

APPENDIX C

AMBIENT NOISE DATA LDN CALCULATIONS

**COMMONWEALTH RAILWAY MAINLINE SAFETY RELOCATION PROJECT
 AMBIENT NOISE DATA LDN CALCULATION SPREADSHEET**

Day	Time	Hourly Baseline Leq Values							Hourly Baseline Leq Values with Nighttime 10 dBA Penalty							Antilog for Hourly Baseline Leq Values with Nighttime 10 dBA Penalty						
		1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Saturday, February 17, 2007	0:00	59.5	69.6	63.7	65.1	50.3	55.3	69.5	79.6	73.7	75.1	60.3	65.3	9E+06	9E+07	2E+07	3E+07	1E+06	3E+06			
	1:00	58.6	67.5	62.2	64.1	48.5	53.6	68.6	77.5	72.2	74.1	58.5	63.6	7E+06	6E+07	2E+07	3E+07	7E+05	2E+06			
	2:00	57.0	67.0	61.3	62.8	48.2	53.4	67.0	77.0	71.3	72.8	58.2	63.4	5E+06	5E+07	1E+07	2E+07	7E+05	2E+06			
	3:00	57.1	66.4	60.6	62.1	50.2	53.9	67.1	76.4	70.6	72.1	60.2	63.9	5E+06	4E+07	1E+07	2E+07	1E+06	2E+06			
	4:00	59.4	68.2	63.5	65.5	49.8	52.2	69.4	78.2	73.5	75.5	59.8	62.2	9E+06	7E+07	2E+07	4E+07	1E+06	2E+06			
	5:00	60.4	70.7	65.0	66.7	51.6	54.6	70.4	80.7	75.0	76.7	61.6	64.6	1E+07	1E+08	3E+07	5E+07	1E+06	3E+06			
	6:00	62.5	72.8	66.7	68.6	54.1	57.2	72.5	82.8	76.7	78.6	64.1	67.2	2E+07	2E+08	5E+07	7E+07	3E+06	5E+06			
	7:00	63.2	73.8	67.8	69.5	54.5	58.2	63.2	73.8	67.8	69.5	54.5	58.2	2E+06	2E+07	6E+06	9E+06	3E+05	7E+05			
	8:00	62.9	74.7	67.4	69.6	52.7	58.1	62.9	74.7	67.4	69.6	52.7	58.1	2E+06	3E+07	5E+06	9E+06	2E+05	6E+05			
	9:00	63.8	74.1	67.9	70.1	51.9	59.4	63.8	74.1	67.9	70.1	51.9	59.4	2E+06	3E+07	6E+06	1E+07	2E+05	9E+05			
	10:00	64.7	74.6	67.9	69.6	52.6	59.5	64.7	74.6	67.9	69.6	52.6	59.5	3E+06	3E+07	6E+06	9E+06	2E+05	9E+05			
	11:00	65.1	74.8	68.0	70.0	52.6	59.1	65.1	74.8	68.0	70.0	52.6	59.1	3E+06	3E+07	6E+06	1E+07	2E+05	8E+05			
	12:00	65.6	74.8	68.8	70.1	53.6	59.5	65.6	74.8	68.8	70.1	53.6	59.5	4E+06	3E+07	8E+06	1E+07	2E+05	9E+05			
	13:00	65.9	75.0	68.4	70.2	53.3	59.3	65.9	75.0	68.4	70.2	53.3	59.3	4E+06	3E+07	7E+06	1E+07	2E+05	9E+05			
	14:00	65.8	75.4	68.6	70.2	53.4	60.2	65.8	75.4	68.6	70.2	53.4	60.2	4E+06	3E+07	7E+06	1E+07	2E+05	1E+06			
	15:00	65.6	75.3	68.7	70.5	53.3	60.0	65.6	75.3	68.7	70.5	53.3	60.0	4E+06	3E+07	7E+06	1E+07	2E+05	1E+06			
	16:00	65.7	75.6	69.2	70.5	53.3	59.8	65.7	75.6	69.2	70.5	53.3	59.8	4E+06	4E+07	8E+06	1E+07	2E+05	1E+06			
	17:00	65.2	75.3	68.7	70.5	52.8	60.2	65.2	75.3	68.7	70.5	52.8	60.2	3E+06	3E+07	7E+06	1E+07	2E+05	1E+06			
	18:00	64.5	74.7	68.6	70.4	53.0	59.0	64.5	74.7	68.6	70.4	53.0	59.0	3E+06	3E+07	7E+06	1E+07	2E+05	8E+05			
	19:00	63.6	73.7	67.6	69.3	53.0	58.4	63.6	73.7	67.6	69.3	53.0	58.4	2E+06	2E+07	6E+06	9E+06	2E+05	7E+05			
	20:00	65.0	72.8	68.3	69.4	54.2	58.3	65.0	72.8	68.3	69.4	54.2	58.3	3E+06	2E+07	7E+06	9E+06	3E+05	7E+05			
	21:00	65.3	73.0	68.0	69.2	53.7	57.3	65.3	73.0	68.0	69.2	53.7	57.3	3E+06	2E+07	6E+06	8E+06	2E+05	5E+05			
	22:00	64.4	71.6	66.1	67.1	52.4	56.7	74.4	81.6	76.1	77.1	62.4	66.7	3E+07	1E+08	4E+07	5E+07	2E+06	5E+06			
23:00	61.3	71.2	65.0	66.0	53.9	56.5	71.3	81.2	75.0	76.0	63.9	66.5	1E+07	1E+08	3E+07	4E+07	2E+06	4E+06				
Sunday, February 18, 2007	0:00	58.8	68.5	63.1	64.1	50.2	54.9	68.8	78.5	73.1	74.1	60.2	64.9	8E+06	7E+07	2E+07	3E+07	1E+06	3E+06			
	1:00	57.1	67.3	61.8	63.2	49.3	53.1	67.1	77.3	71.8	73.2	59.3	63.1	5E+06	5E+07	2E+07	2E+07	9E+05	2E+06			
	2:00	58.3	66.6	61.1	62.5	48.1	53.5	68.3	76.6	71.1	72.5	58.1	63.5	7E+06	5E+07	1E+07	2E+07	6E+05	2E+06			
	3:00	56.4	63.3	59.2	60.5	46.0	51.7	66.4	73.3	69.2	70.5	56.0	61.7	4E+06	2E+07	8E+06	1E+07	4E+05	1E+06			
	4:00	56.9	64.0	60.7	62.7	46.0	58.6	66.9	74.0	70.7	72.7	56.0	68.6	5E+06	3E+07	1E+07	2E+07	4E+05	7E+06			
	5:00	58.4	67.2	61.9	63.3	47.5	51.9	68.4	77.2	71.9	73.3	57.5	61.9	7E+06	5E+07	2E+07	2E+07	6E+05	2E+06			
	6:00	60.3	69.5	63.3	64.7	49.6	54.0	70.3	79.5	73.3	74.7	59.6	64.0	1E+07	9E+07	2E+07	3E+07	9E+05	3E+06			
	7:00	60.9	71.2	64.7	65.9	52.0	56.2	60.9	71.2	64.7	65.9	52.0	56.2	1E+06	1E+07	3E+06	4E+06	2E+05	4E+05			
	8:00	62.4	72.1	65.8	67.2	51.5	55.3	62.4	72.1	65.8	67.2	51.5	55.3	2E+06	2E+07	4E+06	5E+06	1E+05	3E+05			
	9:00	64.3	73.1	67.4	68.7	54.4	56.4	64.3	73.1	67.4	68.7	54.4	56.4	3E+06	2E+07	5E+06	7E+06	3E+05	4E+05			
	10:00	65.8	74.3	68.4	69.4	55.3	56.3	65.8	74.3	68.4	69.4	55.3	56.3	4E+06	3E+07	7E+06	9E+06	3E+05	4E+05			
	11:00		73.8	68.7	69.6	56.6	57.2		73.8	68.7	69.6	56.6	57.2		2E+07	7E+06	9E+06	5E+05	5E+05			
	12:00		73.7	68.9	69.9	55.8	57.0	51.2		73.7	68.9	69.9	55.8	57.0		2E+07	8E+06	1E+07	4E+05	5E+05	1E+05	
	13:00		74.2	68.9	70.1	56.0	60.9	54.1		74.2	68.9	70.1	56.0	60.9	54.1		3E+07	8E+06	1E+07	4E+05	1E+06	3E+05
	14:00		74.6	68.8	69.7	55.6	57.3	50.8		74.6	68.8	69.7	55.6	57.3	50.8		3E+07	8E+06	9E+06	4E+05	5E+05	1E+05
	15:00		74.6	68.7	70.3	55.1	57.3	50.9		74.6	68.7	70.3	55.1	57.3	50.9		3E+07	7E+06	1E+07	3E+05	5E+05	1E+05
	16:00		74.0	68.9	70.3	54.7	57.3	52.2		74.0	68.9	70.3	54.7	57.3	52.2		3E+07	8E+06	1E+07	3E+05	5E+05	2E+05
	17:00		74.0	69.1	70.4	55.6	57.9	53.6		74.0	69.1	70.4	55.6	57.9	53.6		3E+07	8E+06	1E+07	4E+05	6E+05	2E+05
	18:00		73.1	68.9	69.8	55.7	58.0	53.6		73.1	68.9	69.8	55.7	58.0	53.6		2E+07	8E+06	1E+07	4E+05	6E+05	2E+05
	19:00		71.8	68.6	69.6	54.9	56.9	52.6		71.8	68.6	69.6	54.9	56.9	52.6		2E+07	7E+06	9E+06	3E+05	5E+05	2E+05
	20:00		71.6	66.9	68.4	54.0	56.3	53.1		71.6	66.9	68.4	54.0	56.3	53.1		1E+07	5E+06	7E+06	3E+05	4E+05	2E+05
	21:00		70.7	65.8	67.2	55.0	56.4	52.6		70.7	65.8	67.2	55.0	56.4	52.6		1E+07	4E+06	5E+06	3E+05	4E+05	2E+05
	22:00		70.4	64.7	66.1	52.6	57.3	52.9		80.4	74.7	76.1	62.6	67.3	62.9		1E+08	3E+07	4E+07	2E+06	5E+06	2E+06
23:00		68.8	64.3	65.9	53.4	57.0	52.2		78.8	74.3	75.9	63.4	67.0	62.2		8E+07	3E+07	4E+07	2E+06	5E+06	2E+06	
Monday, February 19, 2007	0:00	66.3	61.3	62.9	52.2	54.3	51.0	76.3	71.3	72.9	62.2	64.3	61.0	4E+07	1E+07	2E+07	2E+06	3E+06	1E+06			
	1:00	65.1	60.3	61.9	48.1	52.0	47.1	75.1	70.3	71.9	58.1	62.0	57.1	3E+07	1E+07	2E+07	6E+05	2E+06	5E+05			
	2:00	65.1	59.6	61.7	48.6	50.8	46.2	75.1	69.6	71.7	58.6	60.8	56.2	3E+07	9E+06	1E+07	7E+05	1E+06	4E+05			
	3:00	66.7	60.6	63.1	49.2	52.6	48.5	76.7	70.6	73.1	59.2	62.6	58.5	5E+07	1E+07	2E+07	8E+05	2E+06	7E+05			
	4:00	69.0	63.9	66.1	49.2	52.8	48.7	79.0	73.9	76.1	59.2	62.8	58.7	8E+07	2E+07	4E+07	8E+05	2E+06	7E+05			
	5:00	72.9	68.0	70.1	52.5	54.0	48.0	82.9	78.0	80.1	62.5	64.0	58.0	2E+08	6E+07	1E+08	2E+06	3E+06	6E+05			
	6:00	75.5	69.9	72.1	55.5	57.4	51.6	85.5	79.9	82.1	65.5	67.4	61.6	4E+08	1E+08	2E+08	4E+06	5E+06	1E+06			
	7:00	75.6	70.7	72.9	56.2	59.1	52.9	75.6	70.7	72.9	56.2	59.1	52.9	4E+07	1E+07	2E+07	4E+05	8E+05	2E+05			
	8:00	75.6	70.2	72.3	56.0	59.4	52.4	75.6	70.2	72.3	56.0	59.4	52.4	4E+07	1E+07	2E+07	4E+05	9E+05	2E+05			
	9:00	75.1	70.0	72.1	54.5	59.2	53.2	75.1	70.0	72.1	54.5	59.2	53.2	3E+07	1E+07	2E+07	3E+05	8E+05	2E+05			
	10:00	74.8	69.7	71.7	53.6	61.2	56.0	74.8	69.7	71.7	53.6	61.2	56.0	3E+07	9E+06	1E+07	2E+05	1E+06	4E+05			
	11:00	74.8	69.3	71.2	53.7	59.6	53.5	74.8	69.3	71.2	53.7	59.6	53.5	3E+07	9E+06	1E+07	2E+05	9E+05	2E+05			
	12:00	74.7	69.8	71.2	53.8	61.0	55.0	74.7	69.8	71.2	53.8	61.0	55.0	3E+07	1E+07	2E+07	2E+05	1E+06	3E+05			
	13:00	75.1	69.6	71.2	53.3	60.2	55.4	75.1	69.6	71.2	53.3	60.2	55.4	3E+07	9E+06	1E+07	2E+05	1E+06	3E+05			
	14:00	75.4	69.3	71.0	52.6	60.9	60.3	75.4	69.3	71.0	52.6	60.9	60.3	3E+07	9E+06	1E+07	2E+05	1E+06	1E+06			
	15:00	77.0	69.7	71.5	53.4	61.2	58.5	77.0	69.7	71.5	53.4	61.2	58.5	5E+07	9E+06	1E+07	2E+05					

**COMMONWEALTH RAILWAY MAINLINE SAFETY RELOCATION PROJECT
 AMBIENT NOISE DATA LDN CALCULATION SPREADSHEET**

Day	Ldns						
	1	2	3	4	5	6	7
Total	69.0	77.7	71.8	73.8	58.7	62.6	57.2

Day 1	70.0	77.2	71.5	73.4	60.4	63.5	Wednesday, February 14, 2007
Day 2	69.4	78.3	70.4	74.1	59.5	62.7	Thursday, February 15, 2007
Day 3	69.9	78.9	73.0	74.8	58.7	63.0	Friday, February 16, 2007
Day 4	68.0	77.4	71.5	73.1	58.2	62.4	Saturday, February 17, 2007
Day 5	67.1	75.6	70.3	71.7	57.5	62.1	Sunday, February 18, 2007
Day 6		78.3	72.7	74.8	58.6	62.2	Monday, February 19, 2007

Leq Min	56.4	63.3	59.2	60.5	46.0	48.3	46.2
Leq Max	70.7	78.4	72.0	73.7	60.2	62.4	60.3

SURVEY LOCATION DESCRIPTIONS

- 1 Along NB 664 near the backyard of residence at 4626 Old Fox Trail Road in the Western Branch Commons residential community.
- 2 Along SB 664 near the backyard of residence at 4905 Clifton Street in the Merrimac Landing residential community.
- 3 Along NB 664 near the backyard of residence at 3512 Chipada Court in the Wellington residential community.
- 4 Along NB 664 near the backyard of residence at 3660 Mardean Drive in the Wellington residential community.
- 5 Near the northern property line of the Bon Secours-Maryview Nursing Care Center located at 4775 Bridge Road.
- 6 Along WB 164 near the Dominion Virginia Power (DVP) ROW and parking lot at 3625 Gateway Drive in the Westwind Apartments residential community. (NO BARRIER WALL AT 90 FT)
- 7 Along WB 164 near the the backyard of residence at 6229 Hightower Road in the Stoneridge Apartments community (BARRIER WALL AT 90 FT)