
APPENDIX F

Noise Analysis

Appendix E

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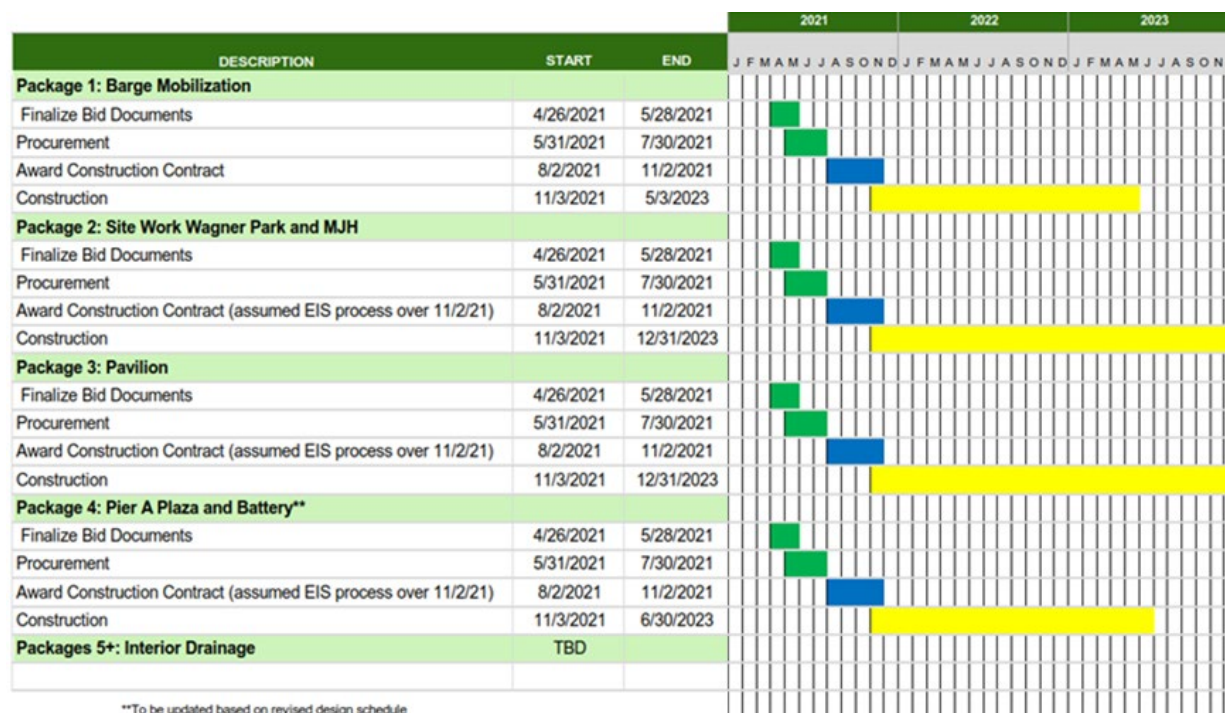
Figure E.1: CEQR Table 22-1, Noise Emission Reference Levels (A-weighted decibels with RMS “slow” time constant)

ID	Equipment Description	Usage Factor (%)	Lmax @ 50 Feet
1	All Other Equipment > 5 HP	50	85
2	Auger Drill Rig	20	85
3	Backhoe	40	80
4	Bar Bender	20	80
5	Blasting	N/A	94
6	Boring Jack Power Unit	50	80
7	Chain Saw	20	85
8	Clam Shovel (dropping)	20	93
9	Compactor (ground)	20	80
10	Compressor (air, less than or equal to 350 cfm)	40	75
11	Compressor (air, greater than 350 cfm)	40	80
12	Concrete Batch Plant	15	83
13	Concrete Mixer Truck	40	85
14	Concrete Pump Truck	20	82
15	Concrete Saw	20	90
16	Crane	16	85
17	Dozer	40	85
18	Drill Rig Truck	20	84
19	Drum Mixer	50	80
20	Dump Truck	40	84
21	Dumpster/Rubbish Removal	20	78
22	Excavator	40	85
23	Flat Bed Truck	40	84
24	Front End Loader	40	80
25	Generator	50	82
26	Generator (< 25 KVA, VMS signs)	50	70
27	Gradall	40	85
28	Grader	40	85
29	Grapple (on Backhoe)	40	85
30	Horizontal Boring Hydr. Jack	25	80
31	Hydra Break Ram	10	90
32	Impact Pile Driver	20	95
33	Jackhammer	20	85
34	Man Lift	20	85
35	Mounted Impact Hammer (Hoe Ram)	20	90
36	Pavement Scarafier	20	85
37	Paver	50	85
38	Pickup Truck	40	55
39	Pneumatic Tools	50	85
40	Pumps	50	77
41	Refrigerator Unit	100	82
42	Rivet Buster / Chipping Gun	20	85
43	Rock Drill	20	85
44	Roller	20	85
45	Sand Blasting	20	85
46	Scraper	40	85
47	Shears (on Backhoe)	40	85
48	Slurry Plant	100	78
49	Slurry Trenching Machine	50	82
50	Soil Mix Drill Rig	50	80
51	Tractor	40	84
52	Vacuum Excavator (Vac-truck)	40	85
53	Vacuum Street Sweeper	10	80
54	Ventilation Fan	100	85
55	Vibrating Hopper	50	85
56	Vibratory Concrete Mixer	20	80
57	Vibratory Pile Driver	20	95
58	Warning Horn	5	85
59	Water Jet Deleading	20	85
60	Welder / Torch	40	73

Notes: As per Local Law 113 of 2005, §24-228(a)(1) Construction, Exhausts, and other Devices, “Sound, other than impulsive sound, attributable to the source or sources, that exceeds 85 dBA as measured 50 or more feet from the source or sources at a point outside the property line where the source or sources are located or as measured 50 or more feet from the source or sources on a public right-of-way” is prohibited.

A Indicates the value is from Local Law 113; other values are from 15 RCNY §28-109, Appendix. Sources: Local Law 113 and the New York City Department of Environmental Protection Notice of Adoption of Rules for Citywide Construction Noise Mitigation: 15 RCNY 28-109, Appendix.

Figure E.2: Estimated SBPCR Packaging and Summary Construction Schedule



Source: LiRo, 20201124 SBPCAR Bid Packaging and Construction Schedule.pdf, 11/24/20.

Figure E.3: Construction Equipment Projections – Barge Mobilization, Wagner Park-Site & MJH

Activity ID	Package ID	Work task	Start Date	End Date	Equip ID	Equipment	CEQR Equivalent	CEQR ID	Max. Qty	CEQR Usage	Type	2021		2022												2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
												N-21	D-21	J-22	F-22	M-22	A-22	M-22	J-22	J-22	A-22	S-22	O-22	N-22	D-22	J-23	F-23	M-23	A-23	M-23	J-23	J-23	A-23	S-23	O-23	N-23	D-23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
1	L1	Barge Mobilization	11/03/21	05/03/23	1	Auger Drill Rig	Auger Drill Rig	2	0	20%	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

Figure E.4: Construction Equipment Projections – Wagner Park-Pavilion, Pier A & The Battery

Activity ID	Package ID	Work task	Start Date	End Date	Equip ID	Equipment	CEQR Equivalent	CEQR ID	Max. Qty	CEQR Usage	Type	2021		2022												2023												
												N-21	D-21	J-22	F-22	M-22	A-22	M-22	J-22	J-22	A-22	S-22	O-22	N-22	D-22	J-23	F-23	M-23	A-23	M-23	J-23	A-23	S-23	O-23	N-23	D-23		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	1	Auger Drill Rig	Auger Drill Rig	2	0	20%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	2	Backhoe	Backhoe	3	1	40%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	3	Backhoe: Hydraulic hammer attachment	Mounted Impact Hammer (Hoe Ram)	35	0	20%	D																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	4	Barge	Pickup Truck	38	0	40%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	5	Boring Machine	Horizontal Boring Hydr. Jack	30	1	25%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	6	Compressor, small	Compressor (air, less than or equal to 350 cfm)	10	0	40%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	7	Compressor, large	Compressor (air, greater than 350 cfm)	11	1	40%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	8	Concrete Pump	Concrete Pump Truck	14	1	20%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	9	Concrete Saw, Walk Behind	Concrete Saw	15	0	20%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	10	Crane	Crane	16	1	16%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	11	Crane: Pile driving leads	Impact Pile Driver	32	1	20%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	12	Crane: Vibratory Hammer	Vibratory Pile Driver	57	1	20%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	13	Crawler-type drill, 4"	Auger Drill Rig	2	0	20%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	14	Dump Truck	Dump Truck	20	8	40%	S	5.60	5.60	5.60	5.60	6.80	6.80	6.80	6.80	6.80	8.00	8.00	8.00	8.00	3.60	3.60	3.60	2.40	2.40	2.40	2.40	2.40	1.20	1.20	1.20	1.20		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	15	Forklift	Refrigerator Unit	41	1	100%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	16	Front Loader	Front End Loader	24	1	40%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	17	Gradall	Gradall	27	0	40%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	18	Jackhammers, Pavement Breakers	Jackhammer	33	0	20%	D																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	19	Jumping Jacks	Compactor (ground)	9	2	20%	S	1.40	1.40	1.40	1.40	1.70	1.70	1.70	1.70	1.70	2.00	2.00	2.00	2.00	0.90	0.90	0.90	0.60	0.60	0.60	0.60	0.60	0.30	0.30	0.30	0.30		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	20	Pavement removal bucket	Scraper	46	0	40%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	21	Pump, Centrif. water pump, 6"	Pumps	40	0	50%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	22	Safety Boat, OSHA	Pickup Truck	38	0	40%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	23	Skidsteer	Tractor	51	1	40%	S	0.70	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.15	0.15	0.15	0.15		
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	24	Tug boat	All Other Equipment > 5 HP	1	0	50%	S																											
4	L3	Wagner Park-New Pavilion	11/03/21	12/31/23	25	Vibratory Rollers	Roller	44	0	20%	S																											
5	L4	Pier A Plaza	11/03/21	06/30/23	1	Auger Drill Rig	Auger Drill Rig	2	0	20%	S																											
5	L4	Pier A Plaza	11/03/21	06/30/23	2	Backhoe	Backhoe	3	1	40%	S	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.15	0.15	0.15						
5	L4	Pier A Plaza	11/03/21	06/30/23	3	Backhoe: Hydraulic hammer attachment	Mounted Impact Hammer (Hoe Ram)	35	1	20%	D	0.70	0.85	1.00	1.00	1.00	1.00	0.85																				
5	L4	Pier A Plaza	11/03/21	06/30/23	4	Barge	Pickup Truck	38	0	40%	S																											
5	L4	Pier A Plaza	11/03/21	06/30/23	5	Boring Machine	Horizontal Boring Hydr. Jack	30	1	25%	S	0.70	0.70	0.70	0.85	0.85	0.85	0.85	0.85	1.00	1.00	1.00	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.15	0.15	0.15						
5	L4	Pier A Plaza	11/03/21	06/30/23	6	Compressor, small	Compressor (air, less than or equal to 350 cfm)	10	0	40%	S																											
5	L4	Pier A Plaza	11/03/21																																			

Figure E.5: Construction Equipment Projections – Tidegate and Near Surface Isolation

Activity ID	Package ID	Work task	Start Date	End Date	Equip ID	Equipment	CEQR Equivalent	CEQR ID	Max Qty	CEQR Usage	Type	SPL 50	2021		2022												2023												
													N-21	D-21	J-22	F-22	M-22	A-22	M-22	J-22	J-22	A-22	S-22	O-22	N-22	D-22	J-23	F-23	M-23	A-23	M-23	J-23	J-23	A-23	S-23	O-23	N-23	D-23	
9	L5	Tidegate	12/03/21	12/02/22	1	Auger Drill Rig	Auger Drill Rig	2	1	20%	S	85		0.70	0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	2	Backhoe	Backhoe	3	1	40%	S	80		0.70	0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	3	Backhoe: Hydraulic hammer attachment	Mounted Impact Hammer (Hoe Ram)	35	0	20%	D	90																											
9	L5	Tidegate	12/03/21	12/02/22	4	Barge	Pickup Truck	38	0	40%	S	55																											
9	L5	Tidegate	12/03/21	12/02/22	5	Boring Machine	Horizontal Boring Hydr. Jack	30	0	25%	S	80																											
9	L5	Tidegate	12/03/21	12/02/22	6	Compressor, small	Compressor (air, less than or equal to 350 cfm)	10	1	40%	S	75	0.70		0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	7	Compressor, large	Compressor (air, greater than 350 cfm)	11	1	40%	S	80	0.70		0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	8	Concrete Pump	Concrete Pump Truck	14	0	20%	S	82																											
9	L5	Tidegate	12/03/21	12/02/22	9	Concrete Saw, Walk Behind	Concrete Saw	15	0	20%	S	90																											
9	L5	Tidegate	12/03/21	12/02/22	10	Crane	Crane	16	0	16%	S	85																											
9	L5	Tidegate	12/03/21	12/02/22	11	Crane: Pile driving leads	Impact Pile Driver	32	0	20%	S	95																											
9	L5	Tidegate	12/03/21	12/02/22	12	Crane: Vibratory Hammer	Vibratory Pile Driver	57	0	20%	S	95																											
9	L5	Tidegate	12/03/21	12/02/22	13	Crawler-type drill, 4"	Auger Drill Rig	2	1	20%	S	85	0.70		0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	14	Dump Truck	Dump Truck	20	1	40%	S	84	0.70		0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	15	Forklift	Refrigerator Unit	41	0	100%	S	82																											
9	L5	Tidegate	12/03/21	12/02/22	16	Front Loader	Front End Loader	24	1	40%	S	80	0.70		0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	17	Gradall	Gradall	27	0	40%	S	85																											
9	L5	Tidegate	12/03/21	12/02/22	18	Jackhammers, Pavement Breakers	Jackhammer	33	0	20%	D	85																											
9	L5	Tidegate	12/03/21	12/02/22	19	Jumping Jacks	Compactor (ground)	9	1	20%	S	80	0.70		0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	20	Pavement removal bucket	Scraper	46	0	40%	S	85																											
9	L5	Tidegate	12/03/21	12/02/22	21	Pump, Centrif. water pump, 6"	Pumps	40	1	50%	S	77	0.70		0.70	0.85	0.85	1.00	1.00	0.45	0.45	0.30	0.30	0.15	0.15														
9	L5	Tidegate	12/03/21	12/02/22	22	Safety Boat, OSHA	Pickup Truck	38	0	40%	S	55																											
9	L5	Tidegate	12/03/21	12/02/22	23	Skidsteer	Tractor	51	0	40%	S	84																											
9	L5	Tidegate	12/03/21	12/02/22	24	Tug boat	All Other Equipment > 5 HP	1	0	50%	S	85																											
9	L5	Tidegate	12/03/21	12/02/22	25	Vibratory Rollers	Roller	44	0	20%	S	85																											
10	0	Near Surface Isolation	06/03/22	12/02/22	1	Auger Drill Rig	Auger Drill Rig	2	1	20%	S	85								0.70	0.85	1.00	1.00	0.85	0.45														
10	0	Near Surface Isolation	06/03/22	12/02/22	2	Backhoe	Backhoe	3	1	40%	S	80																											
10	0	Near Surface Isolation	06/03/22	12/02/22	3	Backhoe: Hydraulic hammer attachment	Mounted Impact Hammer (Hoe Ram)	35	0	20%	D	90																											
10	0	Near Surface Isolation	06/03/22	12/02/22	4	Barge	Pickup Truck	38	0	40%	S	55																											
10	0	Near Surface Isolation	06/03/22	12/02/22	5	Boring Machine	Horizontal Boring Hydr. Jack	30	0	25%	S	80																											
10	0	Near Surface Isolation	06/03/22	12/02/22	6	Compressor, small	Compressor (air, less than or equal to 350 cfm)	10	1	40%	S	75								0.70	0.85	1.00	1.00	0.85	0.45														
10	0	Near Surface Isolation	06/03/22	12/02/22	7	Compressor, large	Compressor (air, greater than 350 cfm)	11	1	40%	S	80																											
10	0	Near Surface Isolation	06/03/22	12/02/22	8	Concrete Pump	Concrete Pump Truck	14	0	20%	S	82																											
10	0	Near Surface Isolation	06/03/22	12/02/22	9	Concrete Saw, Walk Behind	Concrete Saw	15	0	20%	S	90								0.70	0.85	1.00	1.00	0.85	0.45														
10	0	Near Surface Isolation	06/03/22	12/02/22	10	Crane	Crane	16	0	16%	S	85																											
10	0	Near Surface Isolation	06/03/22	12/02/22	11	Crane: Pile driving leads	Impact Pile Driver	32	0	20%	S	95																											
10	0	Near Surface Isolation	06/03/22	12/02/22	12	Crane: Vibratory Hammer	Vibratory Pile Driver	57	0	20%	S	95																											
10	0	Near Surface Isolation	06/03/22	12/02/22	13	Crawler-type drill, 4"	Auger Drill Rig	2	1	20%	S	85																											
10	0	Near Surface Isolation	06/03/22	12/02/22	14	Dump Truck	Dump Truck	20	1	40%	S	84								0.70	0.85	1.00	1.00	0.85	0.45														
10	0	Near Surface Isolation	06/03/22	12/02/22	15	Forklift	Refrigerator Unit	41	0	100%	S	82																											
10	0	Near Surface Isolation	06/03/22	12/02/22	16	Front Loader	Front End Loader	24	1	40%	S	80								0.70	0.85	1.00	1.00	0.85	0.45														
10	0	Near Surface Isolation	06/03/22	12/02/22	17	Gradall	Gradall	27	0	40%	S	85								0.70	0.85	1.00	1.00	0.85	0.45														