

TSD-1h

**Projected 8-h ozone air quality over
the Ozone Transport Region**

**Bureau of Air Quality Analysis and Research
Division of Air Resources
New York State Department of Environmental Conservation
Albany, NY 12233**

March 19, 2007

The USEPA guidance (EPA 2005 and EPA 2006) recommends the use of relative reduction factor (RRF) approach for demonstrating the attainment of the 8-hr ozone NAAQS. The OTC Modeling committee implemented this recommended approach in performing attainment assessment of the areas.

Attainment year 2009

As described in TSD-1g (2007), the RRFs were determined for all OTR monitors for the two future year simulations with 2009OTW and 2009BOTW emissions data. The base design value (DVC) for 2002 representing the number of DVs estimated on the basis of 3-yr averages available from 2000 to 2004 are listed in Tables 1 and 2 along with the RRF, the number of days, the level of threshold, and future year projected concentrations for each monitor identified by its AIRS ID, common name and the county. The values in bold represent projected design values that exceed the 8-hr ozone NAAQS.

In general both simulations do not differ much from each other in that they yield similar design values with the 2009BOTW providing concentrations that are about one or two ppb lower than the 2009OTW. However it should be noted that the Guidance provides for a window (82 to 87 ppb) that can be considered as demonstrating attainment provided there is sufficient information to support in the form of weight of evidence (WOE) that suggests that the projected design value would be at or less than the 8-hr ozone NAAQS, taking into consideration the current measured design value and other projected emissions reductions within and outside the modeling domain.

If such a consideration is given then there are only 6 monitors above 87 ppb in the OTR, and without such an option of WOE there would be 21 monitors that have projected design value above 84 ppb. It should be noted that in either case, a majority of them are located in the Baltimore–Philadelphia–New York City–Connecticut portion of inner OTR corridor associated with high emissions region.

These Tables also list monitors for which no future DV (DVF) was calculated, listed as -9 in all columns except for DVC, which is a limitation inherent in the method for calculating the RRF. Often these monitors have DVC less than 84 ppb, with the exception of the monitor at the summit of Whiteface, NY (360310002), that has a DVC of 88.3 ppb while at the base of Whiteface (360311003) the measured DVC is 84.3 ppb. In both instances, there were fewer than 5 days that the model simulation predicted base concentrations in the 9-grid cells surrounding these monitors was below the threshold of 70 ppb, resulting in assigning no RRF and no estimate of DVF for these monitors.

Attainment year 2012

One other option that was considered by the OTC Modeling committee is the simulation of 2012BOTW emissions within the OTR. The details of the development of the 2012BOTW inventory are provided in TSD-1f (2007). The CMAQ simulation was performed with the 2012BOTW emissions in the OTR with the remainder of the

modeling domain also at 2012 emissions. The results of the simulation were processed in a manner similar to those of 2009 and the resulting future year design values are listed in Table 3 in a format similar to those in Tables 1 and 2.

The listed future DVs indicate that there are 5 monitors that would have a projected design value above 84 ppb, again located in the inner OTR corridor. However it should be noted that if consideration is given to these monitors along with WOE then these would be within the prescribed range of WOE, thereby demonstrating *modeled attainment for all monitors in the OTR* under this scenario.

Non-monitored locations

One of the requirements of the EPA guidance is the need to investigate if there are locations within the modeling domain where the predicted future design values (DVF) are above the level of NAAQS but are not associated with a monitor to provide DVC. While the EPA has recommended the use of modeled attainment test software (MATS) to investigate such occurrences, it was decided by the Modeling committee that such an assessment should be undertaken by the individual areas themselves as part of their SIP analysis.

References

EPA (2005) Guidance on the Use of Models and Other Analyses in Attainment Demonstrations for the 8-hour Ozone NAAQS. EPA-454/R-05-002.

EPA (2006) Guidance on the use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5} and Regional Haze. Draft 3.2-September 2006.

TSD-1f (2007) Future Year Emissions Inventory for 8-h OTC Ozone Modeling

TSD-1g (2007) Relative response factor (RRF) and “Modeled Attainment Test”

Table 1 Projected 8-hr Ozone Design Values over OTR based on 2009OTW Emissions Inventory

AIRS-ID	County	Monitor	#ofDV	DVC	DVF	RRF	#Days	Threshold
340290006	Ocean	Colliers Mills	3	106	92	0.87	20	85
90013007	Fairfield	Stratford	3	98.3	90	0.922	38	85
361030009	Suffolk	Holtsville	3	97	90	0.928	34	85
90093002	New Haven	Madison	3	98.3	89	0.908	39	85
340070003	Camden	Camden	3	98.3	88	0.9	26	85
340155001	Gloucester	Clarksboro	3	98.3	88	0.9	25	85
420170012	Bucks	Bristol	3	99	88	0.898	25	85
90010017	Fairfield	Greenwich	3	95.7	87	0.915	30	85
340071001	Camden	Ancora St. Hos	3	100.7	87	0.873	27	85
421010024	Philadelphia	Northeast (Air	3	96.7	87	0.903	23	85
90011123	Fairfield	Danbury	3	95.7	86	0.9	18	85
340210005	Mercer	Rider Univ.	3	97	86	0.891	23	85
510130020	Arlington	Arlington Co.	3	96.7	86	0.897	24	85
510590018	Fairfax	Fairfax Co. -	3	96.7	86	0.892	20	85
90019003	Fairfield	Westport	3	94	85	0.911	37	85
90070007	Middlesex	Middletown	3	95.7	85	0.892	21	85
90099005	New Haven	Hamden	3	93.3	85	0.915	25	85
240251001	Harford	Edgewood	3	100.3	85	0.854	41	85
340030005	Bergen	Teaneck	3	91.7	85	0.93	18	85
361030002	Suffolk	Babylon	3	93.7	85	0.917	22	85
361192004	Westchester	White Plains	3	91.3	85	0.936	22	85
240030014	Anne Arundel	Davidsonville	3	98	84	0.86	30	85
240030019	Anne Arundel	Ft. Meade	3	97	84	0.871	30	85
340230011	Middlesex	Rutgers Univ.	3	96	84	0.876	22	85
340250005	Monmouth	Monmouth Univ.	3	95.7	84	0.881	45	85
340273001	Morris	Chester	3	95.3	84	0.884	13	85
360290002	Erie	Amherst	3	95.7	84	0.884	11	78
360850067	Richmond	Susan Wagner	3	93	84	0.905	42	85
510590030	Fairfax	Fairfax Co. -	3	95	84	0.887	21	85
250213003	Norfolk	MILTON	1	91	83	0.914	13	85
340190001	Hunterdon	Flemington	3	95.3	83	0.88	15	85
510591005	Fairfax	Fairfax Co. -	1	94	83	0.887	21	85
516500004	Hampton City	Hampton	3	88.3	83	0.94	36	85
110010043	DC	McMillan Reser	3	92.7	82	0.89	22	85
240259001	Harford	Aldino	3	97	82	0.849	35	85
240330002	Prince Georges	Greenbelt	2	94	82	0.874	28	85
250092006	Essex	LYNN	3	90	82	0.918	16	85
360631006	Niagara	Middleport	3	91.7	82	0.895	15	85
360790005	Putnam	Mt. Ninham	3	91.3	82	0.899	14	85
420290050	Chester	West Chester	1	95	82	0.871	12	85
421010014	Philadelphia	Northwest (Rox	3	90.7	82	0.913	20	85
440090007	Washington	EPA Lab	3	93.3	82	0.879	33	85

518000004	Suffolk City	Suffolk - TCC	3	87	82	0.953	26	85
100031010	New Castle	Brandywine	3	92.7	81	0.878	19	85
240150003	Cecil	Fair Hill	3	97.7	81	0.834	18	85
240338003	Prince Georges	PG Coun.Eques.	1	94	81	0.87	28	85
340110007	Cumberland	Millville	3	95.7	81	0.849	16	85
360130006	Chautauqua	Dunkirk	3	93	81	0.878	20	85
360270007	Dutchess	Millbrook	3	92	81	0.882	12	80
420030010	Allegheny	Pittsburgh (Ca	3	90.7	81	0.9	16	85
420070002	Beaver	Hookstown	3	91.3	81	0.89	10	82
420450002	Delaware	Chester	3	91.7	81	0.887	23	85
420910013	Montgomery	Norristown	3	92.3	81	0.886	21	85
510850003	Hanover	Hanover Co.	2	92	81	0.886	11	85
90131001	Tolland	Stafford	3	92.3	80	0.872	11	85
240053001	Baltimore	Essex	3	91.3	80	0.881	48	85
240290002	Kent	Millington	3	95.3	80	0.842	17	85
250010002	Barnstable	TRURO	3	92	80	0.879	23	85
250051002	Bristol	FAIRHAVEN	3	91	80	0.882	23	85
250130008	Hampden	CHICOPEE	3	92	80	0.877	10	83
250250041	Suffolk	BOSTON (Long I	3	88.7	80	0.911	21	85
360450002	Jefferson	Perch River	3	91.3	80	0.879	10	81
420030008	Allegheny	Lawrenceville	3	89.3	80	0.9	16	85
420030067	Allegheny	South Fayette	3	89.3	80	0.899	13	85
440030002	Kent	Alton Jones	3	93.3	80	0.866	17	85
510360002	Charles City	Charles City C	3	89.3	80	0.9	14	85
515100009	Alexandria Cit	Alexandria	3	90	80	0.892	20	85
90110008	New London	Groton	3	90	79	0.883	38	85
100031007	New Castle	Lums Pond	2	94.5	79	0.846	18	85
100031013	New Castle	Bellefonte	3	90.3	79	0.876	21	85
110010025	DC	Takoma Park	3	88.7	79	0.895	24	85
110010041	DC	River Terrace	3	89	79	0.89	22	85
230090102	Hancock	ANP Cadillac M	3	91.7	79	0.871	10	82
420290100	Chester	New Garden (Ai	3	94.7	79	0.839	19	85
100010002	Kent	Killens Pond	3	88.3	78	0.893	25	85
340315001	Passaic	Ramapo	3	86.7	78	0.9	19	85
360050083	Bronx	Botanical Gard	3	83.7	78	0.939	20	85
420031005	Allegheny	Harrison Twp	3	91.3	78	0.864	14	85
420070005	Beaver	Brighton Twp	3	89.7	78	0.876	12	82
420490003	Erie	Erie	3	89	78	0.88	23	85
420770004	Lehigh	Allentown	3	90.7	78	0.87	11	84
420950025	Northampton	Freemansburg	3	90	78	0.874	11	85
440071010	Providence	Francis School	3	89.7	78	0.872	17	85
510870014	Henrico	Henrico Co.	3	88.3	78	0.893	15	85
511071005	Loudon	Loudoun Co.	3	90	78	0.872	15	85
90031003	Hartford	E. Hartford	3	88	77	0.88	16	85
90050005	Litchfield	Cornwall	1	89	77	0.874	11	84
100051003	Sussex	Lewes	3	87	77	0.896	26	85
230312002	York	Kennebunkport	3	88.3	77	0.877	19	85
240051007	Baltimore	Padonia	3	88.7	77	0.874	26	85

340010005	Atlantic	Nacote Creek	3	89	77	0.876	27	85
340170006	Hudson	Bayonne	3	84.7	77	0.911	22	85
420050001	Armstrong	Kittanning	3	90.7	77	0.856	11	84
420550001	Franklin	Methodist Hill	3	90.7	77	0.849	11	77
420710007	Lancaster	Lancaster	3	90.7	77	0.853	17	85
420850100	Mercer	Farrell	3	91.3	77	0.85	10	82
421290008	Westmoreland	Greensburg	3	88	77	0.881	18	85
421330008	York	York	3	89	77	0.866	17	85
510595001	Fairfax	Fairfax Co. -	3	88	77	0.886	21	85
100051002	Sussex	Seaford	3	90	76	0.846	10	80
240170010	Charles	S Maryland	3	93	76	0.819	17	85
240313001	Montgomery	Rockville	3	86.7	76	0.885	26	85
250094004	Essex	NEWBURY	3	86	76	0.884	27	85
360130011	Chautauqua	Westfield	3	87	76	0.88	12	85
420110009	Berks	Reading	3	88.7	76	0.861	10	85
420958000	Northampton	Easton	3	88	76	0.873	12	85
421250005	Washington	Charleroi	3	86.3	76	0.883	15	85
240130001	Carroll	South Carroll	3	88.7	75	0.853	12	85
250154002	Hampshire	WARE	3	86.3	75	0.877	10	81
360551004	Monroe	Rochester	3	83.7	75	0.898	18	85
361030004	Suffolk	Riverhead	3	83	75	0.904	36	85
420590002	Greene	Holbrook	3	87.7	75	0.858	10	85
421010136	Philadelphia	Southwest (Elm	3	83	75	0.907	23	85
510410004	Chesterfield	Chesterfield C	3	84.7	75	0.893	10	85
510590005	Fairfax	Fairfax Co. -	3	87	75	0.871	18	85
511790001	Stafford	Stafford Co.	3	86	75	0.878	36	85
230313002	York	Kittery	3	85.3	74	0.871	16	85
240210037	Frederick	Frederick Airp	3	87.3	74	0.858	11	85
250171102	Middlesex	STOW	3	85.7	74	0.875	10	80
330111010	Hillsborough	Nashua	2	86	74	0.871	10	75
360010012	Albany	Loudonville	3	83	74	0.899	8	70
360810124	Queens	Queens College	2	83	74	0.895	26	85
360910004	Saratoga	Stillwater	3	84.7	74	0.878	6	70
361173001	Wayne	Williamson	3	84	74	0.889	18	85
420431100	Dauphin	Hershey	3	86.7	74	0.857	16	85
421255001	Washington	Florence	3	85.7	74	0.868	10	83
511530009	Prince William	Prince William	3	85	74	0.876	12	83
230052003	Cumberland	Cape Elizabeth	3	84.3	73	0.874	18	85
230130004	Knox	Port Clyde	3	83.7	73	0.873	13	85
240430009	Washington	Hagerstown	3	85.3	73	0.857	10	84
250034002	Berkshire	ADAMS	3	83.3	73	0.881	9	70
330115001	Hillsborough	Peterborough	1	84	73	0.877	10	73
360671015	Onondaga	East Syracuse	3	82.3	73	0.896	8	70
360715001	Orange	Valley Central	3	84.7	73	0.87	10	76
420010002	Adams	Biglerville (P	3	85	73	0.868	10	80
420070014	Beaver	Beaver Falls	3	85	73	0.868	10	83
420430401	Dauphin	Harrisburg	3	85	73	0.862	15	85
421174000	Tioga	Tioga County (	3	85	73	0.859	5	70

421250200	Washington	Washington	3	85.3	73	0.86	11	85
511611004	Roanoke	Roanoke Co.	3	83.7	73	0.873	11	76
230090103	Hancock	ANP McFarland	3	83.7	72	0.872	10	82
250130003	Hampden	AGAWAM	1	83	72	0.878	10	83
250270015	Worcester	WORCESTER	3	84	72	0.867	10	79
330150012	Rockingham	Rye	2	83.5	72	0.871	16	85
420110001	Berks	Kutztown	2	84.5	72	0.858	10	85
420334000	Clearfield	Moshannon (PSU)	3	87.3	72	0.827	11	76
421290006	Wetsmoreland	Murrysville	3	82	72	0.89	20	85
510690010	Frederick	Frederick Co.	3	82.7	72	0.873	11	81
518000005	Suffolk City	Suffolk - Holl	3	82.3	72	0.878	10	76
420210011	Cambria	Johnstown	3	85	71	0.844	10	85
420274000	Centre	Penn Nursery (	3	84.7	71	0.85	11	74
420690101	Lacakawana	Peckville	3	83.3	71	0.858	10	75
420990301	Perry	Perry County	3	83.3	71	0.853	10	77
511130003	Madison	Madison Co. -	3	84.7	71	0.845	11	71
420270100	Centre	State College	3	84.3	70	0.839	10	76
420692006	Lacakawana	Scranton	3	82	70	0.858	10	75
420791101	Luzerene	Wilkes-Barre	3	83.7	70	0.844	10	76
500030004	Bennington	Bennington	3	79.7	70	0.888	8	70
510330001	Caroline	Caroline Co.	3	82.3	70	0.852	10	84
360650004	Oneida	Camden	3	79.7	69	0.869	10	70
420130801	Blair	Altoona	3	83.3	69	0.837	10	80
420810100	Lycoming	Montoursville	1	82	69	0.851	11	75
230112005	Kennebec	Gardiner Pray	3	78	68	0.872	10	71
330150013	Rockingham	999	1	80	68	0.86	10	73
420791100	Luzerene	Nanticoke	3	81.7	68	0.844	10	76
330173002	Strafford	Rochester	2	78.5	67	0.863	11	71
510610002	Fauquier	Fauquier Co.	3	79.3	67	0.852	11	73
511390004	Page	Page Co.	3	79.7	67	0.844	12	72
250250042	Suffolk	BOSTON (Harris	3	73	66	0.91	16	85
420730015	Lawrence	New Castle	3	78.3	66	0.849	10	83
230090301	Hancock	Castine	1	75	65	0.878	10	79
250150103	Hampshire	AMHERST	3	74.7	65	0.878	10	76
420814000	Lycoming	Tiadaghton (PS	3	78.7	65	0.837	10	72
511630003	Rockbridge	Rockbridge Co.	3	76.7	65	0.856	8	70
230310038	York	West Buxton	1	75	64	0.862	9	70
330050007	Cheshire	Keene	3	74.3	64	0.869	10	72
360430005	Herkimer	Nick's Lake	3	74	64	0.874	6	70
421010004	Philadelphia	Frankford (Lab	3	71.3	64	0.908	25	85
250090005	Essex	LAWRENCE	1	70	61	0.883	10	82
330150015	Rockingham	Portsmouth	1	68	59	0.871	16	85
CC0040002	999	Roosevelt-Camp	3	58.3	51	0.889	10	75
230038001	Aroostook	Ashland135	3	64	-9	-9	-9	-999
230173001	Oxford	North Lovell	3	60.7	-9	-9	-9	-999
230194007	Penobscot	Howland	3	66.7	-9	-9	-9	-999
230194008	Penobscot	Holden Rider B	2	79	-9	-9	-9	-999
330012004	Belknap	Laconia	2	76.5	-9	-9	-9	-999

330031002	Carroll	Conway	1	67	-9	-9	-9	-999
330090008	Grafton	Haverhill	3	70.3	-9	-9	-9	-999
330130007	Merrimack	Concord	3	74.7	-9	-9	-9	-999
330190003	Sullivan	Claremont	3	74.3	-9	-9	-9	-999
360150003	Chemung	Elmira	3	80.3	-9	-9	-9	-999
360310002	Essex	Whiteface Summ	3	88.3	-9	-9	-9	-999
360310003	Essex	Whiteface Base	3	84.3	-9	-9	-9	-999
360410005	Hamilton	Piseco Lake	3	78.7	-9	-9	-9	-999
360530006	Madison	Camp Georgetow	3	79.7	-9	-9	-9	-999
361111005	Ulster	Belleayre	3	81.3	-9	-9	-9	-999
500070007	Chittenden	Underhill	3	77	-9	-9	-9	-999
511970002	Wythe	Wythe Co.	3	79.7	-9	-9	-9	-999

Table 2

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360130006	Chautauqua	Dunkirk	3	93	81	0.876	20	85
360631006	Niagara	Middleport	3	91.7	81	0.893	15	85
360790005	Putnam	Mt. Ninham	3	91.3	81	0.895	14	85
420030010	Allegheny	Pittsburgh (Ca	3	90.7	81	0.898	16	85
420070002	Beaver	Hookstown	3	91.3	81	0.889	10	82
420450002	Delaware	Chester	3	91.7	81	0.885	23	85
420910013	Montgomery	Norristown	3	92.3	81	0.883	21	85
440090007	Washington	EPA Lab	3	93.3	81	0.876	33	85
510850003	Hanover	Hanover Co.	2	92	81	0.885	11	85
90131001	Tolland	Stafford	3	92.3	80	0.867	11	85
240053001	Baltimore	Essex	3	91.3	80	0.879	48	85
250010002	Barnstable	TRURO	3	92	80	0.877	23	85
250130008	Hampden	CHICOPEE	3	92	80	0.872	10	83
250250041	Suffolk	BOSTON (Long I	3	88.7	80	0.909	21	85
360270007	Dutchess	Millbrook	3	92	80	0.879	12	80
420030008	Allegheny	Lawrenceville	3	89.3	80	0.898	16	85
420030067	Allegheny	South Fayette	3	89.3	80	0.897	13	85
440030002	Kent	Alton Jones	3	93.3	80	0.862	17	85
510360002	Charles City	Charles City C	3	89.3	80	0.899	14	85
515100009	Alexandria Cit	Alexandria	3	90	80	0.891	20	85
90110008	New London	Groton	3	90	79	0.879	38	85
100031007	New Castle	Lums Pond	2	94.5	79	0.843	18	85
110010025	DC	Takoma Park	3	88.7	79	0.894	24	85
110010041	DC	River Terrace	3	89	79	0.888	22	85
230090102	Hancock	ANP Cadillac M	3	91.7	79	0.869	10	82
240290002	Kent	Millington	3	95.3	79	0.838	17	85
250051002	Bristol	FAIRHAVEN	3	91	79	0.878	23	85
360450002	Jefferson	Perch River	3	91.3	79	0.876	10	81
420290100	Chester	New Garden (Ai	3	94.7	79	0.835	19	85
100010002	Kent	Killens Pond	3	88.3	78	0.891	25	85
100031013	New Castle	Bellefonte	3	90.3	78	0.873	21	85
360050083	Bronx	Botanical Gard	3	83.7	78	0.939	20	85
420031005	Allegheny	Harrison Twp	3	91.3	78	0.862	14	85
420070005	Beaver	Brighton Twp	3	89.7	78	0.874	12	82
420490003	Erie	Erie	3	89	78	0.879	23	85
420770004	Lehigh	Allentown	3	90.7	78	0.867	11	84
420950025	Northampton	Freemansburg	3	90	78	0.87	11	85
510870014	Henrico	Henrico Co.	3	88.3	78	0.892	15	85
511071005	Loudon	Loudoun Co.	3	90	78	0.87	15	85
90031003	Hartford	E. Hartford	3	88	77	0.876	16	85
90050005	Litchfield	Cornwall	1	89	77	0.87	11	84
100051003	Sussex	Lewes	3	87	77	0.893	26	85
230312002	York	Kennebunkport	3	88.3	77	0.875	19	85
240051007	Baltimore	Padonia	3	88.7	77	0.872	26	85
340010005	Atlantic	Nacote Creek	3	89	77	0.874	27	85
340170006	Hudson	Bayonne	3	84.7	77	0.911	22	85
340315001	Passaic	Ramapo	3	86.7	77	0.898	19	85
420050001	Armstrong	Kittanning	3	90.7	77	0.854	11	84

420850100	Mercer	Farrell	3	91.3	77	0.85	10	82
421290008	Westmoreland	Greensburg	3	88	77	0.878	18	85
440071010	Providence	Francis School	3	89.7	77	0.868	17	85
510595001	Fairfax	Fairfax Co. -	3	88	77	0.885	21	85
240313001	Montgomery	Rockville	3	86.7	76	0.883	26	85
360130011	Chautauqua	Westfield	3	87	76	0.879	12	85
420550001	Franklin	Methodist Hill	3	90.7	76	0.841	11	77
420710007	Lancaster	Lancaster	3	90.7	76	0.843	17	85
420958000	Northampton	Easton	3	88	76	0.869	12	85
100051002	Sussex	Seaford	3	90	75	0.843	10	80
240130001	Carroll	South Carroll	3	88.7	75	0.847	12	85
240170010	Charles	S Maryland	3	93	75	0.816	17	85
250094004	Essex	NEWBURY	3	86	75	0.882	27	85
250154002	Hampshire	WARE	3	86.3	75	0.873	10	81
420110009	Berks	Reading	3	88.7	75	0.855	10	85
421010136	Philadelphia	Southwest (Elm	3	83	75	0.905	23	85
421250005	Washington	Charleroi	3	86.3	75	0.879	15	85
421330008	York	York	3	89	75	0.853	17	85
510410004	Chesterfield	Chesterfield C	3	84.7	75	0.892	10	85
510590005	Fairfax	Fairfax Co. -	3	87	75	0.869	18	85
511790001	Stafford	Stafford Co.	3	86	75	0.876	36	85
230313002	York	Kittery	3	85.3	74	0.869	16	85
250171102	Middlesex	STOW	3	85.7	74	0.87	10	80
330111010	Hillsborough	Nashua	2	86	74	0.867	10	75
360551004	Monroe	Rochester	3	83.7	74	0.895	18	85
360810124	Queens	Queens College	2	83	74	0.894	26	85
361030004	Suffolk	Riverhead	3	83	74	0.901	36	85
361173001	Wayne	Williamson	3	84	74	0.886	18	85
420590002	Greene	Holbrook	3	87.7	74	0.855	10	85
421255001	Washington	Florence	3	85.7	74	0.867	10	83
511530009	Prince William	Prince William	3	85	74	0.873	12	83
230052003	Cumberland	Cape Elizabeth	3	84.3	73	0.873	18	85
240210037	Frederick	Frederick Airp	3	87.3	73	0.846	11	85
250034002	Berkshire	ADAMS	3	83.3	73	0.877	9	70
330115001	Hillsborough	Peterborough	1	84	73	0.873	10	73
360010012	Albany	Loudonville	3	83	73	0.89	8	70
360671015	Onondoga	East Syracuse	3	82.3	73	0.889	8	70
360715001	Orange	Valley Central	3	84.7	73	0.868	10	76
360910004	Saratoga	Stillwater	3	84.7	73	0.869	6	70
420070014	Beaver	Beaver Falls	3	85	73	0.866	10	83
420431100	Dauphin	Hershey	3	86.7	73	0.845	16	85
421250200	Washington	Washington	3	85.3	73	0.858	11	85
230090103	Hancock	ANP McFarland	3	83.7	72	0.871	10	82
230130004	Knox	Port Clyde	3	83.7	72	0.871	13	85
240430009	Washington	Hagerstown	3	85.3	72	0.845	10	84
250130003	Hampden	AGAWAM	1	83	72	0.873	10	83
250270015	Worcester	WORCESTER	3	84	72	0.863	10	79
330150012	Rockingham	Rye	2	83.5	72	0.869	16	85

421174000	Tioga	Tioga County (	3	85	72	0.856	5	70
421290006	Wetsmoreland	Murrysville	3	82	72	0.887	20	85
511611004	Roanoke	Roanoke Co.	3	83.7	72	0.872	11	76
518000005	Suffolk City	Suffolk - Holl	3	82.3	72	0.876	10	76
420010002	Adams	Biglerville (P	3	85	71	0.837	10	80
420110001	Berks	Kutztown	2	84.5	71	0.852	10	85
420210011	Cambria	Johnstown	3	85	71	0.841	10	85
420274000	Centre	Penn Nursery (	3	84.7	71	0.843	11	74
420334000	Clearfield	Moshannon (PSU	3	87.3	71	0.824	11	76
420430401	Dauphin	Harrisburg	3	85	71	0.841	15	85
510690010	Frederick	Frederick Co.	3	82.7	71	0.869	11	81
511130003	Madison	Madison Co. -	3	84.7	71	0.844	11	71
420270100	Centre	State College	3	84.3	70	0.833	10	76
420690101	Lacakawana	Peckville	3	83.3	70	0.849	10	75
420791101	Luzerne	Wilkes-Barre	3	83.7	70	0.838	10	76
420990301	Perry	Perry County	3	83.3	70	0.841	10	77
500030004	Bennington	Bennington	3	79.7	70	0.883	8	70
360650004	Oneida	Camden	3	79.7	69	0.867	10	70
420130801	Blair	Altoona	3	83.3	69	0.835	10	80
420692006	Lacakawana	Scranton	3	82	69	0.849	10	75
420810100	Lycoming	Montoursville	1	82	69	0.845	11	75
510330001	Caroline	Caroline Co.	3	82.3	69	0.85	10	84
330150013	Rockingham	999	1	80	68	0.858	10	73
420791100	Luzerne	Nanticoke	3	81.7	68	0.839	10	76
230112005	Kennebec	Gardiner Pray	3	78	67	0.869	10	71
330173002	Strafford	Rochester	2	78.5	67	0.86	11	71
510610002	Fauquier	Fauquier Co.	3	79.3	67	0.85	11	73
511390004	Page	Page Co.	3	79.7	67	0.842	12	72
250250042	Suffolk	BOSTON (Harris	3	73	66	0.908	16	85
420730015	Lawrence	New Castle	3	78.3	66	0.848	10	83
230090301	Hancock	Castine	1	75	65	0.879	10	79
250150103	Hampshire	AMHERST	3	74.7	65	0.874	10	76
420814000	Lycoming	Tiadaghton (PS	3	78.7	65	0.832	10	72
511630003	Rockbridge	Rockbridge Co.	3	76.7	65	0.855	8	70
230310038	York	West Buxton	1	75	64	0.86	9	70
330050007	Cheshire	Keene	3	74.3	64	0.865	10	72
360430005	Herkimer	Nick's Lake	3	74	64	0.873	6	70
421010004	Philadelphia	Frankford (Lab	3	71.3	64	0.906	25	85
250090005	Essex	LAWRENCE	1	70	61	0.88	10	82
330150015	Rockingham	Portsmouth	1	68	59	0.869	16	85
CC0040002	999	Roosevelt-Camp	3	58.3	51	0.888	10	75
230038001	Aroostook	Ashland135	3	64	-9	-9	-9	-999
230173001	Oxford	North Lovell	3	60.7	-9	-9	-9	-999
230194007	Penobscot	Howland	3	66.7	-9	-9	-9	-999
230194008	Penobscot	Holden Rider B	2	79	-9	-9	-9	-999
330012004	Belknap	Laconia	2	76.5	-9	-9	-9	-999
330031002	Carroll	Conway	1	67	-9	-9	-9	-999
330090008	Grafton	Haverhill	3	70.3	-9	-9	-9	-999

330130007	Merrimack	Concord	3	74.7	-9	-9	-9	-999
330190003	Sullivan	Claremont	3	74.3	-9	-9	-9	-999
360150003	Chemung	Elmira	3	80.3	-9	-9	-9	-999
360310002	Essex	Whiteface Summ	3	88.3	-9	-9	-9	-999
360310003	Essex	Whiteface Base	3	84.3	-9	-9	-9	-999
360410005	Hamilton	Piseco Lake	3	78.7	-9	-9	-9	-999
360530006	Madison	Camp Georgetow	3	79.7	-9	-9	-9	-999
361111005	Ulster	Belleayre	3	81.3	-9	-9	-9	-999
500070007	Chittenden	Underhill	3	77	-9	-9	-9	-999
511970002	Wythe	Wythe Co.	3	79.7	-9	-9	-9	-999

Table 3 Projected 8-hr Ozone Design Values over OTR based on 2012BOTW Emissions Inventory

AIRS-ID	County	Monitor	#ofDV	DVC	DVF	RRF	#Days	Threshold
340290006	Ocean	Colliers Mills	3	106	87	0.828	20	85

90013007	Fairfield	Stratford	3	98.3	86	0.885	38	85
361030009	Suffolk	Holtsville	3	97	86	0.896	34	85
340155001	Gloucester	Clarksboro	3	98.3	85	0.865	25	85
420170012	Bucks	Bristol	3	99	85	0.859	25	85
90010017	Fairfield	Greenwich	3	95.7	84	0.882	30	85
90093002	New Haven	Madison	3	98.3	84	0.859	39	85
340070003	Camden	Camden	3	98.3	84	0.862	26	85
421010024	Philadelphia	Northeast (Air	3	96.7	84	0.87	23	85
510130020	Arlington	Arlington Co.	3	96.7	84	0.875	24	85
510590018	Fairfax	Fairfax Co. -	3	96.7	84	0.87	20	85
340071001	Camden	Ancora St. Hos	3	100.7	83	0.827	27	85
361030002	Suffolk	Babylon	3	93.7	83	0.892	22	85
361192004	Westchester	White Plains	3	91.3	83	0.912	22	85
90011123	Fairfield	Danbury	3	95.7	82	0.86	18	85
90019003	Fairfield	Westport	3	94	82	0.875	37	85
90099005	New Haven	Hamden	3	93.3	82	0.881	25	85
240251001	Harford	Edgewood	3	100.3	82	0.821	41	85
340030005	Bergen	Teaneck	3	91.7	82	0.901	18	85
340210005	Mercer	Rider Univ.	3	97	82	0.855	23	85
360290002	Erie	Amherst	3	95.7	82	0.866	11	78
510590030	Fairfax	Fairfax Co. -	3	95	82	0.871	21	85
516500004	Hampton City	Hampton	3	88.3	82	0.93	36	85
240030019	Anne Arundel	Ft. Meade	3	97	81	0.838	30	85
360850067	Richmond	Susan Wagner	3	93	81	0.875	42	85
510591005	Fairfax	Fairfax Co. -	1	94	81	0.871	21	85
518000004	Suffolk City	Suffolk - TCC	3	87	81	0.942	26	85
90070007	Middlesex	Middletown	3	95.7	80	0.846	21	85
240030014	Anne Arundel	Davidsonville	3	98	80	0.822	30	85
340230011	Middlesex	Rutgers Univ.	3	96	80	0.837	22	85
340250005	Monmouth	Monmouth Univ.	3	95.7	80	0.844	45	85
340273001	Morris	Chester	3	95.3	80	0.84	13	85
360631006	Niagara	Middleport	3	91.7	80	0.882	15	85
110010043	DC	McMillan Reser	3	92.7	79	0.862	22	85
240330002	Prince Georges	Greenbelt	2	94	79	0.842	28	85
250092006	Essex	LYNN	3	90	79	0.883	16	85
250213003	Norfolk	MILTON	1	91	79	0.878	13	85
340190001	Hunterdon	Flemington	3	95.3	79	0.837	15	85
360130006	Chautauqua	Dunkirk	3	93	79	0.854	20	85
420030010	Allegheny	Pittsburgh (Ca	3	90.7	79	0.874	16	85
421010014	Philadelphia	Northwest (Rox	3	90.7	79	0.882	20	85
510850003	Hanover	Hanover Co.	2	92	79	0.864	11	85
100031010	New Castle	Brandywine	3	92.7	78	0.842	19	85
240259001	Harford	Aldino	3	97	78	0.81	35	85
240338003	Prince Georges	PG Coun.Eques.	1	94	78	0.834	28	85
360450002	Jefferson	Perch River	3	91.3	78	0.862	10	81
420030008	Allegheny	Lawrenceville	3	89.3	78	0.874	16	85
420290050	Chester	West Chester	1	95	78	0.829	12	85
420450002	Delaware	Chester	3	91.7	78	0.855	23	85

420910013	Montgomery	Norristown	3	92.3	78	0.853	21	85
515100009	Alexandria Cit	Alexandria	3	90	78	0.87	20	85
110010025	DC	Takoma Park	3	88.7	77	0.874	24	85
240053001	Baltimore	Essex	3	91.3	77	0.854	48	85
240150003	Cecil	Fair Hill	3	97.7	77	0.794	18	85
250250041	Suffolk	BOSTON (Long I	3	88.7	77	0.876	21	85
340110007	Cumberland	Millville	3	95.7	77	0.805	16	85
360270007	Dutchess	Millbrook	3	92	77	0.838	12	80
360790005	Putnam	Mt. Ninham	3	91.3	77	0.851	14	85
420030067	Allegheny	South Fayette	3	89.3	77	0.867	13	85
440090007	Washington	EPA Lab	3	93.3	77	0.833	33	85
510360002	Charles City	Charles City C	3	89.3	77	0.869	14	85
511071005	Loudon	Loudoun Co.	3	90	77	0.856	15	85
100031007	New Castle	Lums Pond	2	94.5	76	0.805	18	85
110010041	DC	River Terrace	3	89	76	0.862	22	85
240290002	Kent	Millington	3	95.3	76	0.802	17	85
250010002	Barnstable	TRURO	3	92	76	0.829	23	85
250051002	Bristol	FAIRHAVEN	3	91	76	0.838	23	85
340170006	Hudson	Bayonne	3	84.7	76	0.902	22	85
360050083	Bronx	Botanical Gard	3	83.7	76	0.917	20	85
420490003	Erie	Erie	3	89	76	0.861	23	85
420850100	Mercer	Farrell	3	91.3	76	0.842	10	82
440030002	Kent	Alton Jones	3	93.3	76	0.815	17	85
510595001	Fairfax	Fairfax Co. -	3	88	76	0.871	21	85
510870014	Henrico	Henrico Co.	3	88.3	76	0.872	15	85
90110008	New London	Groton	3	90	75	0.837	38	85
90131001	Tolland	Stafford	3	92.3	75	0.821	11	85
100010002	Kent	Killens Pond	3	88.3	75	0.86	25	85
100031013	New Castle	Bellefonte	3	90.3	75	0.84	21	85
230090102	Hancock	ANP Cadillac M	3	91.7	75	0.823	10	82
250130008	Hampden	CHICOPEE	3	92	75	0.826	10	83
420031005	Allegheny	Harrison Twp	3	91.3	75	0.83	14	85
420070002	Beaver	Hookstown	3	91.3	75	0.827	10	82
420290100	Chester	New Garden (Ai	3	94.7	75	0.797	19	85
420770004	Lehigh	Allentown	3	90.7	75	0.828	11	84
100051003	Sussex	Lewes	3	87	74	0.862	26	85
240051007	Baltimore	Padonia	3	88.7	74	0.838	26	85
240313001	Montgomery	Rockville	3	86.7	74	0.862	26	85
340010005	Atlantic	Nacote Creek	3	89	74	0.837	27	85
340315001	Passaic	Ramapo	3	86.7	74	0.862	19	85
360130011	Chautauqua	Westfield	3	87	74	0.859	12	85
420050001	Armstrong	Kittanning	3	90.7	74	0.817	11	84
420070005	Beaver	Brighton Twp	3	89.7	74	0.835	12	82
420950025	Northampton	Freemansburg	3	90	74	0.829	11	85
421290008	Westmoreland	Greensburg	3	88	74	0.845	18	85
440071010	Providence	Francis School	3	89.7	74	0.825	17	85
510590005	Fairfax	Fairfax Co. -	3	87	74	0.854	18	85
511790001	Stafford	Stafford Co.	3	86	74	0.869	36	85

90031003	Hartford	E. Hartford	3	88	73	0.833	16	85
90050005	Litchfield	Cornwall	1	89	73	0.826	11	84
100051002	Sussex	Seaford	3	90	73	0.814	10	80
230312002	York	Kennebunkport	3	88.3	73	0.827	19	85
420550001	Franklin	Methodist Hill	3	90.7	73	0.81	11	77
420710007	Lancaster	Lancaster	3	90.7	73	0.809	17	85
421250005	Washington	Charleroi	3	86.3	73	0.853	15	85
421330008	York	York	3	89	73	0.821	17	85
510410004	Chesterfield	Chesterfield C	3	84.7	73	0.862	10	85
240170010	Charles	S Maryland	3	93	72	0.784	17	85
250094004	Essex	NEWBURY	3	86	72	0.838	27	85
360551004	Monroe	Rochester	3	83.7	72	0.872	18	85
360810124	Queens	Queens College	2	83	72	0.87	26	85
361173001	Wayne	Williamson	3	84	72	0.859	18	85
420110009	Berks	Reading	3	88.7	72	0.821	10	85
420590002	Greene	Holbrook	3	87.7	72	0.823	10	85
420958000	Northampton	Easton	3	88	72	0.826	12	85
421010136	Philadelphia	Southwest (Elm	3	83	72	0.872	23	85
511530009	Prince William	Prince William	3	85	72	0.857	12	83
511611004	Roanoke	Roanoke Co.	3	83.7	72	0.867	11	76
240130001	Carroll	South Carroll	3	88.7	71	0.811	12	85
250154002	Hampshire	WARE	3	86.3	71	0.828	10	81
360010012	Albany	Loudonville	3	83	71	0.863	8	70
360671015	Onondoga	East Syracuse	3	82.3	71	0.866	8	70
230313002	York	Kittery	3	85.3	70	0.822	16	85
240210037	Frederick	Frederick Airp	3	87.3	70	0.812	11	85
250034002	Berkshire	ADAMS	3	83.3	70	0.842	9	70
250171102	Middlesex	STOW	3	85.7	70	0.826	10	80
330111010	Hillsborough	Nashua	2	86	70	0.821	10	75
360910004	Saratoga	Stillwater	3	84.7	70	0.834	6	70
361030004	Suffolk	Riverhead	3	83	70	0.852	36	85
420070014	Beaver	Beaver Falls	3	85	70	0.832	10	83
421174000	Tioga	Tioga County (	3	85	70	0.831	5	70
421290006	Wetsmoreland	Murrysville	3	82	70	0.861	20	85
510690010	Frederick	Frederick Co.	3	82.7	70	0.852	11	81
511130003	Madison	Madison Co. -	3	84.7	70	0.834	11	71
230052003	Cumberland	Cape Elizabeth	3	84.3	69	0.825	18	85
240430009	Washington	Hagerstown	3	85.3	69	0.812	10	84
330115001	Hillsborough	Peterborough	1	84	69	0.83	10	73
360715001	Orange	Valley Central	3	84.7	69	0.826	10	76
420010002	Adams	Biglerville (P	3	85	69	0.814	10	80
420110001	Berks	Kutztown	2	84.5	69	0.818	10	85
420210011	Cambria	Johnstown	3	85	69	0.814	10	85
420334000	Clearfield	Moshannon (PSU	3	87.3	69	0.795	11	76
420431100	Dauphin	Hershey	3	86.7	69	0.806	16	85
421250200	Washington	Washington	3	85.3	69	0.82	11	85
421255001	Washington	Florence	3	85.7	69	0.808	10	83
510330001	Caroline	Caroline Co.	3	82.3	69	0.843	10	84

518000005	Suffolk City	Suffolk - Holl	3	82.3	69	0.85	10	76
230090103	Hancock	ANP McFarland	3	83.7	68	0.824	10	82
230130004	Knox	Port Clyde	3	83.7	68	0.824	13	85
250130003	Hampden	AGAWAM	1	83	68	0.829	10	83
250270015	Worcester	WORCESTER	3	84	68	0.816	10	79
330150012	Rockingham	Rye	2	83.5	68	0.822	16	85
360650004	Oneida	Camden	3	79.7	68	0.858	10	70
420274000	Centre	Penn Nursery (	3	84.7	68	0.814	11	74
420430401	Dauphin	Harrisburg	3	85	68	0.801	15	85
420130801	Blair	Altoona	3	83.3	67	0.813	10	80
420270100	Centre	State College	3	84.3	67	0.804	10	76
420690101	Lacawana	Peckville	3	83.3	67	0.815	10	75
420791101	Luzerne	Wilkes-Barre	3	83.7	67	0.805	10	76
420990301	Perry	Perry County	3	83.3	67	0.808	10	77
500030004	Bennington	Bennington	3	79.7	67	0.847	8	70
420692006	Lacawana	Scranton	3	82	66	0.815	10	75
420810100	Lycoming	Montoursville	1	82	66	0.812	11	75
510610002	Fauquier	Fauquier Co.	3	79.3	66	0.839	11	73
511390004	Page	Page Co.	3	79.7	66	0.83	12	72
420791100	Luzerne	Nanticoke	3	81.7	65	0.806	10	76
230112005	Kennebec	Gardiner Pray	3	78	64	0.822	10	71
330150013	Rockingham	999	1	80	64	0.806	10	73
360430005	Herkimer	Nick's Lake	3	74	64	0.871	6	70
420730015	Lawrence	New Castle	3	78.3	64	0.82	10	83
511630003	Rockbridge	Rockbridge Co.	3	76.7	64	0.842	8	70
250250042	Suffolk	BOSTON (Harris	3	73	63	0.874	16	85
330173002	Strafford	Rochester	2	78.5	63	0.812	11	71
420814000	Lycoming	Tiadaghton (PS	3	78.7	63	0.804	10	72
230090301	Hancock	Castine	1	75	62	0.832	10	79
250150103	Hampshire	AMHERST	3	74.7	62	0.833	10	76
421010004	Philadelphia	Frankford (Lab	3	71.3	62	0.872	25	85
330050007	Cheshire	Keene	3	74.3	61	0.821	10	72
230310038	York	West Buxton	1	75	60	0.809	9	70
250090005	Essex	LAWRENCE	1	70	58	0.833	10	82
330150015	Rockingham	Portsmouth	1	68	55	0.822	16	85
CC0040002	999	Roosevelt-Camp	3	58.3	49	0.852	10	75
230038001	Aroostook	Ashland135	3	64	-9	-9	-9	-999
230173001	Oxford	North Lovell	3	60.7	-9	-9	-9	-999
230194007	Penobscot	Howland	3	66.7	-9	-9	-9	-999
230194008	Penobscot	Holden Rider B	2	79	-9	-9	-9	-999
330012004	Belknap	Laconia	2	76.5	-9	-9	-9	-999
330031002	Carroll	Conway	1	67	-9	-9	-9	-999
330090008	Grafton	Haverhill	3	70.3	-9	-9	-9	-999
330130007	Merrimack	Concord	3	74.7	-9	-9	-9	-999
330190003	Sullivan	Claremont	3	74.3	-9	-9	-9	-999
360150003	Chemung	Elmira	3	80.3	-9	-9	-9	-999
360310002	Essex	Whiteface Summ	3	88.3	-9	-9	-9	-999
360310003	Essex	Whiteface Base	3	84.3	-9	-9	-9	-999

360410005	Hamilton	Piseco Lake	3	78.7	-9	-9	-9	-999
360530006	Madison	Camp Georgetow	3	79.7	-9	-9	-9	-999
361111005	Ulster	Belleayre	3	81.3	-9	-9	-9	-999
500070007	Chittenden	Underhill	3	77	-9	-9	-9	-999
511970002	Wythe	Wythe Co.	3	79.7	-9	-9	-9	-999