

A. INTRODUCTION

This environmental justice analysis assesses the potential for the proposed project to result in environmental and health effects on minority and low-income populations. As described in greater detail below, this analysis has been prepared to meet both federal requirements found at Executive Order 12898—*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* and Executive Order 13045—*Protection of Children from Environmental Health Risks and Safety Risks*—and also the state requirements found at New York State Department of Environmental Conservation (NYSDEC) requirements found in Commissioner Policy 29 (CP-29).

B. PRINCIPAL CONCLUSIONS

Based on the environmental analyses performed for the proposed project, no minority or low-income communities or children would be disproportionately or adversely impacted for any of the analyzed alternatives. In addition, residents in the project area, including minority and low-income populations would benefit from the proposed coastal flood protection. Therefore, it is concluded that the proposed project would not result in adverse effects with respect to environmental justice.

C. REGULATORY CONTEXT

This environmental justice analysis of the proposed project follows the guidance and methodologies recommended in the federal CEQ’s *Environmental Justice Guidance under the National Environmental Policy Act* (December 1997) as summarized below.

EXECUTIVE ORDER 12898: COUNCIL ON ENVIRONMENTAL QUALITY GUIDANCE

As stated above, Executive Order (EO) 12898—*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*—requires federal agencies to consider whether a proposed federal action may result in disproportionately adverse environmental or human health effects on low-income or minority populations. Since the proposed project requires federal approval from the U.S. Department of Housing and Urban Development (HUD) is subject to review under the National Environmental Policy Act (NEPA), this chapter considers the proposed project’s potential to disproportionately impact minority and low-income populations in accordance with the guidance and methodologies outlined in the Council on Environmental Quality’s (CEQ) *Environmental Justice Guidance under NEPA* (December 1997). In addition, EO 12898 requires federal agencies to work to ensure greater public participation by low-income and minority populations in the decision-making process. Public outreach and coordination with the proposed project has been ongoing since its inception

and is described in greater detail in Chapter 3.0, “Process, Coordination, and Public Participation,” and in accordance with 24 CFR Parts 50 and 58 and EO 11988.

The CEQ, which has oversight of the federal government’s implementation and compliance with EO 12898 and NEPA, developed its guidance to assist federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed.

The CEQ methodology involves collecting demographic information for the geographical area where the proposed project may cause significant adverse effects; identifying low-income and minority populations in that area using census data; and identifying whether the project’s adverse effects are disproportionately high on the low-income or minority populations in comparison with those of other populations. Mitigation measures should be developed and implemented for any disproportionately high and adverse effects. Under NEPA, the potential for disproportionately high and adverse effects on minority and/or low-income populations should then be one of the factors the federal agency considers in making its finding on a project and issuing a Record of Decision.

EO 13045-PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

As outlined in Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks 62 Federal Register 19885, (April 21, 1997)—Federal agencies are directed, as appropriate and consistent with the agency’s mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The FAA is encouraged to identify and assess environmental health risks and safety risks that the agency has reason to believe could disproportionately affect children. Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to.

NYSDEC COMMISSIONER POLICY 29 GUIDANCE

This environmental justice analysis must also comply with Commissioner Policy 29 (CP-29), “Environmental Justice and Permitting,” which requires an environmental justice analysis to identify and address effects on minority and low-income communities. The analysis relies on the other technical analyses included in the Environmental Impact Statement (EIS) for a determination of effects, recognizing that the effects within minority or low-income populations may be different from effects on the general population.

Like the CEQ methodology, the methodology set forth in CP-29 involves the following steps: (1) identifying potential adverse environmental effects and the area to be affected (i.e., establishing a study area); (2) determining whether potential adverse environmental effects are likely to affect a potential environmental justice area (i.e., whether low-income and/or minority populations are present in the study area); and (3) identifying whether potential adverse environmental effects of the proposed action would disproportionately affect low-income and minority populations. In accordance with CP-29 guidance, the environmental justice analysis will also (4) identify the potential for cumulative environmental burdens in the study area; and (5) seek public participation from the affected community.

D. METHODOLOGY

The assessment of environmental justice for the proposed project is based on CEQ and CP-29 guidance, as described above. It involves four basic steps:

1. Identify the area where the proposed project may cause significant and adverse effects (i.e., the study area);
2. Compile race and ethnicity and poverty status data for the study area and identify minority or low-income communities;
3. Identify the proposed project's potential significant adverse effects on minority and low-income communities; and
4. Evaluate the proposed project's potential significant adverse effects on minority and low-income communities relative to its overall effects to determine whether any potential significant adverse effects on those communities would be disproportionate and, therefore, disproportionately high and adverse.

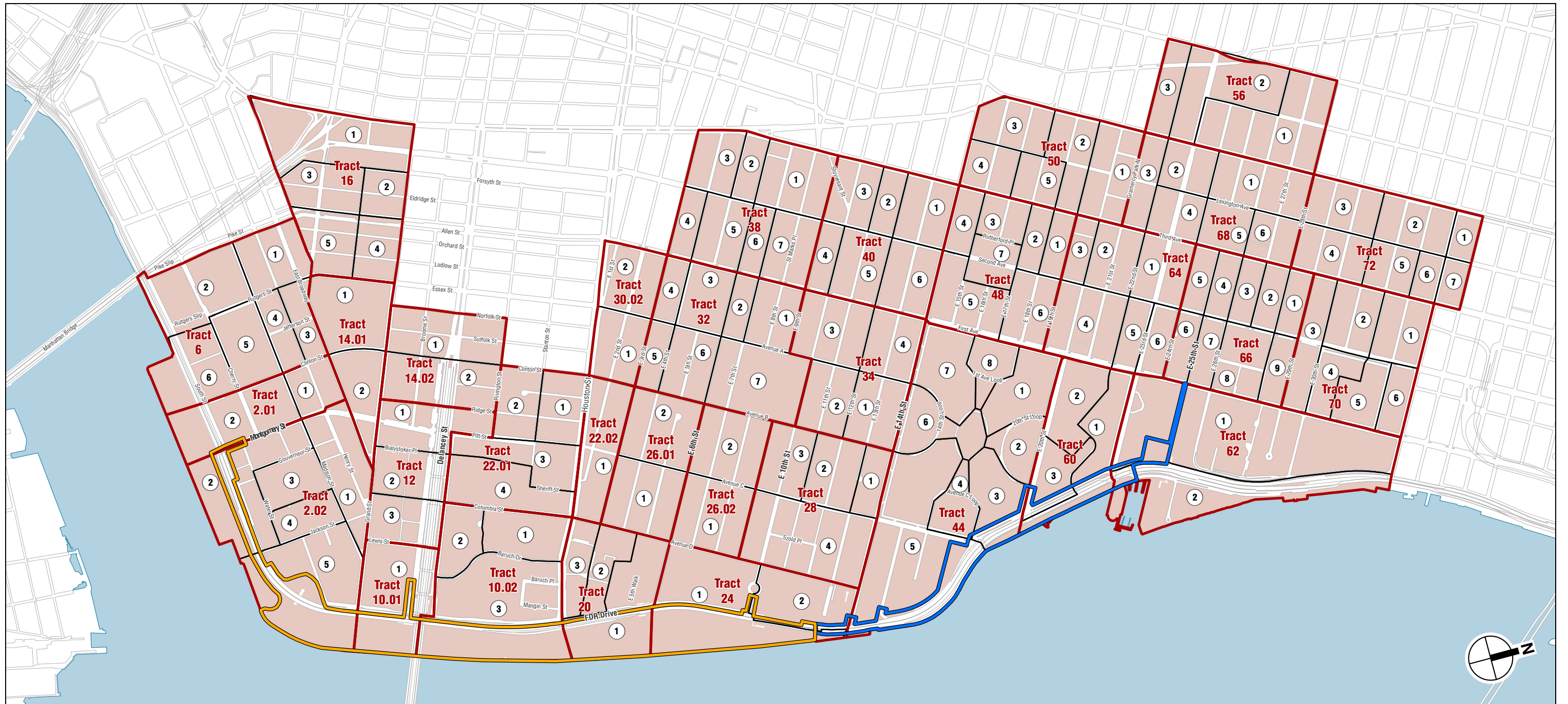
STUDY AREA

As illustrated in Figure 1.0-2, the proposed project encompasses two project areas. Together, the project areas begin at Montgomery Street to the south and extends north along the waterfront to East 25th Street and is composed of two sub-areas: Project Area One and Project Area Two. Project Area One extends from Montgomery Street on the south to the north end of John V. Lindsay East River Park (East River Park) at about East 13th Street. Project Area Two extends north and east from Project Area One, from East 13th Street to East 25th Street. The environmental justice study area encompasses any area potentially affected by the proposed project and, therefore, includes the combined extent of all study areas from all chapters within this EIS. The environmental justice study area covers 135 census block groups, the majority of which are located within a ½ mile from Project Areas One and Two (see **Figure 5.11-1**).

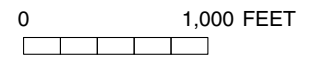
IDENTIFICATION OF MINORITY AND LOW-INCOME POPULATIONS

For this analysis, data on race, ethnicity, and poverty status was gathered from the *American Community Survey (ACS) 2012–2016 5-Year Estimates*. For comparison purposes, data were also compiled for the study area as a whole, for Manhattan, and for New York City. Based on census data and CEQ/CP-29 guidance (described above), potential environmental justice areas are identified as follows (see also **Table 5.11-1**):

- *Minority communities*: CEQ and CP-29 guidance defines minorities to include American Indians or Alaskan Natives, Asian and Pacific Islanders, African Americans or Black persons, and Hispanic persons. This environmental justice analysis also considers minority populations to include persons who identified themselves as being either “some other race” or “two or more races.” CEQ guidance requires minority communities to be identified either where the minority population exceeds 50 percent, or where the minority population percentage is meaningfully greater than the minority population in the comparison areas. In Manhattan, the minority population is approximately 52.9 percent of the total population. According to CP-29 guidance, a “minority community” is present when 51.1 percent or more of the population is minority. This analysis conservatively considers any study area block group with a minority population of greater than 50.0 percent to be a minority community.



- Project Area One
- Project Area Two
- Environmental Justice Study Area
- 10 Census Tract Boundary
- 1 Census Block Group Boundary



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- *Low-income communities:* The percent of individuals living below the poverty level in each census block group is used to identify low-income communities. CEQ guidance does not specify a threshold to be used for identifying clusters of low-income populations. CP-29 defines a low-income community to be any area where the low-income population (i.e., percent living below the poverty threshold) is equal to or greater than 23.59 percent of the total. However, the *ACS 2012–2016 5-Year Estimates* reports a 17.62 percent Manhattan poverty rate. Therefore, this analysis conservatively considers any census block group with a low-income population percentage that is greater than in Manhattan (i.e., exceeds 17.62 percent) to be a low-income community.

**Table 5.11-1
Study Area Race and Ethnicity and Poverty**

Census Tract	Block Group	Total Population	Race and Ethnicity*										Total Minority (%)	Poverty Status
			White	%	Black	%	Asian	%	Hispanic	%	Other	%		
2.01	1	1,052	374	35.6	9	0.9	664	63.1	5	0.5	0	0	64.4	59.41%
2.01	2	1,618	65	4.0	115	7.1	648	40.1	790	48.8	0	0	96.0	46.79%
2.02	1	534	59	11.1	24	4.5	296	55.4	155	29.0	0	0	88.9	12.92%
2.02	2	2,245	364	16.2	568	25.3	507	22.6	781	34.8	25	1.1	83.8	28.02%
2.02	3	1,547	16	1.0	144	9.3	313	20.2	903	58.4	171	11.1	99.0	39.88%
2.02	4	1,888	29	1.5	458	24.3	278	14.7	1,123	59.5	0	0	98.5	9.59%
2.02	5	1,802	673	37.4	17	0.9	661	36.7	272	15.1	179	9.9	62.6	10.27%
6	1	1,650	109	6.6	98	5.9	1,443	87.5	0	0	0	0	93.4	35.88%
6	2	2,962	25	0.8	331	11.2	1,273	43.0	1,263	42.6	70	2.4	99.2	29.17%
6	3	646	54	8.4	0	0	547	84.7	0	0	45	7.0	91.6	33.90%
6	4	608	112	18.4	50	8.2	330	54.3	116	19.1	0	0	81.6	68.60%
6	5	2,807	0	0	413	14.7	1,086	38.7	1,294	46.1	14	0.5	100.0	62.45%
6	6	2,092	172	8.2	26	1.2	1,194	57.1	623	29.8	77	3.7	91.8	20.75%
10.01	1	1,485	996	67.1	23	1.6	98	6.6	338	22.8	30	2.0	32.9	5.72%
10.02	1	1,861	120	6.5	430	23.1	35	1.9	1,276	68.6	0	0	93.5	42.56%
10.02	2	1,443	12	0.8	130	9.0	412	28.6	889	61.6	0	0	99.2	30.42%
10.02	3	2,605	89	3.4	420	16.1	262	10.1	1,790	68.7	44	1.7	96.6	34.31%
12	1	1,819	263	14.5	29	1.6	575	31.6	925	50.9	27	1.5	85.5	31.69%
12	2	772	668	86.5	37	4.8	53	6.9	14	1.8	0	0	13.5	22.67%
12	3	1,135	796	70.1	10	0.9	145	12.8	119	10.5	65	5.7	29.9	0.00%
14.01	1	1,630	1,046	64.2	0	0	229	14.1	270	16.6	85	5.2	35.8	7.24%
14.01	2	1,569	1,056	67.3	20	1.3	316	20.1	165	10.5	12	0.8	32.7	8.78%
14.02	1	1,556	647	41.6	13	0.8	528	33.9	256	16.5	112	7.2	58.4	27.25%
14.02	2	1,346	342	25.4	113	8.4	329	24.4	456	33.9	106	7.9	74.6	31.20%
16	1	2,596	66	2.5	0	0	2,404	92.6	74	2.9	52	2.0	97.5	37.48%
16	2	871	114	13.1	44	5.1	520	59.7	193	22.2	0	0	86.9	18.83%
16	3	1,348	73	5.4	0	0	1,203	89.2	57	4.2	15	1.1	94.6	49.78%
16	4	1,392	446	32.0	25	1.8	863	62.0	20	1.4	38	0	68.0	37.93%
16	5	1,012	302	29.8	17	1.7	528	52.2	149	14.7	16	1.6	70.2	6.94%
20	1	2,255	0	0	238	10.6	545	24.2	1,472	65.3	0	0	100.0	55.52%
20	2	1,664	77	4.6	452	27.2	191	11.5	944	56.7	0	0	95.4	47.12%
20	3	801	10	1.3	179	22.4	101	12.6	511	63.8	0	0	98.7	18.10%
22.01	1	1,702	371	21.8	170	10.0	311	18.3	799	46.9	51	3.0	78.2	52.06%
22.01	2	945	348	36.8	160	16.9	197	20.9	156	16.5	84	8.9	63.2	19.78%
22.01	3	1,346	8	0.6	457	34.0	199	14.8	682	50.7	0	0	99.4	49.33%
22.01	4	2,553	242	9.5	334	13.1	817	32.0	1,160	45.4	0	0	90.5	6.50%
22.02	1	1,937	1,054	54.4	101	5.2	303	15.6	412	21.3	67	3.5	45.6	17.60%
24	1	3,742	628	16.8	397	10.6	321	8.6	1,844	49.3	552	14.8	83.2	49.01%
24	2	1,384	0	0	338	24.4	142	10.3	886	64.0	18	1.3	100.0	35.98%
26.01	1	2,025	669	33.0	169	8.4	275	13.6	842	41.6	70	3.5	67.0	23.95%
26.01	2	2,114	388	18.4	254	12.0	285	13.5	1,145	54.2	42	2.0	81.6	25.26%
26.02	1	1,590	694	43.7	32	2.0	290	18.2	455	28.6	119	7.5	56.3	13.08%
26.02	2	2,699	1,538	57.0	128	4.7	536	19.9	272	10.1	225	8.3	43.0	16.39%
28	1	1,240	197	15.9	249	20.1	89	7.2	688	55.5	17	1.4	84.1	23.47%

Table 5.11-1 (cont'd)
Study Area Race and Ethnicity and Poverty

Census Tract	Block Group	Total Population	Race and Ethnicity*										Total Minority (%)	Poverty Status (%)
			White	%	Black	%	Asian	%	Hispanic	%	Other	%		
28	2	1,338	447	33.4	76	5.7	357	26.7	458	34.2	0	0	66.6	24.85%
28	3	2,248	728	32.4	298	13.3	61	2.7	1,161	51.7	0	0	67.6	37.59%
28	4	2,534	510	20.1	497	19.6	349	13.8	1,095	43.2	83	3.3	79.9	28.26%
30.02	1	1,739	985	56.6	170	9.8	201	11.6	344	19.8	39	2.3	43.4	10.64%
30.02	2	1,109	480	43.3	82	7.4	241	21.7	290	26.2	16	1.4	56.7	33.18%
32	1	1,738	1,517	87.3	52	3.0	119	6.9	12	0.7	38	2.2	12.7	8.11%
32	2	619	481	77.7	0	0	83	13.4	55	8.9	0	0	22.3	3.23%
32	3	1,412	861	61.0	25	1.8	344	24.4	182	12.9	0	0	39.0	12.54%
32	4	713	682	95.7	0	0	31	4.4	0	0	0	0	4.3	11.64%
32	5	579	438	75.7	0	0	140	24.2	1	0.2	0	0	24.3	8.46%
32	6	2,121	1,575	74.3	52	2.5	360	17.0	92	4.3	42	1.9	25.7	23.84%
32	7	738	470	63.7	111	15.0	64	8.7	93	12.6	0	0	36.3	19.78%
34	1	1,796	1,114	62.0	0	0	541	30.1	125	7.0	16	0.9	38.0	31.57%
34	2	1,444	1,053	72.9	0	0	152	10.5	239	16.6	0	0	27.1	25.55%
34	3	1,494	882	59.0	119	8.0	108	7.2	334	22.4	51	3.4	41.0	24.83%
34	4	1,488	908	61.0	25	1.7	143	9.6	384	25.8	28	1.9	39.0	19.35%
38	1	1,643	1,360	82.8	17	1.0	197	12.0	64	3.9	5	0.3	17.2	22.40%
38	2	667	415	62.2	0	0	114	17.1	138	20.7	0	0	37.8	0.00%
38	3	1,580	249	15.8	138	8.7	439	27.8	754	47.7	0	0	84.2	18.22%
38	4	1,123	978	87.1	116	10.3	0	0	29	2.6	0	0	12.9	1.16%
38	5	1,313	1,098	83.6	0	0	91	6.9	51	3.9	73	5.6	16.4	10.13%
38	6	715	524	73.3	44	6.2	29	4.1	84	11.8	34	4.8	26.7	19.20%
38	7	1,388	1,100	79.3	51	3.7	186	13.4	18	1.3	33	2.4	20.7	20.04%
40	1	2,687	2,012	74.9	289	10.8	141	5.3	192	7.2	53	2.0	25.1	7.37%
40	2	1,538	1,179	76.7	56	3.6	208	13.5	87	5.7	8	0.5	23.3	23.54%
40	3	1,251	848	67.8	68	5.4	114	9.1	133	10.6	88	7.0	32.2	8.80%
40	4	589	452	76.7	0	0	137	23.3	0	0	0	0	23.3	23.26%
40	5	1,768	1,143	64.7	37	2.1	250	14.1	161	9.1	177	10.1	35.3	9.45%
40	6	1,596	1,115	69.9	100	6.3	276	17.3	91	5.7	14	0.9	30.1	12.29%
44	1	2,759	2,199	79.7	262	9.5	64	2.3	234	8.5	0	0	20.3	13.81%
44	2	794	628	79.1	0	0	103	13.0	63	7.9	0	0	20.9	9.70%
44	3	2,424	1,533	63.2	41	1.7	274	11.3	533	22.0	43	1.8	36.8	4.62%
44	4	1,235	885	71.7	0	0	282	22.8	68	5.5	0	0	28.3	12.63%
44	5	3,440	2,216	64.4	201	5.8	423	12.3	256	7.4	344	10.0	35.6	3.49%
44	6	743	611	82.2	0	0	69	9.3	63	8.5	0	0	17.8	10.77%
44	7	2,378	1,931	81.2	0	0	372	15.6	75	3.2	0	0	18.8	24.26%
44	8	2,266	1,818	80.2	94	4.2	115	5.1	83	3.7	156	6.9	19.8	7.28%
48	1	1,190	1,001	84.1	0	0	189	15.9	0	0	0	0	15.9	2.18%
48	2	999	813	81.4	0	0	59	5.9	115	11.5	12	1.2	18.6	1.50%
48	3	430	367	85.4	28	6.5	18	4.2	17	4.0	0	0	14.6	10.47%
48	4	1,480	1,012	68.4	99	6.7	275	18.6	85	5.7	9	0.6	31.6	15.35%
48	5	1,796	725	40.4	132	7.4	523	29.1	256	14.3	160	8.9	59.6	14.72%
48	6	1,252	840	67.1	63	5.0	217	17.3	90	7.2	42	3.4	32.9	9.95%
48	7	0	-	-	-	-	-	-	-	-	-	-	-	-
50	1	883	797	90.3	0	0	58	6.6	28	3.2	0	0	9.7	3.65%
50	2	719	673	93.6	0	0	46	6.4	0	0	0	0	6.4	6.26%
50	3	957	482	50.4	0	0	401	41.9	54	5.6	20	2.1	49.6	9.30%
50	4	954	788	82.6	0	0	109	11.4	57	6.0	0	0	17.4	16.46%
50	5	1,661	1,377	82.9	0	0	100	6.0	170	10.2	14	0.8	17.1	6.68%
56	1	1,446	814	56.3	178	12.3	243	16.8	179	12.4	32	2.2	43.7	26.34%
56	2	814	647	79.5	0	0	136	16.7	31	3.8	0	0	20.5	8.48%
56	3	723	532	73.6	0	0	167	23.1	24	3.3	0	0	26.4	12.86%
60	1	2,059	1,604	77.9	28	1.4	339	16.5	71	3.5	17	0.8	22.1	14.86%
60	2	1,888	1,411	74.7	72	3.8	233	12.3	153	8.1	19	1.0	25.3	10.49%
60	3	1,476	1,038	70.3	30	2.0	182	12.3	179	12.1	47	3.2	29.7	7.93%
62	1	2,252	916	40.7	564	25.0	362	16.1	366	16.3	44	2.0	59.3	54.10%
62	2	2,165	1,062	49.1	195	9.0	511	23.6	265	12.2	132	6.1	50.9	17.09%
64	1	1,911	1,365	71.4	41	2.2	404	21.1	32	1.7	69	3.6	28.6	9.71%

**Table 5.11-1 (cont'd)
Study Area Race and Ethnicity and Poverty**

Census Tract	Block Group	Total Population	Race and Ethnicity*										Total Minority (%)	Poverty Status (%)
			White	%	Black	%	Asian	%	Hispanic	%	Other	%		
64	2	1,249	953	76.3	35	2.8	168	13.5	57	4.6	36	2.9	23.7	7.93%
64	3	686	686	100.0	0	0	0	0	0	0	0	0	0	0.00%
64	4	1,417	1,136	80.2	0	0	121	8.5	87	6.1	73	5.2	19.8	9.53%
64	5	1,597	910	57.0	131	8.2	252	15.8	160	10.0	144	9.0	43.0	2.22%
64	6	1,069	514	48.1	89	8.3	75	7.0	129	12.1	262	24.5	51.9	11.41%
66	1	1,200	1,022	85.2	0	0	178	14.8	0	0	0	0	14.8	0.00%
66	2	2,021	546	27.0	0	0	201	10.0	1,238	61.3	36	1.8	73.0	9.80%
66	3	870	770	88.5	0	0	46	5.3	54	6.2	0	0	11.5	18.51%
66	4	1,300	943	72.5	97	7.5	46	3.5	174	13.4	40	3.1	27.5	0.00%
66	5	2,652	1,546	58.3	0	0	187	7.1	919	34.7	0	0	41.7	0.00%
66	6	968	687	71.0	9	0.9	47	4.9	193	19.9	32	3.3	29.0	5.40%
66	7	682	5	0.7	59	8.7	107	15.7	510	74.8	1	0.2	99.3	74.29%
66	8	564	290	51.4	45	8.0	1	0.2	106	18.8	122	21.6	48.6	46.63%
66	9	1,289	476	36.9	56	4.3	601	46.6	156	12.1	0	0	63.1	35.63%
68	1	595	390	65.6	87	14.6	118	19.8	0	0	0	0	34.4	15.29%
68	2	809	557	68.9	38	4.7	176	21.8	38	4.7	0	0	31.1	21.01%
68	3	1,075	912	84.8	89	8.3	28	2.6	46	4.3	0	0	15.2	5.12%
68	4	2,061	1,376	66.8	181	8.8	247	12.0	243	11.8	14	0.6	33.2	9.68%
68	5	1,354	702	51.9	45	3.3	224	16.5	383	28.3	0	0	48.1	3.32%
68	6	1,742	1,428	82.0	40	2.3	194	11.1	44	2.5	36	2.1	18.0	6.95%
70	1	2,159	1,074	49.8	287	13.3	614	28.4	83	3.8	101	4.7	50.2	4.72%
70	2	822	679	82.6	0	0	47	5.7	96	11.7	0	0	17.4	0.00%
70	3	1,608	1,086	67.5	0	0	323	20.1	44	2.7	155	9.6	32.5	14.12%
70	4	740	476	64.3	39	5.3	146	19.7	46	6.2	33	4.5	35.7	0.00%
70	5	1,771	1,138	64.3	6	0.3	540	30.5	31	1.8	56	3.2	35.7	17.55%
70	6	1,297	899	69.3	21	1.6	377	29.1	0	0	0	0	30.7	15.88%
72	1	824	584	70.9	0	0	119	14.4	0	0	121	14.7	29.1	3.03%
72	2	1,142	503	44.1	0	0	522	45.7	30	2.6	87	7.6	55.9	33.63%
72	3	1,054	930	88.2	0	0	32	3.0	92	8.7	0	0	11.8	0.00%
72	4	1,122	680	60.6	10	0.9	432	38.5	0	0	0	0	39.4	21.66%
72	5	1,724	1,060	61.5	0	0	608	35.3	0	0	56	3.3	38.5	5.97%
72	6	340	259	76.2	0	0	23	6.8	29	8.5	29	8.5	23.8	8.53%
72	7	796	619	77.8	5	0.6	118	14.8	50	6.3	4	0.5	22.2	5.37%
Study Area		198,549	96,837	48.8	13,042	6.6	41,010	20.7	41,836	21.1	5,824	2.9	51.2	20.26%
Manhattan		1,634,989	769,598	47.1	206,008	12.6	190,648	11.7	423,526	25.9	45,209	2.7	52.9	17.62%
New York City		8,461,961	2,729,973	32.3	1,879,364	22.2	1,150,513	13.6	2,457,945	29.1	244,166	2.9	67.7	20.30%

Notes:
Purple shading indicates low-income community. Orange shading indicates minority community. Green Shading indicates both minority and low-income communities
* The racial and ethnic categories provided are further defined as: White (White alone, not Hispanic or Latino); Black (Black or African American alone, not Hispanic or Latino); Asian (Asian alone, not Hispanic or Latino); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino; Some other race alone, not Hispanic or Latino; Two or more races, not Hispanic or Latino); Hispanic (Hispanic or Latino; Persons of Hispanic origin may be of any race).

Source: U.S. Census Bureau, 2012–2016 American Community Survey 5-year Estimates.

E. AFFECTED ENVIRONMENT

MINORITY AND LOW-INCOME POPULATIONS IN THE STUDY AREA – OVERVIEW OF STUDY AREA DEMOGRAPHICS

The environmental justice study area, illustrated in **Figure 5.11-1**, includes 135 census block groups and has a total population of 198,549 persons and a population density of approximately 95,000 persons per square mile. The study area extends north to West 35th Street and south to Pike Street. Moving inland, the study area reaches The Bowery at the approach of the Manhattan Bridge and Broadway at Madison Square Park and includes portions of the neighborhoods of the

East Village, Chinatown, Lower East Side, Gramercy Park, and Murray Hill. The study area also includes large residential developments such as Stuyvesant Town, Peter Cooper Village, Co-op Village, and 27 New York City Housing Authority (NYCHA) developments. The NYCHA developments within the study area are concentrated to the south and east near the sections of the project area south of East 14th Street. According to NYCHA, in 2010 about 28,000 people lived in these developments, accounting for approximately 14 percent of the study area's total population. Complete data for individual study area block groups is included in **Table 5.11-1**.

MINORITY STATUS

Of the 135 block groups within the environmental justice study area, 51 are considered minority areas (about 38 percent of the block groups) (see **Figure 5.11-2**). Many of these block groups are concentrated in the southern section of the environmental justice study area below East 14th Street near Project Area One. Individual block group's minority population percentages range from 0 to 100 percent. There are a total of 20 block groups (approximately 15 percent of the block groups) in the study area with minority populations over 90 percent. Most of these block groups are located in the southernmost section of the study area within Chinatown and nearby NYCHA developments. Overall, 51.2 percent of the study area is minority. Comparatively, the minority rates for both Manhattan (52.6 percent) and New York City (67.7 percent) are higher than that of the study area (51.2 percent) (see **Table 5.11-1**).

LOW-INCOME STATUS

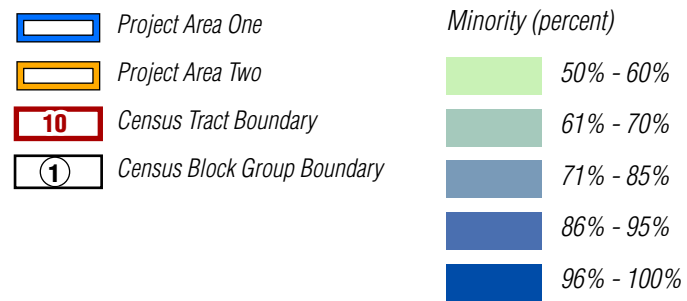
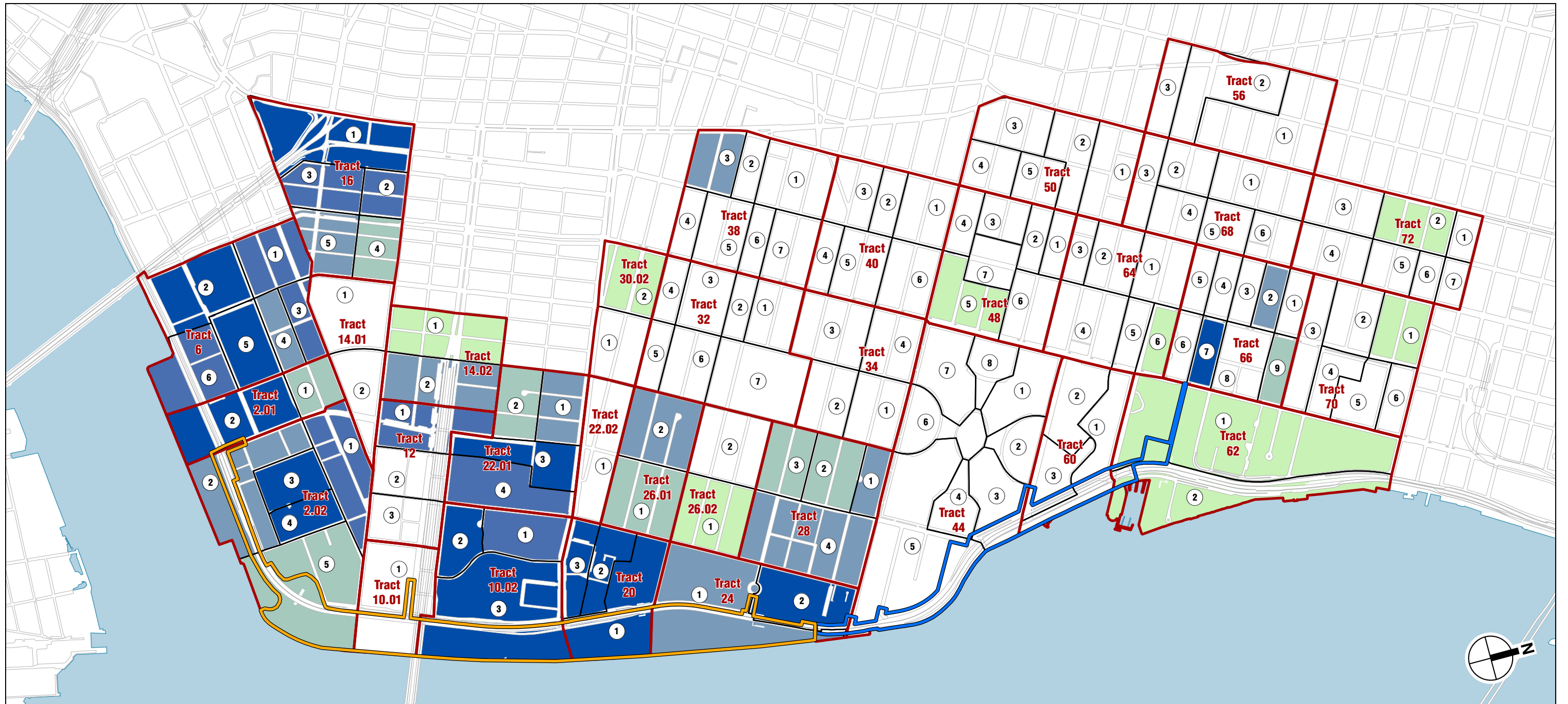
Of the 135 block groups within the environmental justice study area, 58 (approximately 43 percent of the block groups) are considered low-income areas (see **Figure 5.11-3**). Many of the low-income community block groups are also minority community block groups. Of the 58 low-income block groups, 40 (or approximately 69 percent) are also minority block groups (see **Table 5.11-1**). Like the minority communities identified in the section above, the majority of low-income block groups are concentrated in the southern section of the environmental justice study area below East 14th Street. Individual block groups have low-income population percentages ranging from approximately 0 to 74 percent. Several of the block groups with the highest poverty rates are in the southernmost section of the study area in the vicinity of Chinatown and NYCHA's LaGuardia Houses. Overall, over 20 percent of the study area lives below the poverty level. Furthermore, the poverty rate of the study area (20.26 percent) is higher than that of Manhattan (17.62 percent), but slightly below the rate for all of New York City (20.30 percent) (see **Table 5.11-1**).

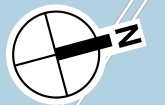
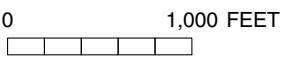
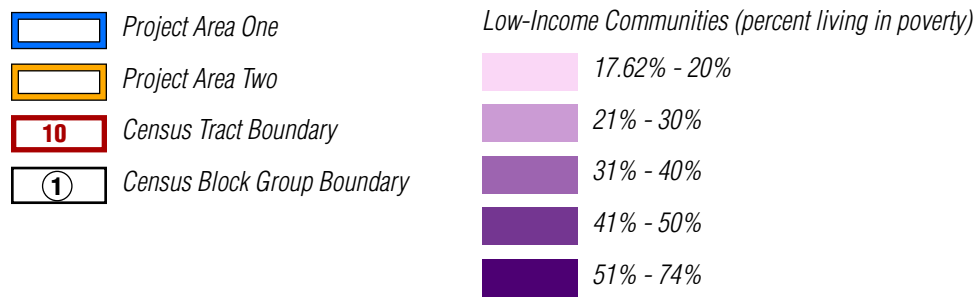
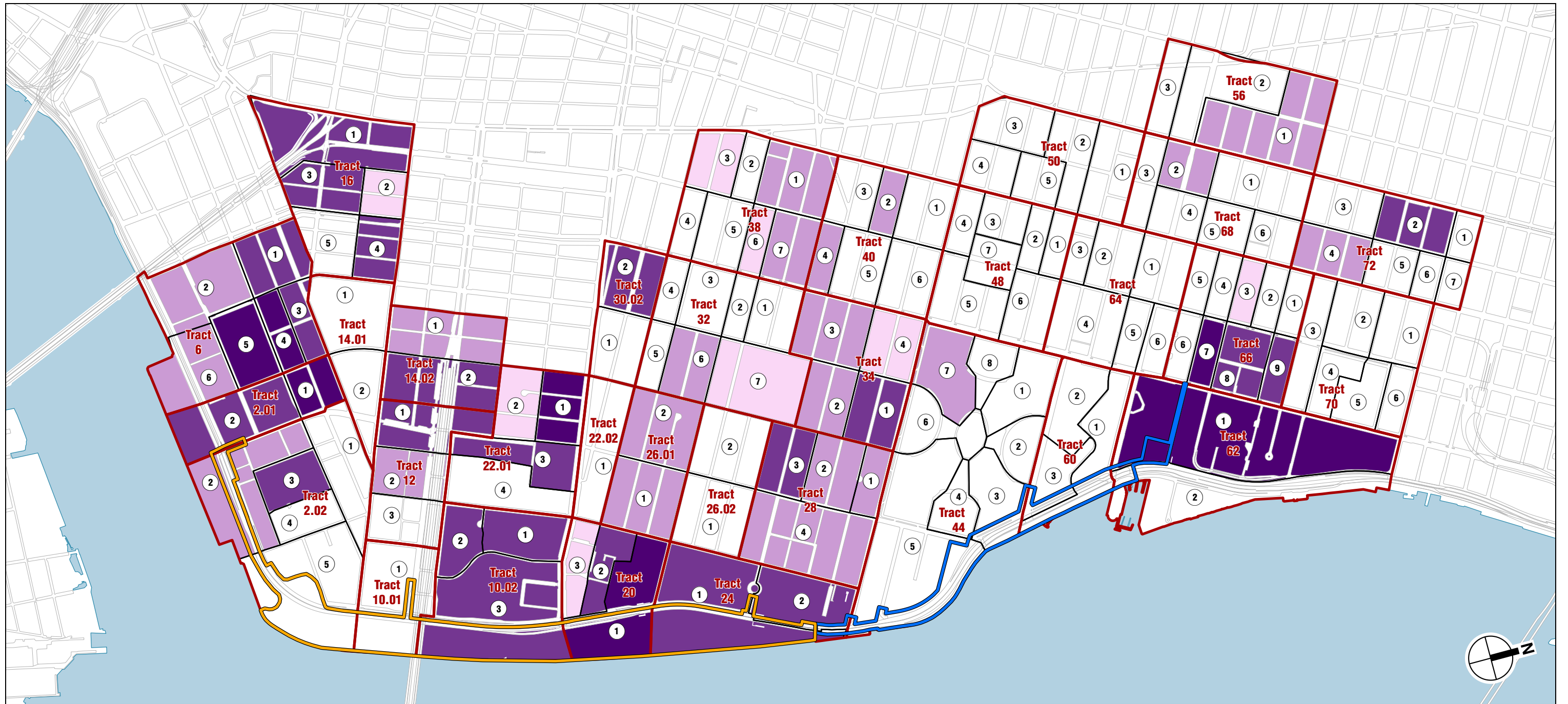
CHILDREN

According to 2012–2016 ACS data, approximately 11.3 percent of the residents in the socioeconomic study area were children (between 0-17)—this is lower than in Manhattan (14.6 percent) and New York City (21.2 percent) (see Chapter 5.2, “Socioeconomic Conditions”).

PUBLIC PARTICIPATION

EO 12898 requires federal agencies to work to ensure greater public participation in the decision-making process. In addition, CEQ guidance suggests that federal agencies should acknowledge and seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation.





The public involvement activities for the proposed project have been guided by the Community Engagement Plan (CEP), which was originally developed during the conceptual design for this project as a “living” document and has continued through preparation of this EIS. The key goal of the community outreach during the design phase was to inform interested parties about the proposed project and seek input on a wide range of issues. The specific details of the proposed project’s public participation process is presented in Chapter 3.0, “Process, Coordination, and Public Participation.”

F. ENVIRONMENTAL EFFECTS

SUMMARY OF BENEFITS

As discussed throughout the EIS, the proposed project would produce beneficial effects for the local community (equally on minority and non-minority, and low-income and non-low-income populations) by reducing flooding potential and enhancing waterfront open spaces and access to the waterfront. Further, by providing reliable coastal flood risk reduction, including for those in NYCHA housing, the proposed project would result in positive socioeconomic benefits due to the avoided costs associated with flood damage that would otherwise be incurred during future storm events. In addition, the proposed project would provide Section 3 employment opportunities during construction, which would be a positive benefit to the community.

The No Action Alternative (Alternative 1) is the future condition without the proposed project and assumes that no new comprehensive coastal protection system is installed in the proposed project area. In the absence of this system, the existing neighborhoods (comprising minority and non-minority, and low-income and non-low-income populations) in the protected area (area within the Federal Emergency Management Agency [FEMA] 100-year special flood hazard area [SFHA]) would remain at risk of flooding during a design storm event. Although some resiliency measures are expected to be completed at NYCHA’s Bernard Baruch Houses, Lillian Wald Houses, Jacob Riis Houses, Jacob Riis II Houses, Campos Plaza II, and other developments in the No Action Alternative, these measures would not provide the type of comprehensive neighborhood protection from potential future storm-related flooding events that would be provided by the flood protection systems presented in the other alternatives, and these NYCHA developments will continue to be vulnerable to flood damage during future storm events. Further, responders’ access to the dwellings would continue to be compromised during flood events. Additionally, residents in market rate and affordable units in Stuyvesant Town and Peter Cooper Village, and many other dwellings in the protection area, will remain vulnerable to design storm events.

SUMMARY OF ADVERSE EFFECTS

As discussed throughout this EIS, the proposed project could result in adverse effects. The potential effects from the proposed project for key technical areas are summarized below. An analysis of the proposed project’s potential for disproportionately high and adverse effects on environmental justice populations is provided in the next section.

- ***Socioeconomic Conditions.*** Under Alternative 1, no new comprehensive coastal protection system would be installed in the project area; the portion of the study area within the protected area would continue to be susceptible to flooding during design storm events. The proposed build alternatives would not result in significant adverse socioeconomic effects on residential and commercial conditions. There would be positive socioeconomic benefits due

to the avoided costs associated with flood damage that would otherwise be incurred during future design storm events.

- **Urban Design and Visual Resources.** The proposed project would likely block existing waterfront and/or East River views from certain locations, potentially resulting in significant adverse effects.
- **Natural Resources.** The proposed project would result in temporary adverse effects to trees within the study area as well as both temporary and permanent adverse effects to New York State Department of Environmental Conservation (NYSDEC) littoral zone tidal wetlands and U.S. Army Corps of Engineers (USACE) designated Waters of the United States. However, a comprehensive planting program as part of a landscape restoration plan and restoration for the tree removals would be provided in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Department of Parks and Recreation Rules) and Local Law 3 of 2010. NYC Department of Parks and Recreation (NYC Parks). In addition, adverse effects to wetland resources would be mitigated for with the creation of approximately 26,000 square feet new embayments within the project area and off-site wetland restoration or through the purchase of credits from the Saw Mill Creek Wetland Mitigation Bank operated by New York City Economic Development Corporation (EDC) and located on Staten Island, New York, pursuant to NYSDEC and USACE permit requirements, and would not be considered significant.
- **Transportation.** The proposed project would not generate any new travel demand during its operations and would therefore have no adverse effects on the local transportation systems.
- **Air Quality/Noise.** The proposed project would not generate any new air or noise emission sources that would impact the community.
- **Hazardous Materials.** The proposed project would disturb subsurface hazardous materials from demolition and excavation activities. However, with the implementation of appropriate measures governing the construction (such as air monitoring, proper storage and handling of materials, and, if required, odor suppression), the potential for significant adverse effects related to hazardous materials would be avoided.
- **Construction.** Potential construction-related adverse effects to open space, traffic, and noise would occur with the proposed project. To the extent feasible, construction activities would incorporate measures to minimize these adverse effects.
 - The proposed project would result in decreases in the open space ratios between the With Action and No Action conditions during construction, exceeding the 2014 *City Environmental Quality Review (CEQR) Technical Manual* threshold of 5 percent. Temporary displacement of open space for construction over the 5 percent threshold is considered significant since it could result in the overburdening of existing facilities within the study area. Measures would be developed and implemented to minimize the effects of construction on open space.
 - Construction of the proposed project would have the potential to result in significant adverse traffic effects at the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C during the 6:00 to 7:00 AM construction analysis peak traffic hour. These effects could be fully mitigated with the implementation of standard traffic mitigation measures (e.g., signal timing changes). In addition, Alternative 5 would result in, additional significant adverse traffic effects due to the temporary lane closures that are required along the FDR Drive to accommodate construction activities associated with the raised FDR Drive under this alternative.

- Noise control measures would be implemented during construction of the proposed project as required by the *New York City Noise Control Code*. However, even with these measures, the cumulative analysis of construction vehicle trips and operation of on-site construction equipment indicated the potential for significant adverse noise at a number of residential buildings and the Asser Levy Recreation Center near the project area. Additional measures would be developed and implemented to minimize the effects of construction noise.
- **Public Health.** The proposed project would not significantly affect the public health environment with respect to air quality, water quality, noise, and hazardous materials. In addition there would be measures implemented during construction to ensure there would be no significant adverse effects to public health.

ANALYSIS OF POTENTIAL FOR DISPROPORTIONATELY HIGH AND ADVERSE EFFECTS

In accordance with CEQ guidance, the determination of a proposed project's potential to result in disproportionately high and adverse effects involves consideration of whether a proposed project would result in any adverse effects that are considered significant (as defined by NEPA) and that would affect a minority or low-income population; whether any significant adverse effects on minority or low-income populations would appreciably exceed or would be likely to appreciably exceed those on the general population or other appropriate comparison group; and whether the minority or low-income population would be affected by cumulative or multiple adverse exposures from environmental hazards. In making this determination, following CEQ guidance, it is recognized that effects to minority or low-income populations may be different from effects on the general population due to a community's distinct cultural practices, for example. The determination of disproportionately high and adverse effects also involves consideration of proposed mitigation measures and offsetting benefits. Based on these considerations, the assessment below concludes that the proposed project would not result in any disproportionately high and adverse effects on environmental justice populations. Moreover, this the proposed project is not expected to result in any disproportionate health and safety impacts on children and would be in compliance with Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks.

URBAN DESIGN AND VISUAL RESOURCES

The levees, elevated infrastructure of park areas, and/or floodwalls constructed for the proposed project would likely block existing waterfront and/or East River views in the Cherry Street, Grand Street, East 6th Street, and East 10th Street view corridors and from within the Bernard Baruch, Lillian Wald, and Jacob Riis Houses, and from portions of the FDR Drive and FDR Drive Service Road, potentially resulting in significant adverse effects. Under Alternatives 4 and 5, the absence of floodwalls along the western frontage and the design of the park to slope down to the level of the FDR Drive would preserve views of the park, although views of the East River itself would be blocked as under the other Alternatives. While certain views from within and adjacent to three NYCHA developments would likely be blocked, the expected visual effects would also occur in non-minority and non-low-income areas. Therefore, no disproportionately high or adverse effects on environmental justice populations would occur from the proposed project's visual adverse effects.

NATURAL RESOURCES

The With Action Alternatives would result in temporary adverse effects to terrestrial resources, namely trees, within the study area. Replacement for the lost trees would be provided in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Department of Parks and Recreation Rules) and Local Law 3 of 2010. The Preferred Alternative would require a NYC Parks approved tree mitigation plan to address the tree removal proposed. Trees and other landscaped areas that are planted as a result of a NYC Parks approved tree mitigation plan for construction of the flood protection system would include salt tolerant native species, among a diverse selection of 52 tree species. The planting plan will also aim to improve ecological habitat and be resistant to the effects of salt spray and wind using the concept of different types of groves. The removal of trees would occur principally within the waterfront parks and is not expected to result in any disproportionately high and adverse effects on minority and low-income populations within the inland neighborhoods.

These alternatives would also result in permanent adverse effects to New York State Department of Environmental Conservation (NYSDEC) littoral zone tidal wetlands and U.S. Army Corps of Engineers (USACE) Waters of the United States within the East River as a result of installation of support structures for the shared use flyover bridge. The tidal wetland area to be affected would be approximately 650 square feet and the support structures would be placed largely beneath the East River Bikeway in a heavily urbanized area with existing piles and other infrastructure. This adverse effect would be considered minor and would not be expected to result in any disproportionately high and adverse effects on minority and low-income populations within the inland neighborhoods.

The Preferred Alternative and Alternative 5 also include reconstruction and relocation of two existing embayments. Placement of fill in the existing embayments would result in an additional 20,600 square feet of permanent adverse effects to littoral zone tidal wetlands beyond Alternatives 2 and 3. However, the embayments would be reconstructed at least at the same size as the existing embayments along the East River shoreline. In addition, permanent adverse effects would be mitigated through a wetland restoration design that meets all NYSDEC and USACE permit conditions. Adverse effects to threatened, endangered, and special concern aquatic species and essential fish habitat would be minimized or avoided as a result of implementation of mitigation measures confirmed through ongoing consultation with NOAA NMFS. Due to these mitigatory measures in addition to the limited extent of impact within East River, the Preferred Alternative and 5 are unlikely to adversely affect threatened and endangered species. Therefore, no disproportionately high or adverse effects on environmental justice populations would occur from the adverse effects on natural resources.

CONSTRUCTION—OPEN SPACE

During construction of the proposed project, the open space resources within the project area, including East River Park, Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground, would be partially or fully closed for a portion of the approximately 3.5 to five-year-long construction duration (depending on the alternative) to accommodate the construction of the proposed project. However, when complete, the overall quality in the rebuilt portion of the open space resources would be enhanced, including landscaping and circulation improvements.

The proposed project would result in decreases in the open space ratios between the With Action and No Action conditions during construction, exceeding the *CEQR Technical Manual* threshold of 5 percent change. Temporary displacement of open space for construction over the 5 percent

threshold is considered significant since it could result in the overburdening of existing facilities within the study area. Therefore, the analysis concluded that there would be potential significant adverse indirect effects on open space during the 3.5 to five-year construction period across all alternatives.

The potentially significant adverse indirect effects due to open space displacement would not disproportionately affect minority and low income populations. Therefore, there would be no disproportionate adverse effects on environmental justice populations with the proposed project.

CONSTRUCTION—TRANSPORTATION

The proposed project would have the potential for significant adverse traffic effects at the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C during construction of the proposed project. At the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C, the significant adverse traffic effects could be fully mitigated with the implementation of standard traffic mitigation measures (e.g., signal timing). No significant adverse effects were identified for transit, pedestrians, and parking.

Under Alternative 5, there is a possibility that the FDR Drive would temporarily require a full closure in the northbound direction and one-lane closure in the southbound direction for two months during construction activities under Alternative 5. If a full closure in any direction is required, it would most likely occur during the summer months when the magnitudes of traffic volumes along the FDR Drive are lower than the rest of the year. Depending on the type of closure and the duration, vehicular traffic from the FDR Drive would need to be diverted to the local roadways in the study area, the result of which would most likely be significant adverse traffic effects in addition to those identified under Alternative 4. The potential FDR Drive closure would require the use of Traffic Enforcement Agents (TEAs) to regulate traffic and pedestrian circulation within the study area. The use of TEAs would help mitigate any additional significant adverse traffic effects that could occur due to the closure of the FDR Drive. The potential traffic effects during construction would not disproportionately affect minority and low income populations. Therefore, there would not be disproportionate adverse effects on environmental justice populations with the proposed project.

CONSTRUCTION—NOISE

During, construction of the proposed project, noise control measures would be implemented as required by the *New York City Noise Control Code*, including both path control (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors) and source control (i.e., reducing noise levels at the source or during the most sensitive time periods). Even with these measures, the cumulative analysis of construction vehicle trips and operation of on-site construction equipment indicated the potential for significant adverse noise effects as a result of construction at some receptors under each of the build alternatives.

Under Alternative 4, construction of the proposed project is predicted to result in significant adverse noise effects at 621 Water Street, 605 Water Street, 309 Avenue C Loop, 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 425 East 25th Street, 10 Waterside Plaza, 765 FDR Drive, 819 FDR Drive, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 132 Avenue D, 465 East 10th Street, and 520 East 23rd Street, 123 Mangin Street, and the Asser Levy Recreation Center. The predicted significant adverse construction noise effects would be of

limited duration and would be up to the mid 80s dBA during daytime construction and up to the mid 70s during nighttime construction. Noise levels in this range are typical in many parts of Manhattan along heavily trafficked roadways. The buildings at 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, and 520 East 23rd Street already have insulated glass windows and an alternative means of ventilation (i.e., air conditioning), and would consequently be expected to experience interior $L_{10(1)}$ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria. Therefore, additional receptor controls (i.e., façade attenuation (improvements) to further reduce interior noise levels at these locations are not proposed to further reduce interior noise levels at these locations. The buildings at 621 Water Street, 605 Water Street, 765 FDR Drive, 819 FDR Drive, 132 Avenue D, 465 Avenue D, 123 Mangin Street, and the Asser Levy Recreation Center appear to have monolithic glass (i.e., non-insulating) and would consequently be expected to experience interior $L_{10(1)}$ values up to the high 60s dBA, which is up to approximately 23 dBA higher than the 45 dBA threshold recommended for residential use according to CEQR noise exposure guidelines.

Under Alternatives 2, 3, and 5, significant adverse construction noise effects are expected to be the same as or less than those under Alternative 4.

However, these effects would not be expected to result in disproportionate effects on minority and low-income communities since the construction effects would affect all populations surrounding the project area. The buildings listed above where significant adverse construction noise effects are predicted to occur are distributed approximately evenly between minority or low-income communities and non-minority and non-low-income communities. Furthermore, the duration of construction noise and the likelihood of night-time construction, which can be more intrusive in residential areas because of the additional sensitivity to noise during night time, are comparable in areas adjacent to minority or low-income communities and non-minority and non-low-income communities. As a result, construction of the proposed project would not result in a disproportionate amount of noise at minority or low-income communities compared to the full study area. *