

**Appendix H:
Noise Supporting Information**

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Mobile Construction Activity Noise Calculation

Receptor:	Receiving school facility	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements									
		Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy	
No.	Equipment Description	Lmax						Lmax	Leq		
1	Backhoe	85	1	40	1200	1	3	54.4	36.6	4585.917802	
2	Front End Loader	85	1	40	1230	1	3	54.2	36.3	4258.48057	
3	Scraper	85	1	40	1280	1	3	53.8	35.8	3778.67983	
4	Rubber Tired Dozer	85	1	40	1330	1	3	53.5	35.3	3368.333475	
5	Front End Loader	85	1	40	1380	1	3	53.2	34.8	3015.315396	
6											
7											
8											
9											
10											

Notes:

- [1] Percentage of time activity occurs each hour
- [2] Soft ground terrain between project site and receptor.
- [3] Shielding due to terrain or structures
- [4] Calculated Lmax is the Loudest value.

Lmax[4]	54	Leq	43
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Ldn Calculations					
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog
Night	12:00 AM	0.0	10.0	1	10
	1:00 AM	0.0	10.0	1	10
	2:00 AM	0.0	10.0	1	10
	3:00 AM	0.0	10.0	1	10
	4:00 AM	0.0	10.0	1	10
	5:00 AM	0.0	10.0	1	10
Day	6:00 AM	0.0	10.0	1	10
	7:00 AM	42.8	42.8	4.278907339	19006.72707
	8:00 AM	42.8	42.8	4.278907339	19006.72707
	9:00 AM	42.8	42.8	4.278907339	19006.72707
	10:00 AM	42.8	42.8	4.278907339	19006.72707
	11:00 AM	42.8	42.8	4.278907339	19006.72707
	12:00 PM	42.8	42.8	4.278907339	19006.72707
	1:00 PM	42.8	42.8	4.278907339	19006.72707
	2:00 PM	42.8	42.8	4.278907339	19006.72707
	3:00 PM	42.8	42.8	4.278907339	19006.72707
	4:00 PM	42.8	42.8	4.278907339	19006.72707
	5:00 PM	42.8	42.8	4.278907339	19006.72707
	6:00 PM	42.8	42.8	4.278907339	19006.72707
	7:00 PM	0.0	0.0	0	1
8:00 PM	0.0	0.0	0	1	
Night	9:00 PM	0.0	0.0	0	1
	10:00 PM	0.0	10.0	1	10
	11:00 PM	0.0	10.0	1	10

Sum	228173.7249
Sum/24	9507.238536
Log10(Sum/24)	3.97805439
10*Log10(Sum/24)	39.7805439
24 Hour Ldn	40

Mobile Construction Activity Noise Calculation

Receptor:	Receiving residence east of the project site	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements									
		Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy	
No.	Equipment Description	Lmax						Lmax	Leq		
1	Backhoe	85	1	40	900	1	5	54.9	38.4	6858.710562	
2	Front End Loader	85	1	40	950	1	5	54.4	37.7	5831.7539	
3	Scraper	85	1	40	950	1	5	54.4	37.7	5831.7539	
4	Rubber Tired Dozer	85	1	40	1000	1	5	54.0	37.0	5000	
5	Front End Loader	85	1	40	1000	1	5	54.0	37.0	5000	
6											
7											
8											
9											
10											

Notes:

- [1] Percentage of time activity occurs each hour
- [2] Soft ground terrain between project site and receptor.
- [3] Shielding due to terrain or structures
- [4] Calculated Lmax is the Loudest value.

Lmax[4]	55	Leq	45
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Ldn Calculations					
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog
Night	12:00 AM	0.0	10.0	1	10
	1:00 AM	0.0	10.0	1	10
	2:00 AM	0.0	10.0	1	10
	3:00 AM	0.0	10.0	1	10
	4:00 AM	0.0	10.0	1	10
	5:00 AM	0.0	10.0	1	10
Day	6:00 AM	0.0	10.0	1	10
	7:00 AM	44.6	44.6	4.4551833	28522.21836
	8:00 AM	44.6	44.6	4.4551833	28522.21836
	9:00 AM	44.6	44.6	4.4551833	28522.21836
	10:00 AM	44.6	44.6	4.4551833	28522.21836
	11:00 AM	44.6	44.6	4.4551833	28522.21836
	12:00 PM	44.6	44.6	4.4551833	28522.21836
	1:00 PM	44.6	44.6	4.4551833	28522.21836
	2:00 PM	44.6	44.6	4.4551833	28522.21836
	3:00 PM	44.6	44.6	4.4551833	28522.21836
	4:00 PM	44.6	44.6	4.4551833	28522.21836
	5:00 PM	44.6	44.6	4.4551833	28522.21836
	6:00 PM	44.6	44.6	4.4551833	28522.21836
	7:00 PM	0.0	0.0	0	1
8:00 PM	0.0	0.0	0	1	
Night	9:00 PM	0.0	0.0	0	1
	10:00 PM	0.0	10.0	1	10
	11:00 PM	0.0	10.0	1	10

Sum	342359.6203
Sum/24	14264.98418
Log10(Sum/24)	4.154271294
10*Log10(Sum/24)	41.54271294
24 Hour Ldn	42

Parking Lot Activity Noise Calculation

Receptor: Receiving Couch Residence (east of site)		Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy	
No.	Equipment Description							Lmax	Leq		
1	parking lot activity	70	4	10	900	1	3	41.9	25.4	343.7498173	
2	parking lot activity	70	6	10	920	1	3	41.7	26.8	482.722766	
3	parking lot activity	70	6	10	920	1	3	41.7	26.8	482.722766	
4											
5											
6											
7											
8											
9											
10											
								Lmax[4]	42	Leq	31

- Notes:
 [1] Percentage of time activity occurs each hour
 [2] Soft ground terrain between project site and receptor.
 [3] Shielding due to terrain or structures
 [4] Calculated Lmax is the Loudest value.

Ldn Calculations						
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog	
Night	12:00 AM	31.2	41.2	4.117004454	13091.95349	
	1:00 AM	31.2	41.2	4.117004454	13091.95349	
	2:00 AM	31.2	41.2	4.117004454	13091.95349	
	3:00 AM	31.2	41.2	4.117004454	13091.95349	
	4:00 AM	31.2	41.2	4.117004454	13091.95349	
	5:00 AM	31.2	41.2	4.117004454	13091.95349	
Day	6:00 AM	31.2	41.2	4.117004454	13091.95349	
	7:00 AM	31.2	31.2	3.117004454	1309.195349	
	8:00 AM	31.2	31.2	3.117004454	1309.195349	
	9:00 AM	31.2	31.2	3.117004454	1309.195349	
	10:00 AM	31.2	31.2	3.117004454	1309.195349	
	11:00 AM	31.2	31.2	3.117004454	1309.195349	
	12:00 PM	31.2	31.2	3.117004454	1309.195349	
	1:00 PM	31.2	31.2	3.117004454	1309.195349	
	2:00 PM	31.2	31.2	3.117004454	1309.195349	
	3:00 PM	31.2	31.2	3.117004454	1309.195349	
	4:00 PM	31.2	31.2	3.117004454	1309.195349	
	5:00 PM	31.2	31.2	3.117004454	1309.195349	
	6:00 PM	31.2	31.2	3.117004454	1309.195349	
	7:00 PM	31.2	31.2	3.117004454	1309.195349	
Night	8:00 PM	31.2	31.2	3.117004454	1309.195349	
	9:00 PM	31.2	31.2	3.117004454	1309.195349	
	10:00 PM	31.2	41.2	4.117004454	13091.95349	
	11:00 PM	31.2	41.2	4.117004454	13091.95349	
					Sum	137465.5117
					Sum/24	5727.729653
					Log10(Sum/24)	3.757982511
					10*Log10(Sum/24)	37.57982511
					24 Hour Ldn	38

Parking Lot Activity Noise Calculation

Receptor: Receiving school facility		Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy	
No.	Equipment Description							Lmax	Leq		
1	parking lot activity	70	4	10	1200	1	3	39.4	21.6	145.0194542	
2	parking lot activity	70	6	10	1225	1	3	39.2	23.1	204.4810174	
3	parking lot activity	70	6	10	1250	1	3	39.0	22.8	192.4558977	
4											
5											
6											
7											
8											
9											
10											
								Lmax[4]	39	Leq	27

- Notes:
 [1] Percentage of time activity occurs each hour
 [2] Soft ground terrain between project site and receptor.
 [3] Shielding due to terrain or structures
 [4] Calculated Lmax is the Loudest value.

Ldn Calculations						
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog	
Night	12:00 AM	27.3	37.3	3.733964325	5419.563693	
	1:00 AM	27.3	37.3	3.733964325	5419.563693	
	2:00 AM	27.3	37.3	3.733964325	5419.563693	
	3:00 AM	27.3	37.3	3.733964325	5419.563693	
	4:00 AM	27.3	37.3	3.733964325	5419.563693	
	5:00 AM	27.3	37.3	3.733964325	5419.563693	
Day	6:00 AM	27.3	37.3	3.733964325	5419.563693	
	7:00 AM	27.3	27.3	2.733964325	541.9563693	
	8:00 AM	27.3	27.3	2.733964325	541.9563693	
	9:00 AM	27.3	27.3	2.733964325	541.9563693	
	10:00 AM	27.3	27.3	2.733964325	541.9563693	
	11:00 AM	27.3	27.3	2.733964325	541.9563693	
	12:00 PM	27.3	27.3	2.733964325	541.9563693	
	1:00 PM	27.3	27.3	2.733964325	541.9563693	
	2:00 PM	27.3	27.3	2.733964325	541.9563693	
	3:00 PM	27.3	27.3	2.733964325	541.9563693	
	4:00 PM	27.3	27.3	2.733964325	541.9563693	
	5:00 PM	27.3	27.3	2.733964325	541.9563693	
	6:00 PM	27.3	27.3	2.733964325	541.9563693	
	7:00 PM	27.3	27.3	2.733964325	541.9563693	
Night	8:00 PM	27.3	27.3	2.733964325	541.9563693	
	9:00 PM	27.3	27.3	2.733964325	541.9563693	
	10:00 PM	27.3	37.3	3.733964325	5419.563693	
	11:00 PM	27.3	37.3	3.733964325	5419.563693	
					Sum	56905.41877
					Sum/24	2371.059116
					Log10(Sum/24)	3.374942382
					10*Log10(Sum/24)	33.74942382
					24 Hour Ldn	34

Mechanical Equipment Noise Calculation

Receptor: Receiving Couch Residence (east of site)		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements							Calculated (dBA)		Energy
No.	Equipment Description	Reference (dBA) 25 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Lmax	Leq	Energy	
		1						Commercial grade mechanical ventilation equipment	60		4
2											
3											
4											
5											
6											
7											
8											
9											
10											

Notes: Leq **16**

- [1] Percentage of time activity occurs each hour
- [2] Soft ground terrain between project site and receptor.
- [3] Shielding due to rooftop parapet and soundwall shielding

Ldn Calculations					
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog
Night	12:00 AM	16.3	26.3	2.633152489	429.6872716
	1:00 AM	16.3	26.3	2.633152489	429.6872716
	2:00 AM	16.3	26.3	2.633152489	429.6872716
	3:00 AM	16.3	26.3	2.633152489	429.6872716
	4:00 AM	16.3	26.3	2.633152489	429.6872716
	5:00 AM	16.3	26.3	2.633152489	429.6872716
Day	6:00 AM	16.3	26.3	2.633152489	429.6872716
	7:00 AM	16.3	16.3	1.633152489	42.96872716
	8:00 AM	16.3	16.3	1.633152489	42.96872716
	9:00 AM	16.3	16.3	1.633152489	42.96872716
	10:00 AM	16.3	16.3	1.633152489	42.96872716
	11:00 AM	16.3	16.3	1.633152489	42.96872716
	12:00 PM	16.3	16.3	1.633152489	42.96872716
	1:00 PM	16.3	16.3	1.633152489	42.96872716
	2:00 PM	16.3	16.3	1.633152489	42.96872716
	3:00 PM	16.3	16.3	1.633152489	42.96872716
	4:00 PM	16.3	16.3	1.633152489	42.96872716
	5:00 PM	16.3	16.3	1.633152489	42.96872716
	6:00 PM	16.3	16.3	1.633152489	42.96872716
	7:00 PM	16.3	16.3	1.633152489	42.96872716
Night	8:00 PM	16.3	16.3	1.633152489	42.96872716
	9:00 PM	16.3	16.3	1.633152489	42.96872716
	10:00 PM	16.3	26.3	2.633152489	429.6872716
	11:00 PM	16.3	26.3	2.633152489	429.6872716
Sum					4511.716352
Sum/24					187.9881813
Log10(Sum/24)					2.274130546
10*Log10(Sum/24)					22.74130546
24 Hour Ldn					23

Mechanical Equipment Noise Calculation

Receptor: Receiving school facility		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements							Calculated (dBA)		Energy
No.	Equipment Description	Reference (dBA) 25 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Lmax	Leq	Energy	
		1						Commercial grade mechanical ventilation equipment	60		4
2											
3											
4											
5											
6											
7											
8											
9											
10											

Notes: Leq **12**

- [1] Percentage of time activity occurs each hour
- [2] Soft ground terrain between project site and receptor.
- [3] Shielding due to rooftop parapet and soundwall shielding

Ldn Calculations					
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog
Night	12:00 AM	11.9	21.9	2.189608441	154.7420838
	1:00 AM	11.9	21.9	2.189608441	154.7420838
	2:00 AM	11.9	21.9	2.189608441	154.7420838
	3:00 AM	11.9	21.9	2.189608441	154.7420838
	4:00 AM	11.9	21.9	2.189608441	154.7420838
	5:00 AM	11.9	21.9	2.189608441	154.7420838
Day	6:00 AM	11.9	21.9	2.189608441	154.7420838
	7:00 AM	11.9	11.9	1.189608441	15.47420838
	8:00 AM	11.9	11.9	1.189608441	15.47420838
	9:00 AM	11.9	11.9	1.189608441	15.47420838
	10:00 AM	11.9	11.9	1.189608441	15.47420838
	11:00 AM	11.9	11.9	1.189608441	15.47420838
	12:00 PM	11.9	11.9	1.189608441	15.47420838
	1:00 PM	11.9	11.9	1.189608441	15.47420838
	2:00 PM	11.9	11.9	1.189608441	15.47420838
	3:00 PM	11.9	11.9	1.189608441	15.47420838
	4:00 PM	11.9	11.9	1.189608441	15.47420838
	5:00 PM	11.9	11.9	1.189608441	15.47420838
	6:00 PM	11.9	11.9	1.189608441	15.47420838
	7:00 PM	11.9	11.9	1.189608441	15.47420838
Night	8:00 PM	11.9	11.9	1.189608441	15.47420838
	9:00 PM	11.9	11.9	1.189608441	15.47420838
	10:00 PM	11.9	21.9	2.189608441	154.7420838
	11:00 PM	11.9	21.9	2.189608441	154.7420838
Sum					1624.79188
Sum/24					67.69966165
Log10(Sum/24)					1.830586498
10*Log10(Sum/24)					18.30586498
24 Hour Ldn					18

Loading/Unloading Noise Calculation

Receptor:	Receiving school facility	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements									
		Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy	
								Lmax	Leq		
No.	Equipment Description										
1	Loading/Unloading Noise Calculation	70	2	25	1030	1	6	37.7	21.6	143.6707448	
2	Loading/Unloading Noise Calculation	70	2	25	1050	1	6	37.6	21.3	135.6163714	
3	Loading/Unloading Noise Calculation	70	2	25	1070	1	6	37.4	21.1	128.1529726	
4	Loading/Unloading Noise Calculation	70	2	25	1090	1	6	37.2	20.8	121.2273254	
5	Loading/Unloading Noise Calculation	70	2	25	1210	1	6	36.3	19.5	88.61840037	
6	Loading/Unloading Noise Calculation	70	2	25	1230	1	6	36.2	19.3	84.36546081	
7											
8											
9											
10											
								Lmax[4]	38	Leq	28

- Notes:
 [1] Percentage of time activity occurs each hour
 [2] Soft ground terrain between project site and receptor.
 [3] Shielding due to terrain or structures
 [4] Calculated Lmax is the Loudest value.

Ldn Calculations						
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog	
Night	12:00 AM	28.5	38.5	3.846121319	7016.512754	
	1:00 AM	28.5	38.5	3.846121319	7016.512754	
	2:00 AM	28.5	38.5	3.846121319	7016.512754	
	3:00 AM	28.5	38.5	3.846121319	7016.512754	
	4:00 AM	28.5	38.5	3.846121319	7016.512754	
	5:00 AM	28.5	38.5	3.846121319	7016.512754	
Day	6:00 AM	28.5	38.5	3.846121319	7016.512754	
	7:00 AM	28.5	28.5	2.846121319	701.6512754	
	8:00 AM	28.5	28.5	2.846121319	701.6512754	
	9:00 AM	28.5	28.5	2.846121319	701.6512754	
	10:00 AM	28.5	28.5	2.846121319	701.6512754	
	11:00 AM	28.5	28.5	2.846121319	701.6512754	
	12:00 PM	28.5	28.5	2.846121319	701.6512754	
	1:00 PM	28.5	28.5	2.846121319	701.6512754	
	2:00 PM	28.5	28.5	2.846121319	701.6512754	
	3:00 PM	28.5	28.5	2.846121319	701.6512754	
	4:00 PM	28.5	28.5	2.846121319	701.6512754	
	5:00 PM	28.5	28.5	2.846121319	701.6512754	
	6:00 PM	28.5	28.5	2.846121319	701.6512754	
	7:00 PM	28.5	28.5	2.846121319	701.6512754	
	8:00 PM	28.5	28.5	2.846121319	701.6512754	
	9:00 PM	28.5	28.5	2.846121319	701.6512754	
	Night	10:00 PM	28.5	38.5	3.846121319	7016.512754
		11:00 PM	28.5	38.5	3.846121319	7016.512754
					Sum	73673.38391
					Sum/24	3069.72433
					Log10(Sum/24)	3.487099376
					10*Log10(Sum/24)	34.87099376
					24 Hour Ldn	35

Loading/Unloading Noise Calculation

Receptor:	Receiving school facility	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements									
		Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy	
								Lmax	Leq		
No.	Equipment Description										
1	Loading/Unloading Noise Calculation	70	2	25	1280	1	3	38.8	21.7	149.3654351	
2	Loading/Unloading Noise Calculation	70	2	25	1300	1	6	35.7	18.5	71.45785251	
3	Loading/Unloading Noise Calculation	70	2	25	1320	1	6	35.6	18.3	68.25873315	
4	Loading/Unloading Noise Calculation	70	2	25	1340	1	6	35.4	18.1	65.24776234	
5	Loading/Unloading Noise Calculation	70	2	25	1360	1	6	35.3	18.0	62.41130911	
6	Loading/Unloading Noise Calculation	70	2	25	1380	1	6	35.2	17.8	59.73691054	
7											
8											
9											
10											
								Lmax[4]	39	Leq	27

- Notes:
 [1] Percentage of time activity occurs each hour
 [2] Soft ground terrain between project site and receptor.
 [3] Shielding due to terrain or structures
 [4] Calculated Lmax is the Loudest value.

Ldn Calculations						
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog	
Night	12:00 AM	26.8	36.8	3.678042856	4764.780028	
	1:00 AM	26.8	36.8	3.678042856	4764.780028	
	2:00 AM	26.8	36.8	3.678042856	4764.780028	
	3:00 AM	26.8	36.8	3.678042856	4764.780028	
	4:00 AM	26.8	36.8	3.678042856	4764.780028	
	5:00 AM	26.8	36.8	3.678042856	4764.780028	
Day	6:00 AM	26.8	36.8	3.678042856	4764.780028	
	7:00 AM	26.8	26.8	2.678042856	476.4780028	
	8:00 AM	26.8	26.8	2.678042856	476.4780028	
	9:00 AM	26.8	26.8	2.678042856	476.4780028	
	10:00 AM	26.8	26.8	2.678042856	476.4780028	
	11:00 AM	26.8	26.8	2.678042856	476.4780028	
	12:00 PM	26.8	26.8	2.678042856	476.4780028	
	1:00 PM	26.8	26.8	2.678042856	476.4780028	
	2:00 PM	26.8	26.8	2.678042856	476.4780028	
	3:00 PM	26.8	26.8	2.678042856	476.4780028	
	4:00 PM	26.8	26.8	2.678042856	476.4780028	
	5:00 PM	26.8	26.8	2.678042856	476.4780028	
	6:00 PM	26.8	26.8	2.678042856	476.4780028	
	7:00 PM	26.8	26.8	2.678042856	476.4780028	
	8:00 PM	26.8	26.8	2.678042856	476.4780028	
	9:00 PM	26.8	26.8	2.678042856	476.4780028	
	Night	10:00 PM	26.8	36.8	3.678042856	4764.780028
		11:00 PM	26.8	36.8	3.678042856	4764.780028
					Sum	50030.19029
					Sum/24	2084.591262
					Log10(Sum/24)	3.319020913
					10*Log10(Sum/24)	33.19020913
					24 Hour Ldn	33