THE CITY OF NEW YORK

OFFICE OF THE MAYOR

NEW YORK, NY 10007

Technical Memorandum for the Seward Park Mixed-Use Development Project FGEIS

CEQR Number 11DME012M
Technical Memorandum 001

A. INTRODUCTION

On August 10, 2012 the Office of the Deputy Mayor for Economic Development (ODMED), as Lead Agency, issued a Notice of Completion for the Seward Park Mixed-Use Development Project Final Generic Environmental Impact Statement (FGEIS) that was prepared in coordination with the New York City Economic Development Corporation (NYCEDC) and New York City Department of Housing Preservation & Development (HPD). The New York City Council (City Council) has proposed certain modifications to the Uniform Land Use Review Procedure (ULURP) applications (the "Applications" or the "proposed actions") as a result of its review of the Applications.

In addition, HPD has submitted a revised Urban Development Action Area Project (UDAAP) project summary (the "UDAAP Revised Project Summary") to the City Council to be reflected in the City Council's resolution regarding the project, and the City has stated certain intentions, as reflected in a letter dated September 27, 2012, from Robert K. Steel, Deputy Mayor for Economic Development, to Councilmember Margaret Chin (the "City Letter," and altogether, the "proposed modifications").

The proposed modifications would increase the number of residential units in the reasonable worst-case development scenario (RWCDS) for the proposed development to 1,000 from the 900 units assessed in the FGEIS and include the potential for a school on Site 5 as part of the RWCDS. The additional 100 residential units would be reflected in the UDAAP Revised Project Summary (and also in a conforming revised project summary submitted to the New York City Department of City Planning [DCP]) and in the notes section of the zoning calculation chart that is part of the approved ULURP drawing set. The Large-Scale General Development (LSGD) ground-floor plans for Zoning Lots 2, 3, and 4 would be revised to eliminate the second waiver to the ground floor frontage requirements. The potential for school use is reflected in the City Letter; while that letter is not part of the approvals for the proposed actions and reflects a statement of intent, the potential for a school to result in additional or different impacts is nevertheless considered herein.

The proposed modifications, which are described and assessed below, would affect the UDAAP Project and the special permit pursuant to ZR Sections 74-743 and 74-744 for an LSGD. The

proposed modifications would not affect: the acquisition of a portion of Site 2 for the sole purpose of the relocated Essex Street Market; the zoning map change; the special permits pursuant to ZR Sections 13-562 and 74-52 to allow the development of up to four parking garages on Sites 2–5; zoning authorization to modify signage regulations; the zoning text amendment; the street mapping and demapping actions; and potential Mayoral and Borough Board approval of the business terms with the developer(s) to be selected pursuant to the Request for Proposals (RFP), as applicable.

This Technical Memorandum describes the proposed modifications and whether they would result in any significant adverse environmental impacts not already identified in the FGEIS. As discussed below, this Technical Memorandum concludes that the proposed modifications would not result in any significant adverse environmental impacts not already identified in the FGEIS. This Technical Memorandum does include an analysis that was not warranted for the FGEIS; as described below, with an additional 100 residential units, the proposed modifications would exceed the CEQR threshold for a detailed analysis of public libraries. As described below, the libraries analysis concluded that the proposed modifications would not result in any significant adverse impacts on public libraries. In terms of transportation, there would be some modest changes to the analyses but the overall findings resulting from the proposed modifications would not be substantially different from those identified in the FGEIS. To preclude the potential for significant adverse impacts on air quality, the analysis below concludes that the heating and hot water system stack for the potential school should be located at least 57 feet away from the proposed residential and commercial development on Site 5. However, as described below, the New York City School Construction Authority (SCA) would further examine the potential environmental effect of the school once a detailed program and a design for a school on Site 5 have been developed, as SCA projects involving the construction of a new school are subject to environmental review pursuant to the State Environmental Quality Review Act (SEQRA). The future SEQRA analysis may determine alternate design features to avoid any significant impacts. The assumption of a public elementary school as part of the RWCDS for the proposed modifications is conceptual, and no school for Site 5 has been designed or funded; SCA will make the final development decisions.

B. DESCRIPTION OF THE PROPOSED MODIFICATIONS

In summary, the proposed modifications would increase the number of residential units in the RWCDS to 1,000 from the 900 units assessed in the FGEIS, include the potential for a school on Site 5 as part of the RWCDS[1], and revise the LSGD ground floor plans for Zoning Lots 2, 3, and 4 to eliminate the second waiver to the ground floor frontage requirements. The proposed modifications are described below. **Table 1** presents the modified RWCDS program.

INCREASE IN THE NUMBER OF RESIDENTIAL UNITS

To further one of the goals of the proposed actions to allow for the development of a mixed-income residential development, the UDAAP Project would be modified to allow for the development of 1,000 residential units, of which half would be affordable units. The additional 100 units would be dispersed across Sites 1 and 3–6 within the LSGD, because the large floorplates of the proposed developments on those sites would be able to accommodate the additional units. Sites 8, 9, and 10, which are smaller development sites, would not be able to

[1] The inclusion of a school is for analysis purposes only.

accommodate an increase in residential units. The total gross residential floor area of the RWCDS would not change from that assessed in the FGEIS; it would remain approximately 951,000 gross square feet. Likewise, the residential floor area assumed on the individual development sites would be the same as assessed in the FGEIS. The additional 100 residential units would be reflected in the UDAAP Revised Project Summary (and also in a conforming revised project summary submitted to DCP) and the notes section of the zoning calculation chart that is part of the approved ULURP drawing set.

Table 1
Modified Reasonable Worst-Case Development Scenario (RWCDS) Program

Site No.	Allowable Zoning Floor Area (zsf)	Total Gross Floor Area (gsf)	Residential (gsf)	Retail (gsf)	Hotel (gsf)	Other Comm. (gsf)	Public Market (gsf)	School (gsf)	Other Community Facility (gsf)
1	142,708	140,682	74,951	60,731	0	0	0	0	5,000
2	280,410	355,200	0	167,294	97,450	36,304	29,152	0	25,000
3	265,038	239,258	168,239	71,019	0	0	0	0	0
4	264,063	344,351	256,663	69,688	0	0	0	0	18,000
5	394,602	343,458	229,603	47,855	0	0	0	66,000	0
6	138,593	107,026	88,101	18,925	0	0	0	0	0
8	44,840	46,652	37,862	8,790	0	0	0	0	0
9	90,384	94,168	75,361	18,807	0	0	0	0	0
10	27,360	26,642	20,402	6,240	0	0	0	0	0
Total	**1,647,997**	**1,697,437**	**951,182***	**469,349**	**97,450**	**36,304**	**29,152**	**66,000**	**48,000**

Notes:
* The modified RWCDS residential program would comprise 1,000 dwelling units, compared to the 900 dwelling units analyzed in the FGEIS. Half (500) of the units would be affordable units. The 100 additional units would be dispersed across Sites 1 and 3–6 of the proposed LSGD.
1. The RWCDS program is for illustrative purposes only; it does not represent an actual development program, which is dependent on a future developer(s) RFP process. Any development beyond the RWCDS analyzed herein would be subject to additional analysis, as required.
2. Site 7, a public parking garage, would not be redeveloped under the proposed actions.
3. The proposed actions would also include the provision for up to 500 parking spaces in 314,502 gsf of below-grade space.

INCLUSION OF A POTENTIAL SCHOOL

The City Letter reflects an intent to reserve approximately 15,000 square feet of land on Site 5 for potential use as a school. For analysis purposes, the RWCDS assumes the development of a 456-seat, 66,000-square-foot public elementary school at this location. For analysis purposes it is assumed that the floor area of the school would be part of the total 114,000 square feet of community facility space assumed as part of the RWCDS assessed in the FGEIS, and the total RWCDS (approximately 1.648 million zoning square feet) would be the same with the proposed modifications as with the proposed actions assessed in the FGEIS. To account for the potential development of a 66,000-square-foot school on Site 5, it is assumed for analysis purposes that 32,000 square feet of community facility space would be shifted from Sites 3, 4, and 6 to Site 5, which included 34,000 square feet of community facility space in the RWCDS assessed in the FGEIS. It is, therefore, assumed for analysis purposes that the total development assumed on each of Sites 3, 4, and 6 would accordingly be less than assessed in the FGEIS.

NYCEDC and HPD would make approximately 15,000 square feet of land available within the LSGD on Site 5 to SCA for the provision of a school. For analysis purposes, a conceptual public elementary school program is being assumed as part of the RWCDS since no school for Site 5

has been designed or funded; SCA will make the final development decisions.[1] However, it is assumed that should SCA develop a public elementary school within the LSGD, it would be designed in accordance with the New York City Department of Education's specifications for new elementary school construction and would include standard school facilities such as classroom, administration, and assembly space, and gymnasium, cafeteria, library, and outdoor play areas. For analysis purposes, it is assumed that the school would have a separate entrance from the other uses developed on Site 5, and the school entrance would be located on Suffolk Street. Further, it is assumed that the school would have a play area on the roof for the exclusive use of students.

SCA projects involving the construction of a new school are subject to environmental review pursuant to SEQRA. Prior to SCA's committing to constructing a school, SCA would further examine the potential environmental effects of the school once the program has been defined and would make appropriate findings at that time.

ELIMINATION OF A GROUND FLOOR FRONTAGE WAIVER

The LSGD ground floor plans for Zoning Lots 2, 3 and 4, which are part of the ULURP drawing set include notes regarding ground floor frontage. The provision requiring a minimum number of storefronts on the ground floor of Delancey and Broome Streets included two exceptions. In order to ensure that ground floor activity on Zoning Lots 2, 3, and 4 is promoted, the City Council proposes to eliminate the exception that gave the City the ability to waive the frontage requirement if the requirement is substantially economically disadvantageous. The proposed modification to the ground floor frontage waiver would not affect the RWCDS program assumptions or the conclusions presented in the FGEIS.

C. POTENTIAL IMPACTS OF THE PROPOSED MODIFICATIONS

The proposed modifications would affect the RWCDS program for the proposed development. Therefore, the potential for new significant adverse impacts in the analysis areas based on the RWCDS program are considered below. However, the proposed modifications would not affect the analysis of greenhouse gas emissions, because the estimate of building operation emissions is based on the residential floor area and not the number of units and is based on a general community facility category that could include a school. The proposed development under the proposed modifications would also include the same sustainable design features assessed in the FGEIS. Furthermore, the proposed modifications would not affect the site plan or RWCDS massing. Accordingly, the proposed modifications would not alter the analyses of shadows, historic and cultural resources, urban design and visual resources, or hazardous materials.

LAND USE, ZONING AND PUBLIC POLICY

As described above, the proposed modifications would add one potential new use to the proposed development–a school. The proposed school use would be in keeping with the uses of the RWCDS program assessed in the FGEIS, which included approximately 114,000 square feet of community facility use, and it would be compatible with the mix of uses in the surrounding study area where there are a number of existing public schools. The proposed school would

[1] While the school program of 456 seats is conceptual for analysis purposes, it is based on SCA's "Program of Requirements for a Small Primary School Building."

complement the proposed residential uses of the project site and provide a community facility for existing and future neighborhood residents. While the proposed school would be located on a site that would also be developed under the proposed modifications with residential and retail uses, many New York City public schools operate in a dense urban environment surrounded by a mix of uses and populations. Schools are permitted "as of right" under the existing and proposed zoning designations of the proposed development sites. Therefore, the proposed school would be compatible with land uses on the project site and in the study area.

The proposed modifications would also increase the number of residential units by 100 units (of which 50 would be affordable). The additional residential units would not alter the finding of the FGEIS that the proposed project would improve land use conditions by replacing underutilized and deteriorated buildings and surface parking lots with a vibrant, mixed-use development. The additional affordable units would further help address the community's need for affordable housing and would be supportive of public policies that aim to increase the availability of affordable housing, including the Mayor's New Market Housing Plan, PlaNYC, and the Community Board 3 redevelopment guidelines for the project site. As discussed above, the proposed modifications would be consistent with surrounding land uses and would be supportive of applicable public policies and would not introduce new discretionary actions that were not assessed in the FGEIS. Therefore, the proposed zoning modifications would not result in any significant adverse impacts on zoning on the development sites or in the study area.

SOCIOECONOMIC CONDITIONS

The FGEIS concluded that there would be no potential significant adverse impacts with respect to any of the six areas of socioeconomic concern—direct residential displacement; direct businesses displacement; indirect residential displacement; indirect businesses displacement due to increased rents; indirect business displacement due to retail market saturation; and adverse effects on specific industries. Similar to the findings of the socioeconomic conditions analysis presented in the FGEIS, the proposed modifications would not result in any significant adverse socioeconomic impacts.

While the total amount of community facility space that would be introduced with the proposed modifications would remain at approximately 114,000 square feet, a portion of the community facility space (66,000 square feet) would be reserved for a public elementary school. This would not alter the finding that the proposed actions would not result in significant adverse socioeconomic impacts. A public elementary school is a community facility use, and as stated in the FGEIS, the addition of community facility uses would not alter existing economic patterns and would, therefore, not result in indirect displacement due to increased rents.

As stated in the FGEIS, the proposed actions would introduce 900 residential units and an estimated 1,989 residents to the study area, for a total population of 46,761 or an increase of 4.44 percent. With the proposed modifications, there would be 100 additional residential units, for a total of 1,000 residential units. Assuming the 2.21 people per household average for Community District 3, the proposed modifications would introduce 2,210 residents to the study area, for a total population of 46,982 or an increase of 4.94 percent.

According to the *CEQR Technical Manual*, a population increase of less than 5 percent of the total study area population would generally not be expected to change real estate market conditions. The population increase with the proposed modifications continues to be lower than this 5 percent CEQR threshold. In addition, the 4.94 percent population increase would be substantially similar to the 4.44 percent increase identified in the FGEIS, and therefore the additional population with the

proposed modifications would not be expected to have effects beyond what was described in the FGEIS. Also, the proposed modifications would include 50 additional affordable residential units compared with the program analyzed in the FGEIS, for a total of 500 affordable residential units. These additional affordable housing units would expand housing options available to lower-income residents in the study area, creating more housing opportunities for these residents than the program analyzed in the FGEIS. Therefore, the findings with respect to indirect residential displacement would be unchanged, and the proposed modifications would not result in any significant adverse indirect residential displacement impacts.

COMMUNITY FACILITIES AND SERVICES

The proposed modifications would result in additional residential development on the project site, which could create additional demand for community facilities and services. The proposed modifications would also include a potential school on Site 5, which would provide additional school capacity for residents of the proposed project and the surrounding area. The FGEIS concluded that the proposed actions would not result in any significant adverse impacts on community facilities. As discussed below, the proposed modifications would also not result in any significant adverse impacts on community facilities.

DIRECT EFFECTS ON HEALTH CARE SERVICES

Like the proposed actions assessed in the FGEIS, the proposed modifications would result in the relocation of the Downtown Health Center, a clinic at 150 Essex Street (on Site 10) that is run by the Community Healthcare Network (CHN). The proposed modifications would not result in any other direct effects on health care services. Therefore, the proposed modifications would not alter the FGEIS findings with respect to health care services.

PUBLIC SCHOOLS

The proposed modifications would result in the development of 1,000 residential units in the school study areas. Based on the CEQR student generation rates, the proposed modifications would generate approximately 119 elementary school students and 40 intermediate school students by 2022 (see **Table 2**). This would represent 11 additional elementary students and 4 additional intermediate students compared to the proposed actions.

Table 2
Estimated Number of Students Introduced in the Study Areas:
2022 Future With the Proposed Modifications

Study Area	Housing Units	Elementary Students	Intermediate Students
Sub-district 1 of CSD 1	94	11	4
Sub-district 2 of CSD 1	127	15	5
Sub-district 1 of CSD 2	779	93	31
Total	1,000	119	40

Sources: *CEQR Technical Manual* (January 2012 edition), Table 6-1a.

Table 3 below shows the school enrollment, capacity, and utilization in the future with the proposed modifications, without accounting for the additional school capacity that would be provided by the proposed elementary school. As shown, even without the additional elementary school capacity, the proposed modifications would not result in any significant adverse impacts on public elementary or intermediate schools. As with the proposed actions assessed in the FGEIS, elementary schools within the three sub-districts analyzed would operate with a shortage of

seats in 2022, but the proposed modifications would introduce a small number of students relative to the overall enrollment of the study area. As a result, they would not substantially increase the elementary or intermediate school utilization rate.

Table 3
Estimated Public Elementary and Intermediate School Enrollment, Capacity, and Utilization: 2022 Future With the Proposed 1,000 Units (Conditions Without the Potential Elementary School)

Study Area	Future No Action Enrollment	Students Introduced by Proposed Modifications	Total With Action Enrollment	Capacity	Available Seats	Utilization	Increase in Utilization over No Action
Elementary Schools							
Sub-district 1 of CSD 1	2,245	11	2,256	1,803	-453	125%	1%
Sub-district 2 of CSD 1	2,561	15	2,576	2,296	-280	112%	1%
Sub-district 1 of CSD 2	5,949	93	6,042	4,882*	-1,160	124%	2%
Intermediate Schools							
Sub-district 1 of CSD 1	822	4	826	1,138	312	73%	0%
Sub-district 2 of CSD 1	958	5	963	1,047	84	92%	0%
Sub-district 1 of CSD 2	1,320	31	1,351	1,144	-207	118%	3%

Notes: * Does not include additional capacity as a result of the potential 456-seat elementary school on Site 5 under the proposed modifications.
Sources: DOE *Enrollment Projections 2009-2018 by the Grier Partnership*; DOE, *Utilization Profiles: Enrollment/Capacity/Utilization, 2010-2011*, DOE 2010-2014 *Five-Year Capital Plan, Proposed Amendment*, February 2012; School Construction Authority.

Table 4 below shows the school enrollment, capacity, and utilization in the future with the proposed modifications accounting for the additional school capacity that would be provided by a potential elementary school. Because this school would be located on Site 5, which is located within Sub-district 1 of CSD 2, it is assumed that it would provide additional capacity for that sub-district. Conditions in all other study areas would remain the same as shown in **Table 3**. As shown, the addition of this new elementary school capacity would improve elementary school conditions in Sub-district 1 of CSD 2 compared to conditions under the proposed actions.

Table 4
Estimated Public Elementary School Enrollment, Capacity, and Utilization: 2022 Future With the Proposed 1,000 Units (Conditions With the Potential Elementary School)

Study Area*	Future No Action Enrollment	Students Introduced by Proposed Modifications	Total With Action Enrollment	Capacity	Available Seats	Utilization	Increase in Utilization over No Action
Elementary Schools							
Sub-district 1 of CSD 2	5,949	93	6,042	5,338**	-704	113%	-9%

Notes: *Conditions in all other study areas would remain as shown in Table 3 above.
** Includes additional capacity as a result of a potential 456-seat elementary school on Site 5 under the proposed modifications.
Sources: DOE *Enrollment Projections 2009-2018 by the Grier Partnership*; DOE, *Utilization Profiles: Enrollment/Capacity/Utilization, 2010-2011*, DOE 2010-2014 *Five-Year Capital Plan, Proposed Amendment*, February 2012; School Construction Authority.

Overall, because the proposed modifications would increase the elementary and intermediate school utilization rates by less than five percentage points (with or without the proposed elementary school), the CEQR threshold for a potential significant adverse impact, the proposed modifications would not result in a significant adverse impact on public elementary or intermediate schools in any of the sub-districts analyzed. Therefore, the proposed modifications would not alter the FGEIS findings with respect to public elementary and intermediate schools.

INDIRECT EFFECTS ON CHILD CARE SERVICES

The proposed modifications would introduce 500 low- to middle-income units by 2022, which is 50 more units than assessed in the FGEIS. Based on CEQR child care multipliers, this development would generate approximately 58 children under the age of six who would be eligible for publicly funded child care programs, compared to 52 eligible children under the proposed actions as analyzed in the FGEIS.

With the addition of these children, total enrollment at study area child care facilities would increase from 1,856 in the FGEIS to 1,862 compared to a capacity of 1,750 slots. As with the proposed actions in the FGEIS, child care facilities would have a utilization rate of 106 percent in the future with the proposed modifications, which would represent an increase of three percentage points over the No Action condition. The *CEQR Technical Manual* guidelines indicate that a demand for slots greater than the remaining capacity of child care facilities and an increase in demand of five percent of the study area capacity could result in a significant adverse impact. While child care facilities in the study area would operate above capacity, the increase in the utilization rate with the proposed modifications would be less than five percent, and therefore, the project with the proposed modifications would not result in a significant adverse impact on child care facilities. Therefore, the proposed modifications would not alter the FGEIS findings with respect to publicly funded child care facilities.

PUBLIC LIBRARIES

According to the *CEQR Technical Manual*, a detailed analysis of public libraries in Manhattan is warranted if a proposed project would introduce 901 or more residential units. With 1,000 residential units, the proposed modifications would exceed this threshold and a detailed analysis of public libraries is warranted. The FGEIS, which assessed 900 proposed units, did not include an analysis of public libraries.

According to the *CEQR Technical Manual*, service areas for neighborhood branch libraries are based on the distance that residents would travel to use library services, typically not more than ¾-mile (this is referred to as the library's ~~"c~~catchment area"). This libraries analysis compares the population generated by the proposed modifications with the catchment area population of libraries available within an approximately ¾-mile area around the project site.

Existing Conditions

The project site is served by the New York Public Library (NYPL). The NYPL system includes 85 neighborhood branches and four research libraries located in Manhattan, the Bronx, and Staten Island, housing approximately 53 million volumes. (The boroughs of Queens and Brooklyn have separate library systems.)

Six NYPL neighborhood libraries are located within a ¾-mile of the project site—the Tompkins Square, Seward Park, Hamilton Fish, Mulberry Street, Chatham Square, and Ottendorfer Branch Libraries (see **Figure 1**). **Table 5** below provides the catchment area population for each library and the total catchment area population served by all six libraries. The branch libraries in the study area have a combined total of 394,770 holdings. When compared to the catchment area population of 299,643, this is a holdings-to-resident ratio of 1.32. All of these branch libraries offer a wide selection of reading materials for people of all ages as well as computers with free internet access. They also offer special programs, such as reading hours, book groups, puppet shows, films, lectures, and more. In addition, residents in the area can go to any NYPL branch and order books from any of the other library branches.

Table 5
Public Libraries Serving the Project Site

Map No.*	Library Name	Address	Holdings	Catchment Area Population	Holdings per Resident
1	Tompkins Square	331 East 10th Street	52,522	135,315	0.39
2	Seward Park	192 East Broadway	87,902	110,608	0.79
3	Hamilton Fish	415 East Houston Street	59,428	105,417	0.56
4	Mulberry Street	10 Jersey Street	54,370	138,032	0.39
5	Chatham Square	33 East Broadway	92,278	110,543	0.83
6	Ottendorfer	135 Second Avenue	48,270	147,962	0.33
Total, Combined Catchment Areas:			**394,770**	**299,643[1]**	**1.32**

Notes: * See Figure 1.
[1] Due to overlapping catchment areas for each library, the total population is less than the sum of the catchment area population for each library. The catchment area population for each library includes the area within ¾-mile of the library.
Sources: NYPL, July 2012 holdings data; U.S. Census Bureau, 2010 Census, NYC Department of City Planning Selected Facilities and Program Sites.

The Future Without the Proposed Project

In the No Action condition, all six libraries will continue to serve the study area. The catchment area population of each library will increase as a result of development projects completed in the future without the proposed project.

Within the combined catchment area, new residential development will introduce 523 new residential units with approximately 1,156 new residents, increasing the combined catchment area population to 300,799. The holdings-per-resident ratio in the combined catchment area will decrease slightly, from 1.32 to 1.31.

The Future With the Proposed Project

The proposed modifications would result in 1,000 new residential units on the project site, which could introduce approximately 2,210 new residents.[1] With these additional residents, the population of the combined catchment area would increase by approximately 0.7 percent to 303,009. The holdings-per-resident ratio in the combined catchment area will decrease slightly, from 1.31 to 1.30.

According to the *CEQR Technical Manual*, if a proposed project increases the study area population by 5 percent or more as compared with the No Action condition, this increase may impair the delivery of library services in the study area, and a significant adverse impact could occur. Overall, the new population introduced with the proposed modifications would constitute less than a one percent increase in the total catchment area population, and the total holdings per resident would decrease only slightly, from 1.31 to 1.30, compared to the No Action condition. Because of the small increase in population and the fact that residents of the study area would have access to the entire NYPL system through the inter-library loan system, the population introduced with the proposed modifications would not be expected to impair the delivery of library services in the study area. Therefore, the proposed modifications would not result in any significant adverse impacts on public libraries.

[1] The number of residents was calculated based on 1,000 units. A Community District 3 rate of 2.21 residents per unit was applied.

OPEN SPACE

The proposed modifications would include an additional 100 residential units, and these new units would increase the number of project-generated residents from 1,989 assessed in the FGEIS to 2,210. Further, with the proposed modifications, there would be a modest decrease of 21 project-generated employees (from the estimated 1,449 employees in the FGEIS to an estimated 1,428 employees) as a result of the substitution of a school for approximately 66,000 square feet of the general community facility space assumed in the FGEIS as part of the RWCDS.

The proposed modifications would not alter the findings of the open space analyses presented in the FGEIS. As shown in **Table 6**, given the lower number of project-generated employees with the proposed modifications compared to the FGEIS, the With-Action open space ratio for workers in the commercial (¼-mile) study area would improve by approximately 0.16 percent (from -11.45 percent in the FGEIS to -11.29 percent). As with the FGEIS, the proposed modifications would continue to result in a decrease in the passive open space for workers in the study area, but the open space ratio would still remain almost five times above the City's recommended guideline ratio. Therefore, the proposed modifications, like the proposed actions, would not result in any significant adverse impacts on open space resources in the commercial study area

Table 6
2022 Open Space Ratios Summary
Future with the Proposed Modifications

Ratio	DCP Guideline	Existing Ratio	No-Action Ratio	With-Action Ratio - FGEIS	With-Action Ratio - Proposed Modifications	Percent Change No-Action to With-Action (FGEIS/Proposed Modifications)
Non-Residential Study Area						
Passive/non-residents	0.15	0.82	0.78	0.69	0.70	-11.45% / -11.29%
Residential Study Area						
Total/residents	2.5	0.79	0.83	0.82	0.81	-1.32% / -1.49%
Passive/residents	0.5	0.23	0.26	0.26	0.26	-1.18% / -1.35%
Active/residents	2.0	0.56	0.57	0.56	0.56	-1.38% / -1.55%
Note: Ratios in acres per 1,000 people.						

As shown in **Table 6**, the larger residential population with the proposed modifications would result in a very slight decrease in the total open space ratio compared to the With-Action open space ratio presented in the FGEIS for the ½-mile residential study area. As with the proposed actions, the open space ratios with the proposed modifications would continue to fall short of the City's recommended open space ratio guidelines. However, the decrease with the proposed modifications would remain 1.55 percent or less and would not constitute a substantial change. Therefore, the proposed modifications would not result in any significant adverse impacts on open space resources in the residential study area.

WATER AND SEWER INFRASTRUCTURE

WATER SUPPLY

As shown in **Table 7**, the proposed development with the proposed modifications would result in a water demand of 690,195 gallons per day (gpd), which is 20,060 gpd more than the water demand generated by the proposed actions assessed in the FGEIS. With this additional

increment, the total incremental water demand of 676,452 gpd over the No Action condition (described in the FGEIS) generated by the proposed development with the proposed modifications would continue to represent a small increase in demand on the New York City water supply system—approximately 0.06 percent of the 1.1 billion gallons per day (bgd) typically distributed within New York City and Westchester County. As a result, the proposed modifications, like the proposed actions assessed in the FGEIS, would have no significant adverse impacts on the City's water supply.

Table 7
Future With the Proposed Modifications Water Consumption

Use	Unit	Size (Square feet)	Rate	Consumption (gallons per day)
Residential				
Domestic	2,210 (people)[1]	NA	100 gpd/person	221,000
Air Conditioning	NA	951,182	0.17 gpd/sf	161,701
Commercial/Office[2]				
Domestic	NA	84,304	0.10 gpd/sf	8,430
Air Conditioning	NA	84,304	0.17 gpd/sf	14,332
Retail[3]				
Domestic	NA	498,501	0.24 gpd/sf	119,640
Air Conditioning	NA	498,501	0.17 gpd/sf	84,745
Hotel				
Domestic	200 (rooms)	NA	120 gpd/room/occupant[4]	48,000
Air Conditioning	NA	97,450	0.17 gpd/sf	16,567
Public School				
Domestic	456 (seats)	NA	10 gpd/seat	4,560
Air Conditioning	NA	66,000	0.17 gpd/sf	11,220
TOTAL	NA	1,697,437	NA	690,195

Notes:
1. The number of residents was calculated based on 1,000 units. A Community District 3 rate of 2.21 residents per unit was applied.
2. Commercial/Office uses also include community facilities.
3. Retail uses include the relocated Essex Street Market.
4. Assumes 2 occupants/hotel room.

Source: Rates from *CEQR Technical Manual* (January 2012 edition).

SANITARY SEWAGE

As with the FGEIS, for purposes of this analysis the amount of sanitary sewage generated by the proposed development is conservatively estimated as all water demand except that used by air conditioning, which is typically not discharged to the sewer system. The estimated amount of sanitary sewage that would be generated by the proposed development with the proposed modifications is estimated to be 401,630 gpd, which is 20,060 gpd more than the sewage that would be generated by the proposed actions assessed in the FGEIS. With this additional increment, the total increment of sanitary sewage—393,904 gpd—generated by the proposed development with the proposed modifications over the No Action condition (described in the FGEIS) would represent approximately 0.17 percent of the average daily flow of 230 million gallons per day at the Newtown Creek Wastewater Treatment Plant (WWTP) and would not result in an exceedance of the Newtown Creek WWTP's capacity. Therefore, the proposed modifications, like the proposed actions assessed in the FGEIS, would not create a significant adverse impact on the City's sanitary sewage treatment system.

STORMWATER

Under the proposed modifications, the surface coverage and weighted runoff coefficient for each combined sewer overflow (CSO) subcatchment area would not change as compared to the program analyzed in the FGEIS.

Following the same methodology used for the FGEIS analysis, the DEP Flow Volume Calculation Matrix was completed for the existing and With-Action conditions. The summary tables, taken from the DEP Flow Volume Calculation Matrix, are included in **Table 8.**

Table 8
DEP Flow Volume Matrix:
Existing and Build Volume Comparison

Rainfall Volume (in.)	Rainfall Duration (hr.)	Runoff Volume Direct Drainage (MG)	Runoff Volume To CSS** (MG)	Sanitary Volume To CSS (MG)	Total Volume To CSS (MG)	Runoff Volume To River (MG)	Runoff Volume To CSS** (MG)	Sanitary Volume To CSS (MG)	Total Volume To CSS (MG)	Increased Total Volume to CSS** (MG)	Percent Increase From Existing Conditions (%)
NCM-042		Existing				Build				**NCM-042 Increment**	
		72,354 sf / 1.66 Acres				72,354 sf / 1.66 Acres					
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.0185	*
0.40	3.80	0.00	0.02	0.00	0.02	0.00	0.02	0.02	0.04	0.0203	129
1.20	11.30	0.00	0.05	0.00	0.05	0.00	0.05	0.06	0.11	0.0603	128
2.50	19.50	0.00	0.10	0.00	0.10	0.00	0.11	0.10	0.20	0.1059	108
NCM-059		Existing				Build				**NCM-059 Increment**	
		72,353 sf / 1.66 Acres				72,353 sf / 1.66 Acres					
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.0185	*
0.40	3.80	0.00	0.02	0.00	0.02	0.00	0.02	0.02	0.04	0.0203	129
1.20	11.30	0.00	0.05	0.00	0.05	0.00	0.05	0.06	0.11	0.0603	128
2.50	19.50	0.00	0.10	0.00	0.10	0.00	0.11	0.10	0.20	0.1059	108
NCM-060		Existing				Build				**NCM-060 Increment**	
		72,353 sf / 1.66 Acres				72,353 sf / 1.66 Acres					
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.0185	*
0.40	3.80	0.00	0.02	0.00	0.02	0.00	0.02	0.02	0.04	0.0203	129
1.20	11.30	0.00	0.05	0.00	0.05	0.00	0.05	0.06	0.11	0.0603	128
2.50	19.50	0.00	0.10	0.00	0.10	0.00	0.11	0.10	0.20	0.1059	108
NCM-063		Existing				Build				**NCM-063 Increment**	
		11,535 sf / 0.26 Acres				11,535 sf / 0.26 Acres					
0.00	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0020	*
0.40	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.0023	84
1.20	11.30	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.02	0.0068	83
2.50	19.50	0.00	0.02	0.00	0.02	0.00	0.02	0.01	0.03	0.0121	71

Notes:
*Percent increase computed for rainfall events only.
** Assumes no on-site detention/BMPs
CSS = Combined Sewer System; MG = Million Gallons

The program and surface coverage analyzed in the FGEIS for Sites 2, 8, 9, and 10 would not change under the proposed modifications.

As shown in **Table 8**, the range of the percent increase in total combined sewer discharge to subcatchment area NCM-042, 059 and 060 increased with the proposed modifications from a range of 103 to 123 percent to a range of 108 to 129 percent. The percent increase in total combined sewer discharge to subcatchment area NCM-063 increased from a range of 64 to 74 percent to a range of 71 to 84 percent.

As with the FGEIS analysis, the Flow Volume Matrix calculations do not reflect the use of any best management practices to reduce sanitary and stormwater runoff volumes to the combined sewer system. BMPs would be required as a part of the DEP site connection approval process. These BMPs, as assessed in the FGEIS, would achieve an overall release rate of 0.25 cfs or 10 percent of the allowable flow rate (whichever is greater) from the proposed development sites.

The BMP Concept Plan in the FGEIS summarizes the potential BMPs that would be suitable for implementation within the project site.

Under the proposed modifications, with the incorporation of select BMPs outlined in the BMP Concept Plan documented in the FGEIS, the overall volume of stormwater runoff and the peak stormwater runoff rate would remain the same as compared to the proposed actions assessed in the FGEIS with BMPs incorporated. In conclusion, the proposed modifications, like the proposed actions assessed in the FGEIS, would not result in any significant adverse impacts on wastewater treatment or stormwater conveyance infrastructure.

SOLID WASTE AND SANITATION SERVICES

There would be no change to the non-residential solid waste generated by the proposed modifications compared to that generated by the proposed actions assessed in the FGEIS.

As shown in **Table 10**, under the proposed modifications, the proposed development would result in 225,848 pounds (112.9 tons) of solid waste per week, which is 4,610 pounds (or 2.3 tons) per week more than would be produced by the proposed actions assessed in the FGEIS. An estimated 42,992 pounds (21.5 tons) of solid waste per week would be from the residential, school, and community facility uses. That 21.5 tons, which would be collected by the New York City Department of Sanitation (DSNY), would be 4,610 pounds (2.3 tons) per week more than assessed in the FGEIS, but it would result in the same number of up to two added truckloads per week for solid collection services assessed in the FGEIS, as the typical DSNY collection truck has a capacity of 12.5 tons. Therefore, as with the proposed actions, the proposed modifications would not result in a significant adverse impact on solid waste services for DSNY, since only two truckloads—the same as assessed in the FGEIS—would be needed per week.

Table 10
The Future with the Proposed Modifications: Solid Waste Generation

Use	Program	Households/ Employment/Students	Generation Rate (pounds per week)[1]	Total (pounds per week)
Residential	1,000 units	1,000 households	41 per household	41,000
Office Building	36,304 sf	145 employees[2]	13 per employee	1,885
General Retail	363,095 sf	535 employees[3]	79 per employee	42,265
Restaurants	21,367 sf	107 employees[4]	251 per employee	26,857
Fast Food	19,887 sf	199 employees[5]	200 per employee	39,800
Food Stores	94,152 sf	236 employees[3]	284 per employee	67,024
Hotel	200 rooms	67 employees[6]	75 per employee	5,025
Community Facility	48,000 sf	48 employees[7]	13 per employee	624
Elementary School	456 seats	456 students	3 per pupil	1,368
Total				**225,848**

Notes:
1. Solid waste generation rates as per Table 14-1 in the *CEQR Technical Manual* (January 2012 edition).
2. Office employment based on 250 sf per employee.
3. Local retail and food stores employment based on 400 sf per employee. Destination retail employment based on 800 sf per employee.
4. Restaurant employment based on 200 sf per employee.
5. Fast food employment based on 100 sf per employee.
6. Hotel employment based on 3 rooms per employee.
7. Based on the solid waste generation rate used in the 2007 *Manhattanville in West Harlem Rezoning and Academic Mixed- Use Development FEIS* and in the 2008 *Willets Point Development Plan FGEIS.*

ENERGY

With the proposed modifications, there would be no change to the estimate of the proposed development's energy consumption disclosed in the FGEIS, as the energy analysis in the FGEIS used the institutional rate for the community facility space and the residential rate was based on floor area and not the number of units. Therefore, with the substitution of a public elementary school for a portion of the community facility space assumed in the FGEIS RWCDS program and the increase in the number of residential units but not of floor area, the proposed development would continue to have a total energy demand of 285.9 billion BTU's per year, and the proposed modifications, like the proposed actions, would not have a significant adverse impact on energy systems and services. In addition, the proposed modifications would not alter the FGEIS assumptions about the inclusion of features aimed at reducing energy consumption and greenhouse gas emissions in the proposed development and the expectation that housing developments on all sites would be certified under the Enterprise Green Communities Program or would incorporate measures that would achieve equivalent energy efficiency levels.

TRANSPORTATION

A detailed trip generation analysis was performed to estimate the volume of person and vehicle trips generated by the proposed modifications. As described above, the modified program would increase the number of residential units analyzed in the RWCDS to 1,000 from the 900 units assessed in the FGEIS and include a potential school on Site 5. To account for the development of the potential elementary school on Site 5, 32,000 square feet of community facility space would be shifted from Sites 3, 4, and 6 to Site 5, which included 34,000 square feet of community facility space in the RWCDS assessed in the FGEIS. Therefore, as discussed above, the total development assumed on Sites 3, 4, and 6 with the proposed modifications would accordingly be less than assessed in the FGEIS.

Travel demand projections were prepared for each of the proposed development components under the proposed modifications for the weekday AM, midday, PM, and Saturday peak hours. The trips generated by the proposed development assessed in the FGEIS were compared to the proposed modifications to determine if additional quantified analyses were warranted. **Table 11** shows the transportation planning assumptions used in estimating the number of person and vehicle trips. Consistent with *CEQR* requirements and consistent with the travel demand assumptions used in the FGEIS transportation analyses, these assumptions are based on travel demand factors from established and published sources including the *CEQR Technical Manual*, *ITE Trip Generation 8th Edition*, 2000 U.S. Census data, and various approved studies.

Table 11
Travel Demand Assumptions

Use	Residential				Hotel				Office				Local Retail				Destination Retail				Public Market				Medical Office (Staff)				Medical Office (Visitors)				School (Students)				School (Staff)				Community Facility			
Daily Person Trip	(1)				(1)				(1)				(1)				(1)				(1)(2)				(10)				(10)				(12)				(12)(14)				(10)			
Generation Rate	8.075			9.6	9.4			9.4	18.0			3.9	205			240	78.2			92.5	175			231	10.0			4.3	33.6			14.5	2.0			0	2.0			0	48			19
	Trips / Unit				Trips / Room				Trips / KSF				Trips / KSF				Trips / KSF				Trips / KSF				Trips / KSF				Trips / KSF				Trips / Seat				Trips / Staff				Trips / KSF			
Trip Linkage	0%				0%				0%				25%				25%				25%				0%				0%				0%				0%				0%			
	AM	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**
Temporal	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(10)				(10)				(12)				(12)				(10)			
	10%	5%	11%	8%	8%	14%	13%	9%	12%	15%	14%	17%	3%	19%	10%	10%	3%	9%	9%	11%	5%	6%	10%	9%	24%	17%	24%	17%	6.0%	9.0%	5.0%	9%	50%	0%	2.5%	0%	50%	0%	2.5%	0%	7%	10%	7%	14%
Direction	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(6)	(4)	(4)	(4)	(7)	(7)	(7)	(8)	(10)				(10)				(12)				(12)				(10)			
In	15%	50%	70%	50%	39%	54%	65%	56%	96%	48%	5%	57%	50%	50%	50%	50%	61%	55%	47%	52%	59%	46%	47%	51%	94%	50%	12%	50%	94%	50%	12%	50%	100%	0%	0%	0%	100%	0%	0%	0%	61%	55%	29%	49%
Out	85%	50%	30%	50%	61%	46%	35%	44%	4%	52%	95%	43%	50%	50%	50%	50%	39%	45%	53%	48%	41%	54%	53%	49%	6%	50%	88%	50%	6%	50%	88%	50%	0%	0%	100%	0%	0%	0%	100%	0%	39%	45%	71%	51%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%
Modal Split	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(5)	(4)	(5)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(9)	(9)	(9)	(9)	(5)(11)	(5)(11)	(5)(11)	(5)(11)	(10)				(13)				(5)(11)				(10)			
Auto	11%	11%	11%	11%	9%	8%	9%	9%	27%	2%	27%	2%	2%	2%	2%	2%	9%	9%	9%	9%	2%	2%	2%	2%	28%	28%	28%	28%	25%	25%	25%	25%	10%	10%	10%	10%	28%	28%	28%	28%	5%	5%	5%	5%
Taxi	2%	2%	2%	2%	18%	15%	18%	18%	1%	3%	1%	3%	3%	3%	3%	3%	4%	4%	4%	4%	3%	3%	3%	3%	1%	1%	1%	1%	25%	25%	25%	25%	2%	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%
Subway	49%	49%	49%	49%	24%	13%	24%	24%	37%	6%	37%	6%	6%	6%	6%	6%	28.5%	20%	28.5%	20%	6%	6%	6%	6%	39%	39%	39%	39%	29%	29%	29%	29%	8%	8%	8%	8%	39%	39%	39%	39%	3%	3%	3%	3%
Bus	9%	9%	9%	9%	3%	3%	3%	3%	8%	6%	8%	6%	6%	6%	6%	6%	8%	8%	8%	8%	6%	6%	6%	6%	8%	8%	8%	8%	11%	11%	11%	11%	7%	7%	7%	7%	8%	8%	8%	8%	6%	6%	6%	6%
Walk	29%	29%	29%	29%	46%	61%	46%	46%	23%	83%	23%	83%	83%	83%	83%	83%	50.5%	59%	50.5%	59%	83%	83%	83%	83%	24%	24%	24%	24%	10%	10%	10%	10%	53%	53%	53%	53%	24%	24%	24%	24%	85%	85%	85%	85%
School Bus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20%	20%	20%	20%	-	-	-	-	-	-	-	-
Work at Home	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Vehicle Occupancy	(3)(4)	(3)(4)	(3)(4)	(3)(4)	(4)	(4)	(4)	(4)	(4)(5)	(4)(5)	(4)(5)	(4)(5)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(9)	(9)	(9)	(9)	(4)(5)	(4)(5)	(4)(5)	(4)(5)	(10)				(12)				(4)(5)				(10)			
Auto	1.18	1.18	1.18	1.18	1.40	1.40	1.40	1.40	1.25	1.25	1.25	1.25	1.65	1.65	1.65	1.65	2.00	2.00	2.00	2.00	1.65	1.65	1.65	1.65	1.25	1.25	1.25	1.25	1.65	1.65	1.65	1.65	1.70	1.70	1.70	1.70	1.25	1.25	1.25	1.25	1.65	1.65	1.65	1.65
Taxi	1.40	1.40	1.40	1.40	1.80	1.80	1.80	1.80	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	2.00	2.00	2.00	2.00	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.20	1.20	1.20	1.20	1.22	1.22	1.22	1.22	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
School Bus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.0	19.0	19.0	19.0	-	-	-	-	-	-	-	-
Daily Delivery Trip	(1)				(4)				(1)				(1)				(1)				(9)				(10)				(10)				(12)				(12)				(10)			
Generation Rate	0.06			0.02	0.06			0.01	0.32			0.01	0.35			0.04	0.35			0.04	0.35			0.04	0.29			0.0	0.29			0.0	0.07			0	0.07			0	0.29			0.04
	Delivery Trips / Unit				Delivery Trips / Room				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF				Delivery Trips / KSF			
	AM	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**	**AM**	**MD**	**PM**	**SAT**
Delivery Temporal	(1)	(1)	(1)	(1)	(4)	(4)	(4)	(4)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(9)	(9)	(9)	(9)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(12)				(12)				(10)			
	12%	9%	2%	9%	12%	9%	1%	9%	10%	11%	2%	11%	8%	11%	2%	11%	8%	11%	2%	11%	8%	11%	2%	11%	9.6%	11.0%	1.0%	0%	9.6%	11%	1.0%	0%	9.6%	11%	1%	0%	9.6%	11%	1%	0%	10%	11%	1%	0%
Delivery Direction	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
In	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Out	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Sources
(1) 2012 CEQR Technical Manual
(2) Assumed supermarket use.
(3) ACS 2005-2009 5-year estimates.
(4) Western Rail Yard FEIS (2009)
(5) 2000 Census Reverse Journey-to-Work Data.
(6) ITE Trip Generation 8th Edition, Land Use Code: 820, P1501.
(7) 250 East 57th Street Redevelopment EAF (2008).
(8) ITE Trip Generation 8th Edition, Land Use Code: 850, P1580.
(9) Same as local retail use.
(10) Jamaica Plan FEIS (2007)
(11) Work at home mode excluded from modal split estimations
(12) NYU Core FEIS (2012)
(13) NYMTC School Paired Journey Data (Lower Manhattan), adjusted for study area transportation conditions.
(14) Assumes one faculty/staff member for every 10 students.
Note: Linked trip credit of 25 percent was not applied to walk-only person trips

TRIP GENERATION

Trip generation assumptions for the residential, hotel, office/community office, local retail, destination retail, public market, medical office, and community facility are identical to the assumptions utilized for the FGEIS. Travel demand factors used to calculate trips generated by the potential elementary school are described in detail below.

Elementary School

For the potential public elementary school included in the RWCDS under the proposed modifications, daily person trip generation rates of 2 person trips per student and per staff for weekday and 0 person trips per student and per staff for Saturday were obtained from the 2012 *New York University* (*NYU) Core FEIS*. A temporal distribution of 50 percent for the weekday AM peak hour, 0 percent for the midday peak hour, 2.5 percent for the PM peak hour, and 0 percent for the Saturday peak hour for students and for staff were also obtained from the *NYU Core FEIS*. Directional distributions for the weekday AM, midday, and PM, and Saturday peak hours were obtained from the *NYU Core FEIS*. A modal split of 10 percent by auto, 2 percent by taxi, 8 percent by subway, 7 percent by bus, 20 percent by school bus, and 53 percent by walk for student trips were based on the information from the New York Metropolitan Transportation Council (NYMTC) school paired-journey data for Lower Manhattan (adjusted for study area conditions). For the staff trips, a modal split of 28 percent by auto, 1 percent by taxi, 39 percent by subway, 8 percent by bus, and 24 percent by walk for the staff were obtained from the 2000 U.S. Census reverse journey-to-work (RJTW) database. Vehicle occupancy rates of 1.7 per auto, 1.22 passengers by taxi, and 19 passengers by school bus for students were obtained from the *NYU Core FEIS*. Vehicle occupancy rates of 1.25 per auto and 1.4 passengers by taxi for staff were obtained from the 2000 U.S. Census RJTW database.

For truck deliveries, a daily trip generation rate of 0.07 trips per 1,000 square feet for weekday and 0.00 trips per 1,000 square feet for Saturday were obtained from the *NYU Core FEIS*. Temporal and directional distribution factors for truck deliveries were also obtained from the *NYU Core FEIS.*

The total number of person and vehicle trips generated by the development program with the proposed modifications is summarized in **Table 12** and **Table 13**, respectively. As presented in **Table 12**, the development program with the proposed modifications would generate approximately 3,562, 6,123, 6,216, and 7,357 person trips, which is the summation of all trips by all modes, during the weekday AM, midday, PM, and Saturday peak hours, respectively. In terms of vehicle trips, the development program with the proposed modifications would generate approximately 397, 450, 473, and 466 vehicle trips, including both auto trips and taxi trips, during the weekday AM, midday, PM, and Saturday peak hours, respectively (see **Table 13)**. In comparison, the development program analyzed in the FGEIS is expected to generate 3,245, 6,375, 6,355, and 7,403 person trips, respectively, and 371, 527, 540, and 496 vehicle trips, respectively, during the weekday AM, midday, PM, and Saturday midday peak hours. As shown in **Tables 14 and 15**, a comparison of the trips expected to be generated by the FGEIS development program versus the development program with the proposed modifications indicates that the person and vehicle trips would be greater for the FGEIS development program during the weekday midday, PM, and Saturday midday peak hours. However, during the weekday AM peak hour, the proposed modifications are expected to generate 317 additional pedestrian trips and 26 additional vehicle trips in comparison to the trips expected to be generated by the FGEIS development program.

Table 12
Trip Generation Summary
Person Trips – Proposed Modifications

Use		Peak Hour		Person Trips						
				Auto	Taxi	Subway	Bus	School Bus	Walk	Total
Residential	1,000 Dwelling Units	AM	In	13	2	59	11	0	35	120
			Out	76	14	336	62	0	199	687
			Total	**89**	**16**	**395**	**73**	**0**	**234**	**807**
		MD	In	22	4	99	18	0	59	202
			Out	22	4	99	18	0	59	202
			Total	**44**	**8**	**198**	**36**	**0**	**118**	**404**
		PM	In	68	12	305	56	0	180	621
			Out	29	5	131	24	0	77	266
			Total	**97**	**17**	**436**	**80**	**0**	**257**	**887**
		SAT	In	42	8	188	35	0	111	384
			Out	42	8	188	35	0	111	384
			Total	**84**	**16**	**376**	**70**	**0**	**222**	**768**
Hotel	200 Rooms	AM	In	5	11	14	2	0	27	59
			Out	8	17	22	3	0	42	92
			Total	**13**	**28**	**36**	**5**	**0**	**69**	**151**
		MD	In	11	21	18	4	0	87	141
			Out	10	18	16	4	0	74	122
			Total	**21**	**39**	**34**	**8**	**0**	**161**	**263**
		PM	In	14	29	38	5	0	73	159
			Out	8	15	21	3	0	39	86
			Total	**22**	**44**	**59**	**8**	**0**	**112**	**245**
		SAT	In	9	17	23	3	0	44	96
			Out	7	13	18	2	0	34	74
			Total	**16**	**30**	**41**	**5**	**0**	**78**	**170**
Office	36.304 KSF	AM	In	20	1	28	6	0	17	72
			Out	1	0	1	0	0	1	3
			Total	**21**	**1**	**29**	**6**	**0**	**18**	**75**
		MD	In	1	1	3	3	0	39	47
			Out	1	2	3	3	0	42	51
			Total	**2**	**3**	**6**	**6**	**0**	**81**	**98**
		PM	In	1	0	2	0	0	1	4
			Out	23	1	32	7	0	20	83
			Total	**24**	**1**	**34**	**7**	**0**	**21**	**87**
		SAT	In	0	0	1	1	0	11	13
			Out	0	0	1	1	0	9	11
			Total	**0**	**0**	**2**	**2**	**0**	**20**	**24**

Table 12 (cont'd)
Trip Generation Summary
Person Trips – Proposed Modifications

Use		Peak Hour		Person Trips						
				Auto	Taxi	Subway	Bus	School Bus	Walk	Total
Local Retail	52.762 KSF	AM	In	2	4	7	7	0	135	155
			Out	2	4	7	7	0	135	155
			Total	**4**	**8**	**14**	**14**	**0**	**270**	**310**
		MD	In	15	23	46	46	0	853	983
			Out	15	23	46	46	0	853	983
			Total	**30**	**46**	**92**	**92**	**0**	**1,706**	**1,966**
		PM	In	8	12	24	24	0	449	517
			Out	8	12	24	24	0	449	517
			Total	**16**	**24**	**48**	**48**	**0**	**898**	**1,034**
		SAT	In	9	14	28	28	0	526	605
			Out	9	14	28	28	0	526	605
			Total	**18**	**28**	**56**	**56**	**0**	**1,052**	**1,210**
Destination Retail	351.587 KSF	AM	In	34	15	108	30	0	254	441
			Out	22	10	69	19	0	162	282
			Total	**56**	**25**	**177**	**49**	**0**	**416**	**723**
		MD	In	92	41	204	82	0	803	1,222
			Out	75	33	167	67	0	657	999
			Total	**167**	**74**	**371**	**149**	**0**	**1,460**	**2,221**
		PM	In	79	35	249	70	0	587	1,020
			Out	89	39	280	79	0	662	1,149
			Total	**168**	**74**	**529**	**149**	**0**	**1,249**	**2,169**
		SAT	In	126	56	279	112	0	1,098	1,671
			Out	116	52	258	103	0	1,013	1,542
			Total	**242**	**108**	**537**	**215**	**0**	**2,111**	**3,213**

Table 12 (cont'd)
Trip Generation Summary
Person Trips – Proposed Modifications

Use		Peak Hour		Person Trips						
				Auto	Taxi	Subway	Bus	School Bus	Walk	Total
Public Market	94.152 KSF	AM	In	7	11	22	22	0	403	465
			Out	5	8	15	15	0	280	323
			Total	**12**	**19**	**37**	**37**	**0**	**683**	**788**
		MD	In	7	10	20	20	0	377	434
			Out	8	12	24	24	0	443	511
			Total	**15**	**22**	**44**	**44**	**0**	**820**	**945**
		PM	In	12	17	35	35	0	643	742
			Out	13	20	39	39	0	725	836
			Total	**25**	**37**	**74**	**74**	**0**	**1,368**	**1,578**
		SAT	In	15	22	45	45	0	829	956
			Out	14	22	43	43	0	796	918
			Total	**29**	**44**	**88**	**88**	**0**	**1,625**	**1,874**
Medical Office (Staff)	43 KSF	AM	In	27	1	38	8	0	23	97
			Out	2	0	2	0	0	1	5
			Total	**29**	**1**	**40**	**8**	**0**	**24**	**102**
		MD	In	10	0	14	3	0	9	36
			Out	10	0	14	3	0	9	36
			Total	**20**	**0**	**28**	**6**	**0**	**18**	**72**
		PM	In	3	0	5	1	0	3	12
			Out	25	1	35	7	0	22	90
			Total	**28**	**1**	**40**	**8**	**0**	**25**	**102**
		SAT	In	4	0	6	1	0	4	15
			Out	4	0	6	1	0	4	15
			Total	**8**	**0**	**12**	**2**	**0**	**8**	**30**
Medical Office (Visitors)	43 KSF	AM	In	20	20	24	9	0	8	81
			Out	1	1	2	1	0	1	6
			Total	**21**	**21**	**26**	**10**	**0**	**9**	**87**
		MD	In	16	16	19	7	0	7	65
			Out	16	16	19	7	0	7	65
			Total	**32**	**32**	**38**	**14**	**0**	**14**	**130**
		PM	In	2	2	3	1	0	1	9
			Out	16	16	18	7	0	6	63
			Total	**18**	**18**	**21**	**8**	**0**	**7**	**72**
		SAT	In	7	7	8	3	0	3	28
			Out	7	7	8	3	0	3	28
			Total	**14**	**14**	**16**	**6**	**0**	**6**	**56**

Table 12 (cont'd)
Trip Generation Summary
Person Trips – Proposed Modifications

Use		Peak Hour		Person Trips						
				Auto	Taxi	Subway	Bus	School Bus	Walk	Total
School (Students)	456 Seats	AM	In	46	9	36	32	91	242	456
			Out	0	0	0	0	0	0	0
			Total	**46**	**9**	**36**	**32**	**91**	**242**	**456**
		MD	In	0	0	0	0	0	0	0
			Out	0	0	0	0	0	0	0
			Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		PM	In	0	0	0	0	0	0	0
			Out	2	0	2	2	5	12	23
			Total	**2**	**0**	**2**	**2**	**5**	**12**	**23**
		SAT	In	0	0	0	0	0	0	0
			Out	0	0	0	0	0	0	0
			Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
School (Staff)	46 Staff	AM	**In**	13	0	18	4	0	11	46
			Out	0	0	0	0	0	0	0
			Total	**13**	**0**	**18**	**4**	**0**	**11**	**46**
		MD	**In**	0	0	0	0	0	0	0
			Out	0	0	0	0	0	0	0
			Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		PM	**In**	0	0	0	0	0	0	0
			Out	1	0	1	0	0	1	3
			Total	**1**	**0**	**1**	**0**	**0**	**1**	**3**
		SAT	**In**	0	0	0	0	0	0	0
			Out	0	0	0	0	0	0	0
			Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Community Facility	5 KSF	AM	In	1	0	0	1	0	9	11
			Out	0	0	0	0	0	6	6
			Total	**1**	**0**	**0**	**1**	**0**	**15**	**17**
		MD	In	1	0	0	1	0	11	13
			Out	1	0	0	1	0	9	11
			Total	**2**	**0**	**0**	**2**	**0**	**20**	**24**
		PM	In	0	0	0	0	0	4	4
			Out	1	0	0	1	0	10	12
			Total	**1**	**0**	**0**	**1**	**0**	**14**	**16**
		SAT	In	0	0	0	0	0	6	6
			Out	0	0	0	0	0	6	6
			Total	**0**	**0**	**0**	**0**	**0**	**12**	**12**
Total		AM	In	188	74	354	132	91	1,164	2,003
			Out	117	54	454	107	0	827	1,559
			Total	**305**	**128**	**808**	**239**	**91**	**1,991**	**3,562**
		MD	In	175	116	423	184	0	2,245	3,143
			Out	158	108	388	173	0	2,153	2,980
			Total	**333**	**224**	**811**	**357**	**0**	**4,398**	**6,123**
		PM	In	187	107	661	192	0	1,941	3,088
			Out	215	109	583	193	5	2,023	3,128
			Total	**402**	**216**	**1,244**	**385**	**5**	**3,964**	**6,216**
		SAT	In	212	124	578	228	0	2,632	3,774
			Out	199	116	550	216	0	2,502	3,583
			Total	**411**	**240**	**1,128**	**444**	**0**	**5,134**	**7,357**

Table 13
Trip Generation Summary
Vehicle Trips – Proposed Modifications

Use	Weekday Peak Hours									Saturday Peak Hour		
	AM			Midday			PM					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Autos												
Residential	11	64	75	19	19	38	58	25	83	36	36	72
Hotel	4	6	10	8	7	15	10	5	15	6	5	11
Office	16	1	17	1	1	2	1	19	20	0	0	0
Local Retail	1	1	2	9	9	18	5	5	10	6	6	12
Destination Retail	17	11	28	46	38	84	39	44	83	63	58	121
Medical Office (Staff)	22	1	23	8	8	16	3	20	23	4	4	8
Medical Office (Visitors)	12	1	13	10	10	20	1	10	11	4	4	8
School (Students)	27	27	54	0	0	0	1	1	2	0	0	0
School (Staff)	10	0	10	0	0	0	0	1	1	0	0	0
Community Facility	0	0	0	0	0	0	0	0	0	0	0	0
Public Market	4	3	7	4	5	9	7	8	15	9	9	18
Deliveries (all uses)	15	15	30	16	16	32	2	2	4	2	2	4
Taxis (all uses)	59	59	118	108	108	216	103	103	206	106	106	212
School Buses (all uses)	5	5	10	0	0	0	0	0	0	0	0	0
Total	**203**	**194**	**397**	**229**	**221**	**450**	**230**	**243**	**473**	**236**	**230**	**466**

Table 14
Person Trip Comparisons:
Proposed Modifications vs. FGEIS Development Program

	Auto		Taxi		Subway		Bus		School Bus		Walk		Total		Total
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour															
PM	188	117	74	54	354	454	132	107	91	0	1,164	827	2,003	1,559	3,562
FGEIS	191	114	91	54	376	425	117	103	0	0	960	814	1,735	1,510	3,245
Diff.	-3	3	-17	0	-22	29	15	4	91	0	204	13	268	49	317
Weekday Midday Peak Hour															
PM	175	158	116	108	423	388	184	173	0	0	2,245	2,153	3,143	2,980	6,123
FGEIS	205	188	137	129	454	419	196	184	0	0	2,278	2,185	3,270	3,105	6,375
Diff.	-30	-30	-21	-21	-31	-31	-12	-11	0	0	-33	-32	-127	-125	-252
Weekday PM Peak Hour															
PM	187	215	107	109	661	583	192	193	0	5	1,941	2,023	3,088	3,128	6216
FGEIS	190	265	109	129	638	641	189	208	0	0	1,932	2,054	3,058	3,297	6355
Diff.	-3	-50	-2	-20	23	-58	3	-15	0	5	9	-31	30	-169	-139
Saturday Peak Hour															
PM	212	199	124	116	578	550	228	216	0	0	2,632	2,502	3,774	3,583	7357
FGEIS	223	210	131	123	576	548	231	219	0	0	2,636	2,506	3,797	3,606	7403
Diff.	-11	-11	-7	-7	2	2	-3	-3	0	0	-4	-4	-23	-23	-46

Table 15
Vehicle Trip Comparisons:
Proposed Modifications vs. FGEIS Development Program

	Auto		Taxi		Truck		School Bus		Total		Total Trips
	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour											
PM	124	115	59	59	15	15	5	5	203	194	397
FGEIS	131	84	67	67	11	11	0	0	209	162	371
Difference	-7	31	-8	-8	4	4	5	5	-6	32	26
Weekday Midday Peak Hour											
PM	105	97	108	108	16	16	0	0	229	221	450
FGEIS	124	117	129	129	14	14	0	0	267	260	527
Difference	-19	-20	-21	-21	2	2	0	0	-38	-39	-77
Weekday PM Peak Hour											
PM	125	138	103	103	2	2	0	0	230	243	473
FGEIS	124	176	120	120	0	0	0	0	244	296	540
Difference	1	-38	-17	-17	2	2	0	0	-14	-53	-67
Saturday Peak Hour											
PM	128	122	106	106	2	2	0	0	236	230	466
FGEIS	134	130	116	116	0	0	0	0	250	246	496
Difference	-6	-8	-10	-10	2	2	0	0	-14	-16	-30

TRAFFIC

A detailed trip distribution and assignment of projected vehicle trips was prepared for all four peak analysis hours. The assumptions were similar to those used for the FGEIS. Traffic assignments performed for the potential school use consisted of two components—student trips and staff trips. Student auto and taxi trips were assigned to pick up and drop off students in front of the school along Suffolk Street and would be similar to the local retail and public market traffic assignment patterns discussed in the FGEIS. School staff auto and taxi trips were assigned similar to the office use discussed in the FGEIS. The auto trips would be assigned to the parking garage located on Site 5. Figures detailing the traffic volume generated by the proposed modifications are provided in Appendix A, "Transportation," at the end of this Technical Memorandum.

During the weekday AM peak hour, vehicle trips resulting from the proposed modifications would exceed the FGEIS development program volumes by a modest amount for one or more movements at most of the analysis intersections. Volumes under the proposed modifications would not exceed the FGEIS traffic volumes at any of the analysis intersections during the weekday PM and Saturday peak hours. During the weekday midday peak hour, the proposed modifications would have two traffic movements out of the 119 analyzed with volumes that would exceed the FGEIS development program volumes by just one vehicle.

Based on this analysis, it was concluded that the findings in the FGEIS would remain unchanged during the weekday midday, PM, and the Saturday midday peak hours. Since the weekday AM peak hour would be expected to have a modest increase in volume at the majority of the intersections, a quantitative analysis was performed for the proposed modifications for the weekday AM peak hour at all 30 analysis intersections for the With-Action and Mitigated With-Action conditions. (There would be no changes to the existing and No Action conditions analyses).

Detailed volume-to-capacity (v/c) ratios, average vehicle delay, and levels of service movement-by-movement at each intersection during the weekday AM peak hour for the proposed modifications, and comparisons with the No Action condition, are provided in **Table A-1** located in the appendix. A summary of level of service findings and significant traffic impacts for the 30 intersections analyzed is presented in **Table 16**. As with the FGEIS analysis, the assessment of potential significant adverse traffic impacts resulting from the proposed modifications is based on significant impact criteria defined in the *CEQR Technical Manual*.

Table 16
Significant Traffic Impact and Mitigation Summary – Weekday AM Peak Hour

Intersections	FGEIS Development Program	Proposed Modifications
No significant impact	17	17
Impact could be fully mitigated	5	6
Impact could be partially mitigated	1	1
Unmitigated impact	7	6

The analysis of the proposed modifications for the weekday AM peak hour indicates that:

- The number of intersections that are projected to operate at or below overall mid-LOS D would remain the same with the proposed modifications as presented in the FGEIS.
- The number of intersections that are projected to operate at overall LOS E or F would remain the same with the proposed modifications as presented in the FGEIS.
- Overall, 13 of the 30 intersections would have significant impacts for the FGEIS as well as the proposed modifications. Intersections that were impacted as part of the FGEIS would also be impacted as part of the proposed modifications with the following exceptions:
  - The intersection of East Houston Street and Chrystie Street/Second Avenue, which was impacted and unmitigatable in the FGEIS, would not be impacted under the proposed modifications;
  - The intersection of Delancey Street and Norfolk Street would have one less significantly impacted movement under the proposed modifications in comparison to the FGEIS, and would continue to remain unmitigated similar to the FGEIS;
  - The intersection of Grand Street and Essex Street, which was not impacted in the FGEIS, would be impacted under the proposed modifications; and
  - The intersection of Grand Street and Allen Street would have one additional movement that would be significantly impacted under the proposed modifications as compared to the FGEIS.
- Impacts at the intersection Grand Street and Essex Street, and for the additional movement at the intersection of Grand Street and Allen Street, could be mitigated by signal timing modifications.

Thus, the overall findings resulting from the proposed modifications would not be significantly different from those identified in the FGEIS.

PARKING

Similar to the FGEIS, the proposed modifications are expected to include up to 500 off-street parking spaces within Sites 2, 3, 4, and 5 to accommodate peak parking demand levels generated by the proposed modifications, as well as to replace the number of public parking spaces that could be lost as a result of the proposed modifications. A parking accumulation analysis performed for the

proposed modifications concluded that, similar to the FGEIS, parking demands during the weekday AM, midday, PM and Saturday peak traffic hours would be fully accommodated by the proposed parking garages. **Tables 17 and 18** provide the projected parking accumulation at the proposed garage locations for the weekday and Saturday conditions under the proposed modifications.

Table 17
Weekday Garage Parking Accumulation

	Site 2 Garage			Site 3 Garage			Site 4 Garage			Site 5 Garage			Total Demand		
Time	**In**	**Out**	**Accum.**	**In**	**Out**	**Accum.**	**In**	**Out**	**Accum.**	**In**	**Out**	**Accum.**	**In**	**Out**	**Accum.**
12 - 1 AM	2	1	57	1	1	40	2	2	81	2	2	54	7	6	232
1 - 2 AM	2	1	58	0	0	40	1	1	81	1	1	54	4	3	233
2 - 3 AM	0	0	58	0	0	40	1	1	81	0	0	54	1	1	233
3 - 4 AM	0	0	58	0	0	40	0	0	81	0	0	54	0	0	233
4 - 5 AM	0	0	58	0	0	40	0	0	81	0	0	54	0	0	233
5 - 6 AM	0	0	58	0	0	40	0	0	81	0	0	54	0	0	233
6 - 7 AM	0	0	58	0	0	40	1	1	81	1	1	54	2	2	233
7 - 8 AM	8	10	56	1	5	36	3	10	74	2	6	50	14	31	216
8 - 9 AM	55	30	81	5	14	27	22	28	68	15	17	48	97	89	224
9 - 10 AM	44	32	93	5	8	24	17	24	61	4	10	42	70	74	220
10 - 11 AM	30	31	92	6	7	23	15	21	55	4	8	38	55	67	208
11 AM - 12 PM	41	39	94	7	8	22	23	25	53	7	8	37	78	80	206
12 - 1 PM	40	40	94	12	10	24	21	21	53	10	9	38	83	80	209
1 - 2 PM	55	51	98	12	11	25	26	24	55	11	10	39	104	96	217
2 - 3 PM	57	56	99	17	17	25	24	24	55	14	14	39	112	111	218
3 - 4 PM	43	47	95	13	14	24	20	20	55	10	18	31	86	99	205
4 - 5 PM	39	52	82	14	13	25	22	20	57	13	13	31	88	98	195
5 - 6 PM	55	80	57	18	13	30	33	33	57	19	13	37	125	139	181
6 - 7 PM	42	46	53	16	14	32	28	22	63	17	12	42	103	94	190
7 - 8 PM	43	37	59	15	10	37	24	15	72	16	10	48	98	72	216
8 - 9 PM	22	21	60	7	5	39	11	8	75	8	5	51	48	39	225
9 - 10 PM	12	20	52	5	7	37	8	8	75	5	6	50	30	41	214
10 - 11 PM	6	5	53	3	1	39	6	3	78	4	2	52	19	11	222
11 PM - 12 midnight	5	2	56	2	1	40	5	2	81	3	1	54	15	6	231
Daily Total	601	601	-	159	159	-	313	313	-	166	166	-	1239	1239	-
Overnight Demand	-	-	58	-	-	40	-	-	81	-	-	54	-	-	233

Table 18
Saturday Garage Parking Accumulation

	Site 2 Garage			Site 3 Garage			Site 4 Garage			Site 5 Garage			Total Demand		
Time	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.	In	Out	Accum.
12 - 1 AM	1	0	57	0	0	40	1	1	81	0	0	48	2	1	226
1 - 2 AM	1	0	58	0	0	40	1	1	81	0	0	48	2	1	227
2 - 3 AM	0	0	58	0	0	40	0	0	81	0	0	48	0	0	227
3 - 4 AM	0	0	58	0	0	40	0	0	81	0	0	48	0	0	227
4 - 5 AM	0	0	58	0	0	40	0	0	81	0	0	48	0	0	227
5 - 6 AM	1	1	58	1	1	40	2	2	81	1	1	48	5	5	227
6 - 7 AM	0	1	57	0	1	39	1	2	80	0	1	47	1	5	223
7 - 8 AM	7	7	57	2	4	37	5	8	77	2	5	44	16	24	215
8 - 9 AM	25	12	70	4	5	36	10	10	77	2	6	40	41	33	223
9 - 10 AM	24	22	72	4	6	34	11	16	72	2	7	35	41	51	213
10 - 11 AM	28	26	74	6	8	32	13	18	67	4	8	31	51	60	204
11 AM - 12 PM	56	45	85	17	14	35	27	30	64	3	10	24	103	99	208
12 - 1 PM	40	41	84	11	13	33	23	25	62	6	7	23	80	86	202
1 - 2 PM	50	51	83	16	15	34	26	25	63	7	7	23	99	98	203
2 - 3 PM	51	49	85	18	16	36	27	23	67	8	6	25	104	94	213
3 - 4 PM	52	46	91	19	16	39	28	22	73	8	6	27	107	90	230
4 - 5 PM	60	57	94	19	18	40	30	29	74	8	8	27	117	112	235
5 - 6 PM	48	55	87	17	15	42	26	27	73	8	5	30	99	102	232
6 - 7 PM	46	51	82	16	15	43	26	22	77	9	5	34	97	93	236
7 - 8 PM	40	47	75	15	16	42	24	21	80	10	4	40	89	88	237
8 - 9 PM	34	42	67	13	15	40	20	19	81	8	3	45	75	79	233
9 - 10 PM	23	34	56	11	11	40	16	16	81	7	4	48	57	65	225
10 - 11 PM	6	6	56	2	2	40	5	5	81	3	3	48	16	16	225
11 PM - 12 midnight	3	3	56	1	1	40	2	2	81	1	1	48	7	7	225
Daily Total	596	596	-	192	192	-	324	324	-	97	97	-	1209	1209	-
Overnight Demand	-	-	58	-	-	40	-	-	81	-	-	48	-	-	227

TRANSIT AND PEDESTRIANS

Transit

As presented in **Table 12**, the development program with the proposed modifications would generate approximately 808, 811, 1,244, and 1,128 subway trips during the weekday AM, midday, PM, and Saturday peak hours, respectively. In terms of bus activity, the development program with the proposed modifications would generate approximately 239, 357, 385, and 444 bus trips during the weekday AM, midday, PM, and Saturday peak hours, respectively. In comparison, the development program analyzed in the FGEIS is expected to generate 801, 873, 1,279, and 1,124 subway trips, respectively, and 220, 380, 397, and 450 bus trips, respectively, during the weekday AM, midday, PM, and Saturday midday peak hours. As shown in **Table 14**, the total subway trips resulting from the proposed modifications would imperceptibly (a maximum of 7 trips) exceed those resulting from the FGEIS development program during the weekday AM and Saturday peak hours. Total subway trips under the proposed modifications would not exceed the total subway trips estimated for the FGEIS development program during the weekday midday and PM peak hours (see **Table 14**). A comparison of bus trips expected to be generated by the FGEIS development program versus the proposed modifications indicates that the bus trips would be greater for the FGEIS development program during the weekday midday, PM, and Saturday midday peak hours. However, during the weekday AM peak hour, the proposed modifications are expected to generate an additional 19 bus trips in comparison to the bus trips expected to be generated by the FGEIS development program. These modest additional subway and bus trips would be distributed among the various subway lines and bus routes in the study area.

Based on this comparison and the modest level of additional subway and bus trips generated under the proposed modifications, the findings in the FGEIS would remain unchanged for the weekday AM and PM peak hours—the peak periods of transit analysis in the study area. Thus, similar to the FGEIS, the proposed modifications would result in significant adverse impacts on bus line-haul levels on the southbound M9 and westbound M14A during the AM peak period and the northbound and southbound M9 during the PM peak period. These impacts could be fully mitigated by increasing the frequency on the M9 and M14A bus routes. While NYCT routinely monitors changes in bus ridership and would make the necessary service adjustments where warranted, these service adjustments are subject to NYCT's fiscal and operational constraints and, if implemented, are expected to take place over time. In addition, similar to the FGEIS, the proposed modifications would not result in the potential for significant adverse subway impacts.

Pedestrians

A detailed trip distribution and assignment of projected pedestrian trips was prepared for all four peak analysis hours. The assumptions were similar to those used for the FGEIS. Pedestrian assignments performed for a potential school use consisted of two components—student trips and staff trips. Students were assigned similar to local retail and public market pedestrian assignment patterns discussed in the FGEIS. Student drop-off and pick-up related pedestrian trips were accounted for on the east sidewalk on Suffolk Street between Broome and Grand Streets Staff auto- and taxi-related pedestrian trips were also assigned similar to the office use discussed in the FGEIS. Figures detailing the pedestrian volumes generated by the proposed modifications are provided in Appendix A, "Transportation."

As presented in **Table 14**, during the weekday AM peak hour, the total person trips resulting from the proposed modifications would exceed the FGEIS development program by approximately 317 person trips. Total person trips under the proposed modifications would not exceed the total person trips estimated for the FGEIS development program during any of the other three peak hours (see **Table 14**).

Based on this comparison, the findings in the FGEIS would remain unchanged during the weekday midday, PM, and the Saturday midday peak hours. Since the weekday AM peak hour would be expected to have higher person trips with the proposed modifications compared to the development program analyzed in the FGEIS, a quantitative analysis of pedestrian conditions was performed for all of the analysis locations for the With-Action condition. (There would be no changes to the existing and No-Action conditions analyses.)

Detailed levels of service for the sidewalks, crosswalks and corner reservoir elements at each of the pedestrian analysis locations during the weekday AM peak hour for the proposed modifications, and comparisons with the No Action condition, are provided in **Tables A-2 through A-4** located in the appendix. A summary of level of service findings for the sidewalks, crosswalks and corner reservoir elements is presented in **Tables 19 through 21**. As in the FGEIS, the assessment of potential significant adverse pedestrian impacts resulting from the proposed modifications is based on significant impact criteria defined in the *CEQR Technical Manual*.

Table 19
Pedestrian Sidewalk Level of Service Summary Comparison – Weekday AM Peak Hour

	FGEIS Development Program	Proposed Modifications
Overall LOS A/B/C	56	56
Overall LOS D	2	2
Overall LOS E	0	0
Overall LOS F	0	0
Number of analysis locations with significant impacts	1	1
Note: Includes 58 sidewalk analysis locations.		

Table 20
Pedestrian Corner Level of Service Summary Comparison – Weekday AM Peak Hour

	FGEIS Development Program	Proposed Modifications
Overall LOS A/B/C	52	52
Overall LOS D	0	0
Overall LOS E	0	0
Overall LOS F	0	0
Number of analysis locations with significant impacts	0	0
Note: Includes 52 corner analysis locations.		

Table 21
Pedestrian Crosswalk Level of Service Summary Comparison – Weekday AM Peak Hour

	FGEIS Development Program	Proposed Modifications
Overall LOS A/B/C	29	29
Overall LOS D	0	0
Overall LOS E	1	1
Overall LOS F	0	0
Number of analysis locations with significant impacts	0	0
Note: Includes 30 crosswalk analysis locations.		

The analysis of pedestrian conditions for the proposed modifications during the weekday AM peak hour indicates that:

- Two of the sidewalks are projected to operate within overall LOS D under the proposed modifications. Of these two sidewalks, one is projected to operate below overall mid-LOS D and the other is projected to operate above overall mid-LOS D. The operating conditions for these two sidewalks under the proposed modifications are consistent with the conclusions presented in the FGEIS.
- None of the sidewalks and corner reservoirs are projected to operate at overall LOS E or F under the proposed modifications consistent with the conclusions presented in the FGEIS;
- One of the crosswalks is projected to operate at overall LOS E under the proposed modifications consistent with the conclusions presented in the FGEIS. Moreover, consistent with the conclusions presented in the FGEIS, this crosswalk would not experience a significant impact;
- Overall, one of the 58 sidewalks would have significant impacts for the FGEIS as well as for the proposed modifications. This west sidewalk of Essex Street between Delancey Street and Broome

Street was impacted in the FGEIS and would also be impacted under the proposed modifications; and

- The impact at the west sidewalk of Essex Street between Delancey Street and Broome Street would be unmitigated under the proposed modifications consistent with the conclusions in the FGEIS.

Thus, the overall findings resulting from the proposed modifications would not be different from those identified in the FGEIS.

Vehicular and Pedestrian Safety

Similar to the future with the proposed actions assessed in the FGEIS, in the future with the proposed modifications there will be ten high pedestrian accident locations in the study area, as per the statistics for 2008 to 2011 obtained from the New York City Department of Transportation (NYCDOT). These intersections are Allen Street at Delancey Street, Clinton Street at Delancey Street, Essex Street at Delancey Street, Norfolk Street at Delancey Street, Suffolk Street at Delancey Street, Avenue A at Houston Street, Bowery at Houston Street, Allen Street at Grand Street, Clinton Street at Grand Street, and Essex Street at Grand Street. As presented in the FGEIS, NYCDOT began implementation of a safety plan along the Delancey Street corridor to improve pedestrian, bicycle, and vehicular safety. Once this plan is fully implemented, it is expected that the pedestrian safety conditions at the high accident locations along the Delancey Street corridor will improve. Similar to the future with the proposed actions assessed in the FGEIS, in the future with the proposed modifications, measures that could be implemented for the remaining high pedestrian accident locations to improve vehicular and pedestrian safety include installation of crosswalk countdown timers, restriping faded crosswalks, and installation of warning signs to alert drivers about the high pedestrian activities at the intersections.

As discussed earlier, the SCA would further examine the potential environmental effect of the potential school once a detailed program and a design for a school on Site 5 have been developed, as SCA projects involving the construction of a new school are subject to environmental review pursuant to SEQRA. At that time, SCA would undertake a comprehensive analysis of the traffic and pedestrian safety conditions resulting from the school as part of their Environmental Assessment. The future SEQRA analysis may determine alternate design features to avoid any significant traffic and pedestrian safety impacts. Furthermore, if warranted, as part of the SEQRA analysis, additional safety improvement measures such as provision of school crosswalks and signage at critical intersections may be recommended to improve traffic and pedestrian safety conditions in the study area.

AIR QUALITY

MOBILE SOURCES

The mobile source analysis conducted for the FGEIS concluded that there would be no potential for significant adverse impacts on air quality from mobile sources. With the proposed modifications, there would be a decrease in project-generated vehicle trips in the midday and PM peak periods and a slight increase in project-generated vehicle trips during the AM peak period. However, the number of AM peak hour trips with the proposed modifications would be below the number of trips analyzed in the FGEIS for the midday and PM peak hours. As the number of vehicle trips would be lower with the proposed modification the effect on air quality

would also be lower than with the program analyzed in the FGEIS, for which it was determined that there would be no significant adverse impacts. Therefore, with the proposed modifications, as with the proposed actions, there would be no potential for significant adverse impacts from mobile sources.

Since there would be no modifications to the proposed parking program analyzed in the FGEIS, the proposed modifications would not alter the FGEIS conclusion that there would be no potential for significant adverse impacts on air quality from the proposed parking garages.

STATIONARY SOURCES

As shown in **Table 1**, there would be no increase in the total floor area of the RWCDS program analyzed in the FGEIS. On Sites 1, 2, 8, 9, and 10, the maximum zoning envelopes and floor areas of the proposed developments would remain the same. On Sites 3, 4, and 6, the floor areas of the proposed developments would slightly decrease, although the maximum zoning envelopes would remain the same. Therefore, with the proposed modifications, there would be no increase in fuel use and resulting emissions on Sites 1, 2, 3, 4, 6, 8, 9, and 10, or cumulatively from all sites, as compared with the RWCDS program analyzed in the FGEIS.

On Site 5, however, there would be an increase of 32,000 community facility square feet. This additional floor area would allow for a potential 66,000-square-foot school on Site 5. It is expected that the school would have its own heating and hot water systems that would exhaust at a height that is lower than the top of the residential and commercial development on Site 5, which would have a total height of 190 feet as assessed in the FGEIS. Therefore, a screening analysis was performed to assess the potential for impacts on air quality from the proposed school's heating and hot water system.

The screening analysis for the proposed school on Site 5 used the methodology described in the *CEQR Technical Manual*. The analysis determines the threshold distance between the heating and hot water system for a proposed building and a sensitive use (e.g., operable window, balcony, publically accessible open space) of a similar or greater height, beyond which there would be no potential for a significant adverse impact on air quality. The screening analysis uses information regarding the type of fuel to be used, the proposed development size, type of development, and the heating and hot water system stack height. When the distance between sensitive uses of concern and the heating and hot water system stack is less than the threshold distance determined from the screening analysis, there is a potential for a significant adverse air quality impact that could further be evaluated using a refined dispersion modeling analysis. Otherwise, the emission source passes the screening analysis, and no further analysis is required.

The screening analysis for the proposed school was based on an assumed exhaust stack height of less than 100 feet, the use of natural gas (which is standard usage for new schools in New York City), and a development size of 66,000 gross square feet. Based on *CEQR Technical Manual* Appendix Figure 17-8, there would be no potential for significant adverse impacts on air quality assuming the school's heating and hot water system stack is located at least 57 feet away from any sensitive use of a similar or greater height. The closest sensitive use would be the proposed residential and commercial development on Site 5. The threshold distance is a guideline to ensure that the future design for the proposed school precludes the potential for significant adverse impacts on air quality; however, SCA would further examine the potential environmental effect of the school once a detailed program and a design for a school on Site 5 have been developed. As described above, SCA projects involving the construction of a new school are subject to environmental review pursuant to SEQRA and, therefore, prior to SCA

committing to acquiring property on Site 5 or elsewhere within the LSGD, appropriate findings regarding the heating and hot water system will be made based on specific design information. The future SEQRA analysis may, therefore, identify alternate design features to avoid any significant impacts.

The proposed residential and commercial floor area on Site 5 would be the same with the proposed modifications as with the proposed actions assessed in the FGEIS. Therefore, with the fuel and stack placement requirements identified in the FGEIS for Site 5, there would be no potential for significant adverse impacts on air quality from the heating and hot water systems for the commercial and residential development on Site 5.

NOISE

INTRODUCTION

The proposed modifications allow for the development of a school on Site 5, which would be expected to include a rooftop playground. The analysis below examines the potential for noise generated by the potential rooftop playground to result in a significant noise impact.

Playground Impact Definition

As recommended in the *CEQR Technical Manual,* this study uses the following criteria to define a significant adverse noise impact:

- An increase of 5 dBA, or more, in With-Action $L_{eq(1)}$ noise levels at sensitive receptors (including residences, play areas, parks, schools, libraries, and houses of worship) over those calculated for the No-Action condition, if the No-Action levels are less than 60 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 4 dBA, or more, in With-Action $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No-Action condition, if the No-Action levels are 61 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA, or more, in With-Action $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No-Action condition, if the No-Action levels are greater than 62 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA, or more, in With-Action $L_{eq(1)}$ noise levels at sensitive receptors over those calculated for the No-Action condition, if the analysis period is a nighttime period (defined by the *CEQR Technical Manual* criteria as being between 10 PM and 7 AM).

NOISE PREDICTION METHODOLOGY

Noise from the Rooftop Playground

The potential school included in the RWCDS under the proposed modifications may include a rooftop playground. The analysis results are based on the following assumptions:

- The playground would be located on the roof of the school at a height of approximately 90 feet;
- The rooftop playground would be used by elementary school students (kindergarten to 6th grade); and
- The maximum occupancy for the playground is expected to be approximately 60 children.

The CadnaA model was used to determine sound effects of the proposed playground at development Site 5 and nearby receptors. The CadnaA model is a computerized model developed by DataKustik for sound prediction and assessment. The model can be used for the analysis of a wide variety of sound sources, including stationary sources (e.g., construction equipment, industrial equipment, power generation equipment, etc.), transportation sources (e.g., roads, highways, railroad lines, busways, airports, etc.), and other specialized sources (e.g., sporting facilities, etc.) The model takes into account the sound power levels of the sound sources, attenuation with distance, ground contours, reflections from barriers and structures, attenuation due to shielding, etc. The CadnaA model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2. The CadnaA model is a state-of-the-art tool for acoustical analysis.

The analysis of the potential school's rooftop playground consisted of the following procedure:

- Street-level noise measurements were made adjacent to Site 5;
- The project site geometry and surrounding building geometry were coded into the CadnaA model;
- Existing noise levels at nearby receptors (both at-grade and elevated) were calculated via the CadnaA model with existing traffic data inputs and adjusted based on the noise measurements;
- The existing noise levels at nearby receptors were conservatively used to represent future noise levels without the proposed modifications, because noise levels in the future without the proposed modifications would be expected to be similar to or slightly above the existing levels;
- Using the playground location assumptions described above (i.e., at a height of approximately 90 feet), the building geometry in the CadnaA model was updated to reflect future conditions with the proposed modifications;
- An area source was created in the CadnaA model for the potential playground. The acoustical parameters of the area source were defined based on noise measurements that were performed at an existing playground similar to the potential playground. The sound power level of the area source created in the CadnaA model was based on measured $L_{eq(1)}$ noise levels (in dB) from the comparable playground and the number of children assumed to be utilizing the corresponding potential playground at any given time;
- Using the area source to represent the potential playground, the CadnaA model was used to predict noise levels with the proposed modifications at nearby buildings;
- The calculated playground-generated noise levels were combined with the future noise levels as calculated in the FGEIS to determine total noise levels in the future with the rooftop playground; and
- Future noise levels with the proposed modifications were compared to CEQR noise impact criteria to identify any potential noise impacts.

PROBABLE IMPACTS OF THE PROPOSED ACTIONS

Using the methodology previously described, an assessment was made of potential noise impacts at noise sensitive receptor locations adjacent to the project site. Noise sensitive receptor locations were determined to be located at 384 Grand Street, 50 Norfolk Street, and 60 Norfolk Street. The façades of the commercial and residential development on Sites 3, 4, and 5 with a direct line of sight to the playground were also analyzed for building attenuation purposes. The

façades of these buildings that directly face the potential rooftop playground would have the greatest potential to experience noise generated by the school playground.

Rooftop Playground Noise

The analysis shows that for receptors at 384 Grand Street, 50 Norfolk Street, and 60 Norfolk Street, exterior noise levels would increase by 2.9 dBA or less during the hours when the potential playground would be in operation (See Appendix B, "Noise," at the end of this Technical Memorandum). As in the FGEIS, it was assumed that No-Action noise levels would be the same as the existing noise levels. Noise level increases of this magnitude would be barely perceptible and would not be considered a significant adverse noise impact. Although weekday AM peak hour vehicle trips resulting from the proposed modifications would exceed the FGEIS development program volumes, these increases would be modest and would not generate sufficient traffic to have the potential to cause a significant noise impact (i.e., the project, as modified, would not result in doubling the Noise Passenger Car Equivalents that would be necessary to cause a 3 dBA increase in noise levels).

PROJECT INTERIOR NOISE LEVELS

As shown in Table 16-3 of the FGEIS, the *CEQR Technical Manual* has set noise attenuation quantities for buildings based on exterior $L_{10(1)}$ noise levels in order to maintain interior noise levels of 45 dBA or lower for residential, community facility, and hotel uses and 50 dBA or lower for commercial uses. As shown in Table 16-4 of the FGEIS, HUD guidelines state that buildings must provide sufficient window/wall attenuation to result in L_{dn} values less than 45 dBA. Based on measured exterior noise levels, predicted future noise levels due to the potential playground on Site 5, and the CEQR and HUD criteria, the necessary attenuation for each façade of a development on each of the proposed development sites has been calculated. The required attenuation levels for Site 5, which experienced increased noise levels due to the proposed modifications, are shown in **Table 22**. Attenuation requirements for Sites 3 and 4—which as noted above were determined to be sensitive receptor locations with the proposed modifications—would be the same with the proposed modifications as identified in the FGEIS.

Table 22
Updated Building Attenuation Requirements (in dBA)

Dev. Site	Proposed Building Façade Locations	FGEIS Attenuation Required for CEQR[1]	FGEIS Attenuation Required for HUD[1]	Updated Attenuation Required for CEQR[1]	Updated Attenuation Required for HUD[1]
5	North (facing playground)	N.A.[2]	23	33-39[3]	25-31[3]
	West (facing playground)	28	31	31-35[3]	28-30[3]

Notes:
[1] The CEQR attenuation requirements shown are for residential uses; commercial uses would require 5 dBA less attenuation. HUD attenuation regulations would not apply to commercial uses.
[2] The maximum measured L_{10} is below 70 dBA, and the *CEQR Technical Manual* does not specify minimum attenuation guidance for exterior L_{10} values below this level.
[3] A range of attenuation requirements is presented due to the upper floors being further away from the playground and needing less attenuation. See Appendix 2 for attenuation requirements by floor.

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and how much of the area is made up of each part. Normally, a building façade is composed of the wall, glazing, and any vents or louvers for HVAC systems in various ratios of area. As described in the FGEIS, to ensure that there would be no potential for significant adverse noise impacts, prospective developers would be notified of required attenuation

measures through the Request for Proposals (RFPs) to be issued by the City, and these measures would be undertaken by the developer(s) selected pursuant to the RFP(s).

These measures (including the provision for alternate means of ventilation) will be required either by HPD through the Land Disposition Agreement (or loan agreements) between HPD and the selected developer(s) or by NYCEDC through provisions of a contract of sale or long-term lease or other legally binding agreement between NYCEDC and the developer(s). All buildings planned to be constructed on development Site 5 would be designed to provide a composite Outdoor-Indoor Transmission Class (OITC) rating greater than or equal to the attenuation requirements listed in **Table 22**. The OITC classification is defined by the ASTM International (ASTM E1332-10) and provides a single-number rating that is used for designing a building façade including walls, doors, glazing, and combinations thereof. The OITC rating is designed to evaluate building elements by their ability to reduce the overall loudness of ground and air transportation noise. By using these design guidelines, development pursuant to the proposed modifications on Site 5 would provide sufficient attenuation to achieve the CEQR interior noise level guideline of 45 dBA L_{10} for residential, community facility, or hotel uses and 50 dBA L_{10} for commercial uses and, if HUD project funding is used, the HUD interior noise level guidance of 45 dBA L_{dn} for residential and community facility use. Therefore, with the implementation of these measures there would be no potential for significant adverse noise impacts.

PUBLIC HEALTH

Since there would be no significant unmitigated adverse impacts found in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise, the assessment of public health for the proposed modifications, like that for the proposed actions, examines the potential effects of construction-period noise impacts on public health. As described below, the findings of the construction-related noise analyses presented in the FGEIS would remain the same with the proposed modifications. Therefore, the proposed modifications would not change the FGEIS conclusion that there would be no significant adverse environmental impacts with respect to public health.

NEIGHBORHOOD CHARACTER

Since the proposed modifications would not result in new significant adverse impacts on any of the contributing elements that define neighborhood character (land use, urban design, visual resources, historic resources, socioeconomic conditions, shadows, open space, traffic, and noise), they—like the proposed actions assessed in the FGEIS—would not result in any significant adverse impacts on neighborhood character. Rather, the proposed modifications add 100 residential units of which half would be affordable housing units. Also, with the proposed modifications, a portion of the community facility space could be used for a potential school. Therefore, the proposed modifications, like the proposed actions, would improve the character of the neighborhood by replacing underutilized buildings and surface parking lots with new, active mixed-use development.

CONSTRUCTION

Consistent with the proposed modifications, the FGEIS analyzed the potential impacts that would result from construction of approximately 951,000 gsf of residential development, a publicly accessible open space on Site 5, and a total of 114,000 gsf community facilities throughout the project site. Although the FGEIS assumed construction of fewer residential units and a different distribution of community facility space than would occur under the proposed modifications, overall, the general construction practices, equipment, staging, and work hours

would be similar to those described in the FGEIS. The potential school would be of modest size, and its construction activities would not be atypical of other community facilities, which were studied in the FGEIS. In addition, the proposed modifications would not require changes to the conceptual construction schedule presented in the FGEIS. Therefore, the findings of the construction-related analyses (including transportation, air quality, noise and vibration, historic and cultural resources, hazardous materials, open space, socioeconomic conditions, community facilities, and land use and neighborhood character) presented in the FGEIS would remain the same. It is possible that the potential school could be built after completion of the proposed residential and commercial development on Site 5. In such a case, there would be no adverse construction noise impacts on the commercial and residential development on Site 5, because that development would be constructed with facades providing sound attenuation as dictated in the FGEIS analysis and Table 22 of this Technical Memorandum. During any time when the proposed buildings on Site 5 may be occupied, and construction would still be underway at the proposed school, interior noise levels at the Site 5 buildings would, during some times, exceed 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria for residential or academic uses). Such exceedances may be intrusive, but would be only temporary and of limited duration. Consequently, they would not result in any significant impacts. As noted, the analysis of a school as part of the RWCDS for the proposed modifications is conceptual; no school has been designed or funded for Site 5. Decisions by SCA to develop the potential school on Site 5 would be subject to further environmental review pursuant to SEQRA. Accordingly, to the extent that construction of the potential school would be different than anticipated under the RWCDS, any potential impacts that could result from the actual construction program would be subject to further review pursuant to SEQRA.

CONCLUSIONS

As described above, the proposed modifications to the proposed actions would not result in any significant adverse environmental impacts that were not previously identified in the FGEIS. The proposed modifications would not affect the majority of the environmental impact areas assessed in the FGEIS. For those impact areas that would be affected by the proposed modifications, there would not be any new significant adverse impacts that were not previously disclosed in the FGEIS. ✷

October 1, 2012
Date

Robert R. Kulikowski, Ph.D.
Assistant to the Mayor

APPENDIX A
TRANSPORTATION

Level of Service Tables

TABLE A-1
SEWARD PARK PROPOSED MODIFICATIONS
2022 NO BUILD VS. 2022 BUILD VS. 2022 MITIGATION WEEKDAY AM PEAK HOUR TRAFFIC LEVELS OF SERVICE

			2022 No Build				2022 Build				2022 Build with Mitigation				
			Control				Control				Control				
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mitigation Measures**
SIGNALIZED INTERSECTIONS														
EAST HOUSTON STREET														
1 EAST HOUSTON STREET AND BOWERY														
East Houston Street	EB	L	0.28	30.5	C	L	0.28	30.9	C	L	0.30	31.5	C	- Modify signal timing: Shift 1 s of green time from EBL / WBL lag phase to the EB / WB phase
		TR	0.69	29.4	C	TR	0.71	30.0	C	TR	0.69	28.7	C	[EB / WB green time shifts from 29 s to 30 s; EBL / WBL lag phase green time shifts from 8 s
	WB	L	0.69	30.4	C	L	0.71	31.3	C	L	0.72	31.8	C	to 7 s; signal timing during all other phases remain the same].
		TR	1.05	58.3	E	TR	1.08	70.2	E	TR	1.04	55.3	E	
Bowery	NB	L	0.86	44.0	D	L	0.86	44.0	D	L	0.86	44.0	D	
		TR	0.92	41.3	D	TR	0.92	41.3	D	TR	0.92	41.3	D	
	SB	L	0.32	26.3	C	L	0.32	26.3	C	L	0.32	26.3	C	
		TR	0.92	42.8	D	TR	0.92	42.8	D	TR	0.92	42.8	D	
Overall Intersection		-	**0.97**	**44.1**	**D**	-	**0.98**	**48.4**	**D**	-	**0.99**	**43.1**	**D**	
2 EAST HOUSTON STREET AND CHRYSTIE STREET / SECOND AVENUE														
East Houston Street	EB	T	0.57	29.4	C	T	0.59	29.7	C					- Mitigation not required.
		R	0.82	49.4	D	R	0.86	53.5	D					**[Intersection was not unmitigatable in the FEIS]**
	WB	L	0.72	45.7	D	L	0.74	48.4	D					
		T	0.74	31.7	C	T	0.77	32.5	C					
Chrystie Street / Second Avenue	NB	L	0.89	42.3	D	L	0.89	42.7	D					
		LR	0.83	40.5	D	LR	0.84	40.7	D					
	SB	L	0.78	38.8	D	L	0.78	38.8	D					
		LT	0.76	35.1	D	LT	0.79	35.8	D					
		R	1.01	64.0	E	R	1.01	64.0	E					
Overall Intersection		-	**0.90**	**39.0**	**D**	-	**0.91**	**39.7**	**D**					
3 EAST HOUSTON STREET AND ALLEN STREET / FIRST AVENUE														
East Houston Street	EB	L	0.90	42.4	D	L	0.90	42.2	D	L	0.94	47.3	D	**- Partially Mitigated**
		T	0.86	33.1	C	T	0.88	34.2	C	T	0.88	34.2	C	- Modify signal timing: Shift 1 s of green time from EBL/WBL lag phase to the NB phase [EBL / WBL
		R	0.90	47.0	D	R	0.90	47.0	D	R	0.90	47.0	D	green time shifts from 15 s to 14 s; NB green time shifts from 22 s to 23 s; signal timing
	WB	L	0.36	24.8	C	L	0.36	25.3	C	L	0.37	26.4	C	during all other phases remain the same].
		TR	1.13	101.3	F	TR	1.16	114.7	F	TR	1.16	114.7	F	
Allen Street	NB	L	0.70	37.6	D	L	0.75	39.6	D	L	0.71	37.2	D	
		T	1.10	90.7	F	T	1.11	96.5	F	T	1.06	77.7	E	
		R	0.41	32.5	C	R	0.41	32.5	C	R	0.39	31.2	C	
Overall Intersection		-	**1.13**	**66.0**	**E**	-	**1.13**	**71.3**	**E**	-	**1.13**	**67.5**	**E**	
4 EAST HOUSTON STREET AND ESSEX STREET / AVENUE A														
East Houston Street	EB	L	0.57	21.6	C	L	0.59	22.5	C	L	0.59	23.1	C	- Modify signal timing: Shift 1 s of green time from EB / WB phase to the NB / SB phase [EB / WB
		TR	0.69	27.3	C	TR	0.72	28.0	C	TR	0.74	29.4	C	green time shifts from 32 s to 31 s; NB / SB green time shifts from 27 s to 28 s; signal timing
	WB	L	0.64	22.7	C	L	0.65	23.3	C	L	0.67	25.0	C	during all other phases remain the same].
		T	0.77	30.0	C	T	0.79	30.9	C	T	0.82	32.8	C	
		R	0.11	19.9	B	R	0.11	19.9	B	R	0.11	20.6	C	
Essex Street / Avenue A	NB	LTR	0.77	35.0	C	LTR	0.80	36.3	D	LTR	0.76	33.7	C	
	SB	LTR	0.97	50.5	D	LTR	1.04	67.5	E	LTR	0.97	50.1	D	
Overall Intersection		-	**0.87**	**31.8**	**C**	-	**0.91**	**35.0**	**C**	-	**0.90**	**33.3**	**C**	
STANTON STREET														
5 STANTON STREET AND ESSEX STREET														
Stanton Street	EB	LTR	0.23	22.4	C	LTR	0.23	22.4	C					- Mitigation not required.
Essex Street	NB	TR	0.33	12.0	B	TR	0.34	12.1	B					
	SB	LT	0.39	12.4	B	LT	0.41	12.7	B					
Overall Intersection		-	**0.33**	**13.1**	**B**	-	**0.34**	**13.3**	**B**					

TABLE A-1
SEWARD PARK PROPOSED MODIFICATIONS
2022 NO BUILD VS. 2022 BUILD VS. 2022 MITIGATION WEEKDAY AM PEAK HOUR TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		2022 No Build Mvt.	V/C	Control Delay	LOS	2022 Build Mvt.	V/C	Control Delay	LOS	2022 Build with Mitigation Mvt.	V/C	Control Delay	LOS	Mitigation Measures
6 STANTON STREET AND NORFOLK STREET														
Stanton Street	EB	LT	0.23	16.4	B	LT	0.23	16.4	B					- Mitigation not required.
Norfolk Street	NB	TR	0.45	19.7	B	TR	0.53	21.3	C					
Overall Intersection		-	**0.34**	**18.6**	**B**	-	**0.38**	**19.8**	**B**					
RIVINGTON STREET														
7 RIVINGTON STREET AND ESSEX STREET														
Rivington Street	WB	LTR	1.07	92.4	F	LTR	1.19	136.8	F	LTR	1.08	92.6	F	- Shift the NB approach centerline six feet to the east and restripe the NB approach from one 10-foot wide travel lane and one 18-foot wide travel lane with parking to one 12-foot wide travel lane and one 10-foot wide parking lane. Restripe the SB receiving side from one 10-foot wide travel lane and one 17-foot wide travel lane with parking to one 12-foot wide travel lane, one 11-foot wide travel lane, and one 10-foot wide parking lane. - Shift the SB approach centerline six feet to the east and restripe the SB approach from one 10-foot wide travel lane and one 17-foot wide travel lane with parking to one 11-foot wide travel lane, one 12-foot wide travel lane, and one 10-foot wide parking lane (which would operate as a travel lane during the Saturday peak hour). Restripe the NB receiving side from one 10-foot wide travel lane and one 18-foot wide travel lane with parking to one 12-foot wide travel lane and one 10-foot wide parking lane. - Modify signal timing: Shift 3 s of green time from NB / SB phase to the WB phase [WB green time shifts from 31 s to 34 s; NB / SB green time shifts from 49 s to 46 s].
Essex Street	NB	LT	0.35	11.9	B	LT	0.36	12.0	B	LT	0.70	19.4	B	
	SB	TR	0.35	12.2	B	TR	0.37	12.5	B	TR	0.37	14.1	B	
Overall Intersection		-	**0.63**	**39.4**	**D**	-	**0.69**	**55.5**	**E**	-	**0.86**	**43.1**	**D**	
8 RIVINGTON STREET AND NORFOLK STREET														
Rivington Street	WB	TR	0.69	26.4	C	TR	0.71	27.0	C					- Mitigation not required.
Norfolk Street	NB	LT	0.45	18.1	B	LT	0.56	19.6	B					
Overall Intersection		-	**0.57**	**22.5**	**C**	-	**0.64**	**23.3**	**C**					
DELANCEY STREET														
9 DELANCEY STREET AND ALLEN STREET														**- Unmitigatable Impact**
Delancey Street	EB	TR	0.98	40.4	D	TR	1.01	47.8	D					
	WB	L	0.82	48.0	D	L	0.84	50.1	D					
		TR	1.08	64.6	E	TR	1.10	68.9	E					
Allen Street	NB	T	0.67	33.4	C	T	0.70	34.4	C					
		R	0.23	9.0	A	R	0.24	9.1	A					
	SB	TR	0.55	31.1	C	TR	0.56	31.4	C					
Overall Intersection		-	**0.96**	**49.6**	**D**	-	**0.98**	**53.9**	**D**					
10 DELANCEY STREET AND ORCHARD STREET														
Delancey Street	EB	T	0.45	12.0	B	T	0.46	12.1	B					- Mitigation not required.
	WB	TR	0.86	19.4	B	TR	0.87	19.6	B					
Orchard Street	NB	LTR	0.22	22.7	C	LTR	0.22	22.7	C					
Overall Intersection		-	**0.62**	**17.0**	**B**	-	**0.63**	**17.1**	**B**					
11 DELANCEY STREET AND LUDLOW STREET														
Delancey Street	EB	TR	0.47	12.5	B	TR	0.49	12.7	B					**- Unmitigatable Impact**
	WB	T	1.14	85.3	F	T	1.15	88.1	F					
Ludlow Street	SB	LTR	0.78	42.0	D	LTR	0.87	51.9	D					
Overall Intersection		-	**1.01**	**57.5**	**E**	-	**1.04**	**59.5**	**E**					

TABLE A-1
SEWARD PARK PROPOSED MODIFICATIONS
2022 NO BUILD VS. 2022 BUILD VS. 2022 MITIGATION WEEKDAY AM PEAK HOUR TRAFFIC LEVELS OF SERVICE

			2022 No Build				2022 Build				2022 Build with Mitigation				
				Control				Control				Control			Mitigation Measures
INTERSECTION & APPROACH		Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
12 DELANCEY STREET AND ESSEX STREET														
Delancey Street	EB	TR	0.51	12.9	B	TR	0.53	13.1	B					**- Unmitigatable Impact**
	WB	T	1.17	99.9	F	T	1.17	101.2	F					
		R	0.76	34.3	C	R	0.80	39.0	D					
Essex Street	NB	LT	0.69	44.5	D	LT	0.77	50.2	D					
		R	0.80	57.7	E	R	0.99	95.8	F					
	SB	TR	0.82	42.2	D	TR	0.91	51.0	D					
Overall Intersection		-	**1.06**	**62.0**	**E**	-	**1.11**	**64.7**	**E**					
13 DELANCEY STREET AND NORFOLK STREET														
Delancey Street	EB	T	0.57	13.7	B	T	0.59	13.9	B					**- Unmitigatable Impact**
	WB	TR	1.03	37.8	D	TR	1.04	44.0	D					
Norfolk Street	NB	TR	0.74	35.7	D	TR	0.89	48.6	D					
		R	0.71	34.6	C	R	0.88	47.5	D					
Overall Intersection		-	**0.92**	**29.3**	**C**	-	**0.99**	**34.6**	**C**					
14 DELANCEY STREET AND SUFFOLK STREET														
Delancey Street	EB	TR	0.74	16.3	B	TR	0.82	18.1	B					- Mitigation not required.
	WB	T	0.94	20.0	C	T	0.95	20.4	C					
Suffolk Street	SB	R	0.21	23.0	C	R	0.26	24.3	C					
Overall Intersection		-	**0.67**	**18.4**	**B**	-	**0.69**	**19.4**	**B**					
15 DELANCEY STREET AND CLINTON STREET														
Delancey Street	EB	T	0.72	15.7	B	T	0.73	15.9	B					**- Unmitigatable Impact**
Williamsburg Bridge	WB	T	1.24	132.0	F	T	1.25	137.0	F					
		R	0.86	28.8	C	R	0.87	29.8	C					
Delancey Street Service Road	WB	R	2.05	571.1	F	R	2.05	571.1	F					
Clinton Street	NB	R	1.01	75.8	E	R	1.01	75.8	E					
Overall Intersection		-	**1.15**	**78.9**	**E**	-	**1.16**	**81.3**	**F**					
BROOME STREET														
16 BROOME STREET AND ESSEX STREET														
Broome Street	EB	LTR	0.17	21.3	C	LTR	0.20	21.9	C	LTR	0.24	25.3	C	- Modify signal phasing: Add a new lead phase for the SB approach. The existing signal phasing [EB
Essex Street	NB	TR	0.30	11.6	B	TR	0.32	11.9	B	TR	0.55	27.6	C	phase has 31 s of green time; NB / SB phase has 49 s of green time] would be modified to the
	SB	L	0.92	44.6	D	L	1.25	153.0	F	L	0.79	21.3	C	following: EB phase will have 27 s of green time, SB-lead phase will have 19 s of green time, and
		T	0.33	12.3	B	T	0.33	12.3	B	T	0.31	10.0	A	NB / SB phase will have 29 s of green [each phase will have 3 s amber and 2 s all red].
Overall Intersection		-	**0.63**	**21.7**	**C**	-	**0.85**	**56.5**	**E**	-	**0.53**	**21.8**	**C**	
17 BROOME STREET AND NORFOLK STREET														
Broome Street	EB	L	0.43	14.0	B	L	0.69	21.7	C					- Mitigation not required.
	WB	R	0.11	10.2	B	R	0.18	11.1	B					
Norfolk Street	NB	T	0.53	25.1	C	T	0.70	28.5	C					
Overall Intersection		-	**0.47**	**18.2**	**B**	-	**0.70**	**23.5**	**C**					
GRAND STREET														
18 GRAND STREET AND ALLEN STREET														
Grand Street	EB	LTR	0.88	33.5	C	LTR	0.98	44.1	D	LTR	0.94	37.3	D	- Modify signal phasing: The existing signal phasing [EB / WB phase has 31 s of green; SB-lead
	WB	LTR	0.69	34.5	C	LTR	0.84	45.2	D	LTR	0.81	41.6	D	phase has 10 s of green; NBTR / SBTR phase has 19 s of green; NB-lag phase has 10 s of green]
Allen Street	NB	L	0.63	55.7	E	L	0.63	55.7	E	L	0.53	46.5	D	would be modified to the following: EB / WB phase will have 32 s of green time; NBL / SBL phase
		TR	0.59	24.9	C	TR	0.60	25.1	C	TR	0.66	28.6	C	will have 12 s of green time; NBTR / SBTR phase will have 31 s of green time [each phase will have
	SB	L	0.86	73.7	E	L	0.90	80.0	F	L	0.75	56.1	E	3 s amber and 2 s all red]. Pedestrians are not allowed to cross during the NBL / SBL phase.
		TR	0.65	26.0	C	TR	0.65	26.0	C	TR	0.72	30.0	C	
Overall Intersection		-	**0.75**	**32.8**	**C**	-	**0.80**	**36.9**	**D**	-	**0.82**	**35.2**	**D**	

TABLE A-1
SEWARD PARK PROPOSED MODIFICATIONS
2022 NO BUILD VS. 2022 BUILD VS. 2022 MITIGATION WEEKDAY AM PEAK HOUR TRAFFIC LEVELS OF SERVICE

			2022 No Build			2022 Build				2022 Build with Mitigation				Mitigation Measures
				Control				Control				Control		
INTERSECTION & APPROACH		**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	
19 GRAND STREET AND ORCHARD STREET														
Grand Street	EB	LT	0.63	21.1	C	LT	0.70	22.7	C					- Mitigation not required.
	WB	TR	0.50	21.0	C	TR	0.59	23.2	C					
Orchard Street	NB	LTR	0.15	15.4	B	LTR	0.15	15.4	B					
Overall Intersection		-	**0.39**	**20.4**	**C**	-	**0.42**	**22.1**	**C**					
20 GRAND STREET AND LUDLOW STREET														
Grand Street	EB	TR	0.59	22.6	C	TR	0.67	24.9	C					- Mitigation not required.
	WB	LT	0.34	17.3	B	LT	0.42	18.4	B					
Ludlow Street	SB	LTR	0.28	17.4	B	LTR	0.29	17.6	B					
Overall Intersection		-	**0.44**	**19.8**	**B**	-	**0.48**	**21.2**	**C**					
21 GRAND STREET AND ESSEX STREET														
Grand Street	EB	LTR	0.80	33.4	C	LTR	0.92	47.6	D	LTR	0.89	42.4	D	- Modify signal timing: Shift 1 s from the NB/SB phase to EB/WB [EB/WB green time shifts from 40 s to 41 s; NB/SB green time shifts from 40 s to 39 s].
	WB	LTR	0.72	21.8	C	LTR	0.91	28.4	C	LTR	0.89	26.4	C	
Essex Street	NB	LTR	0.38	17.9	B	LTR	0.40	18.3	B	LTR	0.41	19.1	B	**[Intersection was not impacted in the FEIS]**
	SB	DefL	0.45	22.9	C	DefL	0.49	25.1	C	DefL	0.51	26.5	C	
		TR	0.31	17.7	B	TR	0.31	17.9	B	TR	0.32	18.7	B	
Overall Intersection		-	**0.62**	**23.6**	**C**	-	**0.71**	**29.9**	**C**	-	**0.70**	**28.3**	**C**	
22 GRAND STREET AND NORFOLK STREET														
Grand Street	EB	L	0.21	12.6	B	L	0.36	15.1	B					- Mitigation not required.
		T	0.49	16.2	B	T	0.49	16.2	B					
	WB	T	0.43	14.1	B	T	0.54	15.5	B					
		R	0.28	12.5	B	R	0.36	13.3	B					
Overall Intersection		-	**0.50**	**14.3**	**B**	-	**0.54**	**15.1**	**B**					
23 GRAND STREET AND SUFFOLK STREET														
Grand Street	EB	T	0.45	15.2	B	T	0.45	15.2	B					- Mitigation not required.
	WB	T	0.71	20.5	C	T	0.78	23.2	C					
Suffolk Street	SB	LR	0.11	19.3	B	LR	0.45	24.9	C					
Overall Intersection		-	**0.46**	**18.5**	**B**	-	**0.64**	**21.2**	**C**					
24 GRAND STREET AND CLINTON STREET														
Grand Street	EB	TR	0.50	17.8	B	LTR	0.61	20.4	C					- **Unmitigatable Impact**
	WB	L	0.06	11.9	B	L	0.07	12.0	B					- Install pedestrian countdown signals to accommodate signal timing modifications during the weekday PM peak period.
		T	0.58	18.1	B	T	0.64	19.6	B					
		R	1.00	65.8	E	R	1.12	104.2	F					
Clinton Street	NB	LTR	0.75	36.8	D	LTR	0.77	38.1	D					
Overall Intersection		-	**0.90**	**33.2**	**C**	-	**0.99**	**42.1**	**D**					
25 GRAND STREET AND EAST BROADWAY														
Grand Street	EB	T	0.16	7.1	A	T	0.18	7.3	A					- Mitigation not required.
	WB	LT	0.76	15.5	B	LT	0.82	18.0	B					
East Broadway	NB	R	-	10.2	B	R	-	10.3	B					
Overall Intersection		-	**0.76**	**13.6**	**B**	-	**0.82**	**15.5**	**B**					

TABLE A-1
SEWARD PARK PROPOSED MODIFICATIONS
2022 NO BUILD VS. 2022 BUILD VS. 2022 MITIGATION WEEKDAY AM PEAK HOUR TRAFFIC LEVELS OF SERVICE

		2022 No Build				2022 Build				2022 Build with Mitigation				Mitigation Measures
				Control				Control				Control		
INTERSECTION & APPROACH	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**	
UNSIGNALIZED INTERSECTIONS													
26 STANTON STREET AND LUDLOW STREET													
Stanton Street	EB	TR	-	8.0	A	TR	-	8.0	A				- Mitigation not required.
Ludlow Street	SB	LT	-	9.2	A	LT	-	9.3	A				
Overall Intersection		-	-	**8.9**	**A**	-	-	**9.0**	**A**				
27 RIVINGTON STREET AND LUDLOW STREET													
Rivington Street	WB	LT	-	12.3	B	LT	-	12.5	B				- Mitigation not required.
Ludlow Street	SB	TR	-	10.0	A	TR	-	10.1	B				
Overall Intersection		-	-	**11.5**	**B**	-	-	**11.6**	**B**				
28 BROOME STREET AND LUDLOW STREET													
Broome Street	EB	TR	-	10.5	B	TR	-	10.7	B				- Mitigation not required.
Ludlow Street	SB	LT	-	7.5	A	LT	-	7.5	A				
Overall Intersection		-	-	**5.9**	**A**	-	-	**6.0**	**A**				
29 BROOME STREET AND SUFFOLK STREET													
Broome Street	WB	LT	-	7.6	A	LT	-	7.6	A				- Mitigation not required.
Suffolk Street	SB	TR	-	10.6	B	TR	-	14.7	B				
Overall Intersection		-	-	**6.1**	**A**	-	-	**11.2**	**B**				
30 BROOME STREET AND CLINTON STREET													
Broome Street	NB	LTR	-	7.9	A	LTR	-	7.9	A				- Mitigation not required.
Overall Intersection		-	-	**1.2**	**A**	-	-	**1.3**	**A**				

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
Denotes a significant impact.

Table A-2
2022 With Action Condition Sidewalk Analysis Comparison:
FGEIS Development Program vs. Proposed Modifications – Weekday AM Peak Hour

Intersection No.	Location	Sidewalk	FGEIS		Proposed Modifications	
			PMF	LOS	PMF	LOS
1	Essex Street between Stanton Street and Rivington Street	East	2.59	B	2.62	B
2	Essex Street between Rivington Street and Stanton Street	East	2.95	B	2.98	B
	Essex Street between Rivington Street and Delancey Street	East	7.97	D	8.03	D
3	Delancey Street between Allen Street and Orchard Street	South	0.54	B	0.57	B
4	Delancey Street between Orchard Street and Ludlow Street	South	0.53	B	0.55	B
5	Delancey Street between Ludlow Street and Essex Street	South	1.27	B	1.31	B
6	Delancey Street between Essex Street and Norfolk Street	North	2.50	B	2.53	B
		South	1.18	B	1.20	B
	Essex Street between Delancey Street and Rivington Street	East	5.48	C	5.58	C
	Essex Street between Delancey Street and Broome Street	East	4.45	C	4.47	C
		West	10.85	D+	10.99	D+
7	Delancey Street between Norfolk Street and Essex Street	North	2.50	B	2.53	B
		South	0.99	B	1.00	B
	Delancey Street between Norfolk Street and Suffolk Street	North	4.68	C	4.73	C
		South	0.52	B	0.51	B
	Norfolk Street between Delancey Street and Broome Street	West	0.61	B	0.64	B
8	Delancey Street between Suffolk Street and Norfolk Street	South	0.50	A	0.51	B
	Delancey Street between Suffolk Street and Clinton Street	North	3.52	C	3.54	C
		South	0.58	B	0.56	B
	Suffolk Street between Delancey Street and Broome Street	East	0.36	A	0.47	A
		West	0.53	B	0.62	B
9	Delancey Street between Clinton Street and Suffolk Street	South	0.40	A	0.40	A
	Clinton Street between Delancey Street and Broome Street	East	0.48	A	0.46	A
		West	0.41	A	0.43	A
10	Broome Street between Allen Street and Orchard Street	North	1.08	B	1.10	B
		South	0.72	B	0.76	B
11	Broome Street between Ludlow Street and Essex Street	North	0.99	B	1.00	B
	Broome Street between Ludlow Street and Orchard Street	North	2.29	B	2.31	B
		South	1.10	B	1.15	B
12	Broome Street between Essex Street and Ludlow Street	North	1.06	B	1.08	B
	Broome Street between Essex Street and Norfolk Street	North	2.43	B	2.47	B
	Essex Street between Broome Street and Delancey Street	East	3.18	C	3.22	C
		West	3.17	C	3.22	C
	Essex Street between Broome Street and Grand Street	East	1.39	B	1.37	B
		West	2.26	B	2.30	B
13	Broome Street between Norfolk Street and Essex Street	North	1.82	B	1.87	B
	Broome Street between Norfolk Street and Suffolk Street	North	1.76	B	1.84	B
		South	1.09	B	1.27	B
	Norfolk Street between Broome Street and Delancey Street	West	0.35	A	0.37	A

Table A-2 (cont'd)
2022 With Action Condition Sidewalk Analysis Comparison:
FGEIS Development Program vs. Proposed Modifications – Weekday AM Peak Hour

Intersection No.	Location	Sidewalk	FGEIS		Proposed Modifications	
			PMF	LOS	PMF	LOS
14	Broome Street between Suffolk Street and Norfolk Street	North	1.42	B	1.50	B
	Broome Street between Suffolk Street and Clinton Street	North	0.62	B	0.58	B
	Suffolk Street between Broome Street and Delancey Street	East	0.59	B	0.74	B
		West	0.50	A	0.60	B
	Suffolk Street between Broome Street and Grand Street	East	1.02	B	1.70	B
15	Broome Street between Clinton Street and Suffolk Street	North	0.63	B	0.59	B
	Broome Street between Clinton Street and Ridge Street	North	0.46	A	0.43	A
	Clinton Street between Broome Street and Delancey Street	East	0.34	A	0.33	A
		West	0.40	A	0.43	A
	Clinton Street between Broome Street and Grand Street	West	0.65	B	0.60	B
16	Grand Street between Allen Street and Orchard Street	North	1.89	B	1.95	B
17	Grand Street between Ludlow Street and Orchard Street	North	2.16	B	2.22	B
	Grand Street between Ludlow Street and Essex Street	North	1.91	B	1.97	B
18	Grand Street between Essex Street and Norfolk Street	North	1.05	B	1.12	B
19	Grand Street between Norfolk Street and Suffolk Street	North	0.95	B	1.03	B
20	Grand Street between Suffolk Street and Clinton Street	North	0.86	B	0.87	B
	Suffolk Street between Grand Street and Broome Street	East	0.84	B	1.60	B
21	Grand Street between Clinton Street and Suffolk Street	North	1.65	B	1.75	B
	Clinton Street between Grand Street and Broome Street	West	0.53	B	0.50	A

Note: PMF = pedestrians per minute per foot
+ Denotes a significant adverse pedestrian impact

Table A-3
2022 With Action Condition Corner Analysis Comparison:
FGEIS Development Program vs. Proposed Modifications – Weekday AM Peak Hour

Intersection No.	Location	Corner	FGEIS		Proposed Modifications	
			SFP	LOS	SFP	LOS
1	Stanton Street and Essex Street	Southeast	78.2	A	77.1	A
		Southwest	121.7	A	119.8	A
2	Rivington Street and Essex Street	Northeast	60.5	A	60.2	A
		Southeast	29.3	C	29.1	C
		Southwest	93.6	A	92.8	A
3	Delancey Street and Allen Street	Southeast	312.0	A	301.1	A
		Southwest	295.5	A	286.8	A
4	Delancey Street and Orchard Street	Southeast	380.8	A	367.8	A
		Southwest	398.9	A	383.2	A
5	Delancey Street and Ludlow Street	Northeast	227.3	A	221.8	A
		Southeast	204.2	A	197.7	A
		Southwest	311.0	A	301.2	A
		Northwest	266.0	A	260.7	A
6	Delancey Street and Essex Street	Northeast	78.2	A	77.6	A
		Southeast	108.6	A	107.1	A
		Southwest	112.9	A	110.6	A
		Northwest	208.6	A	208.0	A
7	Delancey Street and Norfolk Street	Northeast	137.3	A	134.8	A
		Southeast	1027.3	A	1032.7	A
		Southwest	275.2	A	270.7	A
		Northwest	131.7	A	129.3	A
8	Delancey Street and Suffolk Street	Northeast	122.3	A	119.4	A
		Southeast	997.7	A	922.1	A
		Southwest	962.1	A	906.5	A
		Northwest	54.3	B	53.3	B
9	Delancey Street and Clinton Street	Southwest	451.2	A	446.8	A
		Northwest	160.3	A	159.2	A
12	Broome Street and Essex Street	Northeast	80.1	A	78.7	A
		Southeast	206.0	A	201.7	A
		Southwest	51.2	B	50.1	B
		Northwest	69.2	A	67.8	A
13	Broome Street and Norfolk Street	Northeast	273.6	A	266.4	A
		Southeast	198.1	A	172.2	A
		Southwest	823.9	A	709.9	A
		Northwest	233.5	A	222.8	A
16	Grand Street and Allen Street	Northeast	66.7	A	65.5	A
		Southeast	64.4	A	63.2	A
17	Grand Street and Orchard Street	Northeast	78.3	A	76.8	A
		Northwest	74.4	A	72.5	A
18	Grand Street and Ludlow Street	Northeast	194.4	A	189.3	A
		Southeast	103.0	A	100.7	A
		Northwest	95.2	A	93.0	A
19	Grand Street and Essex Street	Northeast	211.9	A	203.6	A
		Southeast	186.8	A	184.9	A
		Southwest	111.0	A	109.1	A
		Northwest	78.1	A	74.9	A
20	Grand Street and Norfolk Street	Northeast	567.9	A	520.0	A
		Northwest	1374.7	A	1257.3	A
21	Grand Street and Suffolk Street	Northeast	244.6	A	214.3	A
		Northwest	206.7	A	188.6	A
22	Grand Street and Clinton Street	Southwest	550.3	A	542.0	A
		Northwest	215.2	A	207.2	A

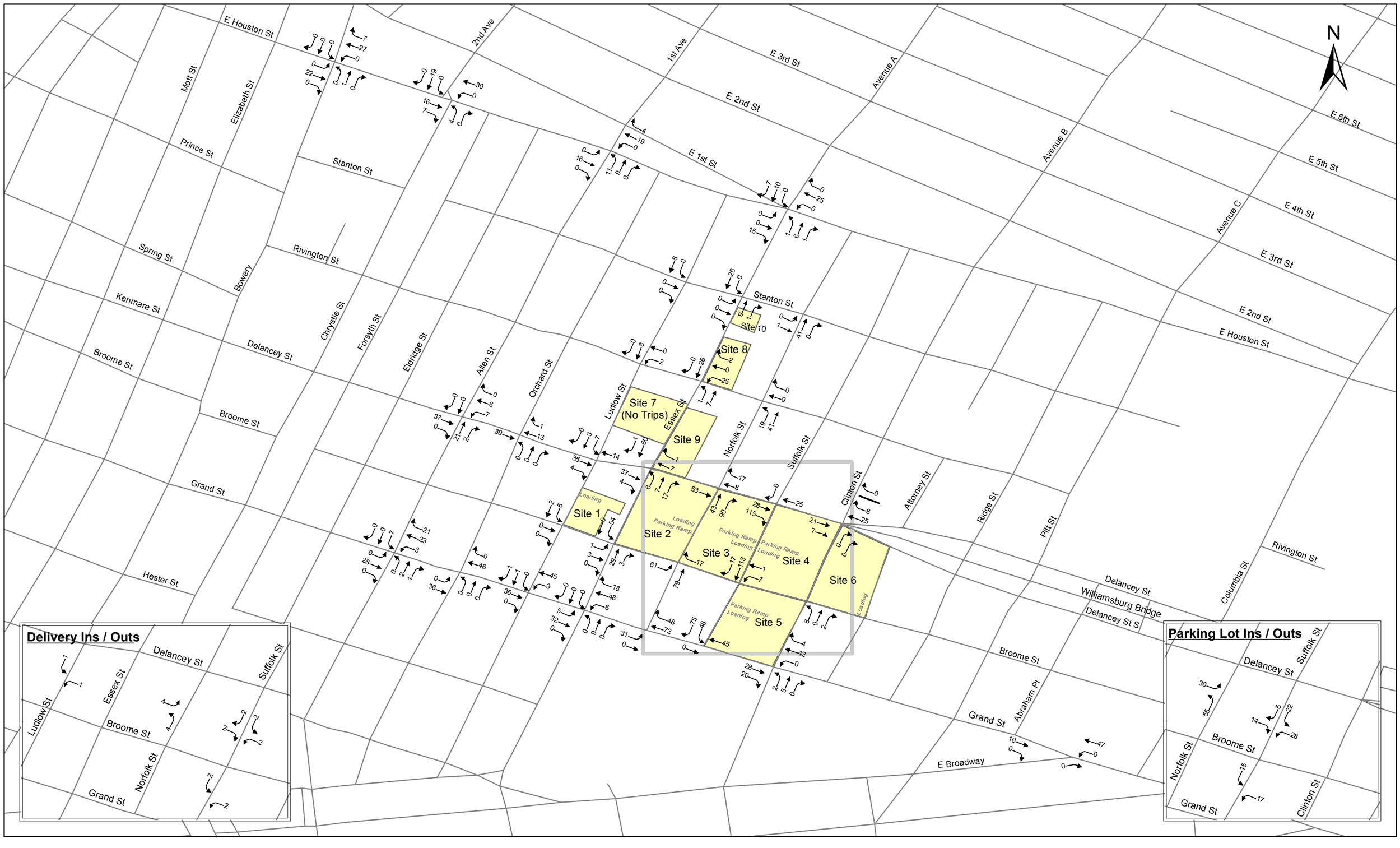
Note: SFP = square feet per pedestrian

Table A-4
2022 With Action Condition Crosswalk Analysis Comparison:
FGEIS Development Program vs. Proposed Modifications – Weekday AM Peak Hour

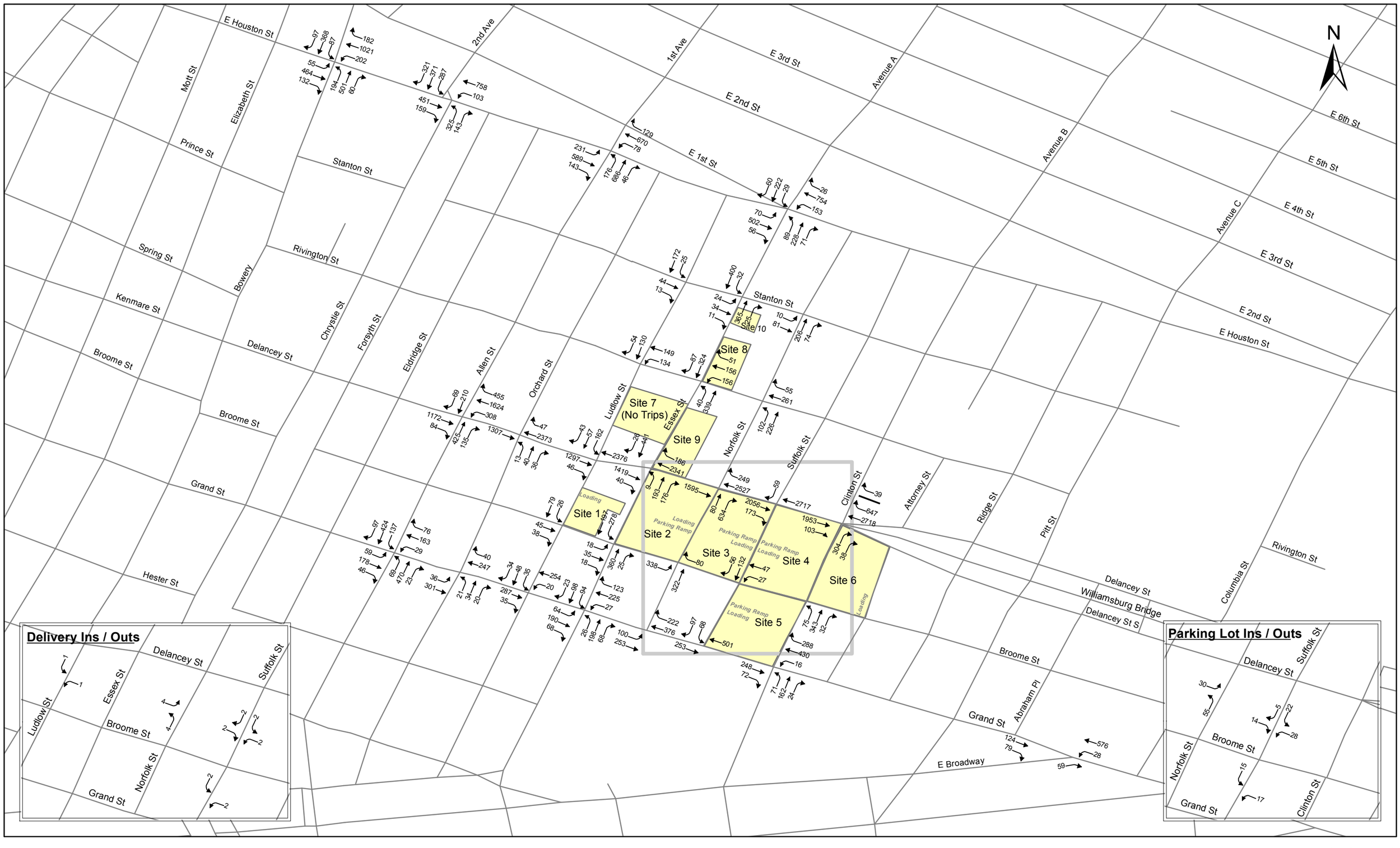
Intersection No.	Location	Crosswalk	FGEIS		Proposed Modifications	
			SFP	LOS	SFP	LOS
2	Rivington Street and Essex Street	East	26.4	C	26.2	C
3	Delancey Street and Allen Street	South[1]	75.9	A	72.9	A
4	Delancey Street and Orchard Street	South	233.9	A	222.9	A
5	Delancey Street and Ludlow Street	North	88.6	A	86.4	A
		South	181.9	A	174.9	A
6	Delancey Street and Essex Street	North	61.1	A	60.9	A
		East	29.2	C	28.9	C
		South	142.5	A	137.2	A
		West	28.6	C	28.4	C
7	Delancey Street and Norfolk Street	North	71.5	A	70.2	A
		South	69.6	A	69.4	A
		West	78.8	A	76.9	A
8	Delancey Street and Suffolk Street	North	35.2	C	34.9	C
		East[1]	270.8	A	223.3	A
		South	116.7	A	114.2	A
		West[1]	140.0	A	126.6	A
9	Delancey Street and Clinton Street	North	8.1	E	8.1	E
		South	255.7	A	259.1	A
		West (North of Median)	94.0	A	92.2	A
		West (South of Median)	127.3	A	124.0	A
12	Broome Street and Essex Street	North	73.3	A	71.7	A
		East	37.9	C	37.3	C
		South	111.4	A	107.6	A
13	Broome Street and Norfolk Street	North	83.5	A	81.3	A
		South	168.1	A	142.9	A
17	Grand Street and Orchard Street	North	32.8	C	31.8	C
18	Grand Street and Ludlow Street	North	55.7	B	53.7	B
19	Grand Street and Essex Street	North	78.2	A	71.1	A
20	Grand Street and Norfolk Street	North	45.7	B	40.4	B
21	Grand Street and Suffolk Street	North	78.5	A	70.9	A

Notes: SFP = square feet per pedestrian
1 Critical width (north/east or south/west of pedestrian refuge median) used for analysis street width
+ Denotes a significant adverse pedestrian impact

Volume Maps

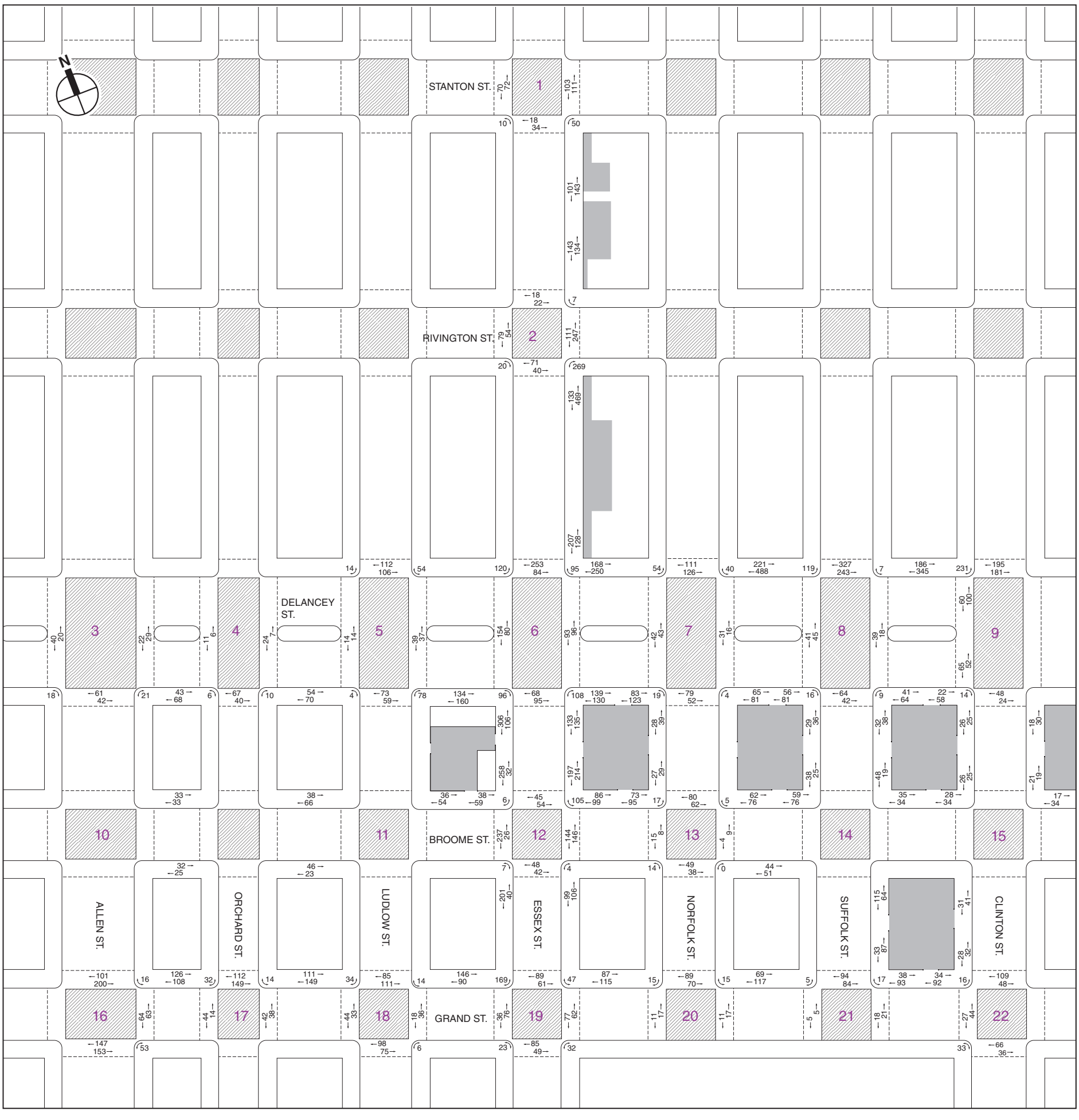


2022 BUILD TRAFFIC VOLUME INCREMENTS
WEEKDAY AM PEAK HOUR
Seward Park Proposed Modifications



2022 BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR
Seward Park Proposed Modifications

9.18.12



Proposed Development Parcels

2022 With Action Pedestrian Volumes - Peak 15 Minutes
Weekday AM Peak Hour
Seward Park Proposed Modifications

9.18.12

Project Generated Pedestrian Volumes
Weekday AM Peak Hour
Seward Park Proposed Modifications

9.18.12

Proposed Development Parcels

Project Generated Pedestrian Volumes
Weekday AM Peak Hour
Seward Park Proposed Modifications

APPENDIX B
NOISE

Seward Park Rooftop Playground Analysis

Receptor	Façade	Receptor Floor	Predicted Playground Noise Level (L_{eq})	Associated Noise Receptor	Calculated Existing Noise Level (L_{eq})	Calculated Build Noise Level (L_{eq})	Level Increase (dBA)
384 Grand Street	North	1	45.8	2	58.1	58.3	0.2
		6	54.7	2	60.1	61.2	1.1
50 Norfolk Street	East	1	45.2	2	56.4	56.7	0.3
		11	60.2	2	60.4	63.3	2.9
60 Norfolk Street	South	1	43.5	2	54.7	55.0	0.3
		7	53.6	2	57.2	58.8	1.6

Playground Noise Results (in dBA)

Seward Park

CadnaA Receptor Sites	Elevation (floor)	Existing $L_{eq(1)}$	Existing L_{10}	Playground Only $L_{eq(1)}$	Playground Only Delta	Playground Only L_{10}	Total L_{10}	CEQR Attenuation Required	"Playground" L_{dn}	FGEIS Site	FGEIS Façade	FGEIS Governing Receptor	FGEIS L_{dn}	FGEIS Attenuation Required	Total L_{dn}	Total Attenuation Required	Change
AAAA	1	62.9	65.4	30.4	2.8	33.2	65.4	0	25.6	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA	2	63.6	66.1	30.4	2.8	33.2	66.1	0	25.6	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA	3	64.1	66.6	30.4	2.8	33.2	66.6	0	25.6	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA	4	64.6	67.1	30.5	2.8	33.3	67.1	0	25.7	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA	5	65.0	67.5	30.5	2.8	33.3	67.5	0	25.7	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA	6	65.2	67.7	30.5	2.8	33.3	67.7	0	25.7	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA	7	65.4	67.9	30.5	2.8	33.3	67.9	0	25.7	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA	8	65.5	68.0	30.6	2.8	33.4	68.0	0	25.8	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA01	1	54.7	57.2	31.7	2.8	34.5	57.2	0	26.9	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	2	54.7	57.2	31.7	2.8	34.5	57.2	0	26.9	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	3	55.6	58.1	31.8	2.8	34.6	58.1	0	27.0	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	4	56.0	58.5	31.8	2.8	34.6	58.5	0	27.0	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	5	56.2	58.7	32.1	2.8	34.9	58.7	0	27.3	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	6	56.3	58.8	32.9	2.8	35.7	58.8	0	28.1	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	7	56.4	58.9	34.9	2.8	37.7	58.9	0	30.1	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	8	56.6	59.1	39.0	2.8	41.8	59.2	0	34.2	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	9	56.8	59.3	41.7	2.8	44.5	59.4	0	36.9	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	10	56.9	59.4	48.4	2.8	51.2	60.0	0	43.6	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	11	57.6	60.1	48.7	2.8	51.5	60.7	0	43.9	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA01	16	59.5	62.0	48.7	2.8	51.5	62.4	0	43.9	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA02	1	54.7	57.7	42.3	2.8	45.1	57.9	0	37.5	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA02	2	54.7	57.7	42.9	2.8	45.7	57.9	0	38.1	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA02	3	54.7	57.7	40.8	2.8	43.6	57.8	0	36.0	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA02	4	54.7	57.7	42.1	2.8	44.9	57.9	0	37.3	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA02	5	54.7	57.7	43.6	2.8	46.4	58.0	0	38.8	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA02	6	54.7	57.7	45.3	2.8	48.1	58.1	0	40.5	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA02	7	54.7	57.7	47.2	2.8	50.0	58.4	0	42.4	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA02	8	54.7	57.7	47.0	2.8	49.8	58.3	0	42.2	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA03	1	58.8	61.1	37.5	2.8	40.3	61.1	0	32.7	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA03	2	59.4	61.7	37.9	2.8	40.7	61.7	0	33.1	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA03	3	59.7	62.0	38.5	2.8	41.3	62.0	0	33.7	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA03	4	59.8	62.1	39.3	2.8	42.1	62.1	0	34.5	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA03	5	59.9	62.2	40.4	2.8	43.2	62.3	0	35.6	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA03	6	59.8	62.1	41.9	2.8	44.7	62.2	0	37.1	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA03	7	59.9	62.2	45.9	2.8	48.7	62.4	0	41.1	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA03	8	59.9	62.2	47.0	2.8	49.8	62.4	0	42.2	6	W	4	71.9	26.9	71.9	26.9	0.0

AAAA04	9	54.7	57.2	32.0	2.8	34.8	57.2	0	27.2	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA04	10	64.7	67.2	32.0	2.8	34.8	67.2	0	27.2	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA04	11	64.8	67.3	32.0	2.8	34.8	67.3	0	27.2	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA04	16	64.8	67.3	32.3	2.8	35.1	67.3	0	27.5	6	N	4	71.9	26.9	71.9	26.9	0.0
AAAA05	9	54.7	57.2	41.5	2.8	44.3	57.4	0	36.7	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA05	10	54.7	57.2	45.1	2.8	47.9	57.7	0	40.3	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA05	11	54.7	57.2	45.4	2.8	48.2	57.7	0	40.6	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA05	16	57.0	59.5	45.4	2.8	48.2	59.8	0	40.6	6	E	4	71.9	26.9	71.9	26.9	0.0
AAAA06	9	54.7	57.7	49.6	2.8	52.4	58.8	0	44.8	6	S	3	65.5	20.5	65.5	20.5	0.0
AAAA06	10	54.7	57.7	52.5	2.8	55.3	59.7	0	47.7	6	S	3	65.5	20.5	65.6	20.6	0.1
AAAA06	11	54.7	57.7	52.6	2.8	55.4	59.7	0	47.8	6	S	3	65.5	20.5	65.6	20.6	0.1
AAAA06	16	54.7	57.7	52.4	2.8	55.2	59.6	0	47.6	6	S	3	65.5	20.5	65.6	20.6	0.1
AAAA07	9	54.7	57.0	49.0	2.8	51.8	58.1	0	44.2	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA07	10	58.4	60.7	52.5	2.8	55.3	61.8	0	47.7	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA07	11	59.5	61.8	52.7	2.8	55.5	62.7	0	47.9	6	W	4	71.9	26.9	71.9	26.9	0.0
AAAA07	16	59.6	61.9	52.6	2.8	55.4	62.8	0	47.8	6	W	4	71.9	26.9	71.9	26.9	0.0
BBBB	1	54.7	57.7	49.1	2.8	51.9	58.7	0	44.3	5	N	3	65.5	20.5	65.5	20.5	0.0
BBBB	2	55.5	58.5	49.9	2.8	52.7	59.5	0	45.1	5	N	3	65.5	20.5	65.5	20.5	0.0
BBBB	3	55.9	58.9	50.7	2.8	53.5	60.0	0	45.9	5	N	3	65.5	20.5	65.5	20.5	0.0
BBBB	4	56.0	59.0	51.6	2.8	54.4	60.3	0	46.8	5	N	3	65.5	20.5	65.6	20.6	0.1
BBBB	5	55.9	58.9	52.6	2.8	55.4	60.5	0	47.8	5	N	3	65.5	20.5	65.6	20.6	0.1
BBBB	6	54.8	57.8	53.6	2.8	56.4	60.2	0	48.8	5	N	3	65.5	20.5	65.6	20.6	0.1
BBBB	7	54.7	57.7	54.7	2.8	57.5	60.6	0	49.9	5	N	3	65.5	20.5	65.6	20.6	0.1
BBBB	8	55.2	58.2	55.5	2.8	58.3	61.3	0	50.7	5	N	3	65.5	20.5	65.6	20.6	0.1
BBBB01	1	66.5	65.3	38.5	2.8	41.3	65.3	0	33.7	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB01	2	66.5	65.3	38.8	2.8	41.6	65.3	0	34.0	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB01	3	66.0	64.8	39.0	2.8	41.8	64.8	0	34.2	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB01	4	65.4	64.2	39.3	2.8	42.1	64.2	0	34.5	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB01	5	64.7	63.5	39.5	2.8	42.3	63.5	0	34.7	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB01	6	64.1	62.9	39.7	2.8	42.5	62.9	0	34.9	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB01	7	62.6	61.4	39.9	2.8	42.7	61.5	0	35.1	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB01	8	62.4	61.2	40.0	2.8	42.8	61.3	0	35.2	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB02	1	62.0	65.7	38.4	2.8	41.2	65.7	0	33.6	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB02	2	63.0	66.7	38.7	2.8	41.5	66.7	0	33.9	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB02	3	63.1	66.8	38.9	2.8	41.7	66.8	0	34.1	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB02	4	63.0	66.7	39.1	2.8	41.9	66.7	0	34.3	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB02	5	62.7	66.4	39.3	2.8	42.1	66.4	0	34.5	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB02	6	61.9	65.6	39.5	2.8	42.3	65.6	0	34.7	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB02	7	61.4	65.1	39.7	2.8	42.5	65.1	0	34.9	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB02	8	61.0	64.7	39.8	2.8	42.6	64.7	0	35.0	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB03	1	57.0	59.3	48.7	2.8	51.5	60.0	0	43.9	5	W	7	72.4	27.4	72.4	27.4	0.0
BBBB03	2	57.5	59.8	49.3	2.8	52.1	60.5	0	44.5	5	W	7	72.4	27.4	72.4	27.4	0.0
BBBB03	3	57.6	59.9	49.9	2.8	52.7	60.7	0	45.1	5	W	7	72.4	27.4	72.4	27.4	0.0
BBBB03	4	57.8	60.1	50.7	2.8	53.5	61.0	0	45.9	5	W	7	72.4	27.4	72.4	27.4	0.0
BBBB03	5	58.0	60.3	51.5	2.8	54.3	61.3	0	46.7	5	W	7	72.4	27.4	72.4	27.4	0.0
BBBB03	6	58.0	60.3	52.2	2.8	55.0	61.4	0	47.4	5	W	7	72.4	27.4	72.4	27.4	0.0
BBBB03	7	58.1	60.4	53.0	2.8	55.8	61.7	0	48.2	5	W	7	72.4	27.4	72.4	27.4	0.0

BBBB03	8	58.1	60.4	54.3	2.8	57.1	62.1	0	49.5	5	W	7	72.4	27.4	72.4	27.4	0.0
BBBB04	9	54.7	57.7	61.2	2.8	64.0	64.9	0	56.4	5	N	3	65.5	20.5	66.0	21.0	0.5
BBBB04	10	54.7	57.7	60.2	2.8	63.0	64.1	0	55.4	5	N	3	65.5	20.5	65.9	20.9	0.4
BBBB04	11	54.7	57.7	60.5	2.8	63.3	64.4	0	55.7	5	N	3	65.5	20.5	65.9	20.9	0.4
BBBB04	16	54.7	57.7	58.6	2.8	61.4	62.9	0	53.8	5	N	3	65.5	20.5	65.8	20.8	0.3
BBBB05	9	54.7	53.5	40.8	2.8	43.6	53.9	0	36.0	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB05	10	57.2	56.0	40.8	2.8	43.6	56.2	0	36.0	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB05	11	58.5	57.3	40.7	2.8	43.5	57.5	0	35.9	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB05	16	60.0	58.8	39.7	2.8	42.5	58.9	0	34.9	5	E	2	62.3	17.3	62.3	17.3	0.0
BBBB06	9	54.7	58.4	40.6	2.8	43.4	58.5	0	35.8	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB06	10	56.5	60.2	40.6	2.8	43.4	60.3	0	35.8	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB06	11	59.8	63.5	40.5	2.8	43.3	63.5	0	35.7	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB06	16	58.5	62.2	39.6	2.8	42.4	62.2	0	34.8	5	S	1	71.5	26.5	71.5	26.5	0.0
BBBB07	9	54.7	53.5	61.4	2.8	64.2	64.6	0	56.6	5	W	7	72.4	27.4	72.5	27.5	0.1
BBBB07	10	58.2	57.0	60.9	2.8	63.7	64.5	0	56.1	5	W	7	72.4	27.4	72.5	27.5	0.1
BBBB07	11	60.2	59.0	61.2	2.8	64.0	65.2	0	56.4	5	W	7	72.4	27.4	72.5	27.5	0.1
BBBB07	16	62.1	60.9	59.9	2.8	62.7	64.9	0	55.1	5	W	7	72.4	27.4	72.5	27.5	0.1
BBBB08	9	54.7	53.5	79.6	2.8	82.4	82.4	39	74.8	5	PN	3	65.5	20.5	75.3	31.0	10.5
BBBB08	10	54.7	53.5	78.8	2.8	81.6	81.6	38	74.0	5	PN	3	65.5	20.5	74.6	30.0	9.5
BBBB08	11	54.7	53.5	77.6	2.8	80.4	80.4	37	72.8	5	PN	3	65.5	20.5	73.6	29.0	8.5
BBBB08	12	54.7	53.5	76.5	2.8	79.3	79.3	35	71.7	6	PN	3	65.5	20.5	72.7	28.0	7.5
BBBB08	13	54.7	53.5	75.5	2.8	78.3	78.3	35	70.7	7	PN	3	65.5	20.5	71.9	27.0	6.5
BBBB08	14	54.7	53.5	74.7	2.8	77.5	77.5	33	69.9	8	PN	3	65.5	20.5	71.3	27.0	6.5
BBBB08	15	54.7	53.5	73.9	2.8	76.7	76.7	33	69.1	9	PN	3	65.5	20.5	70.7	26.0	5.5
BBBB08	16	55.7	54.5	73.2	2.8	76.0	76.0	33	68.4	5	PN	3	65.5	20.5	70.2	26.0	5.5
BBBB09	9	54.7	57.7	76.4	2.8	79.2	79.2	35	71.6	5	PW	7	72.4	27.4	75.0	31.0	3.6
BBBB09	10	54.7	57.7	76.0	2.8	78.8	78.8	35	71.2	5	PW	7	72.4	27.4	74.9	30.0	2.6
BBBB09	11	54.7	57.7	75.2	2.8	78.0	78.0	35	70.4	5	PW	7	72.4	27.4	74.5	30.0	2.6
BBBB09	12	54.7	57.7	74.1	2.8	76.9	77.0	33	69.3	6	PW	7	72.4	27.4	74.1	30.0	2.6
BBBB09	13	54.7	57.7	73.2	2.8	76.0	76.1	33	68.4	7	PW	7	72.4	27.4	73.9	29.0	1.6
BBBB09	14	54.7	57.7	72.5	2.8	75.3	75.4	31	67.7	8	PW	7	72.4	27.4	73.7	29.0	1.6
BBBB09	15	54.7	57.7	71.7	2.8	74.5	74.6	31	66.9	9	PW	7	72.4	27.4	73.5	29.0	1.6
BBBB09	16	54.7	57.7	71.0	2.8	73.8	73.9	31	66.2	5	PW	7	72.4	27.4	73.3	29.0	1.6
CCCC	1	66.6	68.8	30.5	2.8	33.3	68.8	0	25.7	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC	2	67.9	70.1	30.6	2.8	33.4	70.1	28	25.8	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC	3	68.1	70.3	30.6	2.8	33.4	70.3	28	25.8	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC	4	68.1	70.3	30.7	2.8	33.5	70.3	28	25.9	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC	5	67.9	70.1	30.7	2.8	33.5	70.1	28	25.9	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC	6	67.7	69.9	30.8	2.8	33.6	69.9	0	26.0	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC	7	67.4	69.6	30.9	2.8	33.7	69.6	0	26.1	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC	8	67.1	69.3	31.1	2.8	33.9	69.3	0	26.3	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC01	1	58.1	60.4	39.7	2.8	42.5	60.5	0	34.9	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC01	2	58.5	60.8	40.7	2.8	43.5	60.9	0	35.9	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC01	3	58.6	60.9	41.8	2.8	44.6	61.0	0	37.0	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC01	4	58.5	60.8	43.1	2.8	45.9	60.9	0	38.3	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC01	5	58.4	60.7	44.4	2.8	47.2	60.9	0	39.6	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC01	6	58.3	60.6	45.6	2.8	48.4	60.9	0	40.8	4	E	4	71.9	26.9	71.9	26.9	0.0

CCCC01	7	58.0	60.3	46.6	2.8	49.4	60.6	0	41.8	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC01	8	57.8	60.1	49.0	2.8	51.8	60.7	0	44.2	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC02	1	57.9	60.9	44.9	2.8	47.7	61.1	0	40.1	4	S	3	65.5	20.5	65.5	20.5	0.0
CCCC02	2	58.3	61.3	45.3	2.8	48.1	61.5	0	40.5	4	S	3	65.5	20.5	65.5	20.5	0.0
CCCC02	3	58.0	61.0	46.4	2.8	49.2	61.3	0	41.6	4	S	3	65.5	20.5	65.5	20.5	0.0
CCCC02	4	57.5	60.5	47.3	2.8	50.1	60.9	0	42.5	4	S	3	65.5	20.5	65.5	20.5	0.0
CCCC02	5	57.0	60.0	47.9	2.8	50.7	60.5	0	43.1	4	S	3	65.5	20.5	65.5	20.5	0.0
CCCC02	6	56.4	59.4	50.3	2.8	53.1	60.3	0	45.5	4	S	3	65.5	20.5	65.5	20.5	0.0
CCCC02	7	55.9	58.9	53.0	2.8	55.8	60.6	0	48.2	4	S	3	65.5	20.5	65.6	20.6	0.1
CCCC02	8	55.5	58.5	55.4	2.8	58.2	61.4	0	50.6	4	S	3	65.5	20.5	65.6	20.6	0.1
CCCC03	1	59.8	62.1	41.1	2.8	43.9	62.2	0	36.3	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC03	2	60.5	62.8	41.9	2.8	44.7	62.9	0	37.1	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC03	3	61.0	63.3	42.8	2.8	45.6	63.4	0	38.0	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC03	4	61.4	63.7	43.8	2.8	46.6	63.8	0	39.0	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC03	5	61.8	64.1	45.1	2.8	47.9	64.2	0	40.3	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC03	6	61.9	64.2	46.7	2.8	49.5	64.3	0	41.9	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC03	7	62.0	64.3	47.8	2.8	50.6	64.5	0	43.0	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC03	8	62.0	64.3	49.0	2.8	51.8	64.5	0	44.2	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC04	9	54.7	56.9	31.7	2.8	34.5	56.9	0	26.9	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC04	10	67.2	69.4	31.7	2.8	34.5	69.4	0	26.9	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC04	11	68.3	70.5	31.7	2.8	34.5	70.5	28	26.9	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC04	16	67.2	69.4	31.6	2.8	34.4	69.4	0	26.8	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC04	21	66.0	68.2	31.4	2.8	34.2	68.2	0	26.6	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC04	26	64.8	67.0	30.0	2.8	32.8	67.0	0	25.2	4	N	8	73.8	28.8	73.8	28.8	0.0
CCCC05	9	54.7	57.0	44.2	2.8	47.0	57.4	0	39.4	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC05	10	54.7	57.0	50.0	2.8	52.8	58.4	0	45.2	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC05	11	54.9	57.2	50.0	2.8	52.8	58.5	0	45.2	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC05	16	57.0	59.3	49.9	2.8	52.7	60.2	0	45.1	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC05	21	56.4	58.7	40.1	2.8	42.9	58.8	0	35.3	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC05	26	55.9	58.2	39.9	2.8	42.7	58.3	0	35.1	4	E	4	71.9	26.9	71.9	26.9	0.0
CCCC06	9	54.7	57.7	54.3	2.8	57.1	60.4	0	49.5	4	S	3	65.5	20.5	65.6	20.6	0.1
CCCC06	10	54.7	57.7	59.1	2.8	61.9	63.3	0	54.3	4	S	3	65.5	20.5	65.8	20.8	0.3
CCCC06	11	54.7	57.7	59.2	2.8	62.0	63.4	0	54.4	4	S	3	65.5	20.5	65.8	20.8	0.3
CCCC06	16	54.7	57.7	58.9	2.8	61.7	63.1	0	54.1	4	S	3	65.5	20.5	65.8	20.8	0.3
CCCC06	21	54.7	57.7	58.3	2.8	61.1	62.7	0	53.5	4	S	3	65.5	20.5	65.8	20.8	0.3
CCCC06	26	54.7	57.7	57.6	2.8	60.4	62.3	0	52.8	4	S	3	65.5	20.5	65.7	20.7	0.2
CCCC07	1	54.7	57.7	40.1	2.8	42.9	57.8	0	35.3	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC07	9	54.7	57.7	57.7	2.8	60.5	62.3	0	52.9	4	W	4	71.9	26.9	72.0	27.0	0.1
CCCC07	10	54.7	57.7	60.9	2.8	63.7	64.7	0	56.1	4	W	4	71.9	26.9	72.0	27.0	0.1
CCCC07	11	54.7	57.7	60.9	2.8	63.7	64.7	0	56.1	4	W	4	71.9	26.9	72.0	27.0	0.1
CCCC07	16	54.7	57.7	60.7	2.8	63.5	64.5	0	55.9	4	W	4	71.9	26.9	72.0	27.0	0.1
CCCC07	21	54.7	57.7	60.3	2.8	63.1	64.2	0	55.5	4	W	4	71.9	26.9	72.0	27.0	0.1
CCCC07	26	54.7	57.7	59.7	2.8	62.5	63.7	0	54.9	4	W	4	71.9	26.9	72.0	27.0	0.1
CCCC08	9	54.7	56.9	54.5	2.8	57.3	60.1	0	49.7	4	S	3	65.5	20.5	65.6	20.6	0.1
CCCC08	10	54.7	56.9	57.2	2.8	60.0	61.7	0	52.4	4	S	3	65.5	20.5	65.7	20.7	0.2
CCCC08	11	54.7	56.9	57.4	2.8	60.2	61.9	0	52.6	4	S	3	65.5	20.5	65.7	20.7	0.2
CCCC08	16	54.7	56.9	57.3	2.8	60.1	61.8	0	52.5	4	S	3	65.5	20.5	65.7	20.7	0.2

CCCC08	21	54.7	56.9	56.9	2.8	59.7	61.5	0	52.1	4	S	3	65.5	20.5	65.7	20.7	0.2
CCCC08	26	54.7	56.9	56.5	2.8	59.3	61.3	0	51.7	4	S	3	65.5	20.5	65.7	20.7	0.2
CCCC09	9	54.7	56.9	52.5	2.8	55.3	59.2	0	47.7	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC09	10	61.8	64.0	54.9	2.8	57.7	64.9	0	50.1	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC09	11	63.6	65.8	55.0	2.8	57.8	66.4	0	50.2	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC09	16	64.7	66.9	54.9	2.8	57.7	67.4	0	50.1	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC09	21	64.0	66.2	53.2	2.8	56.0	66.6	0	48.4	4	W	4	71.9	26.9	71.9	26.9	0.0
CCCC09	26	63.2	65.4	52.9	2.8	55.7	65.8	0	48.1	4	W	4	71.9	26.9	71.9	26.9	0.0
DDDD	1	67.8	70.0	36.8	2.8	39.6	70.0	28	32.0	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD	2	69.5	71.7	37.9	2.8	40.7	71.7	28	33.1	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD	3	70.1	72.3	38.9	2.8	41.7	72.3	28	34.1	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD	4	70.4	72.6	40.0	2.8	42.8	72.6	28	35.2	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD	5	70.5	72.7	40.9	2.8	43.7	72.7	28	36.1	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD	6	70.4	72.6	41.5	2.8	44.3	72.6	28	36.7	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD	7	70.3	72.5	37.3	2.8	40.1	72.5	28	32.5	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD	8	70.1	72.3	30.9	2.8	33.7	72.3	28	26.1	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD01	1	62.0	64.3	43.2	2.8	46.0	64.4	0	38.4	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD01	2	62.6	64.9	44.3	2.8	47.1	65.0	0	39.5	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD01	3	63.1	65.4	45.6	2.8	48.4	65.5	0	40.8	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD01	4	63.6	65.9	47.1	2.8	49.9	66.0	0	42.3	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD01	5	63.8	66.1	48.7	2.8	51.5	66.2	0	43.9	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD01	6	63.9	66.2	50.4	2.8	53.2	66.4	0	45.6	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD01	7	63.9	66.2	52.8	2.8	55.6	66.6	0	48.0	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD01	8	63.8	66.1	54.8	2.8	57.6	66.7	0	50.0	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD02	1	60.7	63.7	42.7	2.8	45.5	63.8	0	37.9	3	S	3	65.5	20.5	65.5	20.5	0.0
DDDD02	2	60.9	63.9	44.2	2.8	47.0	64.0	0	39.4	3	S	3	65.5	20.5	65.5	20.5	0.0
DDDD02	3	60.6	63.6	46.1	2.8	48.9	63.7	0	41.3	3	S	3	65.5	20.5	65.5	20.5	0.0
DDDD02	4	60.1	63.1	48.0	2.8	50.8	63.3	0	43.2	3	S	3	65.5	20.5	65.5	20.5	0.0
DDDD02	5	59.6	62.6	49.8	2.8	52.6	63.0	0	45.0	3	S	3	65.5	20.5	65.5	20.5	0.0
DDDD02	6	59.1	62.1	51.9	2.8	54.7	62.8	0	47.1	3	S	3	65.5	20.5	65.6	20.6	0.1
DDDD02	7	58.7	61.7	53.3	2.8	56.1	62.8	0	48.5	3	S	3	65.5	20.5	65.6	20.6	0.1
DDDD02	8	58.3	61.3	54.9	2.8	57.7	62.9	0	50.1	3	S	3	65.5	20.5	65.6	20.6	0.1
DDDD03	1	70.3	72.6	32.9	2.8	35.7	72.6	28	28.1	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD03	2	70.3	72.6	33.0	2.8	35.8	72.6	28	28.2	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD03	3	69.8	72.1	33.2	2.8	36.0	72.1	28	28.4	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD03	4	69.2	71.5	33.0	2.8	35.8	71.5	28	28.2	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD03	5	68.7	71.0	33.4	2.8	36.2	71.0	28	28.6	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD03	6	68.3	70.6	34.6	2.8	37.4	70.6	28	29.8	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD03	7	67.8	70.1	37.0	2.8	39.8	70.1	28	32.2	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD03	8	67.4	69.7	41.4	2.8	44.2	69.7	0	36.6	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD04	9	54.9	57.1	31.6	2.8	34.4	57.1	0	26.8	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD04	10	67.0	69.2	31.6	2.8	34.4	69.2	0	26.8	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD04	11	66.9	69.1	31.6	2.8	34.4	69.1	0	26.8	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD04	16	65.7	67.9	31.6	2.8	34.4	67.9	0	26.8	3	N	8	73.8	28.8	73.8	28.8	0.0
DDDD05	9	54.7	57.0	54.8	2.8	57.6	60.3	0	50.0	3	E	4	71.9	26.9	71.9	26.9	0.0
DDDD05	10	59.3	61.6	59.2	2.8	62.0	64.8	0	54.4	3	E	4	71.9	26.9	72.0	27.0	0.1
DDDD05	11	61.5	63.8	59.2	2.8	62.0	66.0	0	54.4	3	E	4	71.9	26.9	72.0	27.0	0.1

DDDD05	16	63.1	65.4	59.1	2.8	61.9	67.0	0	54.3	3	E	4	71.9	26.9	72.0	27.0	0.1
DDDD06	9	54.7	57.7	55.8	2.8	58.6	61.2	0	51.0	3	S	3	65.5	20.5	65.7	20.7	0.2
DDDD06	10	54.7	57.7	57.9	2.8	60.7	62.5	0	53.1	3	S	3	65.5	20.5	65.7	20.7	0.2
DDDD06	11	54.7	57.7	58.0	2.8	60.8	62.5	0	53.2	3	S	3	65.5	20.5	65.8	20.8	0.3
DDDD06	16	54.7	57.7	57.8	2.8	60.6	62.4	0	53.0	3	S	3	65.5	20.5	65.7	20.7	0.2
DDDD07	9	54.7	57.0	32.4	2.8	35.2	57.0	0	27.6	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD07	10	60.5	62.8	32.4	2.8	35.2	62.8	0	27.6	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD07	11	62.7	65.0	32.3	2.8	35.1	65.0	0	27.5	3	W	7	72.4	27.4	72.4	27.4	0.0
DDDD07	16	64.8	67.1	33.0	2.8	35.8	67.1	0	28.2	3	W	7	72.4	27.4	72.4	27.4	0.0
EEEE	1	70.2	73.6	26.4	2.8	29.2	73.6	31	21.7	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE	2	71.2	74.6	26.4	2.8	29.2	74.6	31	21.7	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE	3	71.4	74.8	26.5	2.8	29.3	74.8	31	21.8	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE	4	71.3	74.7	26.5	2.8	29.3	74.7	31	21.8	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE	5	71.2	74.6	26.6	2.8	29.4	74.6	31	21.8	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE	6	70.9	74.3	26.7	2.8	29.5	74.3	31	21.9	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE	7	70.6	74.0	26.8	2.8	29.6	74.0	31	22.0	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE	8	70.3	73.7	27.0	2.8	29.8	73.7	31	22.2	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE01	1	67.8	70.1	31.2	2.8	34.0	70.1	28	26.4	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE01	2	68.1	70.4	31.3	2.8	34.1	70.4	28	26.5	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE01	3	67.7	70.0	31.5	2.8	34.3	70.0	28	26.7	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE01	4	67.4	69.7	31.7	2.8	34.5	69.7	0	26.9	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE01	5	67.0	69.3	31.9	2.8	34.7	69.3	0	27.1	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE01	6	66.6	68.9	32.1	2.8	34.9	68.9	0	27.3	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE01	7	66.2	68.5	32.4	2.8	35.2	68.5	0	27.6	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE01	8	65.9	68.2	32.5	2.8	35.3	68.2	0	27.7	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE02	1	55.5	58.5	42.3	2.8	45.1	58.7	0	37.5	2	S	3	65.5	20.5	65.5	20.5	0.0
EEEE02	2	56.2	59.2	43.5	2.8	46.3	59.4	0	38.7	2	S	3	65.5	20.5	65.5	20.5	0.0
EEEE02	3	56.5	59.5	44.8	2.8	47.6	59.8	0	40.0	2	S	3	65.5	20.5	65.5	20.5	0.0
EEEE02	4	56.4	59.4	46.4	2.8	49.2	59.8	0	41.6	2	S	3	65.5	20.5	65.5	20.5	0.0
EEEE02	5	56.2	59.2	48.1	2.8	50.9	59.8	0	43.3	2	S	3	65.5	20.5	65.5	20.5	0.0
EEEE02	6	55.9	58.9	49.1	2.8	51.9	59.7	0	44.3	2	S	3	65.5	20.5	65.5	20.5	0.0
EEEE02	7	55.7	58.7	49.6	2.8	52.4	59.6	0	44.8	2	S	3	65.5	20.5	65.5	20.5	0.0
EEEE02	8	55.4	58.4	50.6	2.8	53.4	59.6	0	45.8	2	S	3	65.5	20.5	65.5	20.5	0.0
EEEE03	1	65.5	67.8	29.3	2.8	32.1	67.8	0	24.5	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE03	2	66.1	68.4	29.4	2.8	32.2	68.4	0	24.6	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE03	3	66.9	69.2	29.9	2.8	32.7	69.2	0	25.1	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE03	4	68.4	70.7	30.7	2.8	33.5	70.7	28	25.9	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE03	5	68.2	70.5	32.4	2.8	35.2	70.5	28	27.6	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE03	6	68.1	70.4	35.0	2.8	37.8	70.4	28	30.2	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE03	7	67.9	70.2	38.8	2.8	41.6	70.2	28	34.0	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE03	8	67.6	69.9	41.3	2.8	44.1	69.9	0	36.5	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE04	9	58.1	61.5	27.3	2.8	30.1	61.5	0	22.5	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE04	10	68.1	71.5	27.3	2.8	30.1	71.5	28	22.5	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE04	11	68.5	71.9	27.3	2.8	30.1	71.9	28	22.5	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE04	16	67.8	71.2	27.2	2.8	30.0	71.2	28	22.4	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE04	21	66.5	69.9	27.2	2.8	30.0	69.9	0	22.4	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE04	26	65.4	68.8	29.0	2.8	31.8	68.8	0	24.2	2	N	6	78.2	33.2	78.2	33.2	0.0

EEEE04	28	65.1	68.5	28.8	2.8	31.6	68.5	0	24.0	2	N	6	78.2	33.2	78.2	33.2	0.0
EEEE05	9	54.7	57.0	34.7	2.8	37.5	57.0	0	29.9	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE05	10	62.8	65.1	34.7	2.8	37.5	65.1	0	29.9	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE05	11	64.4	66.7	34.7	2.8	37.5	66.7	0	29.9	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE05	16	66.2	68.5	36.0	2.8	38.8	68.5	0	31.2	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE05	21	65.2	67.5	53.1	2.8	55.9	67.8	0	48.3	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE05	26	64.6	66.9	53.6	2.8	56.4	67.3	0	48.8	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE05	28	64.2	66.5	53.5	2.8	56.3	66.9	0	48.7	2	E	7	72.4	27.4	72.4	27.4	0.0
EEEE06	9	54.7	57.7	51.7	2.8	54.5	59.4	0	46.9	2	S	3	65.5	20.5	65.6	20.6	0.1
EEEE06	11	54.7	57.7	52.9	2.8	55.7	59.8	0	48.1	2	S	3	65.5	20.5	65.6	20.6	0.1
EEEE06	16	54.7	57.7	52.9	2.8	55.7	59.8	0	48.1	2	S	3	65.5	20.5	65.6	20.6	0.1
EEEE06	21	54.7	57.7	52.7	2.8	55.5	59.7	0	47.9	2	S	3	65.5	20.5	65.6	20.6	0.1
EEEE06	26	54.7	57.7	52.5	2.8	55.3	59.7	0	47.7	2	S	3	65.5	20.5	65.6	20.6	0.1
EEEE06	28	54.7	57.7	52.4	2.8	55.2	59.6	0	47.6	2	S	3	65.5	20.5	65.6	20.6	0.1
EEEE07	9	60.4	62.7	43.5	2.8	46.3	62.8	0	38.7	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE07	10	65.0	67.3	28.4	2.8	31.2	67.3	0	23.6	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE07	11	66.0	68.3	28.4	2.8	31.2	68.3	0	23.6	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE07	16	66.2	68.5	28.3	2.8	31.1	68.5	0	23.5	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE07	21	65.5	67.8	28.2	2.8	31.0	67.8	0	23.4	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE07	26	64.8	67.1	28.2	2.8	31.0	67.1	0	23.4	2	W	7	72.4	27.4	72.4	27.4	0.0
EEEE07	28	64.5	66.8	27.9	2.8	30.7	66.8	0	23.1	2	W	7	72.4	27.4	72.4	27.4	0.0
FFFF	1	60.3	62.6	24.8	2.8	27.6	62.6	0	20.1	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF	2	60.7	63.0	23.7	2.8	26.5	63.0	0	19.0	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF	3	60.6	62.9	23.7	2.8	26.5	62.9	0	19.0	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF	4	60.5	62.8	23.7	2.8	26.5	62.8	0	19.0	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF	5	60.5	62.8	23.8	2.8	26.6	62.8	0	19.1	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF	6	60.6	62.9	23.8	2.8	26.6	62.9	0	19.1	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF	7	60.8	63.1	23.8	2.8	26.6	63.1	0	19.1	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF	8	61.1	63.4	23.5	2.8	26.3	63.4	0	18.8	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF01	1	54.7	57.0	24.2	2.8	27.0	57.0	0	19.5	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	2	54.7	57.0	24.2	2.8	27.0	57.0	0	19.5	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	3	54.7	57.0	24.3	2.8	27.1	57.0	0	19.6	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	4	54.7	57.0	24.3	2.8	27.1	57.0	0	19.6	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	5	56.7	59.0	24.4	2.8	27.2	59.0	0	19.7	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	6	63.7	66.0	24.5	2.8	27.3	66.0	0	19.8	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	7	63.1	65.4	24.5	2.8	27.3	65.4	0	19.8	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	8	63.9	66.2	24.5	2.8	27.3	66.2	0	19.8	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	9	64.5	66.8	24.5	2.8	27.3	66.8	0	19.8	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	10	65.0	67.3	39.4	2.8	42.2	67.3	0	34.6	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	11	65.3	67.6	39.4	2.8	42.2	67.6	0	34.6	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF01	16	65.5	67.8	39.5	2.8	42.3	67.8	0	34.7	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF02	1	65.3	67.6	27.3	2.8	30.1	67.6	0	22.5	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF02	2	66.0	68.3	27.4	2.8	30.2	68.3	0	22.6	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF02	3	66.1	68.4	27.5	2.8	30.3	68.4	0	22.7	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF02	4	66.1	68.4	28.1	2.8	30.9	68.4	0	23.3	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF02	5	66.0	68.3	28.8	2.8	31.6	68.3	0	24.0	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF02	6	65.9	68.2	30.3	2.8	33.1	68.2	0	25.5	1	E	7	72.4	27.4	72.4	27.4	0.0

FFFF02	7	65.7	68.0	33.2	2.8	36.0	68.0	0	28.4	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF02	8	65.4	67.7	38.4	2.8	41.2	67.7	0	33.6	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF03	1	54.8	57.1	26.8	2.8	29.6	57.1	0	22.0	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF03	2	56.8	59.1	27.0	2.8	29.8	59.1	0	22.2	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF03	3	56.9	59.2	27.0	2.8	29.8	59.2	0	22.2	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF03	4	56.7	59.0	27.1	2.8	29.9	59.0	0	22.3	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF03	5	56.4	58.7	27.2	2.8	30.0	58.7	0	22.4	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF03	6	56.0	58.3	28.5	2.8	31.3	58.3	0	23.7	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF03	7	55.7	58.0	38.5	2.8	41.3	58.1	0	33.7	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF03	8	55.9	58.2	45.1	2.8	47.9	58.6	0	40.3	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF04	1	54.7	57.7	27.1	2.8	29.9	57.7	0	22.3	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	2	54.7	57.7	27.3	2.8	30.1	57.7	0	22.5	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	3	54.7	57.7	27.6	2.8	30.4	57.7	0	22.8	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	4	54.7	57.7	27.7	2.8	30.5	57.7	0	22.9	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	5	54.7	57.7	27.9	2.8	30.7	57.7	0	23.1	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	6	54.7	57.7	28.1	2.8	30.9	57.7	0	23.3	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	7	54.7	57.7	38.0	2.8	40.8	57.8	0	33.2	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	8	54.7	57.7	46.3	2.8	49.1	58.2	0	41.5	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	9	54.7	57.7	47.1	2.8	49.9	58.3	0	42.3	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	10	54.7	57.7	48.3	2.8	51.1	58.5	0	43.5	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	11	54.7	57.7	48.4	2.8	51.2	58.6	0	43.6	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF04	16	58.4	61.4	48.4	2.8	51.2	61.8	0	43.6	1	E	7	72.4	27.4	72.4	27.4	0.0
FFFF05	1	54.7	57.7	30.5	2.8	33.3	57.7	0	25.7	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF05	2	54.9	57.9	31.7	2.8	34.5	57.9	0	26.9	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF05	3	54.8	57.8	33.8	2.8	36.6	57.8	0	29.0	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF05	4	54.7	57.7	34.6	2.8	37.4	57.7	0	29.8	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF05	5	54.7	57.7	35.8	2.8	38.6	57.7	0	31.0	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF05	6	54.7	57.7	37.3	2.8	40.1	57.8	0	32.5	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF05	7	54.7	57.7	37.4	2.8	40.2	57.8	0	32.6	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF05	8	57.9	60.2	37.4	2.8	40.2	60.2	0	32.6	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF06	9	54.7	57.0	24.4	2.8	27.2	57.0	0	19.7	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF06	10	58.0	60.3	24.4	2.8	27.2	60.3	0	19.7	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF06	11	59.6	61.9	24.4	2.8	27.2	61.9	0	19.7	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF06	16	61.1	63.4	25.5	2.8	28.3	63.4	0	20.8	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF07	9	54.7	57.0	44.2	2.8	47.0	57.4	0	39.4	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF07	10	56.4	58.7	48.8	2.8	51.6	59.5	0	44.0	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF07	11	61.8	64.1	49.0	2.8	51.8	64.3	0	44.2	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF07	16	64.2	66.5	49.0	2.8	51.8	66.6	0	44.2	1	W	7	72.4	27.4	72.4	27.4	0.0
FFFF08	9	54.7	57.0	24.9	2.8	27.7	57.0	0	20.2	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF08	10	54.7	57.0	39.4	2.8	42.2	57.1	0	34.6	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF08	11	59.4	61.7	39.4	2.8	42.2	61.7	0	34.6	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF08	16	64.0	66.3	39.6	2.8	42.4	66.3	0	34.8	1	N	6	78.2	33.2	78.2	33.2	0.0
FFFF09	9	54.7	57.7	39.9	2.8	42.7	57.8	0	35.1	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF09	10	54.7	57.7	42.1	2.8	44.9	57.9	0	37.3	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF09	11	54.7	57.7	42.2	2.8	45.0	57.9	0	37.4	1	S	3	65.5	20.5	65.5	20.5	0.0
FFFF09	16	54.7	57.7	42.3	2.8	45.1	57.9	0	37.5	1	S	3	65.5	20.5	65.5	20.5	0.0