Appendix B

SUPPLEMENTAL GRID POINT ANALYSIS – INM VERSION 6.1

The DNL noise contours discussed throughout the Study identify the general noise levels surrounding the Waterbury-Oxford Airport (OXC). In order to provide a sample of specific noise levels at specific locations, a supplemental grid point analysis was conducted for the 40 selected locations illustrated on Figure B-1 and listed in Table B-1.[1] The selected locations, or points, were chosen based on documented noise complaints, the location of noise sensitive facilities (e.g., schools) and future residential development, and to provide a sample of various points in towns near the Airport.

As the grid point analysis is generated by the Integrated Noise Model (INM) Version 6.1, it may include calculated airport-generated noise levels in any noise "metric." The grid point analysis included the DNL metric, so that direct comparison could be made with the DNL contours. In addition, four other noise metrics were included that are commonly used in airport noise studies. These noise metrics were previously described in Chapter 2, and are defined below:

1. **Day-Night Average Noise Level (DNL)** – Total accumulation of aircraft noise spread out uniformly throughout the day (i.e., over a 24-hour period). DNL is an annualized metric representing the noise of a typical day of the year. To compensate for the added annoyance created by nighttime aircraft activity, DNL adds a 10-decibel weighting (a "penalty") to night operations (between 10:00 pm and 7:00 am).
2. **Equivalent Sound Level (Leq)** – Time-average of the total sound energy over a given period of time. Unlike LAMAX and SEL, Leq may account for multiple noise events.
3. **Sound Exposure Level (SEL) –** Total sound energy of an individual noise event, incorporating intensity, frequency, and duration. Unlike LAMAX, this measure is normalized to a referenced duration of one second, allowing events of different durations to be compared.
4. **Maximum Sound Level (LAMAX) –** Maximum noise level that occurs during an individual noise event, such as an aircraft flyover. It is the peak instantaneous noise level heard during the event.
5. **Time Above 65 dB (TA-65) –** The average number of minutes in a day that noise levels exceed 65 dB.

Tables B-2 through B-6 summarize the noise levels for the 40 selected locations (using the five noise metrics above). The tables include the 2008 baseline noise levels, as well as the predicted noise levels under each of the following noise abatement alternatives:

- NA-1A through 1E (flight track changes)
- NA-2B (NBAA noise abatement departure procedures)
- NA-3A and 3B (runway use)

[1] Note that noise monitoring was also conducted at locations 1-4, 6-8, and 10 (see Appendix A). However, the noise monitoring effort only captured single-event noise levels that occurred at the time of the monitoring (not average or annualized noise levels), and therefore, those noise levels may be substantially different than what is provided in the grid point analysis.

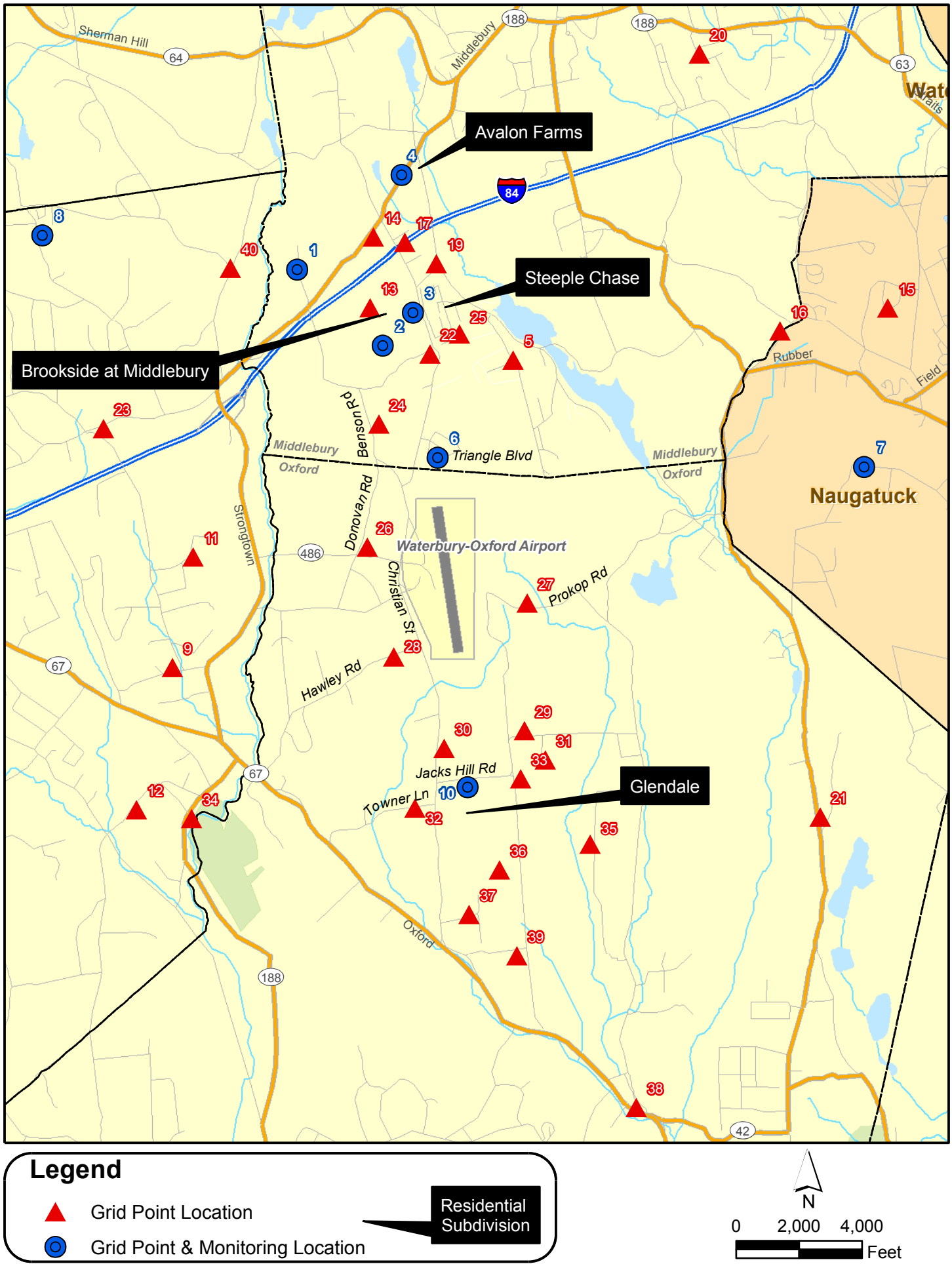

Figure B-1 - Grid Point Locations

TABLE B-1 – GRID POINT LOCATIONS	
ID	**Description**
1	Long Meadow School, 65 N Benson Rd
2	Independence Circle on the south end
3	Brookside Drive on the south end
4	Avalon Farms, Middlebury
5	Washington Drive
6	Triangle Blvd, north of Hill Pkwy
7	Andrew Mountain Rd, Naugatuck
8	Reservoir Rd, Southbury
9	221 Munn Rd, Southbury
10	Glendale Retirement Development on the corner of Road "C" &"D"
11	Larkey Road on the north end
12	Hulls Hill Rd, Southbury
13	Independence Circle on the north end
14	elementary school on CT Route 188
15	Wildwood Circle, Naugatuck
16	Hill Rd, Middlebury
17	corner of Christian Road and Midway Drive
18	36 Ash Swamp Rd, Woodbury (not depicted on Figure B-1)
19	Longmeadow Road on the north end
20	Curtis Farm Rd, Middlebury
21	Chestnut Tree Hill Rd, Oxford
22	Kissawaug Rd
23	Old Waterbury Rd, Southbury
24	Benson Road on the east side
25	Kimberwick Court on the south end
26	Donovan Road north of Airport Access Road
27	Prokop Road on the north side
28	Hawley Road on the south side
29	Jacks Hill Road on the east side
30	Christian Street on the south end
31	Wildflower Drive on the east side
32	Towner Lane
33	Glendale Retirement Development on the south end of Road "C"
34	Route 188, Southbury
35	Greenbriar Road on the west side
36	Country Farm Road on the north side
37	Corner of Deanna Drive and Nancy Lynn Drive
38	Oxford, town center
39	Condon Road on the south side
40	Pomperaug High School, 234 Judd Road

Table B-2
Noise Monitoring Location Results - DNL
Waterbury-Oxford Airport

Site	Future Baseline	Alt. NA-1A		Alt. NA-1B		Alt. NA-1C		Alt. NA-1D		Alt. NA-1E		Alt. NA-2B		Alt. NA-3A		Alt. NA-3B	
	DNL	DNL	*change*	DNL	*change*	DNL	*change*	DNL	*change*	DNL	*change*	DNL	*change*	DNL	*change*	DNL	*change*
1	56.6	56.6	0.0	56.6	0.0	53.5	-3.1	48.0	-8.6	42.4	-14.2	56.5	-0.1	52.8	-3.8	54.9	-1.7
2	61.6	61.6	0.0	61.6	0.0	59.4	-2.2	53.1	-8.5	52.8	-8.8	62.2	0.6	58.0	-3.6	60.0	-1.6
3	56.5	56.5	0.0	56.5	0.0	61.7	5.2	57.4	0.9	54.7	-1.8	55.8	-0.7	55.8	-0.7	56.1	-0.4
4	46.7	46.7	0.0	46.7	0.0	49.6	2.9	55.0	8.3	46.3	-0.4	46.5	-0.2	48.6	1.9	47.9	1.2
5	50.5	50.5	0.0	50.5	0.0	50.8	0.3	56.8	6.3	60.4	9.9	50.1	-0.4	48.2	-2.3	49.4	-1.1
6	70.3	70.3	0.0	70.3	0.0	70.3	0.0	69.7	-0.6	70.3	0.0	69.6	-0.7	67.7	-2.6	68.8	-1.5
7	36.9	36.9	0.0	36.5	-0.4	36.8	-0.1	37.8	0.9	41.3	4.4	37.4	0.5	37.3	0.4	37.0	0.1
8	53.2	53.2	0.0	53.2	0.0	48.8	-4.4	41.9	-11.3	40.9	-12.3	54.3	1.1	49.7	-3.5	51.6	-1.6
9	39.8	39.6	-0.2	40.0	0.2	39.4	-0.4	39.2	-0.6	39.6	-0.2	40.0	0.2	39.6	-0.2	39.7	-0.1
10	60.2	58.2	-2.0	57.6	-2.6	60.2	0.0	60.2	0.0	60.3	0.1	60.0	-0.2	63.5	3.3	62.3	2.1
11	43.9	43.9	0.0	44.0	0.1	43.2	-0.7	42.9	-1.0	43.4	-0.5	43.9	0.0	41.7	-2.2	42.8	-1.1
12	40.7	37.6	-3.1	40.8	0.1	40.6	-0.1	40.6	-0.1	40.8	0.1	40.8	0.1	43.5	2.8	42.4	1.7
13	58.3	58.3	0.0	58.3	0.0	58.6	0.3	51.7	-6.6	48.6	-9.7	58.0	-0.3	54.6	-3.7	56.6	-1.7
14	52.3	52.3	0.0	52.3	0.0	58.5	6.2	52.3	0.0	45.5	-6.8	51.3	-1.0	50.2	-2.1	51.3	-1.0
15	41.7	41.7	0.0	41.7	0.0	40.3	-1.4	38.6	-3.1	42.0	0.3	41.8	0.1	38.8	-2.9	40.4	-1.3
16	43.0	43.0	0.0	43.0	0.0	41.3	-1.7	41.0	-2.0	44.1	1.1	43.0	0.0	40.6	-2.4	41.8	-1.2
17	50.2	50.2	0.0	50.2	0.0	56.7	6.5	57.0	6.8	49.0	-1.2	49.7	-0.5	50.7	0.5	50.5	0.3
18	27.8	27.8	0.0	27.8	0.0	28.7	0.9	36.1	8.3	27.1	-0.7	27.7	-0.1	24.9	-2.9	26.4	-1.4
19	48.5	48.5	0.0	48.5	0.0	54.4	5.9	58.5	10.0	49.9	1.4	47.9	-0.6	48.1	-0.4	48.3	-0.2
20	30.4	30.4	0.0	30.4	0.0	32.3	1.9	33.3	2.9	31.9	1.5	30.6	0.2	29.0	-1.4	29.6	-0.8
21	40.2	39.3	-0.9	36.6	-3.6	40.2	0.0	40.3	0.1	43.3	3.1	40.5	0.3	43.0	2.8	42.0	1.8
22	61.3	61.3	0.0	61.3	0.0	64.3	3.0	59.4	-1.9	59.6	-1.7	60.8	-0.5	59.6	-1.7	60.5	-0.8
23	50.1	50.1	0.0	50.1	0.0	44.6	-5.5	40.1	-10.0	45.1	-5.0	50.0	-0.1	46.7	-3.4	48.6	-1.5
24	58.6	58.6	0.0	58.6	0.0	56.8	-1.8	53.5	-5.1	55.9	-2.7	57.8	-0.8	55.4	-3.2	57.1	-1.5
25	51.4	51.4	0.0	51.4	0.0	56.2	4.8	61.7	10.3	58.3	6.9	50.6	-0.8	48.5	-2.9	50.1	-1.3
26	51.8	51.8	0.0	51.8	0.0	51.6	-0.2	51.6	-0.2	51.8	0.0	53.1	1.3	52.5	0.7	52.2	0.4
27	50.6	50.6	0.0	50.5	-0.1	50.5	-0.1	50.6	0.0	52.6	2.0	52.0	1.4	50.1	-0.5	50.3	-0.3
28	52.2	52.2	0.0	52.4	0.2	52.2	0.0	52.2	0.0	52.4	0.2	53.6	1.4	51.5	-0.7	51.8	-0.4
29	55.5	56.6	1.1	52.3	-3.2	55.5	0.0	55.5	0.0	56.3	0.8	55.0	-0.5	58.7	3.2	57.5	2.0
30	57.0	55.8	-1.2	61.0	4.0	57.0	0.0	57.0	0.0	57.2	0.2	56.6	-0.4	60.2	3.2	59.0	2.0
31	52.3	53.9	1.6	61.7	9.4	52.3	0.0	52.3	0.0	54.0	1.7	51.7	-0.6	55.7	3.4	54.5	2.2
32	51.1	49.6	-1.5	56.9	5.8	51.0	-0.1	51.0	-0.1	51.5	0.4	50.9	-0.2	53.0	1.9	52.2	1.1
33	56.4	58.9	2.5	51.0	-5.4	56.4	0.0	56.4	0.0	57.0	0.6	55.7	-0.7	59.9	3.5	58.6	2.2
34	41.7	38.7	-3.0	42.0	0.3	41.7	0.0	41.7	0.0	41.9	0.2	41.9	0.2	44.3	2.6	43.4	1.7
35	46.5	50.5	4.0	41.3	-5.2	46.5	0.0	46.5	0.0	50.6	4.1	45.7	-0.8	50.2	3.7	48.9	2.4
36	57.1	56.1	-1.0	52.2	-4.9	57.1	0.0	57.1	0.0	57.5	0.4	57.5	0.4	60.4	3.3	59.2	2.1
37	52.7	50.2	-2.5	50.3	-2.4	52.7	0.0	52.7	0.0	53.4	0.7	52.5	-0.2	56.0	3.3	54.8	2.1
38	42.2	47.2	5.0	34.2	-8.0	42.2	0.0	42.2	0.0	45.5	3.3	41.9	-0.3	46.1	3.9	44.7	2.5
39	53.5	51.3	-2.2	47.2	-6.3	53.5	0.0	53.5	0.0	54.3	0.8	53.7	0.2	57.0	3.5	55.8	2.3
40	56.3	53.5	-2.8	56.3	0.0	50.6	-5.7	45.2	-11.1	40.6	-15.7	56.3	0.0	52.5	-3.8	54.6	-1.7

Table B-3
Noise Monitoring Location Results - Leq
Waterbury-Oxford Airport

Site	Future Baseline	Alt. NA-1A		Alt. NA-1B		Alt. NA-1C		Alt. NA-1D		Alt. NA-1E		Alt. NA-2B		Alt. NA-3A		Alt. NA-3B	
	LEQ	LEQ	*change*	LEQ	*change*	LEQ	*change*	LEQ	*change*	LEQ	*change*	LEQ	*change*	LEQ	*change*	LEQ	*change*
1	53.9	53.9	0.0	53.9	0.0	50.7	-3.2	45.4	-8.5	40.3	-13.6	53.8	-0.1	50.4	-3.5	53.6	-0.3
2	58.9	58.9	0.0	58.9	0.0	56.8	-2.1	51.0	-7.9	50.8	-8.1	59.5	0.6	55.7	-3.2	58.7	-0.2
3	53.8	53.8	0.0	53.8	0.0	58.9	5.1	54.6	0.8	52.0	-1.8	53.1	-0.7	53.1	-0.7	53.7	-0.1
4	44	44.0	0.0	44.0	0.0	46.8	2.8	52.2	8.2	43.6	-0.4	43.8	-0.2	45.8	1.8	44.2	0.2
5	48.1	48.1	0.0	48.1	0.0	48.4	0.3	54.1	6.0	57.7	9.6	47.7	-0.4	46.1	-2.0	47.9	-0.2
6	57.3	57.3	0.0	57.3	0.0	57.3	0.0	58.9	1.6	57.8	0.5	56.6	-0.7	56.0	-1.3	57.1	-0.2
7	34.4	34.4	0.0	34.0	-0.4	34.3	-0.1	35.2	0.8	38.6	4.2	34.9	0.5	34.6	0.2	34.5	0.1
8	50.4	50.4	0.0	50.4	0.0	46.1	-4.3	39.4	-11.0	38.5	-11.9	51.5	1.1	47.2	-3.2	50.2	-0.2
9	37.4	37.2	-0.2	37.6	0.2	37.1	-0.3	36.9	-0.5	37.2	-0.2	37.6	0.2	37.3	-0.1	37.4	0.0
10	57.5	55.7	-1.8	55.1	-2.4	57.5	0.0	57.5	0.0	57.7	0.2	57.4	-0.1	60.7	3.2	58.0	0.5
11	41.6	41.6	0.0	41.7	0.1	41.0	-0.6	40.7	-0.9	41.1	-0.5	41.6	0.0	39.8	-1.8	41.5	-0.1
12	38	34.9	-3.1	38.1	0.1	37.9	-0.1	37.9	-0.1	38.1	0.1	38.1	0.1	40.6	2.6	38.4	0.4
13	55.5	55.5	0.0	55.5	0.0	55.9	0.4	49.2	-6.3	46.3	-9.2	55.3	-0.2	52.2	-3.3	55.3	-0.2
14	49.5	49.5	0.0	49.5	0.0	55.7	6.2	49.6	0.1	42.9	-6.6	48.6	-0.9	47.6	-1.9	49.4	-0.1
15	39.5	39.5	0.0	39.5	0.0	38.3	-1.2	36.9	-2.6	39.7	0.2	39.5	0.0	37.2	-2.3	39.3	-0.2
16	40.7	40.7	0.0	40.6	-0.1	39.2	-1.5	38.9	-1.8	41.6	0.9	40.7	0.0	38.7	-2.0	40.5	-0.2
17	47.5	47.5	0.0	47.5	0.0	53.9	6.4	54.2	6.7	46.3	-1.2	47.0	-0.5	48.0	0.5	47.5	0.0
18	25	25.0	0.0	25.0	0.0	26.0	1.0	33.3	8.3	24.3	-0.7	25.0	0.0	22.4	-2.6	24.8	-0.2
19	45.8	45.8	0.0	45.8	0.0	51.6	5.8	55.7	9.9	47.2	1.4	45.2	-0.6	45.4	-0.4	45.8	0.0
20	28.2	28.2	0.0	28.2	0.0	29.9	1.7	30.8	2.6	29.6	1.4	28.4	0.2	27.0	-1.2	28.1	-0.1
21	37.5	36.6	-0.9	34.0	-3.5	37.5	0.0	37.6	0.1	40.6	3.1	37.8	0.3	40.1	2.6	37.9	0.4
22	58.7	58.7	0.0	58.7	0.0	61.6	2.9	56.8	-1.9	57.0	-1.7	58.2	-0.5	57.1	-1.6	58.5	-0.2
23	47.5	47.5	0.0	47.5	0.0	42.3	-5.2	38.5	-9.0	42.7	-4.8	47.3	-0.2	44.4	-3.1	47.2	-0.3
24	56	56.0	0.0	56.0	0.0	54.4	-1.6	51.3	-4.7	53.5	-2.5	55.2	-0.8	53.3	-2.7	55.8	-0.2
25	48.9	48.9	0.0	48.9	0.0	53.5	4.6	58.9	10.0	55.6	6.7	48.1	-0.8	46.3	-2.6	48.6	-0.3
26	49.2	49.2	0.0	49.2	0.0	49.0	-0.2	49.0	-0.2	49.2	0.0	50.5	1.3	49.8	0.6	49.3	0.1
27	47.9	48.0	0.1	47.9	0.0	47.9	0.0	47.9	0.0	49.9	2.0	49.3	1.4	47.5	-0.4	47.9	0.0
28	49.5	49.5	0.0	49.7	0.2	49.5	0.0	49.5	0.0	49.7	0.2	50.9	1.4	48.9	-0.6	49.5	0.0
29	52.9	54.0	1.1	50.0	-2.9	52.9	0.0	52.9	0.0	53.7	0.8	52.5	-0.4	55.9	3.0	53.4	0.5
30	54.4	53.3	-1.1	59.0	4.6	54.4	0.0	54.4	0.0	54.6	0.2	54.0	-0.4	57.4	3.0	54.9	0.5
31	49.9	51.3	1.4	46.1	-3.8	49.9	0.0	49.9	0.0	51.5	1.6	49.4	-0.5	53.0	3.1	50.4	0.5
32	48.7	47.4	-1.3	54.2	5.5	48.7	0.0	48.7	0.0	49.0	0.3	48.5	-0.2	50.4	1.7	48.9	0.2
33	53.9	56.3	2.4	49.2	-4.7	53.9	0.0	53.9	0.0	54.5	0.6	53.3	-0.6	57.1	3.2	54.4	0.5
34	39.1	36.2	-2.9	39.3	0.2	39.0	-0.1	39.0	-0.1	39.3	0.2	39.2	0.1	41.5	2.4	39.4	0.3
35	43.9	47.8	3.9	39.2	-4.7	43.9	0.0	43.9	0.0	47.9	4.0	43.1	-0.8	47.4	3.5	44.5	0.6
36	54.4	53.3	-1.1	49.4	-5.0	54.4	0.0	54.4	0.0	54.8	0.4	54.8	0.4	57.5	3.1	54.9	0.5
37	49.9	47.4	-2.5	47.6	-2.3	49.9	0.0	49.9	0.0	50.7	0.8	49.7	-0.2	53.1	3.2	50.4	0.5
38	39.4	44.4	5.0	31.5	-7.9	39.4	0.0	39.4	0.0	42.8	3.4	39.2	-0.2	43.2	3.8	40.0	0.6
39	50.7	48.5	-2.2	44.4	-6.3	50.7	0.0	50.7	0.0	51.5	0.8	50.9	0.2	54.1	3.4	51.3	0.6
40	53.5	53.5	0.0	53.5	0.0	47.9	-5.6	42.8	-10.7	38.7	-14.8	53.5	0.0	50.0	-3.5	53.3	-0.2

Table B-4
Noise Monitoring Location Results - SEL
Waterbury-Oxford Airport

Site	Future Baseline	Alt. NA-1A		Alt. NA-1B		Alt. NA-1C		Alt. NA-1D		Alt. NA-1E		Alt. NA-2B		Alt. NA-3A		Alt. NA-3B	
	SEL	SEL	*change*	SEL	*change*	SEL	*change*	SEL	*change*	SEL	*change*	SEL	*change*	SEL	*change*	SEL	*change*
1	103.3	103.3	0.0	103.3	0.0	100.1	-3.2	94.8	-8.5	89.7	-13.6	103.1	-0.2	99.8	-3.5	103.0	-0.3
2	108.3	108.3	0.0	108.3	0.0	106.1	-2.2	100.4	-7.9	100.2	-8.1	108.9	0.6	105.1	-3.2	108.1	-0.2
3	103.1	103.1	0.0	103.1	0.0	108.3	5.2	104.0	0.9	101.4	-1.7	102.4	-0.7	102.5	-0.6	103.1	0.0
4	93.3	93.3	0.0	93.3	0.0	96.2	2.9	101.6	8.3	93.0	-0.3	93.1	-0.2	95.2	1.9	93.6	0.3
5	97.5	97.5	0.0	97.5	0.0	97.8	0.3	103.4	5.9	107.0	9.5	97.1	-0.4	95.5	-2.0	97.3	-0.2
6	106.6	106.6	0.0	106.6	0.0	106.7	0.1	108.3	1.7	107.1	0.5	106.0	-0.6	105.4	-1.2	106.5	-0.1
7	83.8	83.8	0.0	83.4	-0.4	83.7	-0.1	84.6	0.8	88.0	4.2	84.2	0.4	84.0	0.2	83.8	0.0
8	99.8	99.8	0.0	99.8	0.0	95.5	-4.3	88.8	-11.0	87.9	-11.9	100.9	1.1	96.6	-3.2	99.5	-0.3
9	86.8	86.6	-0.2	86.9	0.1	86.4	-0.4	86.2	-0.6	86.6	-0.2	87.0	0.2	86.6	-0.2	86.8	0.0
10	106.9	105.1	-1.8	104.5	-2.4	106.9	0.0	106.9	0.0	107.0	0.1	106.8	-0.1	110.1	3.2	107.4	0.5
11	91	91.0	0.0	91.0	0.0	90.4	-0.6	90.1	-0.9	90.5	-0.5	91.0	0.0	89.2	-1.8	90.8	-0.2
12	87.3	84.3	-3.0	87.4	0.1	87.3	0.0	87.2	-0.1	87.4	0.1	87.5	0.2	90.0	2.7	87.7	0.4
13	104.9	104.9	0.0	104.9	0.0	105.2	0.3	98.6	-6.3	95.7	-9.2	104.6	-0.3	101.6	-3.3	104.7	-0.2
14	98.9	98.9	0.0	98.9	0.0	105.1	6.2	98.9	0.0	92.3	-6.6	98.0	-0.9	97.0	-1.9	98.7	-0.2
15	88.8	88.9	0.1	88.8	0.0	87.7	-1.1	86.3	-2.5	89.1	0.3	88.9	0.1	86.6	-2.2	88.6	-0.2
16	90	90.0	0.0	90.0	0.0	88.5	-1.5	88.3	-1.7	91.0	1.0	90.0	0.0	88.0	-2.0	89.8	-0.2
17	96.8	96.8	0.0	96.8	0.0	103.3	6.5	103.6	6.8	95.7	-1.1	96.4	-0.4	97.3	0.5	96.9	0.1
18	74.4	74.4	0.0	74.4	0.0	75.3	0.9	82.7	8.3	73.7	-0.7	74.3	-0.1	71.8	-2.6	74.2	-0.2
19	95.2	95.2	0.0	95.2	0.0	101.0	5.8	105.1	9.9	96.6	1.4	94.6	-0.6	94.8	-0.4	95.1	-0.1
20	77.6	77.6	0.0	77.6	0.0	79.3	1.7	80.2	2.6	78.9	1.3	77.7	0.1	76.4	-1.2	77.5	-0.1
21	86.9	86.0	-0.9	83.4	-3.5	86.9	0.0	87.0	0.1	90.0	3.1	87.1	0.2	89.5	2.6	87.3	0.4
22	108	108.0	0.0	108.0	0.0	110.9	2.9	106.2	-1.8	106.3	-1.7	107.6	-0.4	106.5	-1.5	107.9	-0.1
23	96.9	96.9	0.0	96.9	0.0	91.7	-5.2	87.9	-9.0	92.1	-4.8	96.7	-0.2	93.8	-3.1	96.6	-0.3
24	105.4	105.4	0.0	105.4	0.0	103.7	-1.7	100.7	-4.7	102.9	-2.5	104.6	-0.8	102.6	-2.8	105.2	-0.2
25	98.2	98.2	0.0	98.2	0.0	102.9	4.7	108.3	10.1	105.0	6.8	97.4	-0.8	95.7	-2.5	98.0	-0.2
26	98.5	98.5	0.0	98.6	0.1	98.4	-0.1	98.3	-0.2	98.6	0.1	99.9	1.4	99.2	0.7	98.6	0.1
27	97.3	97.3	0.0	97.3	0.0	97.3	0.0	97.3	0.0	99.3	2.0	98.7	1.4	96.8	-0.5	97.3	0.0
28	98.9	98.9	0.0	99.1	0.2	98.9	0.0	98.9	0.0	99.1	0.2	100.3	1.4	98.2	-0.7	98.8	-0.1
29	102.3	103.3	1.0	99.3	-3.0	102.3	0.0	102.3	0.0	103.0	0.7	101.9	-0.4	105.3	3.0	102.7	0.4
30	103.8	102.6	-1.2	108.3	4.5	103.8	0.0	103.8	0.0	103.9	0.1	103.4	-0.4	106.8	3.0	104.2	0.4
31	99.3	100.7	1.4	95.4	-3.9	99.3	0.0	99.3	0.0	100.9	1.6	98.7	-0.6	102.4	3.1	99.8	0.5
32	98	96.8	-1.2	103.6	5.6	98.0	0.0	98.0	0.0	98.4	0.4	97.9	-0.1	99.8	1.8	98.3	0.3
33	103.3	105.7	2.4	98.6	-4.7	103.3	0.0	103.3	0.0	103.8	0.5	102.6	-0.7	106.5	3.2	103.8	0.5
34	88.5	85.6	-2.9	88.7	0.2	88.4	-0.1	88.4	-0.1	88.6	0.1	88.6	0.1	90.9	2.4	88.8	0.3
35	93.3	97.2	3.9	88.5	-4.8	93.3	0.0	93.3	0.0	97.2	3.9	92.5	-0.8	96.8	3.5	93.9	0.6
36	103.7	102.7	-1.0	98.8	-4.9	103.7	0.0	103.7	0.0	104.1	0.4	104.1	0.4	106.9	3.2	104.2	0.5
37	99.3	96.8	-2.5	96.9	-2.4	99.3	0.0	99.3	0.0	100.0	0.7	99.1	-0.2	102.5	3.2	99.8	0.5
38	88.8	93.8	5.0	80.8	-8.0	88.8	0.0	88.8	0.0	92.1	3.3	88.5	-0.3	92.5	3.7	89.4	0.6
39	100.1	97.9	-2.2	93.8	-6.3	100.1	0.0	100.1	0.0	100.9	0.8	100.3	0.2	103.5	3.4	100.6	0.5
40	102.9	102.9	0.0	102.9	0.0	97.2	-5.7	92.1	-10.8	88.1	-14.8	102.9	0.0	99.4	-3.5	102.6	-0.3

Table B-5
Noise Monitoring Location Results - LMAX
Waterbury-Oxford Airport

Site	Future Baseline	Alt. NA-1A		Alt. NA-1B		Alt. NA-1C		Alt. NA-1D		Alt. NA-1E		Alt. NA-2B		Alt. NA-3A		Alt. NA-3B	
	LMAX	LMAX	*change*	LMAX	*change*	LMAX	*change*	LMAX	*change*	LMAX	*change*	LMAX	*change*	LMAX	*change*	LMAX	*change*
1	95.3	95.3	0.0	95.3	0.0	88.9	-6.4	79.1	-16.2	82.4	-12.9	95.7	0.4	95.3	0.0	95.3	0.0
2	101.2	101.2	0.0	101.2	0.0	96.5	-4.7	86.1	-15.1	96.1	-5.1	102.8	1.6	101.2	0.0	101.2	0.0
3	100.4	100.4	0.0	100.4	0.0	100.4	0.0	94.4	-6.0	100.4	0.0	102.3	1.9	100.4	0.0	100.4	0.0
4	95.5	95.5	0.0	95.5	0.0	95.5	0.0	93.7	-1.8	95.5	0.0	94.7	-0.8	95.5	0.0	95.5	0.0
5	85.1	85.1	0.0	95.0	9.9	85.1	0.0	94.6	9.5	98.5	13.4	83.7	-1.4	85.1	0.0	85.1	0.0
6	97.2	97.2	0.0	85.1	-12.1	97.2	0.0	99.2	2.0	97.2	0.0	95.9	-1.3	97.2	0.0	97.2	0.0
7	77.1	77.1	0.0	77.1	0.0	77.1	0.0	77.1	0.0	79.5	2.4	77.1	0.0	77.1	0.0	77.1	0.0
8	90.8	90.8	0.0	90.8	0.0	83.0	-7.8	82.2	-8.6	82.2	-8.6	92.6	1.8	90.8	0.0	90.8	0.0
9	75.7	75.7	0.0	75.7	0.0	75.7	0.0	75.7	0.0	75.7	0.0	75.7	0.0	75.7	0.0	75.7	0.0
10	103.2	99.7	-3.5	98.4	-4.8	103.2	0.0	103.2	0.0	103.2	0.0	103.8	0.6	103.2	0.0	103.2	0.0
11	74.5	74.5	0.0	74.5	0.0	74.5	0.0	74.5	0.0	74.5	0.0	74.5	0.0	74.5	0.0	74.5	0.0
12	75.1	75.1	0.0	75.1	0.0	75.1	0.0	75.1	0.0	75.1	0.0	75.1	0.0	75.1	0.0	75.1	0.0
13	96.9	96.9	0.0	96.9	0.0	95.0	-1.9	84.1	-12.8	93.5	-3.4	97.4	0.5	96.9	0.0	96.9	0.0
14	90.4	90.4	0.0	90.4	0.0	96.7	6.3	90.3	-0.1	90.4	0.0	90.3	-0.1	90.4	0.0	90.4	0.0
15	68.2	68.2	0.0	68.2	0.0	68.2	0.0	68.2	0.0	68.2	0.0	68.2	0.0	68.2	0.0	68.2	0.0
16	76.5	76.5	0.0	76.5	0.0	76.5	0.0	76.5	0.0	76.8	0.3	76.5	0.0	76.5	0.0	76.5	0.0
17	97.1	97.1	0.0	97.1	0.0	97.1	0.0	94.5	-2.6	97.1	0.0	98.3	1.2	97.1	0.0	97.1	0.0
18	66.9	66.9	0.0	66.9	0.0	66.9	0.0	77.0	10.1	66.9	0.0	67.9	1.0	66.9	0.0	66.9	0.0
19	95.3	95.3	0.0	95.3	0.0	95.3	0.0	96.5	1.2	95.3	0.0	95.7	0.4	95.3	0.0	95.3	0.0
20	67.1	67.1	0.0	67.1	0.0	67.1	0.0	76.3	9.2	67.5	0.4	67.1	0.0	67.1	0.0	67.1	0.0
21	77.7	77.7	0.0	77.7	0.0	77.7	0.0	77.7	0.0	79.4	1.7	77.7	0.0	77.7	0.0	77.7	0.0
22	103.7	103.7	0.0	103.7	0.0	103.7	0.0	97.3	-6.4	103.7	0.0	105.3	1.6	103.7	0.0	103.7	0.0
23	85.5	85.5	0.0	85.5	0.0	74.1	-11.4	73.1	-12.4	73.1	-12.4	85.4	-0.1	85.5	0.0	85.5	0.0
24	95.0	95.0	0.0	95.0	0.0	93.3	-1.7	88.8	-6.2	93.3	-1.7	93.9	-1.1	95.0	0.0	95.0	0.0
25	93.6	93.6	0.0	93.6	0.0	93.6	0.0	100.5	6.9	97.5	3.9	93.1	-0.5	93.6	0.0	93.6	0.0
26	84.4	84.4	0.0	84.4	0.0	84.4	0.0	84.2	-0.2	84.4	0.0	89.7	5.3	84.4	0.0	84.4	0.0
27	82.3	82.4	0.1	82.4	0.1	82.3	0.0	82.3	0.0	84.7	2.4	87.6	5.3	82.3	0.0	82.3	0.0
28	84.1	84.3	0.2	84.3	0.2	84.1	0.0	84.1	0.0	84.1	0.0	89.7	5.6	84.1	0.0	84.1	0.0
29	96.2	98.4	2.2	90.9	-5.3	96.2	0.0	96.2	0.0	96.2	0.0	95.0	-1.2	96.2	0.0	96.2	0.0
30	98.2	96.4	-1.8	106.4	8.2	98.2	0.0	98.2	0.0	98.2	0.0	97.2	-1.0	98.2	0.0	98.2	0.0
31	91.7	95.0	3.3	83.4	-8.3	91.7	0.0	91.7	0.0	91.7	0.0	90.4	-1.3	91.7	0.0	91.7	0.0
32	86.5	83.7	-2.8	99.0	12.5	86.5	0.0	86.5	0.0	86.5	0.0	85.3	-1.2	86.5	0.0	86.5	0.0
33	98.0	102.2	4.2	87.0	-11.0	98.0	0.0	98.0	0.0	98.0	0.0	97.5	-0.5	98.0	0.0	98.0	0.0
34	76.0	76.0	0.0	76.0	0.0	76.0	0.0	76.0	0.0	76.0	0.0	76.0	0.0	76.0	0.0	76.0	0.0
35	85.5	90.6	5.1	74.4	-11.1	85.5	0.0	85.5	0.0	85.5	0.0	84.5	-1.0	85.5	0.0	85.5	0.0
36	99.0	96.6	-2.4	91.5	-7.5	99.0	0.0	99.0	0.0	99.0	0.0	100.7	1.7	99.0	0.0	99.0	0.0
37	93.5	88.7	-4.8	88.7	-4.8	93.5	0.0	93.5	0.0	93.5	0.0	93.7	0.2	93.5	0.0	93.5	0.0
38	81.8	88.1	6.3	66.0	-15.8	81.8	0.0	81.8	0.0	82.2	0.4	81.6	-0.2	81.8	0.0	81.8	0.0
39	95.4	91.4	-4.0	87.3	-8.1	95.4	0.0	95.4	0.0	95.4	0.0	95.9	0.5	95.4	0.0	95.4	0.0
40	95.0	95.0	0.0	95.0	0.0	84.6	-10.4	76.0	-19.0	75.3	-19.7	95.1	0.1	95.0	0.0	95.0	0.0

Table B-6
Noise Monitoring Location Results – TA-65
Waterbury-Oxford Airport

Site	Future Baseline	Alt. NA-1A		Alt. NA-1B		Alt. NA-1C		Alt. NA-1D		Alt. NA-1E		Alt. NA-2B		Alt. NA-3A		Alt. NA-3B	
	TA-65	TA-65	*change*	TA-65	*change*	TA-65	*change*	TA-65	*change*	TA-65	*change*	TA-65	*change*	TA-65	*change*	TA-65	*change*
1	3.8	3.8	0.0	3.8	0.0	5.1	1.3	2.1	-1.7	0.5	-3.3	3.4	-0.4	1.8	-2.0	3.6	-0.2
2	12.3	12.3	0.0	12.3	0.0	14.8	2.5	11.5	-0.8	9.9	-2.4	11.8	-0.5	9.3	-3.0	12.0	-0.3
3	5.9	5.9	0.0	5.9	0.0	11.7	5.8	9.3	3.4	5.1	-0.8	5.3	-0.6	5.0	-0.9	5.8	-0.1
4	1.2	1.2	0.0	1.2	0.0	2.3	1.1	3.6	2.4	1.0	-0.2	1.1	-0.1	1.8	0.6	1.2	0.0
5	4.8	4.8	0.0	4.8	0.0	4.9	0.1	7.8	3.0	9.1	4.3	4.5	-0.3	2.7	-2.1	4.6	-0.2
6	11.6	11.6	0.0	11.6	0.0	10.9	-0.7	13.8	2.2	13.4	1.8	11.2	-0.4	11.5	-0.1	11.6	0.0
7	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.5	0.4	0.1	0.0	0.1	0.0	0.1	0.0
8	2.9	2.9	0.0	2.9	0.0	2.7	-0.2	0.4	-2.5	0.2	-2.7	2.7	-0.2	1.6	-1.3	2.8	-0.1
9	0.2	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.3	0.1	0.2	0.0	0.2	0.0
10	11.0	10.8	-0.2	9.8	-1.2	11.0	0.0	11.0	0.0	12.0	1.0	10.9	-0.1	14.9	3.9	11.4	0.4
11	1.3	1.3	0.0	1.3	0.0	1.1	-0.2	1.1	-0.2	1.1	-0.2	1.3	0.0	0.7	-0.6	1.2	-0.1
12	0.5	0.1	-0.4	0.4	-0.1	0.5	0.0	0.5	0.0	0.5	0.0	0.5	0.0	1.0	0.5	0.5	0.0
13	5.2	5.2	0.0	5.2	0.0	9.4	4.2	4.6	-0.6	2.4	-2.8	4.7	-0.5	2.8	-2.4	4.9	-0.3
14	2.8	2.8	0.0	2.8	0.0	5.6	2.8	4.5	1.7	0.8	-2.0	2.3	-0.5	1.8	-1.0	2.7	-0.1
15	0.6	0.6	0.0	0.6	0.0	0.1	-0.5	0.0	-0.6	0.6	0.0	0.6	0.0	0.3	-0.3	0.6	0.0
16	0.8	0.8	0.0	0.8	0.0	0.3	-0.5	0.1	-0.7	1.0	0.2	0.8	0.0	0.4	-0.4	0.8	0.0
17	2.6	2.6	0.0	2.6	0.0	5.5	2.9	6.0	3.4	1.7	-0.9	2.2	-0.4	2.6	0.0	2.6	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	2.0	2.0	0.0	2.0	0.0	4.9	2.9	6.6	4.6	2.1	0.1	1.7	-0.3	2.2	0.2	2.1	0.1
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	9.3	0.0	0.0
21	0.4	0.3	-0.1	0.1	-0.3	0.4	0.0	0.4	0.0	0.8	0.4	0.5	0.1	0.8	0.4	0.4	0.0
22	14.6	3.1	-11.5	14.6	0.0	21.5	6.9	16.5	1.9	14.1	-0.5	14.2	-0.4	12.8	-1.8	14.4	-0.2
23	3.1	11.0	7.9	3.1	0.0	1.2	-1.9	0.1	-3.0	1.2	-1.9	2.7	-0.4	1.4	-1.7	2.9	-0.2
24	11.0	4.0	-7.0	11.0	0.0	8.8	-2.2	6.3	-4.7	9.1	-1.9	10.3	-0.7	6.6	-4.4	10.5	-0.5
25	4.0	5.5	1.5	4.0	0.0	7.1	3.1	12.5	8.5	5.8	1.8	3.6	-0.4	2.2	-1.8	3.8	-0.2
26	5.5	3.8	-1.7	5.5	0.0	5.3	-0.2	5.3	-0.2	5.6	0.1	5.5	0.0	6.0	0.5	5.5	0.0
27	3.8	5.5	1.7	3.7	-0.1	3.7	-0.1	3.8	0.0	5.7	1.9	3.9	0.1	3.8	0.0	3.8	0.0
28	5.5	5.9	0.4	5.8	0.3	5.5	0.0	5.5	0.0	5.9	0.4	5.6	0.1	4.9	-0.6	5.4	-0.1
29	5.8	5.9	0.1	4.6	-1.2	5.8	0.0	5.8	0.0	7.7	1.9	5.8	0.0	9.1	3.3	6.2	0.4
30	7.1	6.5	-0.6	9.1	2.0	7.1	0.0	7.1	0.0	7.7	0.6	7.0	-0.1	10.4	3.3	7.5	0.4
31	5.0	4.7	-0.3	2.8	-2.2	5.0	0.0	5.0	0.0	6.9	1.9	4.8	-0.2	8.9	3.9	5.4	0.4
32	4.6	3.4	-1.2	6.1	1.5	4.6	0.0	4.6	0.0	5.0	0.4	4.5	-0.1	7.1	2.5	4.8	0.2
33	9.6	10.9	1.3	7.8	-1.8	9.6	0.0	9.6	0.0	11.4	1.8	9.5	-0.1	13.9	4.3	10.1	0.5
34	0.6	0.2	-0.4	0.6	0.0	0.6	0.0	0.6	0.0	0.6	0.0	0.6	0.0	1.1	0.5	0.6	0.0
35	1.4	2.4	1.0	0.3	-1.1	1.4	0.0	1.4	0.0	3.0	1.6	1.2	-0.2	3.2	1.8	1.6	0.2
36	3.8	4.5	0.7	3.4	-0.4	3.8	0.0	3.8	0.0	5.2	1.4	3.6	-0.2	5.9	2.1	4.0	0.2
37	2.3	2.8	0.5	2.7	0.4	2.3	0.0	2.3	0.0	3.4	1.1	2.2	-0.1	4.0	1.7	2.5	0.2
38	0.5	1.0	0.5	0.0	-0.5	0.5	0.0	0.5	0.0	1.0	0.5	0.4	-0.1	1.3	0.8	0.6	0.1
39	2.4	2.7	0.3	1.5	-0.9	2.4	0.0	2.4	0.0	3.7	1.3	2.3	-0.1	1.8	-0.6	2.5	0.1
40	3.5	3.5	0.0	3.5	0.0	3.7	0.2	1.4	-2.1	0.3	-3.2	3.3	-0.2	1.6	-1.9	3.3	-0.2

SUPPLEMENTAL GRID POINT ANALYSIS – INM VERSION 7.0

As discussed in Chapter 5, previous analyses of the Waterbury-Oxford Airport (OXC) Noise Study were conducted using the FAA's Integrated Noise Model (INM) Version 6.1. A new version of INM (Version 7.0) was released in 2007. At the request of the FAA, the following three updated Day-Night Average Noise Level (DNL) analyses were conducted for OXC using INM Version 7.0:

- ***Year 2007 Baseline –*** Represents the most recent full year of activity at OXC.
- ***Year 2012 Baseline –*** Represents the five-year forecast activity level at OXC.
- ***Year 2012 Mitigated –*** Represents the 2012 forecast activity levels, combined with the recommended Noise Compatibility Program (NCP) measures described in this chapter.

In order to provide a sample of specific noise levels at specific locations, a supplemental grid point analysis was conducted for the 40 selected locations illustrated on Figure B-1. Table B-7 summarizes the noise levels for the 40 selected locations (for DNL only) for all three scenarios above.

According to FAA Order 1050.1E, a significant noise impact occurs when an action, compared to the no action alternative for the same timeframe, would cause noise sensitive areas located at or above DNL 65 dB to experience a noise increase of at least DNL 1.5 dB. An increase from DNL 63.5 dB to DNL 65 dB over a sensitive area is considered a significant noise impact.

As shown in Table B-7, for all three scenarios, only one grid point location is exposed to noise levels greater than DNL 65 dB – Location 6, Triangle Boulevard. Compared to the 2012 Baseline scenario, the 2012 Mitigated scenario (i.e., the implementation of the NCP recommendations) would result in a DNL 2.2 dB decrease in noise exposure at this location. Thus, the no significant noise impacts would be anticipated from the implementation of the NCP recommendations.

TABLE B-7 – DNL NOISE LEVELS						
ID	**LOCATION**	**DNL Noise Level**				
		A. 2007 Baseline	**B. 2012 Baseline**	**Change (A to B)**	**C. 2012 Mitigated**	**Change (B to C)**
1	Long Meadow School, 65 N Benson Rd	55.1	54.8	-0.3	52.9	-1.9
2	Independence Circle on the south end	60.2	59.9	-0.3	58.6	-1.3
3	Brookside Drive on the south end	55.7	55.4	-0.3	54.8	-0.6
4	Avalon Farms, Middlebury	46.2	46.3	0.1	47.5	1.2
5	Washington Drive	50.6	50.7	0.1	49.3	-1.4
6	Triangle Blvd, north of Hill Pkwy	69.3	68.6	-0.7	66.4	-2.2
7	Andrew Mountain Rd, Naugatuck	37.6	37.8	0.2	38.3	0.5
8	Reservoir Rd, Southbury	48.6	48.3	-0.3	46.6	-1.7
9	221 Munn Rd, Southbury	48.1	47.8	-0.3	47.8	0.0
10	Glendale Development (Corner of "C" &"D")	58.8	58.6	-0.2	60.4	1.8
11	Larkey Road on the north end	49.7	49.6	-0.1	49.0	-0.6
12	Hulls Hill Rd, Southbury	47.5	46.9	-0.6	46.7	-0.2
13	Independence Circle on the north end	57.0	56.7	-0.3	54.7	-2.0
14	elementary school on CT Route 188	51.8	51.3	-0.5	49.5	-1.8
15	Wildwood Circle, Naugatuck	42.4	42.6	0.2	41.4	-1.2
16	Hill Rd, Middlebury	43.5	43.7	0.2	42.6	-1.1
17	Corner of Christian Road and Midway Drive	49.7	49.6	-0.1	49.8	0.2
18	Ash Swamp Rd, Woodbury (not shown on B-1)	27.2	27.7	0.5	26.5	-1.2
19	Longmeadow Road on the north end	47.9	47.9	0.0	47.3	-0.6
20	Curtis Farm Rd, Middlebury	31.2	31.5	0.3	30.4	-1.1
21	Chestnut Tree Hill Rd, Oxford	40.1	40.3	0.2	42.3	2.0
22	Kissawaug Rd	60.3	59.9	-0.4	58.8	-1.1
23	Old Waterbury Rd, Southbury	52.6	52.5	-0.1	51.5	-1.0
24	Benson Road on the east side	57.5	57.4	-0.1	55.3	-2.1
25	Kimberwick Court on the south end	51.0	51.0	0.0	49.2	-1.8
26	Donovan Road north of Airport Access Road	52.0	51.9	-0.1	53.4	1.5
27	Prokop Road on the north side	50.6	50.5	-0.1	51.8	1.3
28	Hawley Road on the south side	52.1	52.0	-0.1	53.2	1.2
29	Jacks Hill Road on the east side	54.1	54.0	-0.1	55.5	1.5
30	Christian Street on the south end	55.7	55.6	-0.1	57.0	1.4
31	Wildflower Drive on the east side	51.6	51.6	0.0	53.0	1.4
32	Towner Lane	50.7	50.8	0.1	51.5	0.7
33	Glendale Development (South end of "C")	55.3	55.2	-0.1	56.6	1.4
34	Route 188, Southbury	49.7	49.1	-0.6	48.6	-0.5
35	Greenbriar Road on the west side	45.9	45.9	0.0	47.2	1.3
36	Country Farm Road on the north side	55.9	55.6	-0.3	57.9	2.3
37	Corner of Deanna Drive and Nancy Lynn Drive	51.5	51.2	-0.3	52.9	1.7
38	Oxford, town center	41.5	41.3	-0.2	43.4	2.1
39	Condon Road on the south side	52.4	52.1	-0.3	54.3	2.2
40	Pomperaug High School, 234 Judd Road	54.7	54.4	-0.3	52.5	-1.9