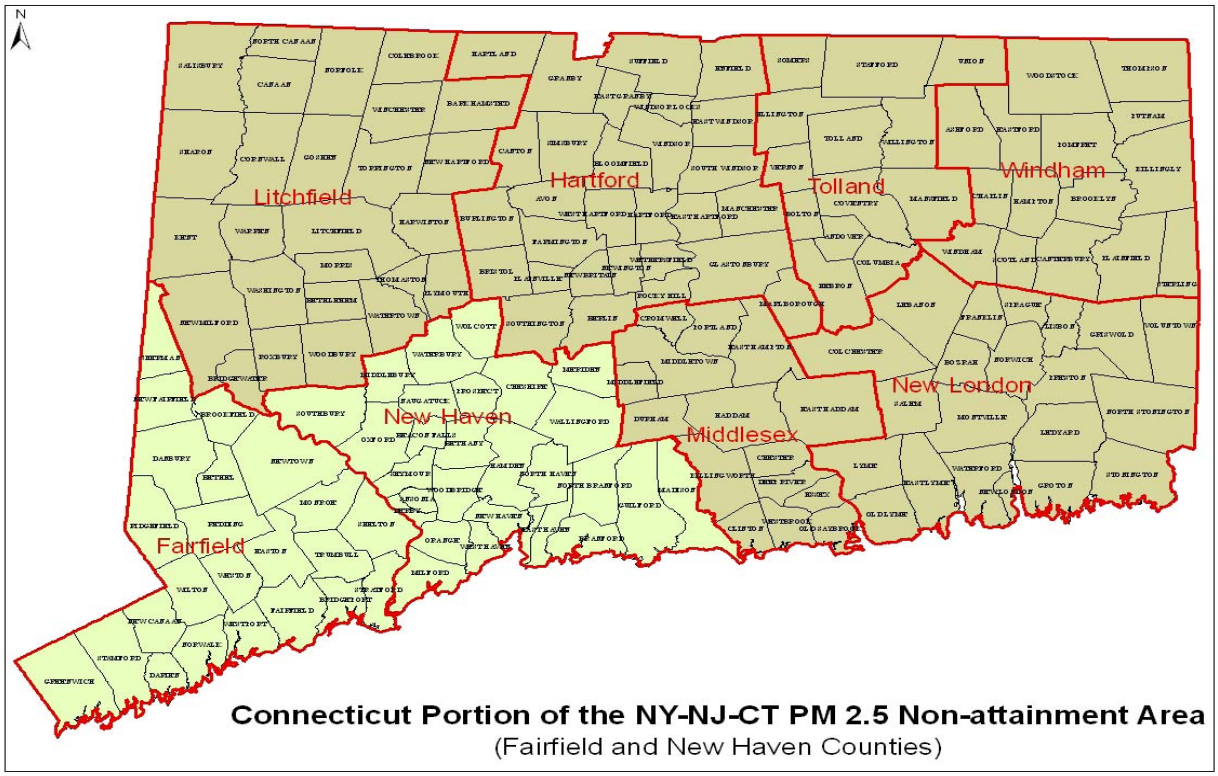
REGIONAL AIR QUALITY EMISSIONS ASSESSMENT FOR THE CONNECTICUT PORTION OF THE NY-NJ-CT $PM_{2.5}$ NONATTAINMENT AREA

TRANSPORTATION IMPROVEMENT PROGRAM – FFY2010-2013 FOR THE GREATER BRIDGEPORT PLANNING REGION

October 2009



Connecticut Portion of the NY-NJ-CT PM 2.5 Non-attainment Area
(Fairfield and New Haven Counties)

The US Environmental Protection Agency (EPA) promulgated national ambient air quality standards (NAAQS) for fine particulate matter in 1997. Fine particulate matter is referred to as $PM_{2.5}$ and is a mixture of microscopic solids and suspended liquid solids in the air. It is formed directly as a by-product of combustion, such as smoke or automobile exhaust, or indirectly from chemical reactions in the atmosphere. On November 18, 2008 Connecticut Department of Environmental Protection submitted a SIP Revision "Attainment Demonstration for the 1997 Annual PM2.5 National Ambient Air Quality Standard for the Connecticut portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT PM 2.5 Nonattainment Area". EPA determined Connecticut's PM2.5 attainment demonstration SIP to be administratively and technically complete on January 8, 2009. The New Jersey – New York – Connecticut multi-state non-attainment area was designated by EPA because this region's air quality fails to meet the annual PM2.5 NAAQS. As EPA New England has determined the MOBILE6.2 2009 motor vehicle emissions budgets submitted on April 17, 2007 to be adequate for transportation conformity purposes, the emissions analysis in this report will be limited to these areas only and the budgets effective as of June 20, 2007.

GREATER BRIDGEPORT & VALLEY REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM: FFY 2010 ~ 2013
REGIONAL EMISSIONS ANALYSES RESULTS

FINE PARTICULATE MATTER ANNUAL NAAQS FOR THE CT PORTION OF THE NY-NJ-CT PM2.5 NON-ATTAINMENT AREA

Direct $PM_{2.5}$ Interim Emissions Test Results Tons per Year No Greater Than 2002

	2002	2009	2010	2020	2030	2035
COGCNV (part of 1 county)	**67.8**	46.3	43.7	32.4	32.9	33.6
GB&V MPO (pt. of 2 counties)	**98.8**	65.4	61.5	44.6	45.0	45.8
HVCEO (part of 1 county)	**55.7**	35.2	33.6	26.1	27.2	28.0
SCRCOG (part of 1 county)	**173**	119.5	113.0	82.0	83.2	85.1
SWRPA (part of 1 county)	**125.4**	82.6	77.9	56.3	56.7	57.8
TOTALS:	**520.7**	349.0	329.7	241.4	245.0	250.3
Conclusion		**Pass**	**Pass**	**Pass**	**Pass**	**Pass**

Notes:

1. New Jersey MPOs (DVRPC and NJTPA) are excluded from the multi-state conformity because it has adopted PM2.5 budgets that EPA has found to be adequate.
2. A small reduction in VMT and emissions will occur from the ECO program.
2. Based on air quality modeling that represents two seasons – SUMMER and WINTER.
3. NOx emissions are in tons per year and are calculated using Connecticut's vehicle mix.
4. HMPS 12 Functional Class system used.
5. National Low Emission Vehicle (NLEV) program included in 2009 and future years.
6. Includes emission reductions from passenger transit locomotives.
7. Interim emissions test based on analysis year total less than BASE YEAR per EPA guidance.
8. Series 28E run with 20 iteration equilibrium assignment.

NOx ($PM_{2.5}$ Precursor) Interim Emissions Test (Annual Tons) No Greater Than 2002						
	2002	**2009**	**2010**	**2020**	**2030**	**2035**
COGCNV (part of 1 county)	**4,412.30**	2358.0	2111.2	736.6	512.4	508.9
GB&V MPO (pt. of 2 counties)	**6,395.20**	3310.2	2962.1	1012.9	700.7	693.2
HVCEO (part of 1 county)	**3,571.20**	1730.4	1556.9	562.7	414.9	418.2
SCRCOG (part of 1 county)	**11,311.90**	6163.4	5546.1	1903.0	1309.5	1296.3
SWRPA (part of 1 county)	**8,149.60**	4206.1	3770.6	1283.4	884.1	874.8
TOTALS:	**33,840.2**	17768.1	15946.9	5498.6	3821.6	3791.4
Conclusion		**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

Notes:

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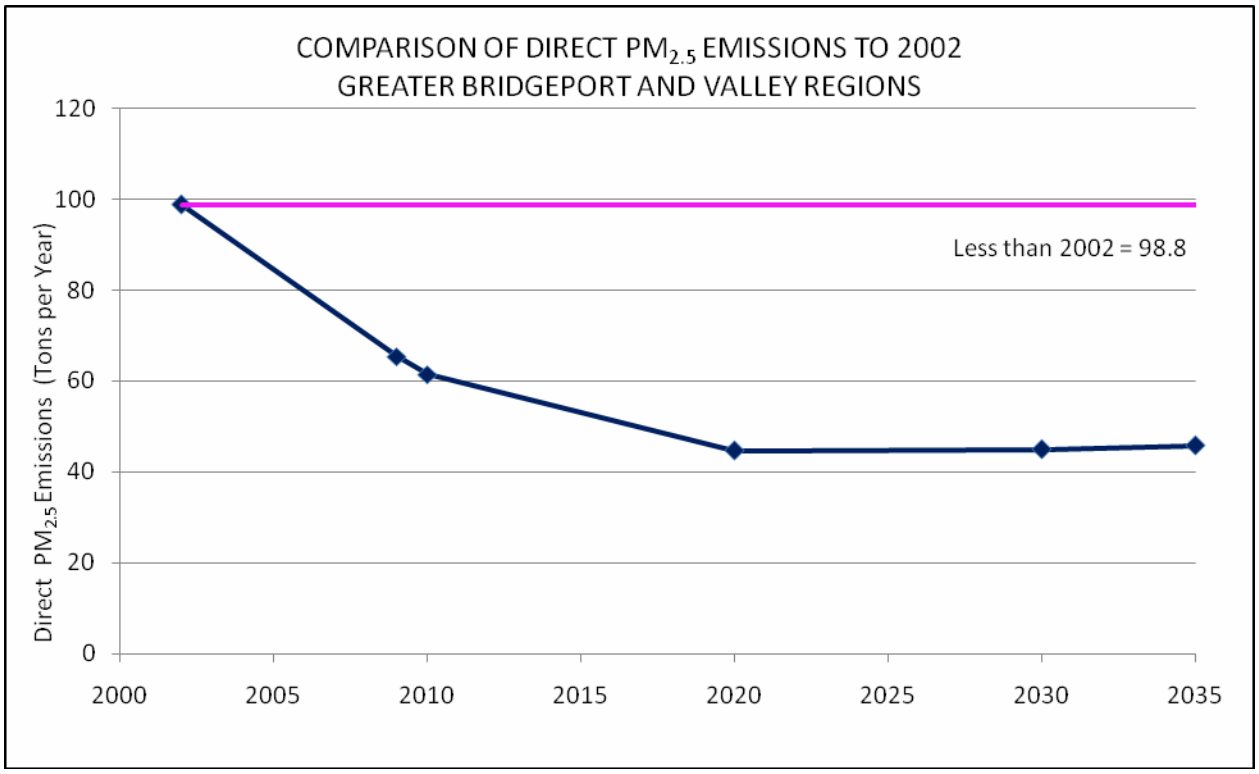
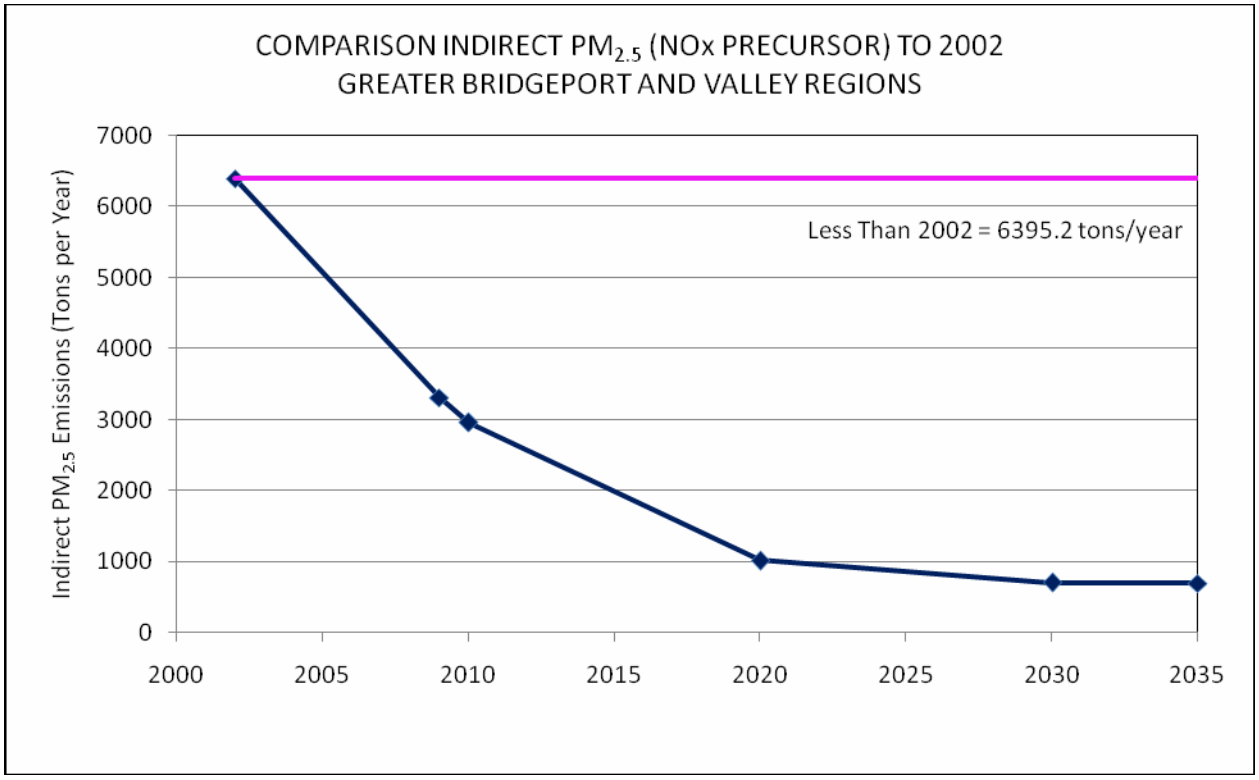
8. Series 28E run with 20 iteration equilibrium assignment.

* To be calculated when NYMTC and OCTC complete their respective model runs for the year 2035.


COMPARISON OF DIRECT PM2.5 EMISSIONS TO 2002
GREATER BRIDGEPORT AND VALLEY REGIONS
Direct PM2.5 Emissions (Tons per Year)
120
100
80
60
40
20
0
2000
2005
2010
2015
2020
2025
2030
2035
Less than 2002 = 98.8


COMPARISON INDIRECT PM2.5 (NOx PRECURSOR) TO 2002
GREATER BRIDGEPORT AND VALLEY REGIONS
Indirect PM2.5 Emissions (Tons per Year)
7000
6000
5000
4000
3000
2000
1000
0
2000
2005
2010
2015
2020
2025
2030
2035
Less Than 2002 = 6395.2 tons/year