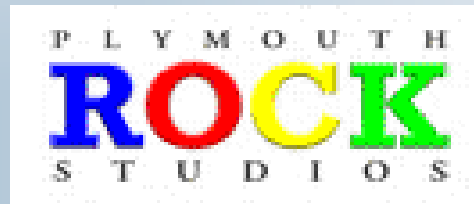




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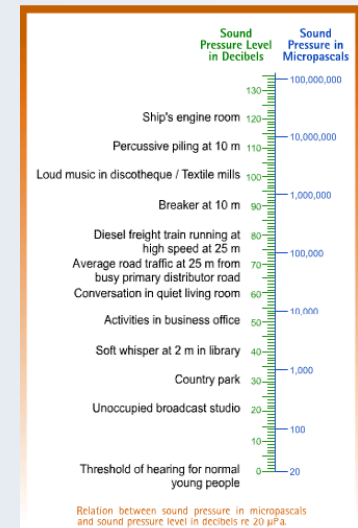
Plymouth Rock Studios Noise Analysis Status Report



***Marc Wallace, QEP
Associate***

Common Measures of Sound

- **Sound Levels expressed in decibels (dB) based on logarithmic scale**
- **Sound levels not directly additive (i.e., 70 dB +70 dB = 73 dB, not 140 dB)**
- **Noise exposure commonly expressed in dBA (approx. frequency response of human ear)**



Human Perception

Change in Sound Pressure Level	Perceived Change in Loudness
3 dB	Just Perceptible
5 dB	Noticeable
10 dB	Twice (or Half) as Loud

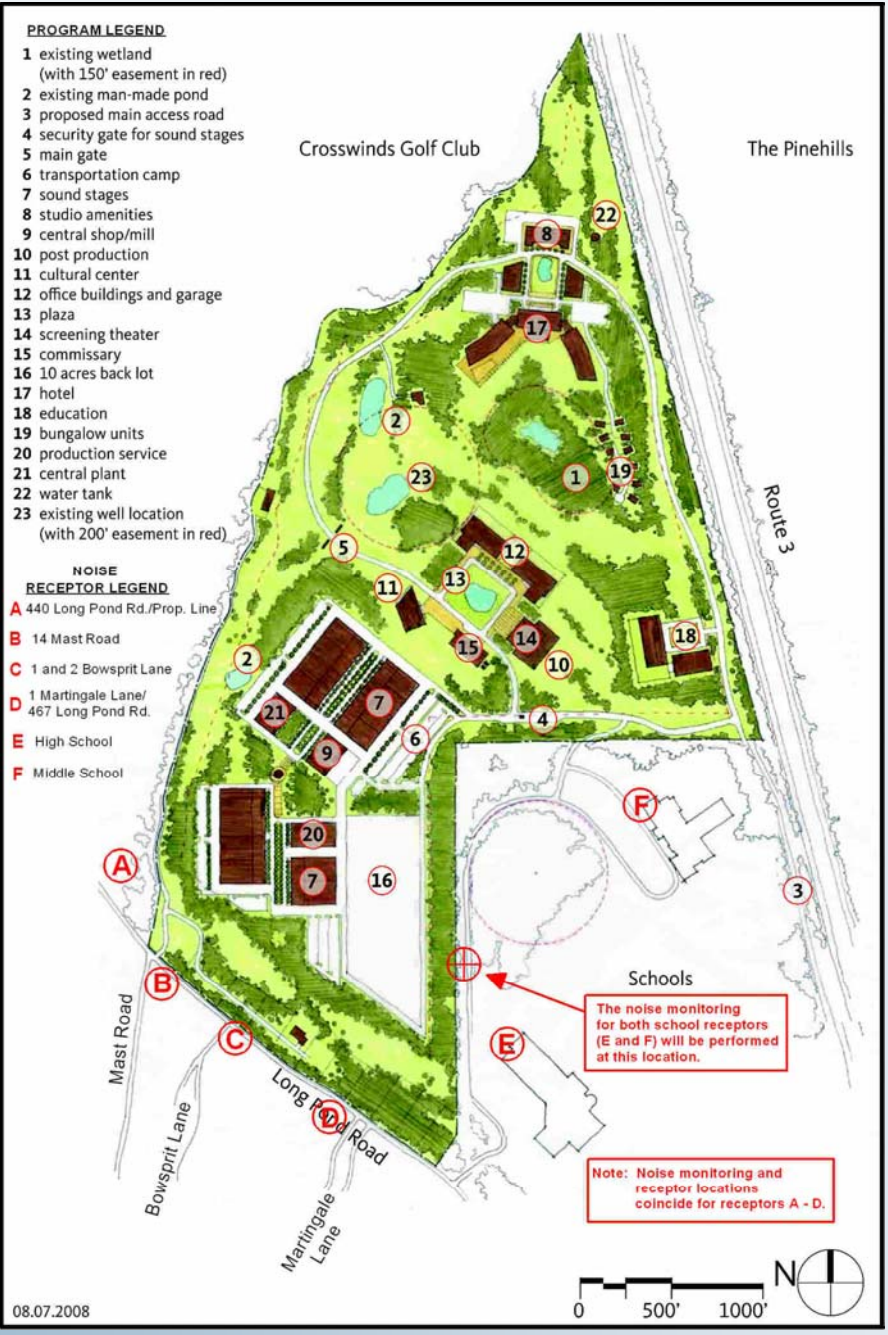
Common Sound Levels

Sound Level (dBA)	Common Indoor Sounds	Common Outdoor Sounds
110	Rock Band	Jet Takeoff at 1,000 ft.
100	Inside NYC Subway Train	Chain Saw at 3 ft.
90	Food Blender at 3 ft.	Impact Hammer (Hoe Ram) at 50 ft.
80	Garbage Disposal at 3 ft.	Diesel Truck at 100 ft.
70	Vacuum Cleaner at 10 ft.	Lawn Mower at 100 ft.
60	Normal Speech at 3 ft.	Auto (40 mph) at 100 ft.
50	Dishwasher in Next Room	Busy Suburban Area at Night
40	Empty Conference Room	Quiet Suburban Area at Night
25	Empty Concert Hall	Rural Area at Night

Existing Acoustic Environment

- ***Conducted a site visit and selected five sensitive receptor locations***
- ***Conducted daytime and nighttime sound level measurements***
- ***L₉₀ metric, which is the sound level exceeded 90 % of the time or quietest 10 percent over a given time period.***
- ***Analysis of the sound spectrum into its various frequency components to determine tonal characteristics (16-16K Hertz)***





Existing Sound Levels

Timeframe	Broadband Sound Levels (dBA)				
	A	B	C	D	E & F
	440 Long Pond Rd.	14 Mast Rd.	1 & 2 Bowsprit Lane	1 Martingale Lane	Middle & High Schools
Daytime	38	37	39	41	37
Nighttime	36	32	32	34	--

Dominant sources: Rt. 3/Long Pond Rd. traffic, aircraft, insects

Types of Sound Sources

- ***Stationary: AHUs, cooling towers, emerg. generators, exhaust fans, mill shop***
- ***Mobile: delivery trucks and backup alarms***
- ***Construction activities (e.g., excavation, concrete pouring, framing & paving (temporary))***

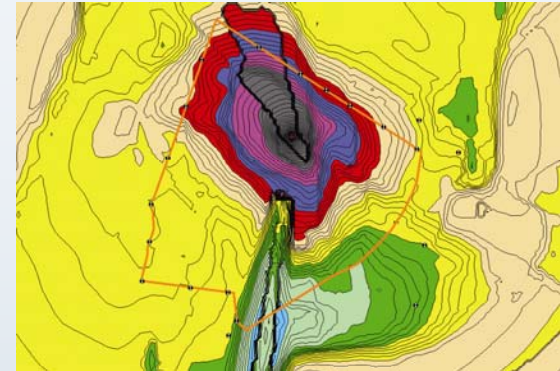


Types of Sound Mitigation

- ***Use of mufflers, silencers & acoustic louvers***
- ***Use of buildings as shielding***
- ***Specify the use of quieter equipment***
- ***Construct earth berms***



Next Steps



- ***Early stages of modeling analysis***
- ***Use detailed sound model (Cadna-A)***
- ***Assess operational & construction sound levels & mitigation measures***
- ***Analysis completed in next 2-3 weeks***



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Questions

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