

Appendix G

Noise

Proposed Project Weekday Noise Analysis Results

Receptor Location	Site	Hour	EXISTING CONDITIONS			NO ACTION				WITH ACTION									
			Volume	PCEs	L _{eq(1)}	Volume	PCEs	Leq(1)	Change	P-G Autos	P-G Taxi	P-G Medium	P-G Heavy	P-G Bus	Total PCE's	Traffic Leq (1)	Equipment Leq (1)	Total Leq(1)	Change
Richmond Terrace between Schuyler and Wall Streets	1	Weekday MD	861	2046	68.1	1201	2854	69.5	1.4	677	52	10		4	3785	70.7	29.4	70.7	1.2
		Weekday PM	1145	2764	68.5	1606	3876	70.0	1.5	684	51	2		4	4709	70.8	29.4	70.8	0.8
Richmond Terrace between Stuyvesant Place and Nicholas Street	2	Weekday MD	742	2012	69.4	911	2470	70.3	0.9	226	32	2		4	2826	70.9	39.8	70.9	0.6
		Weekday PM	1021	2639	70.3	1190	3076	71.0	0.7	240	31	0		4	3419	71.5	39.8	71.5	0.5
Richmond Terrace between Nicholas Street and St. Peters Place	3	Weekday MD	717	1988	66.0	883	2448	66.9	0.9	123	32	2		4	2701	67.3	31.1	67.3	0.4
		Weekday PM	1001	2587	68.5	1174	3034	69.2	0.7	124	31	0		4	3261	69.5	31.1	69.5	0.3
North Shore Waterfront Esplanade	4	Weekday MD	126	219	59.4	139	241	59.8	0.4	127	0	0		0	368	61.6	40.0	61.6	1.8
		Weekday PM	148	185	58.7	177	222	59.5	0.8	130	0	0		0	352	61.5	40.0	61.5	2.0
Closest open space location to the Wheel	A*	Weekday MD			59.4			59.8	0.4							61.6	51.7	62.0	2.2
		Weekday PM			58.7			59.5	0.8							61.5	51.7	61.9	2.4
Parking lot near the Staten Island Ferry	5	Weekday MD			64.3			64.3	0.0							64.3	32.9	64.3	0.0
		Weekday PM			63.0			63.0	0.0							63.0	32.9	63.0	0.0

*Existing and No Action noise levels at the closest open space location to the Wheel were estimated as the same values at Receptor Site 4.

Proposed Project Weekday Noise Analysis Results

Receptor Location	Site	Hour	No Action Change	Existing L10	Category (Existing L10 noise levels)	Existing L10 + NA Change = NA L10	Category (NA L10 noise levels)	With Action Change	No Action L10	No Action L10 + With Action Change = With Action L10	Category (With Action L10 noise levels)
North Shore Waterfront Esplanade	1	Weekday MD	1.4	71.2	MARGINALLY UNACCEPTABLE	72.6	MARGINALLY UNACCEPTABLE	1.2	72.6	73.8	MARGINALLY UNACCEPTABLE
		Weekday PM	1.5	72.6	MARGINALLY UNACCEPTABLE	74.1	MARGINALLY UNACCEPTABLE	0.8	74.1	74.9	MARGINALLY UNACCEPTABLE
Richmond Terrace between Stuyvesant Place and Nicholas Street	2	Weekday MD	0.9	73.5	MARGINALLY UNACCEPTABLE	74.4	MARGINALLY UNACCEPTABLE	0.6	74.4	75.0	MARGINALLY UNACCEPTABLE
		Weekday PM	0.7	74.2	MARGINALLY UNACCEPTABLE	74.9	MARGINALLY UNACCEPTABLE	0.5	74.9	75.4	MARGINALLY UNACCEPTABLE
Richmond Terrace between Nicholas Street and St. Peters Place	3	Weekday MD	0.9	70.8	MARGINALLY UNACCEPTABLE	71.7	MARGINALLY UNACCEPTABLE	0.4	71.7	72.1	MARGINALLY UNACCEPTABLE
		Weekday PM	0.7	72.8	MARGINALLY UNACCEPTABLE	73.5	MARGINALLY UNACCEPTABLE	0.3	73.5	73.8	MARGINALLY UNACCEPTABLE
North Shore Waterfront Esplanade	4	Weekday MD	0.4	62.7	NA	63.1	NA	1.8	63.1	64.9	NA
		Weekday PM	0.8	62.6	NA	63.4	NA	2.0	63.4	65.4	NA
Closest open space location to the Wheel	A	Weekday MD	0.4	62.7	NA	63.1	NA	2.2	63.1	65.3	NA
		Weekday PM	0.8	62.6	NA	63.4	NA	2.4	63.4	65.8	NA
Parking lot near the Staten Island Ferry	5	Weekday MD	0.0	65.9	MARGINALLY ACCEPTABLE	65.9	MARGINALLY ACCEPTABLE	0.0	65.9	65.9	MARGINALLY ACCEPTABLE
		Weekday PM	0.0	63.5	ACCEPTABLE	63.5	ACCEPTABLE	0.0	63.5	63.5	ACCEPTABLE

Proposed Project Weekday Noise Analysis Results

Receptor Location	Site	Hour	EXISTING CONDITIONS			NO ACTION				WITH ACTION									
			Volume	PCEs	L _{eq(1)}	Volume	PCEs	Leq(1)	Change	P-G Autos	P-G Taxi	P-G Medium	P-G Heavy	P-G Bus	Total PCE's	Traffic Leq (1)	Equipment Leq (1)	Total Leq(1)	Change
Richmond Terrace between Schuyler and Wall Streets	1	Saturday MD	714	1466	67.2	1111	2281	69.1	1.9	1008	70	2		4	3457	70.9	29.4	70.9	1.8
		Saturday PM	1207	2800	66.4	1639	3802	67.7	1.3	836	63	0		4	4773	68.7	29.4	68.7	1.0
Richmond Terrace between Stuyvesant Place and Nicholas Street	2	Saturday MD	581	1005	67.1	758	1311	68.3	1.2	302	46	0		4	1731	69.5	39.8	69.5	1.2
		Saturday PM	939	1222	66.7	1128	1468	67.5	0.8	273	39	0		4	1852	68.5	39.8	68.5	1.0
Richmond Terrace between Nicholas Street and St. Peters Place	3	Saturday MD	569	996	66.1	747	1308	67.3	1.2	194	46	0		4	1620	68.2	31.1	68.2	0.9
		Saturday PM	879	1163	67.5	1068	1413	68.3	0.8	156	39	0		4	1680	69.1	31.1	69.1	0.8
North Shore Waterfront Esplanade	4	Saturday MD	169	169	60.5	193	193	61.1	0.6	178	0	0		0	371	63.9	40.0	63.9	2.8
		Saturday PM	327	327	60.3	368	368	60.8	0.5	145	0	0		0	513	62.2	40.0	62.2	1.4
Open Space adjacent to Wheel	A*	Saturday MD			60.5			61.1	0.6							63.9	51.7	64.2	3.1
		Saturday PM			60.3			60.8	0.5							62.2	51.7	62.6	1.8
Parking lot near the Staten Island Ferry	5	Saturday MD			60.6			60.6	0.0							60.6	32.9	60.6	0.0
		Saturday PM			61.4			61.4	0.0							61.4	32.9	61.4	0.0

*Existing and No Action noise levels at the closest open space location to the Wheel were estimated as the same values at Receptor Site 4.

Proposed Project Weekday Noise Analysis Results

Receptor Location	Site	Hour	No Action Change	Existing L10	Category (Existing L10 noise levels)	Existing L10 + NA Change = NA L10	Category (NA L10 noise levels)	With Action Change	No Action L10	No Action L10 + With Action Change = With Action L10	Category (With Action L10 noise levels)
Richmond Terrace between Schuyler and Wall Streets	1	Saturday MD	1.9	71.5	MARGINALLY UNACCEPTABLE	73.4	MARGINALLY UNACCEPTABLE	1.8	73.4	75.2	MARGINALLY UNACCEPTABLE
		Saturday PM	1.3	70.3	MARGINALLY UNACCEPTABLE	71.6	MARGINALLY UNACCEPTABLE	1.0	71.6	72.6	MARGINALLY UNACCEPTABLE
Richmond Terrace between Stuyvesant Place and Nicholas Street	2	Saturday MD	1.2	70.9	MARGINALLY UNACCEPTABLE	72.1	MARGINALLY UNACCEPTABLE	1.2	72.1	73.3	MARGINALLY UNACCEPTABLE
		Saturday PM	0.8	71.3	MARGINALLY UNACCEPTABLE	72.1	MARGINALLY UNACCEPTABLE	1.0	72.1	73.1	MARGINALLY UNACCEPTABLE
Richmond Terrace between Nicholas Street and St. Peters Place	3	Saturday MD	1.2	71.5	MARGINALLY UNACCEPTABLE	72.7	MARGINALLY UNACCEPTABLE	0.9	72.7	73.6	MARGINALLY UNACCEPTABLE
		Saturday PM	0.8	71.3	MARGINALLY UNACCEPTABLE	72.1	MARGINALLY UNACCEPTABLE	0.8	72.1	72.9	MARGINALLY UNACCEPTABLE
Bank Street near shoreline	4	Saturday MD	0.6	63.3	NA	63.9	NA	2.8	63.9	66.7	NA
		Saturday PM	0.5	64.6	NA	65.1	NA	1.4	65.1	66.5	NA
Open Space adjacent to Wheel	A	Saturday MD	0.6	63.3	NA	63.9	NA	3.1	63.9	67.0	NA
		Saturday PM	0.5	64.6	NA	65.1	NA	1.8	65.1	66.9	NA
Parking lot near the Staten Island Ferry	5	Saturday MD	0.0	62.1	ACCEPTABLE	62.1	ACCEPTABLE	0.0	62.1	62.1	ACCEPTABLE
		Saturday PM	0.0	62.6	ACCEPTABLE	62.6	ACCEPTABLE	0.0	62.6	62.6	ACCEPTABLE

No Catering Facility Scenario - Weekday Noise Analysis Results

Receptor Location	Site	Hour	EXISTING CONDITIONS							NO ACTION				WITH ACTION										
			Volume	%Auto	%Medium	%Heavy	%Bus	PCEs	Leq(1)	Volume	PCEs	Leq(1)	Change	P-G Autos	P-G Taxi	P-G Medium	P-G Heavy	P-G Bus	Total PCE's	Traffic Leq (1)	Equipment Leq (1)	Total Leq(1)	Change	
Richmond Terrace between Schuyler and Wall Streets	1	Weekday MD	861	92.5%	2.5%	0.8%	4.1%	2046	68.1	1201	2854	69.5	1.4	670	50	11		4	3789	70.7	29.4	70.7	1.2	
		Weekday PM	1145	93.3%	1.0%	1.1%	4.6%	2764	68.5	1606	3876	70.0	1.5	687	52	2		4	4713	70.8	29.4	70.8	0.8	
Richmond Terrace between Stuyvesant Place and Nicholas Street	2	Weekday MD	742	90.8%	3.0%	1.0%	5.3%	2012	69.4	911	2470	70.3	0.9	229	31	2		4	2828	70.9	39.8	70.9	0.6	
		Weekday PM	1021	91.9%	1.9%	1.1%	5.1%	2639	70.3	1190	3076	71.0	0.7	241	33	0		4	3422	71.5	39.8	71.5	0.5	
Richmond Terrace between Nicholas Street and St. Peters Place	3	Weekday MD	717	90.5%	3.0%	1.0%	5.5%	1988	66.0	883	2448	66.9	0.9	118	31	2		4	2695	67.3	31.1	67.3	0.4	
		Weekday PM	1001	91.7%	2.0%	1.0%	5.3%	2587	68.5	1174	3034	69.2	0.7	122	33	0		4	3261	69.5	31.1	69.5	0.3	
North Shore Waterfront Esplanade	4	Weekday MD	126	96.5%	2.2%	0.9%	0.4%	219	59.4	139	241	59.8	0.4	134	0	0		0	375	61.7	40.0	61.7	1.9	
		Weekday PM	148	98.8%	0.9%	0.3%	0.0%	185	58.7	177	222	59.5	0.8	137	0	0		0	359	61.6	40.0	61.6	2.1	
Closest open space location to the Wheel	A*	Weekday MD							59.4			59.8	0.4							61.7	51.7	62.1	2.3	
		Weekday PM							58.7			59.5	0.8								61.6	51.7	62.0	2.5
Parking lot near the Staten Island Ferry	5	Weekday MD							64.3			64.3	0.0								64.3	32.9	64.3	0.0
		Weekday PM							63.0			63.0	0.0								63.0	32.9	63.0	0.0

*Existing and No Action noise levels at the closest open space location to the Wheel were estimated as the same values at Receptor Site 4.

No Catering Facility Scenario - Weekday Noise Analysis Results

Receptor Location	Site	Hour	No Action Change	Existing L10	Category (Existing L10 noise levels)	Existing L10 + NA Change = NA L10	Category (NA L10 noise levels)	With Action Change	No Action L10	No Action L10 + With Action Change = With Action L10	Category (With Action L10 noise levels)
North Shore Waterfront Esplanade	1	Weekday MD	1.4	71.2	MARGINALLY UNACCEPTABLE	72.6	MARGINALLY UNACCEPTABLE	1.2	72.6	73.8	MARGINALLY UNACCEPTABLE
		Weekday PM	1.5	72.6	MARGINALLY UNACCEPTABLE	74.1	MARGINALLY UNACCEPTABLE	0.8	74.1	74.9	MARGINALLY UNACCEPTABLE
Richmond Terrace between Stuyvesant Place and Nicholas Street	2	Weekday MD	0.9	73.5	MARGINALLY UNACCEPTABLE	74.4	MARGINALLY UNACCEPTABLE	0.6	74.4	75.0	MARGINALLY UNACCEPTABLE
		Weekday PM	0.7	74.2	MARGINALLY UNACCEPTABLE	74.9	MARGINALLY UNACCEPTABLE	0.5	74.9	75.4	MARGINALLY UNACCEPTABLE
Richmond Terrace between Nicholas Street and St. Peters Place	3	Weekday MD	0.9	70.8	MARGINALLY UNACCEPTABLE	71.7	MARGINALLY UNACCEPTABLE	0.4	71.7	72.1	MARGINALLY UNACCEPTABLE
		Weekday PM	0.7	72.8	MARGINALLY UNACCEPTABLE	73.5	MARGINALLY UNACCEPTABLE	0.3	73.5	73.8	MARGINALLY UNACCEPTABLE
North Shore Waterfront Esplanade	4	Weekday MD	0.4	62.7	NA	63.1	NA	1.9	63.1	65.0	NA
		Weekday PM	0.8	62.6	NA	63.4	NA	2.1	63.4	65.5	NA
Closest open space location to the Wheel	A	Weekday MD	0.4	62.7	NA	63.1	NA	2.3	63.1	65.4	NA
		Weekday PM	0.8	62.6	NA	63.4	NA	2.5	63.4	65.9	NA
Parking lot near the Staten Island Ferry	5	Weekday MD	0.0	65.9	MARGINALLY ACCEPTABLE	65.9	MARGINALLY ACCEPTABLE	0.0	65.9	65.9	MARGINALLY ACCEPTABLE
		Weekday PM	0.0	63.5	ACCEPTABLE	63.5	ACCEPTABLE	0.0	63.5	63.5	ACCEPTABLE

No Catering Facility Scenario - Weekday Noise Analysis Results

Receptor Location	Site	Hour	EXISTING CONDITIONS						NO ACTION				WITH ACTION										
			Volume	%Auto	%Medium	%Heavy	%Bus	PCEs	L _{eq(1)}	Volume	PCEs	Leq(1)	Change	P-G Autos	P-G Taxi	P-G Medium	P-G Heavy	P-G Bus	Total PCE's	Traffic Leq (1)	Equipment Leq (1)	Total Leq(1)	Change
Richmond Terrace between Schuyler and Wall Streets	1	Saturday MD	714	94.5%	2.3%	0.8%	2.3%	1466	67.2	1111	2281	69.1	1.9	951	66	2		4	3396	70.8	29.4	70.8	1.7
		Saturday PM	1207	92.1%	1.8%	0.2%	5.9%	2800	66.4	1639	3802	67.7	1.3	745	55	0		4	4674	68.6	29.4	68.6	0.9
Richmond Terrace between Stuyvesant Place and Nicholas Street	2	Saturday MD	581	95.6%	0.5%	0.0%	3.9%	1005	67.1	758	1311	68.3	1.2	280	44	0		4	1707	69.4	39.8	69.4	1.1
		Saturday PM	939	98.2%	0.1%	0.0%	1.7%	1222	66.7	1128	1468	67.5	0.8	265	36	0		4	1841	68.5	39.8	68.5	1.0
Richmond Terrace between Nicholas Street and St. Peters Place	3	Saturday MD	569	95.4%	0.5%	0.0%	4.0%	996	66.1	747	1308	67.3	1.2	173	44	0		4	1597	68.2	31.1	68.2	0.9
		Saturday PM	879	98.1%	0.1%	0.0%	1.8%	1163	67.5	1068	1413	68.3	0.8	132	36	0		4	1653	69.0	31.1	69.0	0.7
North Shore Waterfront Esplanade	4	Saturday MD	169	100.0%	0.0%	0.0%	0.0%	169	60.5	193	193	61.1	0.6	188	0	0		0	381	64.1	40.0	64.1	3.0
		Saturday PM	327	100.0%	0.0%	0.0%	0.0%	327	60.3	368	368	60.8	0.5	152	0	0		0	520	62.3	40.0	62.3	1.5
Open Space adjacent to Wheel	A*	Saturday MD							60.5			61.1	0.6							64.1	51.7	64.3	3.2
		Saturday PM							60.3			60.8	0.5							62.3	51.7	62.7	1.9
Parking lot near the Staten Island Ferry	5	Saturday MD							60.6			60.6	0.0							60.6	32.9	60.6	0.0
		Saturday PM							61.4			61.4	0.0							61.4	32.9	61.4	0.0

*Existing and No Action noise levels at the closest open space location to the Wheel were estimated as the same values at Receptor Site 4.

No Catering Facility Scenario - Weekday Noise Analysis Results

Receptor Location	Site	Hour	No Action Change	Existing L10	Category (Existing L10 noise levels)	Existing L10 + NA Change = NA L10	Category (NA L10 noise levels)	With Action Change	No Action L10	No Action L10 + With Action Change = With Action L10	Category (With Action L10 noise levels)
Richmond Terrace between Schuyler and Wall Streets	1	Saturday MD	1.9	71.5	MARGINALLY UNACCEPTABLE	73.4	MARGINALLY UNACCEPTABLE	1.7	73.4	75.1	MARGINALLY UNACCEPTABLE
		Saturday PM	1.3	70.3	MARGINALLY UNACCEPTABLE	71.6	MARGINALLY UNACCEPTABLE	0.9	71.6	72.5	MARGINALLY UNACCEPTABLE
Richmond Terrace between Stuyvesant Place and Nicholas Street	2	Saturday MD	1.2	70.9	MARGINALLY UNACCEPTABLE	72.1	MARGINALLY UNACCEPTABLE	1.1	72.1	73.2	MARGINALLY UNACCEPTABLE
		Saturday PM	0.8	71.3	MARGINALLY UNACCEPTABLE	72.1	MARGINALLY UNACCEPTABLE	1.0	72.1	73.1	MARGINALLY UNACCEPTABLE
Richmond Terrace between Nicholas Street and St. Peters Place	3	Saturday MD	1.2	71.5	MARGINALLY UNACCEPTABLE	72.7	MARGINALLY UNACCEPTABLE	0.9	72.7	73.6	MARGINALLY UNACCEPTABLE
		Saturday PM	0.8	71.3	MARGINALLY UNACCEPTABLE	72.1	MARGINALLY UNACCEPTABLE	0.7	72.1	72.8	MARGINALLY UNACCEPTABLE
Bank Street near shoreline	4	Saturday MD	0.6	63.3	NA	63.9	NA	3.0	63.9	66.9	NA
		Saturday PM	0.5	64.6	NA	65.1	NA	1.5	65.1	66.6	NA
Open Space adjacent to Wheel	A	Saturday MD	0.6	63.3	NA	63.9	NA	3.2	63.9	67.1	NA
		Saturday PM	0.5	64.6	NA	65.1	NA	1.9	65.1	67.0	NA
Parking lot near the Staten Island Ferry	5	Saturday MD	0.0	62.1	ACCEPTABLE	62.1	ACCEPTABLE	0.0	62.1	62.1	ACCEPTABLE
		Saturday PM	0.0	62.6	ACCEPTABLE	62.6	ACCEPTABLE	0.0	62.6	62.6	ACCEPTABLE

Wheel Noise Analysis Results

Equipment	Shielded by Structure	Emission Noise Level			Distance (feet)	Attenuation dB	Shielding	Lp dBA
		Lp1 dBA	Component Number	Total Lp1				
Site 1								
Wheel Component	Yes	70	32	85	1285	53	3	29.4
Sum								29.4
Site 2								
Wheel Component	Yes	70	32	85	390	42	3	39.8
Sum								39.8
Site 3								
Wheel Component	Yes	70	32	85	1064	51	3	31.1
Sum								31.1
Site 4								
Wheel Component	No	70	32	85	537	45	0	40.0
Sum								40.0
Site 5								
Wheel Component	No	70	32	85	1216	52	0	32.9
Sum								32.9
Site A								
Wheel Component	No	70	32	85	140	33	0	51.7
Sum								51.7

Note:

Sound Pressure Level $L_p = L_{p1} - A_{div} - \text{Shielding}$

L_{p1} = Reference sound pressure level (70 dBA at 3 feet for each of wheel components).

$A_{div} = 20\log(\text{Distance}/\text{reference distance})$.

Shielding = 3 dBA attenuation was assumed for the wheel (30% of 32 gear boxes shielded by structures at sites 1-3).