Chapter 24: Alternatives

A. INTRODUCTION

In accordance with the City Environmental Quality Review (CEQR), this chapter presents and analyzes alternatives to the proposed project. Alternatives selected for consideration in an environmental impact statement (EIS) are generally those which are feasible and have the potential to reduce, eliminate, or avoid adverse impacts of a proposed action while meeting some or all of the goals and objectives of the action. In addition to a comparative impact analysis, the alternatives in this chapter are assessed to determine to what extent they would meet the goals and objectives of the proposed project, which include: 1) the creation of a substantial amount of affordable housing (the balance of the proposed project's residential units would be market rate and would serve to cross-subsidize the substantial affordable housing component); 2) physical and visual access to the East River waterfront, including the creation of a substantial amount of publicly accessible open space with connections to an existing park; 3) redevelopment of a former waterfront industrial site into an economically integrated mix of residential, retail/commercial, and community facility uses; and 4) the adaptive reuse of the three buildings that make up the complex of buildings known as the Refinery (see Chapter 1, "Project Description").

This chapter considers seven alternatives to the proposed project:

- A No Action Alternative that assumes the continuation of the existing M3-1 zoning on the site and the demolition and redevelopment of the site under that zoning;
- A Reduced Density Alternative, which considers a smaller project that would reduce the development program and building heights;
- A Hotel Alternative, in which a hotel would be developed in a portion of the Refinery under the proposed C6-2 zoning designation, replacing a portion of the community facility and residential space;
- A Reduced Parking Alternative, which considers the same development program as the proposed project but without the special permit for accessory parking spaces in the northern parking facility (located beneath Sites A and B);
- A Reduced Site A Alternative, which assesses the environmental effects of reduced heights on the northernmost waterfront buildings (Site A) and with no special permit for accessory parking in the northern parking facility;
- A Cogeneration Energy Supply Alternative that explores the potential for the proposed project to include a distributed generation and combined heat and power (CHP) system, including cogeneration to improve energy efficiency and reliability while reducing greenhouse gas emissions. This alternative specifically responds to Energy Initiative #9 of PlaNYC; and

- A No Unmitigated Significant Adverse Impacts Alternative, which considers a project program that would eliminate the proposed project's unmitigated significant adverse impacts.

PRINCIPAL CONCLUSIONS

The conclusion of the alternatives analysis is that three of the seven alternatives would not substantively meet the goals and objectives of the proposed project. Of the four remaining alternatives—all would include approximately the same overall square footage as the proposed project: one would include a hotel component should market conditions indicate that a potential hotel use is economically viable, one would include a reduction in the total amount of on-site parking, and one would include the same reduction in on-site parking in combination with reduced building heights on Site A. The other remaining alternative is an option to include on-site facilities to generate electricity, heat, and cooling (cogeneration); however, this alternative was identified as economically infeasible. Each of the alternatives is summarized briefly below, followed by a more detailed chapter analysis.

NO ACTION ALTERNATIVE

The No Action Alternative assumes no discretionary actions would occur and that the proposed project would not be implemented. The project site would be developed with uses permitted under the existing M3-1 manufacturing zoning, including a storage facility, a building materials storage yard, a new distribution facility, and a new two-story building with a catering hall/restaurant with parking. The No Action Alternative would retain the Refinery complex, a New York City Landmark, which would be maintained but would remain vacant due to the high cost of adaptive reuse. The boiler house, which is located between the Refinery and the waterfront, would also remain as a vacant building due to the high cost of demolition. This alternative would avoid the proposed project's significant adverse impacts relating to elementary and intermediate schools, child care facilities, shadows, traffic, and transit and pedestrians. Independent of development on the project site, the 32 anticipated development projects in the study area would substantially increase the background demand for schools and child care facilities and cause declines in the level of service (LOS) at up to 16 study area intersections, the south crosswalk at Bedford Avenue and North 7th Street, and the Bedford Avenue and Marcy Avenue subway stations. In this alternative, there would be no market-rate or affordable housing developed on the project site. Furthermore, there would be no new open space or public waterfront esplanade with upland connections and a connection to Grand Ferry Park. In short, the No Action Alternative would fail to meet all four of the proposed project's principal goals.

REDUCED DENSITY ALTERNATIVE

The Reduced Density Alternative assumes redevelopment of the project site with the same mix of uses anticipated with the proposed project, but at a reduced density. This alternative was developed in response to a public comment on the draft scope of work which requested shorter building heights. To accommodate this request, the Reduced Density Alternative would achieve 4.7 Floor Area Ratio (FAR) on the waterfront parcel and 2.42 FAR on the upland parcel, with 20 percent affordable housing; in comparison, the proposed project would achieve 5.6 FAR on the waterfront parcel, 6.0 FAR on the upland parcel, and 30 percent affordable housing. This (Reduced Density Alternative) FAR would be consistent with what is permitted on waterfront sites further north in Williamsburg and in Greenpoint under the 2005 Greenpoint-Williamsburg rezoning. Compared with the proposed project, the Reduced Density Alternative would

introduce shorter buildings on the waterfront parcel. The reduced FAR and shorter building heights in this alternative would translate to approximately 549 fewer residential units overall and 350 fewer affordable units. Otherwise, the Reduced Density Alternative would introduce the same mix of uses on the project site and the same open space plan as the proposed project. Although this alternative would have a smaller program, it would not avoid any of the significant adverse impacts of the proposed project (public schools, child care facilities, shadows, historic resources, traffic, and transit and pedestrians). However, while the same mitigation measures identified for the proposed project would also fully or partially address those significant adverse impacts, this Reduced Density Alternative would substantially fail to meet the proposed project's affordable housing objectives.

HOTEL ALTERNATIVE

The Hotel Alternative would introduce a hotel use to the project site in place of a portion of the proposed project's residential and community facility space in the Refinery. Therefore, this alternative would introduce 57 fewer market-rate residential units and approximately 49,000 gross square feet (gsf) less community facility space, but would otherwise provide the same site plan as the proposed project, including the same amount of open space, commercial office, and retail space, and would also provide the same number of affordable units as the proposed project. Although not proposed as part of the project, a hotel use would be allowable under the proposed C6-2 zoning on the Refinery site. Should market conditions indicate that a potential hotel use is a viable development option, the applicant may seek to include it. In addition, this alternative could occur only if the New York City School Construction Authority (SCA) decides not to locate a school at the Refinery. As discussed below, future discretionary actions would be needed in order to allow the hotel use and the change would have to be reviewed under the Uniform Land Use Review Procedure (ULURP) and CEQR. In general, the Hotel Alternative would satisfy the goals of the proposed project, and the hotel use would cross-subsidize the affordable housing in the same way as the market-rate housing would in the proposed project.

REDUCED PARKING ALTERNATIVE

During the City's Uniform Land Use Review Procedure (ULURP) and DEIS public review process, Community Board 1, elected officials and members of the public requested that the total number of accessory parking spaces be reduced. This alternative is identical to the proposed project with the exception that it would not include the parking special permit for the north parking facility [ULURP No. 100189ZSK]. Therefore, a Reduced Parking Alternative that assumes the same development program as the proposed project but with a total of 1,428 on-site accessory parking spaces has been included for assessment.

The Reduced Parking Alternative would result in the same significant adverse impacts identified for the proposed project and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation. Overall, the Reduced Parking Alternative would satisfy the goals of the proposed project.

REDUCED SITE A ALTERNATIVE

This alternative is proposed for the purposes of examining a reduction in the height of the tower portion of Site A. With this alternative, the height of the three buildings comprising the tower portion of Site A would be reduced to 130 feet, 160 feet, and 205 feet, from 200 feet, 240 feet, and 300 feet, respectively, resulting in the reallocation of approximately 20,000 sf of community

facility space from Site A to elsewhere on the project site. This Reduced Site A Alternative is identical to the proposed project in terms of uses and total square footage, public open space, and upland connections. In addition, this alternative would not include the parking special permit for the north parking facility [ULURP No. 100189ZSK], which would reduce the on-site parking capacity to 1,428 spaces.

The Reduced Site A Alternative would result in similar significant adverse impacts as the proposed project and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation." Overall, the Reduced Site A Alternative would satisfy the goals of the proposed project.

COGENERATION ENERGY SUPPLY ALTERNATIVE

The Cogeneration Supply Alternative was given consideration by the applicant as part of the City's PlaNYC 2030 policy to improve energy efficiency and reliability while minimizing greenhouse gas (GHG) emissions. This alternative considers the construction of on-site distributed generation and CHP facilities and was based on the same development program as the proposed project. While the Cogeneration Supply Alternative would offer the opportunity to achieve greater energy efficiency and reduced GHG emissions, it was identified as economically infeasible because of the long payback period as well as the complexities of facility ownership among the various proposed users on the project site. The required upfront capital investment and long payback period would adversely affect the project's ability to meet its affordable housing objectives.

NO UNMITIGATED SIGNIFICANT ADVERSE IMPACTS

The No Unmitigated Significant Adverse Impacts Alternative considers several modifications of the proposed project to eliminate its significant adverse impacts on shadows and historic resources. This alternative would create far fewer residential units, thereby failing to meet the proposed project's goal of providing affordable housing through cross-subsidization by market-rate units.

To avoid all of the proposed project's significant adverse shadow impacts to Grand Ferry Park, this alternative would limit the northernmost building on the project site (Site A) to a maximum height of 70 feet, ten feet higher than the building that would be developed at that location in the future without the proposed project. A reduction in the height of this building to 70 feet would either result in a reduction of approximately 115,000 sf in the proposed density on the project site, or result in the reduction in the total amount of proposed open space on the project site. Reducing the density on the project site would reduce the cross-subsidization opportunities that would maximize the development of affordable housing units and would therefore fail to meet the proposed project's principal goal of providing a substantial amount of affordable housing.

As described in Chapter 8, "Historic Resources," the buildings on the project site have been determined eligible for listing on the State and National Registers of Historic Places (S/NRs) and the proposed project would demolish all structures on the project site with the exception of the complex known as "the Refinery." Therefore, any substantial development on the project site would result in unmitigated significant adverse impacts to historic resources. As this alternative would not include any substantial redevelopment of the project site, it would fail to meet the proposed project's goals and objectives.

B. NO ACTION ALTERNATIVE

DESCRIPTION OF THE NO ACTION ALTERNATIVE

The No Action Alternative assumes no discretionary actions would occur since all uses would be permitted as-of-right under the existing M3-1 zoning. The proposed project would not be implemented. This condition is described earlier in Chapter 2, "Analytical Framework," as the "future without the proposed project" or the "No Action" condition, and it has been used in other chapters of this EIS as the baseline against which impacts of the proposed project are measured. This section compares the potential effects of the No Action Alternative to those of the proposed project.

As shown on Figure 24-1, the No Action Alternative includes development of a storage facility on the waterfront parcel between South 3rd and South 5th Streets, a building materials storage yard along the waterfront between South 2nd and South 1st Streets, and a new distribution facility along the waterfront immediately south of Grand Ferry Park. On the upland portion of the site, a new two-story building with a catering hall/restaurant on the upper floor and parking on the ground floor would be constructed. The No Action Alternative would retain the Refinery complex, an NYCL, which would be maintained but would remain vacant due to the high cost of adaptive reuse. The boiler house, which is located between the Refinery and the waterfront, would also remain as a vacant building due to the high cost of demolition. Under the No Action Alternative, all buildings on the site except for the Refinery and the boiler house would be demolished. In addition, the former "Domino Sugar" sign would be removed from the site. The adaptive reuse of the Refinery poses a number of challenges because it was originally designed and constructed for the specialized processes of sugar refining. Therefore, the cost of reusing the Refinery would be prohibitive under the project site's existing zoning. As a landmark, however, the Refinery would need basic maintenance to prevent its deterioration, and the revenues from the as-of-right uses described above would be necessary for this maintenance.

The total development program for this alternative would include approximately 106,300 sf of industrial distribution space, approximately 60,000 sf of storage space, 40,000 sf of catering hall/restaurant space, and 61,000 sf of land used for a building materials storage yard (as well as 5,000 sf of office space for this use). The new structures that would be built as part of the No Action Alternative range in height from 18 to 60 feet (see Figure 24-1).

NO ACTION ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Under this alternative, the project site would be developed with industrial and commercial land uses. While both the proposed project and the No Action Alternative would represent changes in the current vacant status of the project site, only the proposed project would create a new mixed-use development with public waterfront access and open space of approximately four acres. The No Action Alternative would not change the allowable land uses on the project site. The industrial uses anticipated under the No Action Alternative would be consistent with the mixed-use land use patterns of the broader study area, and like the proposed project, this alternative would not result in significant adverse impacts to land use, zoning, and public policy. However, the industrial uses proposed for the No Action Alternative would contrast with the ongoing trend throughout the study area in which vacant or underutilized waterfront sites are redeveloped with housing, retail space, and public open space. This alternative would not support the goals of

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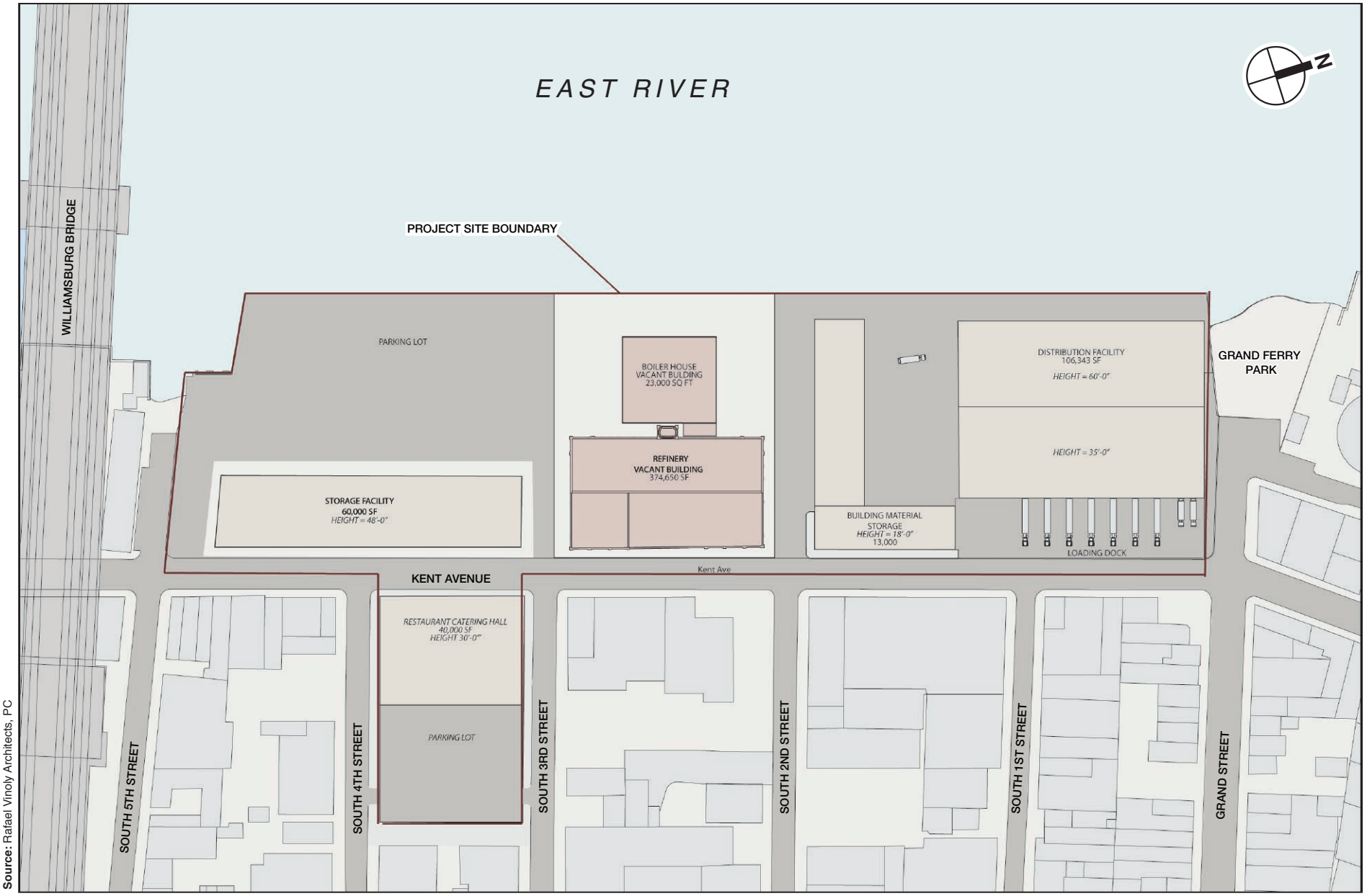

Source: Rafael Vinoly Architects, PC

NOT TO SCALE

No Action Alternative

Figure 24-1

several public policies, including the Mayor's housing plan, PlaNYC, the Waterfront Revitalization Program, and the Plan for the Brooklyn Waterfront.

Unlike the proposed project, this alternative would not seek: zoning map amendments; designation as a General Large Scale Development; various special permits for height, bulk, inner court, rear yard, and parking; waterfront access authorization; zoning text amendments; or other discretionary actions sought by the proposed project. Without a zoning change, the residential and community facility uses envisioned under the proposed project would not be allowed on the project site. It is possible that some of the heavy industrial uses allowable under the existing M3 zoning could locate on the project site in the future and would not be compatible with nearby residential and commercial districts along Grand, South 4th, and South 5th Streets. The No Action Alternative would not meet the proposed project's goals of providing a substantial amount of affordable housing in the Williamsburg neighborhood, creating physical and visual access to the waterfront, redeveloping of a former waterfront industrial site into an economically integrated mix of residential, retail/commercial, and community facility uses, nor would it adaptively reuse the Refinery.

SOCIOECONOMIC CONDITIONS

Like the proposed project, the No Action Alternative would result in new development on the currently vacant project site. Neither the No Action Alternative nor the proposed project would result in direct displacement of existing residences or businesses.

The No Action Alternative would not introduce any new residential units to the project site and, therefore, would not have the potential to cause changes in market conditions in the surrounding area resulting in an increase or decrease in rents that could in turn result in the possibility of indirect displacement of residents of the surrounding area. However, the trend toward development of new, market-rate housing and increased rents in the study area would continue independent of the No Action Alternative. Given that anticipated development projects in the study area would introduce a substantial new population with high incomes relative to the existing population, it is expected that at-risk residents in the study area are likely to be indirectly displaced by 2020 irrespective of development on the project site. The proposed project would introduce new housing, including a substantial number of affordable units that would house a population with incomes that closely resemble existing incomes in the study area, while the No Action Alternative would not provide any affordable units, thereby exacerbating the loss of lower-income residents.

The No Action Alternative would introduce industrial and commercial businesses to the project site. These types of uses already exist in the study areas and it is not likely that this alternative would alter or accelerate existing economic patterns. Therefore, this alternative, similar to the proposed project, would not result in any significant adverse indirect business displacement.

Because the No Action Alternative, like the proposed project, would not result in direct or indirect business displacement, it would not adversely affect business conditions in any industry or any category of business within or outside of the study area. This alternative would also not indirectly reduce employment or impact the economic viability in an industry or category of business.

Therefore, like the proposed project, the No Action Alternative would not have significant adverse impacts on a specific industry.

COMMUNITY FACILITIES

With the No Action Alternative, unlike the proposed project, there would be no increase in the residential population of the project site and, therefore, no increase in demand for community facilities and services. This alternative would not result in the significant adverse impacts predicted to occur as a result of the proposed project on elementary and intermediate schools within the ½-mile study area and Sub-district 3 of Community School District (CSD) 14. It also would not result in the significant adverse impact to publicly funded child care facilities that is predicted to occur with the proposed project. Like the proposed project, the No Action Alternative would not result in any significant adverse impacts to libraries, outpatient health care facilities, and police and fire protection services.

The 32 development projects recently completed or forecasted for completion by 2020 would substantially increase demand for public schools, libraries, child care facilities, and other community services independent of the project site program (see Table 2-1 and Figure 2-2). As discussed in Chapter 5, "Community Facilities," new students introduced by the anticipated nearby residential developments would cause elementary schools in the ½-mile study area and publicly funded child care facilities to operate over capacity. However, unlike the proposed project, the No Action Alternative would not add to the shortfall created by the anticipated residential developments in the study area. Although the proposed project would add demand to the shortfall that is expected to occur in the future baseline condition, it would also explore measures to address the shortage of elementary school seats and child care slots that could occur as the result of background development. As discussed in Chapter 23, "Mitigation," the DEIS listed a number of measures that could be undertaken to mitigate the significant adverse impact on schools; of these, for large residential projects, provision of new school capacity, construction of a new school or an addition to an existing school may be the most appropriate mitigation. Unlike the proposed project, the No Action Alternative would not have to consider measures to address these future projected shortfalls in public elementary and intermediate school seats.

For child care facilities, potential mitigation measures investigated as part of the proposed project include the possibility of adding capacity to existing facilities if it were determined feasible following consultation with the Administration for Children's Services (ACS) or providing a new child care facility within or near the project site. Unlike the proposed project, the No Action Alternative would not have to consider measures to address these future projected shortfalls.

OPEN SPACE

The No Action Alternative would not create any of the approximately four acres of publicly accessible waterfront open space that would be developed under the proposed project. The waterfront esplanade would not be created, nor would the active and passive recreation areas that would be located along the esplanade. Public access to the waterfront on the site would be incompatible with the planned industrial uses under this alternative. Thus, this alternative would neither create upland connections from Kent Avenue, nor would it create publicly accessible open space and a connection to Grand Ferry Park.

The No Action Alternative would introduce an open space user population of 182 workers but would not introduce any residential population. With the No Action Alternative, the commercial open space study area (defined as the area approximately within ¼ mile of the project site) would continue to provide ample passive recreation space for the workers of the area, as it also would with the proposed project. The residential open space study area (defined as the area

approximately within ½ mile of the project site) would continue to have insufficient amounts of open space to meet City open space guidelines for the area's residential population.

Like the proposed project, the No Action Alternative would result in decreases to the total open space ratio for the study area's residential population and the passive open space ratios for the residential population and the combined residential and worker population. The No Action Alternative would have a slightly higher total open space ratio per 1,000 residents compared to the proposed project. The No Action ratios of passive open space to the residential population and the combined residential and worker population would be 0.366 and 0.310, respectively, as compared with 0.365 and 0.310 with the proposed project.

Neither the No Action Alternative nor the proposed project would result in significant adverse impacts on open space. However, unlike the proposed project, this alternative would not create approximately four acres of new active and passive public open space on the project site, upland connections to the waterfront esplanade, or connections to Grand Ferry Park. This alternative would fail to meet the project goal and the City's goal to create public access to and recreational use of the waterfront.

SHADOWS

The No Action Alternative would result in a different site plan and shorter buildings as compared with the proposed project, and therefore would result in shorter shadows in different locations. Given the maximum height (60 feet) and proposed location of the buildings, shadows would not be extensive. Incremental shadows from this alternative would fall on various sections of the East River and Grand Ferry Park, but these shadows would be shorter in extent and duration as compared with the proposed project. The No Action Alternative would not result in any significant adverse shadow impacts.

Neither the No Action Alternative nor the proposed project would result in significant adverse shadow impacts to the East River or the Public School (PS) 84 William Sheridan Playground. This alternative, unlike the proposed project, would not result in a significant adverse shadow impact to Grand Ferry Park. However, the proposed project would create approximately four acres of new publicly accessible open space, including a connection to Grand Ferry Park. This new open space would provide sunlit areas during times when Grand Ferry Park would experience areas of incremental shadow. Moreover, as detailed in Chapter 23, "Mitigation," the applicant has reached agreement with the New York City Department of Parks & Recreation (DPR) on mitigation measures that will partially mitigate the significant adverse shadows impact on Grand Ferry Park.

HISTORIC RESOURCES

The No Action Alternative would result in the demolition of all project site buildings except for the Refinery—an NYCL—and the Boiler House. The proposed project would demolish all project site buildings, including the Boiler House, and would retain only the Refinery. Although the New York City Landmarks Preservation Commission (LPC) has designated only the Refinery complex as a landmark, the New York State Historic Preservation Office (SHPO) has determined that all structures on the site are eligible for listing on the State and National Registers of Historic Places (S/NR-eligible). Therefore, the No Action Alternative would also result in a significant adverse impact on architectural resources. While the proposed project would retain and adaptively re-use the Refinery, under this alternative the Refinery would

remain vacant due to the high cost of reuse. Thus, this alternative would not meet the project goal of restoring and adaptively reusing the Refinery complex.

Like the proposed project, there would not be any significant adverse contextual impacts to any of the other architectural resources in the study area with the No Action Alternative. The demolition of the project site buildings would change the context of the two former American Sugar Refinery buildings and the former Matchett Candy Factory, but the change would not be adverse. The other resources are located at least a block away, or 300 to 400 feet, from the waterfront parcel, with buildings intervening. In addition, there are a number of new developments currently under construction, and others are anticipated in the future which will alter the context of existing resources.

The No Action Alternative would take appropriate measures to protect the Refinery and other nearby historic structures from the adjacent construction, including adhering to New York City Department of Buildings (DOB) controls governing the protection of adjacent properties from accidental construction damage. Since the Refinery is an NYCL, both this alternative and the proposed project would avoid damage to the Refinery by complying with the procedures set forth in DOB's *Technical Policy and Procedure Notice (TPPN) #10/88.* However, unlike the proposed project, this alternative would not develop a Construction Protection Plan (CPP) that would adhere to *TPPN #10/88* for properties that are not NYCLs, including those in New York City historic districts, or that are S/NR-listed. Therefore, under the No Action Alternative there could be the likelihood that ground-borne vibrations or other potential construction-related activities could potentially damage the historic structures near the project site since these properties are not designated by LPC or S/NR-listed.

The project site is not sensitive for archaeological resources. Therefore, neither the proposed project nor the No Action Alternative would result in significant adverse impacts to archaeological resources.

URBAN DESIGN AND VISUAL RESOURCES

With the No Action Alternative, the project site would be developed with utilitarian, light-industrial buildings. Unlike the proposed project, this alternative would not construct a public waterfront esplanade, thus leaving the waterfront visually and physically separated from the surrounding area. Furthermore, with the proposed project, the "Domino Sugar" sign would remain on the project site, while the No Action Alternative would remove the sign from the site. The No Action Alternative would not provide for an upland connection to the waterfront and would not connect the surrounding community to the new public open spaces and to Grand Ferry Park. Unlike the proposed project, this alternative would not enliven the project site by providing ground-floor retail along Kent Avenue. Although this alternative would not positively affect the urban design of the project site or surrounding area, like the proposed project, it would not result in significant adverse impacts on urban design or visual resources.

NEIGHBORHOOD CHARACTER

The No Action Alternative, like the proposed project, would not result in significant adverse impacts to neighborhood character. However, with the No Action Alternative, the project site would not be transformed from a vacant site to a residential and mixed-use development. This alternative would redevelop the site with industrial and commercial uses, and would contrast with the pattern emerging throughout Greenpoint and Williamsburg of mid- to high-rise waterfront developments transitioning to lower-scale, mixed-use upland neighborhoods. In

addition, with this alternative the waterfront would remain visually and physically separated from the surrounding area. The less intensive uses of the No Action Alternative would result in lower traffic and noise levels when compared to the proposed project.

NATURAL RESOURCES

Neither the proposed project nor this alternative would result in significant adverse impacts to terrestrial plant communities or wildlife, or on floodplains, wetlands, water quality, or aquatic biota in the East River. The No Action Alternative would not result in in-water repairs to the overwater platform associated with the proposed project. Although the proposed project would result in in-water activities, as discussed in Chapter 11, "Natural Resources," potential impacts to aquatic biota from the discharge of stormwater would be minimized through the implementation of the stormwater pollution prevention plan (SWPPP) to minimize adverse impacts to stormwater quality. Further, the No Active Alternative would not include the potential benefits to natural resources associated with the proposed project, namely the creation of a waterfront park providing public access to the East River waterfront—one of the project goals—and additional habitat areas for birds. In addition, when compared to the No Action Alternative, the proposed project would result in an increase in the pervious surface area on the project site and a reduction in the rate of stormwater discharge to the East River.

HAZARDOUS MATERIALS

Under the No Action Alternative, it is assumed that less extensive remediation would occur on the project site. Like the proposed project, existing storage tanks and asbestos-containing materials would remain at the project site until it was redeveloped. Unlike the proposed project, occupants and/or construction workers during future development and/or other excavation work would not necessarily be protected from exposure by means of the Restrictive Declaration, remedial action plan (RAP), and construction health and safety plan (CHASP). Overall, there would be a lower potential for disturbance of hazardous materials, but unlike conditions with the proposed project, there would be less extensive remediation of hazardous materials.

WATERFRONT REVITALIZATION PROGRAM

The No Action Alternative, unlike the proposed project, would not be consistent with many of the applicable New York City Waterfront Revitalization Program (WRP) policies, particularly those that aim to encourage public access to waterfront resources. Unlike the proposed project, the No Action Alternative would not advance the WRP goal of encouraging commercial and residential redevelopment in appropriate portions of the coastal zone where public facilities and infrastructure are or will be adequate. The No Action Alternative would not result in the development of approximately four acres of publicly accessible open space within the coastal zone with new views of the East River waterfront. Unlike the proposed project, the proposed uses under the No Action Alternative would not enliven and attract residents and visitors to the Williamsburg waterfront. In contrast to the No Action Alternative, the proposed project would be consistent with citywide WRP goals for providing public access in the coastal zone and protecting scenic resources.

INFRASTRUCTURE

Because the No Action Alternative would result in less development on the project site than the proposed project, it would generate 1,235,144 gallons per day (gpd) less demand for water. The

No Action Alternative would also result in 793,530 gpd less sanitary sewage than the proposed project.

However, neither the No Action Alternative nor the proposed project would result in any significant adverse impacts on the city's water supply or the processing capacity of the Newtown Creek Water Pollution Control Plant (WPCP).

Because the No Action Alternative would not create the waterfront esplanade, development under the No Action Alternative would result in more impervious surface on the project site when compared with the proposed project. The increase in impervious surface would result in increased stormwater runoff and the potential for more combined sewer overflow (CSO) events.

SOLID WASTE AND SANITATION SERVICES

The No Action Alternative would generate approximately 117,778 pounds (59 tons) less of solid waste per week than the proposed project. The No Action Alternative would generate less municipal solid waste because it would not include residential uses. Although the No Action Alternative would generate less solid waste overall, neither the No Action Alternative nor the proposed project would result in any significant adverse impacts on solid waste disposal or sanitation services.

ENERGY

The No Action Alternative would generate less energy demand, but neither the No Action Alternative nor the proposed project would result in any significant adverse impacts on energy supplies.

TRAFFIC AND PARKING

As described above, the No Action Alternative would have a different mix of uses as compared with the proposed project. It would introduce an industrial distribution center/warehouse, catering hall, storage facility, and a building materials storage use, as compared with residential, retail, commercial office, and community facility uses introduced by the proposed project. This alternative would result in 2,903; 3,255; 4,090; and 3,039 fewer person trips during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively. It would also result in 636; 338; 612; and 310 fewer vehicle trips during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively.

Traffic conditions were evaluated at 55 intersections for the weekday and Saturday condition. The analysis indicates that in the future with the proposed project, there would be the potential for significant adverse impacts at a total of 18 signalized and 14 unsignalized intersections during one or more of the peak-hour periods analyzed, including: 24 intersections during the weekday AM peak hour, 11 intersections during the weekday midday peak hour, 31 intersections during the weekday PM peak hour, and 6 intersections during the Saturday midday peak hour at one or more lane-groups or approaches.

Although the No Action Alternative would result in fewer trips than the proposed project, overall traffic volumes in the study area would increase as a result of the background growth (a total of 10 percent background growth by 2020 over the 2010 baseline conditions), the traffic generated by the specific development projects in the broader ½-mile radius study area, and the traffic generated by the development of approximately 7,300 dwelling units and 204,600 sf of retail space identified as part of the Greenpoint-Williamsburg rezoning. The increased traffic

levels under the No Action condition would result in congested service conditions at a number of intersections in the study area. Of the 18 signalized intersections that would experience a significant adverse traffic impact with the proposed project, up to 15 would operate with notable service constraints (operating at mid-level of service [LOS] D or worse) during one or more peak hours with the No Action Alternative. Up to 10 of the 14 unsignalized intersections that would experience a significant adverse traffic impact with the proposed project would also operate with notable service constraints with the No Action Alternative (see Table 24-1).

In the No Action Alternative, new parking demand would be generated by background growth and new anticipated development independent of the proposed project. This alternative would include off-street parking per the underlying zoning regulations. Like the proposed project, the No Action Alternative would not result in any significant adverse impacts on parking.

TRANSIT AND PEDESTRIANS

The No Action Alternative would generate fewer subway, bus, and pedestrian trips than the proposed project, and therefore, would not result in the proposed project's significant adverse impacts in these impact categories.

The No Action Alternative would generate 1,082 and 1,308 fewer subway trips than the proposed project during the weekday AM and PM peak hours, respectively; the No Action Alternative would also generate 260 and 341 fewer bus riders than the proposed project during the weekday AM and PM peak hours, respectively. However, the 32 forecasted development projects recently completed or anticipated by 2020 would result in an increase in congested conditions at the Marcy Avenue subway station and two bus routes (B62 and Q59) independent of the proposed project or the No Action Alternative. Although the proposed project would add a greater demand to transit services when compared to the No Action Alternative, it would also identify measures to address project-generated demand. The No Action Alternative would not have to consider measures to address these congested conditions.

The No Action Alternative would generate 873 and 1,704 fewer pedestrian trips than the proposed project during the weekday AM and PM peak hours, respectively, and, unlike the proposed project, would not result in significant adverse pedestrian impacts on the south crosswalk at Bedford Avenue and North 7th Street. However, as discussed in Chapter 23, "Mitigation," potential mitigation measures as part of the proposed project could include the widening of the affected crosswalk.

AIR QUALITY

Like the proposed project, the No Action Alternative would not result in significant adverse air quality impacts from mobile or stationary sources of pollution. Although the number of heavy-duty trucks may be higher with the No Action Alternative as compared to the proposed project (the number of peak-hour truck trips would be greater for the proposed project, as discussed in Chapter 17, "Traffic and Parking"), the overall emissions profile of the No Action Alternative would be less than that of the proposed project.

NOISE

The No Action Alternative would result in lower traffic volumes than the proposed project, but the difference in noise levels between this alternative and the proposed project would be barely perceptible (i.e., less than 3 dBA) (see Table 24-2). Like the proposed project, this alternative

Table 24-1

Congested Intersections for the No Action Alternative (2020) [(1)(2)]

Intersections	Congested Lane Group	Congested Peak Periods			
Wythe Avenue and Metropolitan Avenue					
Eastbound	TR				
Westbound	LT				
Southbound	LTR	AM	MD	PM	Saturday
Wythe Avenue and Broadway					
Eastbound	TR				
Westbound	L			PM	
	T				
Southbound	LTR			PM	
Bedford Avenue and South 6th Street					
Westbound	TR			PM	
Northbound	LT				
Metropolitan Avenue and Driggs Avenue					
Eastbound	TR				
Westbound	LT	AM		PM	
Southbound	LTR				
Broadway and Driggs Avenue					
Eastbound	TR				
Westbound	LT		MD	PM	
Southbound	LTR				
Roebling Street and South 4th Street					
Eastbound	LR				
Westbound	L				
	TR				
Southbound	TR	AM			
Metropolitan Avenue and Marcy Avenue					
Eastbound	TR				
Westbound	L	AM		PM	
	T				
Metropolitan Avenue and Rodney Street					
Eastbound	DefL	AM	MD	PM	
	T				
Westbound	TR				
Northbound	LT				
	R				
Broadway and Havemeyer Street					
Eastbound	LT			PM	
Westbound	TR				
Northbound	LTR				
Broadway and Marcy Avenue					
Eastbound	TR			PM	
Westbound	LT	AM	MD	PM	
Southbound	LTR				
Kent Avenue and South 2nd Street					
Eastbound	L			PM	
Westbound	TR				
Northbound	L				
Kent Avenue and South 4th Street					
Westbound	R			PM	
Kent Avenue and South 6th Street					
Eastbound	L	AM		PM	
Westbound	TR			PM	
Northbound	L				
Wythe Avenue and Grand Street					
Eastbound	TR				
Westbound	LT				
Southbound	LTR	AM		PM	
Wythe Avenue and South 2nd Street					
Westbound	LT			PM	
Wythe Avenue and South 3rd Street					
Eastbound	TR			PM	
Southbound	LT				

Table 24-1 (cont'd)

Congested Intersections for the No Action Alternative (2020) [(1)(2)]

Intersections	Congested Lane Group	Congested Peak Periods			
Wythe Avenue and South 4th Street					
Westbound	LT				
Southbound	TR			PM	Saturday
Wythe Avenue and South 5th Street					
Eastbound	TR	AM		PM	
Southbound	LT				
Wythe Avenue and South 6th Street					
Westbound	LT				
Southbound	TR			PM	
Kent Avenue and Clymer Street					
Eastbound	LR	AM	MD	PM	
Westbound	LTR	AM		PM	
Northbound	L				
	T				
Flushing Avenue and Williamsburg Street West					
Westbound	L				
	T				
Southbound	TR	AM		PM	
Flushing Avenue and Classon Avenue/BQE Off-Ramp					
Westbound	TR				
Northbound - BQE Off-Ramp	LTR	AM	MD	PM	
Northbound - Classon Avenue	LTR	AM	MD	PM	Saturday
Wythe Avenue and Williamsburg Street West					
Eastbound	TR	AM		PM	
Southbound	LTR				
Kent Avenue and South 8th Street					
Eastbound	L			PM	
Westbound	TR				
Northbound	L				
Wythe Avenue and South 8th Street					
Westbound	LT			PM	
Wythe Avenue and South 11th Street					
Eastbound	TR				
Westbound	LT	AM		PM	
Southbound	LTR				

Notes: L = Left Turn, T = Through, R = Right Turn.

(1) As defined in the *2001 City Environmental Quality Review (CEQR) Technical Manual*, lane groups/intersections are considered congested if they operate at mid-LOS D or worse (delays in excess of 45.0 seconds for a signalized intersection and 30.0 seconds for an unsignalized intersection).

(2) This table has been revised for the FEIS.

would not result in a significant adverse noise impacts. Overall, noise levels with the proposed project and the No Action Alternative would be typical of urban areas.

Table 24-2
Future With the Proposed Project Noise Levels
(in dBA)

Noise Receptor Site	Day	Time	2020 No Action $L_{eq(1)}$	2020 Future with the Proposed Project $L_{eq(1)}$	Change
	Weekday	AM	65.6	65.6	0.0
	Weekday	MD	67.0	66.8	-0.2
1	Weekday	PM	66.1	65.9	-0.2
	Weekday	AM	70.7	71.1	0.4
	Weekday	MD	66.4	66.8	0.4
2[1]	Weekday	PM	65.1	67.2	2.1
	Weekday	AM	65.3	66.4	1.1
	Weekday	MD	60.6	61.2	0.6
3	Weekday	PM	61.7	64.4	2.7
	Weekday	AM	66.3	67.3	1.0
	Weekday	MD	66.4	66.7	0.3
4[1]	Weekday	PM	71.4	74.2	2.8
	Weekday	AM	65.6	63.9	0.9
	Weekday	MD	66.0	62.7	0.7
5[1]	Weekday	PM	66.2	66.4	0.2
	Weekday	AM	73.8	74.8	1.0
	Weekday	MD	72.5	73.4	0.9
6	Weekday	PM	73.6	74.8	1.2
	Weekday	AM	69.7	70.8	1.1
	Weekday	MD	69.3	70.3	1.0
7	Weekday	PM	69.0	69.5	0.5
	Weekday	AM	71.6	71.9	0.3
	Weekday	MD	69.6	69.7	0.1
8	Weekday	PM	69.8	70.1	0.3
	Weekday	AM	68.3	68.8	0.5
	Weekday	MD	67.4	68.0	0.6
9	Weekday	PM	70.4	71.0	0.6

Notes: [1] Future with the proposed project noise levels at these locations were calculated using the TNM modeling technique.

CONSTRUCTION

The No Action Alternative would result in new industrial and commercial development on the project site. Because the total amount of development with the No Action Alternative would be less than with the proposed project, construction activities associated with this alternative would

be substantially smaller in scale and shorter in duration. Unlike the construction period for the proposed project, which is expected to take nine years, the construction period for the No Action Alternative is expected to take between 18 and 24 months. Construction of this alternative could result in temporary inconveniences, such as increased traffic, noise and dust that are typical of construction projects throughout the city. Unlike the proposed project, this alternative is not expected to result in any significant adverse construction traffic and noise impacts. Construction of the No Action Alternative would not result in any major in-ground structural work, nor would it result in any in-water construction activities, as it would not replace the overwater platform. As described in "Historic Resources" above, both this alternative and the proposed project would avoid damage to the Refinery by complying with the procedures set forth in DOB's *TPPN #10/88*.

CONCLUSION

The No Action Alternative assumes no discretionary actions would occur and that the proposed project would not be implemented. The project site would be developed with uses permitted under the existing M3-1 manufacturing zoning, including a storage facility, a building materials storage yard, a new distribution facility, and a new two-story building with a catering hall/restaurant with parking. The No Action Alternative would retain the Refinery complex, an NYCL, which would be maintained but would remain vacant due to the high cost of adaptive reuse.

This alternative would avoid the proposed project's significant adverse impacts relating to elementary and intermediate schools, publicly funded child care facilities, shadows, historic resources, traffic, transit and pedestrians, noise, and construction. However, it should be noted that the proposed project has identified mitigation measures that would fully or partially mitigate its significant adverse impacts in these analysis areas. In all other analysis areas, as with the proposed project, the No Action Alternative would not result in significant adverse impacts. However, the No Action Alternative would not result in the positive open space and neighborhood character effects associated with the proposed project. In addition, this alternative would not be consistent with many of the applicable WRP policies, particularly those that aim to encourage residential and commercial redevelopment along the waterfront and public access to waterfront resources.

In this alternative, there would be no market-rate or affordable housing developed on the project site. Furthermore, there would be no new open space or public waterfront esplanade with upland connections and a connection to Grand Ferry Park. The No Action Alternative would fail to meet all four of the proposed project's principal goals, which include the creation of affordable housing, providing physical and visual access to the waterfront including the creation of a substantial amount of publicly accessible open space, redevelopment of a former waterfront industrial site into a mix of active residential, retail/commercial, and community facility uses; and the adaptive reuse of the Refinery.

C. REDUCED DENSITY ALTERNATIVE

DESCRIPTION OF THE REDUCED DENSITY ALTERNATIVE

The Reduced Density Alternative assumes redevelopment of the project site with the same mix of uses anticipated with the proposed project, but at a reduced density. This alternative was developed in response to a public comment on the draft scope of work which requested shorter

building heights. To accommodate this request, the Reduced Density Alternative would achieve 4.7 FAR on the waterfront parcel and 2.42 FAR on the upland parcel; in comparison, the proposed project would achieve 5.6 FAR on the waterfront parcel and 6.0 FAR on the upland parcel. This FAR would be consistent with what is permitted on waterfront sites further north in Williamsburg and in Greenpoint under the 2005 Greenpoint-Williamsburg rezoning. Compared with the proposed project, the Reduced Density Alternative would introduce shorter buildings on the waterfront parcel (see Figure 24-2). The proposed project would result in residential towers on the waterfront parcel ranging from 300 to 400 feet along the waterfront. In comparison, the Reduced Density Alternative would result in waterfront buildings rising to maximum heights between 200 and 300 feet. The buildings on the upland parcel under this alternative would be shorter than those of the proposed project.

The reduced FAR and shorter building heights in this alternative translate to 549 fewer residential units overall and 350 fewer affordable units. Under this alternative, the project site would be developed with approximately 1,850,794 residential sf, which could accommodate approximately 1,851 dwelling units, of which 20 percent, or 370 units, would be affordable.[1] The applicant currently intends to build 2,200 residential units on the project site, of which 660 would be affordable to low- and moderate-income households. However, it is assumed for analysis purposes in this EIS that the proposed project could include up to 2,400 residential units (based on an average unit size of approximately 1,000 gsf), 30 percent of which would be affordable to low- and moderate-income households. The Reduced Density Alternative would have the same amount of public open space, community facility space, commercial office space, and retail space. This analysis compares the impacts of the Reduced Density Alternative to the proposed project. Table 24-3 summarizes the components of the Reduced Density Alternative.

Table 24-3
Comparison of Proposed Project and Reduced Density Alternative

Use	Proposed Project	Reduced Density Alternative
Residential Units[1,2]		
Market Rate	1,680	1,481
Affordable	720	370
Total	2,400	1,851
Proposed Uses (gsf)		
Residential	2,442,305	1,850,794
Retail	127,537	127,537
Community Facility	146,451	146,451
Commercial Office	98,738	83,316
Publicly Accessible Open Space	Approx. 4 acres	Approx. 4 acres
Accessory Parking Spaces	1,694 spaces	Approx. 1,301 spaces

Notes:
[1] Assumes average residential unit size of 1,000 gsf.
[2] For conservative analysis, assumes that the proposed project could include up to 2,400 residential units, 30 percent of which would be affordable to low- and moderate-income households. The Reduced Density Alternative assumes 20 percent of units would be affordable, consistent with the Greenpoint-Williamsburg rezoning guidelines.

[1] Based on an average unit size of approximately 1,000 gsf.

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Reduced Density Alternative
Figure 24-2

The Reduced Density Alternative would result in fewer affordable housing units when compared to the proposed project primarily because the reduction in overall FAR on the project site would result in fewer market-rate units available to cross-subsidize the development of affordable housing units. Thus, the Reduced Density Alternative would allocate only 20 percent of the total residential units as affordable housing, consistent with the Greenpoint-Williamsburg rezoning guidelines, compared to the proposed project's allocation of 30 percent of its residential units as affordable housing.

REDUCED DENSITY ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Like the proposed project, the Reduced Density Alternative would create a new mixed-use development with public waterfront access and open space on a site that is currently vacant. Both the Reduced Density Alternative and the proposed project would adaptively reuse the landmarked Refinery. Although the Reduced Density Alternative would introduce fewer residential units, like the proposed project, the proposed uses would bring activity to the site and would serve both residents of the development and the larger community.

Overall, the new uses introduced by both the Reduced Density Alternative and the proposed project would be compatible with the existing and anticipated future mix of residential, retail, and light industrial uses in the surrounding area. The Reduced Density Alternative would require the same zoning actions as the proposed project, facilitating the creation of housing, open space, and public access to the waterfront. These zoning changes would be compatible with zoning in the study area, particularly the residential districts mapped on waterfront sites to the north of the project site from North 3rd Street to Newtown Creek as part of the Greenpoint-Williamsburg rezoning. Both the Reduced Density Alternative and the proposed project would support City initiatives for the creation of housing and waterfront revitalization and would also be consistent with PlaNYC's recommendation that former industrial sites be remediated and redeveloped.

Overall, the Reduced Density Alternative, like the proposed project, would not result in any significant adverse impacts to land use, zoning, and public policy. However, this alternative would provide 350 fewer affordable units when compared to the proposed project and thus be significantly less supportive of one of the project's overall goals of providing as much affordable housing as possible through cross-subsidization from market-rate units.

SOCIOECONOMIC CONDITIONS

Like the proposed project, the Reduced Density Alternative would result in new development on the currently vacant project site. Therefore, neither the Reduced Density Alternative nor the proposed project would result in direct displacement of existing residences or businesses.

Neither the Reduced Density Alternative nor the proposed project would result in significant adverse impacts with respect to indirect residential displacement. The affordable housing components of both the Reduced Density Alternative and the proposed project would house a population with incomes that closely resemble existing incomes in the study area.

Given that the anticipated 32 development projects in the study area would introduce a substantial new population with high incomes relative to the existing population, it is expected that at-risk residents in the study area are likely to be indirectly displaced by 2020 irrespective of

development on the project site. However, the Reduced Density Alternative would have 350 fewer affordable units than the proposed project, and therefore would do less to offset indirect residential displacement pressures when compared to the proposed project.

Like the proposed project, the Reduced Density Alternative would introduce housing, retail/commercial, community facilities, and open space uses to the project site. Both the proposed project and the Reduced Density Alternative would introduce less than 200,000 sf of commercial uses, an amount that is unlikely to result in significant socioeconomic impacts. As described in Chapter 4, "Socioeconomic Conditions," these uses already exist in the study areas, and it is not likely that the either the proposed project or the Reduced Density Alternative would alter or accelerate existing economic patterns. Therefore, both the proposed project and the Reduced Density Alternative would not result in significant adverse indirect business displacement.

Because the Reduced Density Alternative, like the proposed project, would not directly or indirectly displace businesses, it would not adversely affect business conditions in any industry or any category of business within or outside of the study area. This alternative would also not indirectly reduce employment or impact the economic viability of an industry or category of business. Therefore, like the proposed project, this alternative would not have significant adverse impacts on a specific industry.

COMMUNITY FACILITIES AND SERVICES

The Reduced Density Alternative would introduce 549 fewer residential units and 350 fewer affordable units than the proposed project. Therefore, the Reduced Density Alternative would result in less demand on community facilities and services as compared with the proposed project. Like the proposed project, this alternative would not result in any significant adverse impacts to libraries, outpatient health care facilities, and police and fire protection services.

The Reduced Density Alternative would introduce 536 elementary, 222 middle, and 259 high school students by 2020. In comparison, the proposed project would introduce approximately 696 elementary, 288 intermediate, and 336 high school students by 2020. Although the Reduced Density Alternative would result in slightly lower levels of school utilization as compared with the proposed project (see Table 24-4), both the Reduced Density Alternative and the proposed project would result in significant adverse impacts to elementary public schools. Unlike the proposed project, the Reduced Density Alternative would not result in significant adverse impacts to intermediate schools. As discussed in Chapter 23, "Mitigation," the DEIS listed a number of measures that could be undertaken to mitigate the significant adverse impact on schools; of these, for large residential projects, provision of new school capacity, construction of a new school or an addition to an existing school may be the most appropriate mitigation.

Unlike the proposed project, the Reduced Density Alternative would not result in significant adverse impacts to child care facilities in the 1½-mile study area. 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 5 percent of the study area capacity could result in a significant adverse impact. The addition of children from the Reduced Density Alternative would result in an approximately 3.2 percent increase in the demand over the collective capacity of child care facilities in the study area and would therefore not result in significant adverse impacts to child care facilities.

Table 24-4
Comparison of Elementary, Intermediate, and High School Utilizations for the Reduced Density Alternative and the Proposed Project

	Reduced Density Alternative				Proposed Project			
School Study Area	**Capacity**	**Enrollment**	**Utilization**	**Available Seats**	**Capacity**	**Enrollment**	**Utilization**	**Available Seats**
Elementary Schools								
½-Mile Study Area	1,431	3,002	210%	-1,571	1,431	3,162	221%	-1,731
Sub-district 3, CSD 14	3,214	5,879	183%	-2,665	3,214	6,039	188%	-2,825
CSD 14	12,625	11,400	90%	1,225	12,625	11,560	92%	1,065
Intermediate Schools								
Sub-district 3, CSD 14	1,926	1,895	98%	31	1,926	2,755	143%	-829
CSD 14	5,744	4,902	85%	842	5,744	4,968	86%	776
High Schools								
Brooklyn Total	92,965	72,908	78%	20,057	92,965	72,985	79%	19,980

Sources: DOE *Enrollment Projections 2008-2017 by Grier Partnership*; DOE, *Utilization Profiles: Enrollment/Capacity/ Utilization,* 2008-2009.

OPEN SPACE

As noted above, the Reduced Density Alternative would include the same open space acreage, layout, size of open space areas, and open space amenities as currently contemplated for the proposed project. However, fewer residents and workers would be introduced to the project site and, therefore, the demands on those open spaces and other open spaces in the surrounding area would be smaller.

Neither the Reduced Density Alternative nor the proposed project would result in significant adverse open space impacts. Both the proposed project and the Reduced Density Alternative would improve open space conditions in the area by adding a substantial new waterfront esplanade and public open space.

As shown in Table 24-5, with the Reduced Density Alternative, the commercial open space study area (defined as the area within approximately ¼ mile of the project site) would continue to provide ample passive recreation space for the workers of the area, as it also would with the proposed project. Within the residential open space study area (defined as the area approximately within ½ mile of the project site) the Reduced Density Alternative would improve open space ratios slightly and would result in slightly higher ratios than the proposed project. In both the proposed project and the Reduced Density Alternative, the study area would fall short of City guidelines for active open space, but the proposed project would reduce the active ratio while the Reduced Density Alternative would result in a small increase. Overall, the total open space ratio would remain below the City's guideline ratio of 2.5 acres per 1,000 residents and below the citywide median ratio of 1.5 acres per 1,000 residents. As discussed in Chapter 6, "Open Space," although these ratios are below City guidelines, the *CEQR Technical Manual* acknowledges that City guidelines are not feasible in many parts of the city and therefore are not considered impact thresholds.

SHADOWS

The Reduced Density Alternative would have shorter tower elements than the proposed project (see Figure 24-2) and would therefore result in shorter shadows than the proposed project. Other than the length of the longest portions of the shadows, the new shadows resulting from this alternative would be the same as those of the proposed project. Neither the Reduced Density Alternative nor the proposed project would result in significant adverse shadow impacts to the East River or the PS 84 William Sheridan Playground.

Table 24-5
Open Space Ratios Summary:
Comparison of Reduced Density Alternative and Proposed Project

Ratio (Acres per 1,000 Population)	City Guideline	No Action Condition	Reduced Density Alternative	Percent Change, No Action to Reduced Density Alternative	Proposed Project	Percent Change, No Action to Proposed Project
Commercial (¼-Mile Study Area)						
Passive/Workers	0.15	2.461	2.423	-1.6%	2.384	-3.1%
Passive/Total Population	Weighted 0.388 / 0.437 / 0.440*	0.443	0.432	-2.4%	0.411	-7.1%
Residential (½-Mile Study Area)						
Total/Residents	2.5	0.668	0.681	1.9%	0.659	-1.4%
Passive/Residents	0.5	0.366	0.377	3.2%	0.365	-0.2%
Passive/Total Population	Weighted: 0.426 / 0.447 / 0.447*	0.310	0.319	2.9%	0.310	-0.1%
Active/Residents	2.0	0.302	0.303	0.4%	0.294	-2.9%

Notes: Ratios in acres per 1,000 people.
* Weighted average combining 0.15 acres per 1,000 non-residents and 0.50 acres per 1,000 residents. Because this guideline depends on the proportion of non-residents and residents in the study area's population, it is different for existing, No Action, and future with the proposed project conditions. Each of these ratios is listed in this table.

Like the proposed project, the incremental midday shadow as result of the proposed building on Site A—which is adjacent to Grand Ferry Park—would cause a significant adverse impact to this open space during the fall, winter, and early spring, though there would be a slight decrease in the extent and duration of the shadows from the Reduced Density Alternative when compared to the shadows from the proposed project. As noted in Chapter 23, "Mitigation," if the proposed building on Site A were further reduced in height to a 70-foot podium with no tower, the significant adverse impacts on the park would be eliminated. It must be noted, however, that this reduction in height at Site A would result in a loss of 115,000 sf of residential use. An equivalent amount of residential square footage would have to be added in another part of the development site to maintain the overall density of the Reduced Density Alternative.

However, as with the proposed project, this alternative would create approximately four acres of new public open space that would provide sunlit areas during times when Grand Ferry Park would experience areas of incremental shadow. Moreover, as detailed in Chapter 23, "Mitigation," the applicant has reached agreement with DPR on mitigation measures that will partially mitigate the significant adverse shadows impact on Grand Ferry Park.

HISTORIC RESOURCES

Like the proposed project, the Reduced Density Alternative would have a significant adverse impact on historic resources due to the demolition of buildings that have been determined S/NR-eligible. Both the proposed project and the Reduced Density Alternative would result in the demolition of all structures on the project site except for the Refinery, which would be retained and adaptively reused. Prior to construction of either the proposed project or the Reduced Density Alternative, construction protection measures would be developed and implemented in consultation with SHPO and LPC. This alternative would require the same construction protection plans as required by the proposed project to avoid inadvertent construction-related impacts on the Refinery, the Williamsburg Bridge, the former American Sugar Refinery Buildings, and the former Matchett Candy Factory.

Neither the proposed project nor the Reduced Density Alternative would result in contextual impacts to any of the other architectural resources in the study area.

URBAN DESIGN AND VISUAL RESOURCES

The Reduced Density Alternative would introduce shorter residential towers because this alternative would have less residential floor area, but the public open space plan would be the same as with the proposed project. Compared with the proposed project, the buildings in the Reduced Density Alternative would have less building articulation and would create a less varied skyline. The proposed project would result in residential towers on the waterfront parcel ranging from 300 to 400 feet along the waterfront. In comparison, the Reduced Density Alternative would result in waterfront buildings of 200 to 300 feet in height. Both this alternative and the proposed project would also extend the existing street network into the project site and would connect the surrounding community to the new public open spaces to be created on the project site.

Although the residential towers would be shorter than the proposed project's, the view corridors or views of visual resources created would be the same as under the proposed project. Both the Reduced Density Alternative and the proposed project would block some views of visual resources in the study area, including the Williamsburg Bridge and the Manhattan skyline; both would also create new and expansive views of these resources. The waterfront esplanade created in both the proposed project and the Reduced Density Alternative would create new viewing opportunities of these two resources which are currently not available. Like the proposed project, the Reduced Density Alternative would demolish the Bin Building—a visual resource on the project site—but both would also provide the most visually significant feature of this resource, the "Domino Sugar" sign, on top of the renovated Refinery.

Therefore, the Reduced Density Alternative, like the proposed project, would not result in significant adverse impacts on visual resources or urban design.

NEIGHBORHOOD CHARACTER

The Reduced Density Alternative and the proposed project would have essentially the same effect on neighborhood character. Both would create a vibrant new mixed-use development with public waterfront access and open space on a site that is currently vacant. Each would continue the pattern emerging throughout Greenpoint and Williamsburg of mid- to high-rise waterfront developments transitioning to lower-scale, mixed-use upland neighborhoods. By adding a large new development, both the Reduced Density Alternative and the proposed project would increase the pedestrian activity, vehicular traffic, and general activity levels in the nearby study area, though with the Reduced Density Alternative these increases would be slightly smaller. The Reduced Density Alternative would introduce less housing and less affordable housing, and as a result would not introduce as large a population that would have incomes that closely resemble existing household incomes. Overall, both the Reduced Density Alternative and the proposed project would not result in significant adverse impacts to neighborhood character.

NATURAL RESOURCES

Neither the proposed project nor the Reduced Density Alternative would result in significant adverse impacts on terrestrial plant communities or wildlife or on floodplains, wetlands, water quality, or aquatic biota in the East River. There would be no difference in potential effects to natural resources between this alternative and the proposed project. Both the proposed project

and the Reduced Density Alternative would result in in-water activities and include the same potential benefits, namely the creation of a waterfront park providing public access to the East River—one of the project's principal goals.

HAZARDOUS MATERIALS

The effects of the Reduced Density Alternative and the proposed project with respect to hazardous materials would be the same. Both the Reduced Density Alternative and the proposed project would result in the demolition of the existing structures and excavation, disturbance, and removal for off-site disposal of some of the existing fill and soil. Under this alternative and the proposed project, preventative measures would be taken during construction on the project site so that no significant adverse hazardous materials impacts would result.

WATERFRONT REVITALIZATION PROGRAM

Both the Reduced Density Alternative and the proposed project would be consistent with the City's applicable WRP policies, particularly those that aim to encourage public access to waterfront resources. Both would be consistent with citywide goals for supporting and facilitating residential and commercial development in appropriate areas, protecting and restoring ecological systems; protecting and improving water quality; providing public access in the coastal zone; and protecting scenic resources.

INFRASTRUCTURE

Because the Reduced Density Alternative would result in fewer residential units than the proposed project, it would generate less demand for water and less sanitary sewage. Development of the Reduced Density Alternative would generate a total demand for 988,599 gpd of water and 619,054 gpd of sanitary sewage. This water demand would be 288,777 gpd less than with the proposed project, and the sanitary sewage generated would be 186,678 gpd less than the proposed project. Overall, neither the Reduced Density Alternative nor the proposed project would result in significant adverse impacts on the city's water supply or the processing capacity of the Newtown Creek WPCP. Both the Reduced Density Alternative and the proposed project would create a waterfront park, which would result in less impervious surface when compared to existing conditions on the project site. Both the proposed project and the Reduced Density Alternative would also construct a new separate storm sewer, and both would implement stormwater BMPs as part of the SWPPP to regulate the quality and rate at which stormwater is discharged from the project site.

SOLID WASTE AND SANITATION SERVICES

Similar to the proposed project, the Reduced Density Alternative would be expected to increase solid waste generation and collection on the project sites. Overall, the Reduced Density Alternative would generate 23,315 pounds (11.7 tons) per week less solid waste than the proposed project. Because this alternative would result in fewer residential units, this reduction in sold waste would result in less waste handled by the New York City Department of Sanitation (DSNY) and the same amount of waste handled by private carters as compared with the proposed project. Neither the Reduced Density Alternative nor the proposed project would result in significant adverse impacts on solid waste disposal or sanitation services.

ENERGY

The Reduced Density Alternative would generate a demand of approximately 300,872 million British thermal units (BTUs) per year, 87,266 million BTUs less than the proposed project. Therefore, like the proposed project, the Reduced Density Alternative would not result in a significant adverse energy impact. Further, it is expected that the buildings constructed under this alternative, like those under the proposed project, would incorporate a variety of sustainable design features to optimize the performance of the proposed buildings and their relationship to the environment.

TRAFFIC AND PARKING

Tables 24-6a and 24-6b compare the trip volumes generated by the Reduced Density Alternative with those of proposed project. The Reduced Density Alternative would generate 12, 7, 9, and 8 percent fewer vehicle trips (converted to passenger car equivalents [PCEs]), and 14, 7, 11, and 8 percent fewer person trips than the proposed project in the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively.

Both the proposed project and the Reduced Density Alternative would result in significant adverse traffic impacts. Based on the trip volumes presented above, it is expected that the traffic impacts of the Reduced Density Alternative would be similar to those of the proposed project, which would result in significant adverse traffic impacts at 24 intersections during the weekday AM peak hour, 11 intersections during the weekday midday peak hour, 31 intersections during the weekday PM peak hour, and 6 intersections during the Saturday midday peak hour. Like the proposed project, all of the impacts of this alternative could be fully mitigated.

The Reduced Density Alternative would provide approximately 1,301 accessory parking spaces, including the same proportion of parking spaces to residential units as under the proposed project. Therefore, its parking demand is expected to be accommodated on-site and no significant adverse impacts to parking conditions would result from the implementation of either the proposed project or the Reduced Density Alternative.

TRANSIT AND PEDESTRIANS

The Reduced Density Alternative would generate slightly fewer subway, bus, and pedestrian trips than the proposed project. Therefore, the Reduced Density Alternative likely would result in many of the same significant adverse impacts to transit and pedestrian facilities as the proposed project.

Table 24-6a

Comparison of Person Trips Generated by the Proposed Project and the Reduced Density Alternative

Peak Hour	Project Alternatives	Mode					
		Auto	Bus	Subway	Walk/Other	Taxi	Total
Weekday AM	Reduced Density Alternative (RDA)	609	228	901	808	80	**2,626**
	Proposed Project	691	270	1,123	890	88	**3,062**
	Net Difference (RDA-Proposed Project)	**-82**	**-42**	**-222**	**-82**	**-8**	**-436**
Weekday Midday	Reduced Density Alternative (RDA)	495	236	540	1,921	133	**3,325**
	Proposed Project	529	261	653	1,994	138	**3,575**
	Net Difference (RDA-Proposed Project)	**-34**	**-25**	**-113**	**-73**	**-5**	**-250**
Weekday PM	Reduced Density Alternative (RDA)	965	301	1,091	1,630	130	**4,117**
	Proposed Project	1,061	352	1,352	1,726	138	**4,629**
	Net Difference (RDA-Proposed Project)	**-96**	**-51**	**-261**	**-96**	**-8**	**-512**
Saturday Midday	Reduced Density Alternative (RDA)	823	234	447	1,714	116	**3,334**
	Proposed Project	891	265	546	1,809	122	**3,633**
	Net Difference (RDA-Proposed Project)	**-68**	**-31**	**-99**	**-95**	**-6**	**-299**

Table 24-6b

Comparison of Vehicle Trips Generated by the Proposed Project and the Reduced Density Alternative

Peak Hour	Project Alternatives	Mode				
		Auto	Taxi	Truck	Total Trips	Total PCEs
Weekday AM	Reduced Density Alternative (RDA)	490	96	42	628	670
	Proposed Project	556	106	50	712	762
	Net Difference (RDA-Proposed Project)	**-66**	**-10**	**-8**	**-84**	**-92**
Weekday Midday	Reduced Density Alternative (RDA)	318	140	36	494	530
	Proposed Project	344	144	42	530	572
	Net Difference (RDA-Proposed Project)	**-26**	**-4**	**-6**	**-36**	**-42**
Weekday PM	Reduced Density Alternative (RDA)	692	134	21	847	868
	Proposed Project	769	142	23	934	957
	Net Difference (RDA-Proposed Project)	**-77**	**-8**	**-2**	**-87**	**-89**
Saturday Midday	Reduced Density Alternative (RDA)	527	112	7	646	653
	Proposed Project	579	120	7	706	713
	Net Difference (RDA-Proposed Project)	**-52**	**-8**	**0**	**-60**	**-60**

The Reduced Density Alternative would generate 222, 113, 261, and 99 fewer subway trips than the proposed project during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively. Like the proposed project, the Reduced Density Alternative is expected to result in a significant adverse impact to the Marcy Avenue subway station's Manhattan-bound control area during the weekday AM peak hour and the Queens-bound control area during the weekday PM peak hour. Like the proposed project, these significant adverse impacts could be mitigated by a number of potential measures, including replacing the high entry-exit turnstiles (HEETs) with regular turnstiles within the station control areas and alternative commuting options such as express bus and/or water taxi service to Manhattan (see Chapter 23, "Mitigation").

The Reduced Density Alternative would generate 42, 25, 51, and 31 fewer bus riders than the proposed project during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively. The Reduced Density Alternative is expected to result in the proposed project's significant adverse impact on bus line haul capacities (B62 and Q59) in the study area. Like the proposed project, potential mitigation measures for bus operations as a result of this alternative could include increasing bus line haul capacities for affected routes during affected peak hours.

The Reduced Density Alternative would generate 436, 250, 512, and 299 fewer pedestrian trips than the proposed project during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively. The Reduced Density Alternative—similar to the proposed project—would result in a significant adverse impact to the south crosswalk at Bedford Avenue and North 7th Street during the weekday AM, weekday midday, and Saturday midday peak hours. Like the proposed project, potential mitigation measures for congested pedestrian conditions as a result of this alternative could include the widening of the affected crosswalks.

AIR QUALITY

Neither the Reduced Density Alternative nor the proposed project would result in significant adverse air quality impacts from mobile or stationary sources of pollution. The overall emissions profile of the Reduced Density Alternative would be less than that of the proposed project. This alternative would be subject to the same limitations in terms of exhaust stack heights and locations as that of the proposed project.

NOISE

Because the Reduced Density Alternative would result in lower traffic volumes when compared to the proposed project, the noise levels at and around the project site are expected to be less with the Reduced Density Alternative than with the proposed project. However, neither the proposed project nor the Reduced Density would result in any significant adverse noise impacts. This alternative would include the same levels of building attenuation as the proposed project.

CONSTRUCTION

Although the Reduced Density Alternative would result in shorter residential buildings (up to 300 feet tall) when compared to the proposed project (up to 400 feet tall), it is expected that construction activities associated with the Reduced Density Alternative would result in similar construction effects as the proposed project since both the proposed project and the Reduced Density Alternative would construct similar types of buildings. Both this alternative and the

proposed project would avoid damage to the Refinery by complying with the procedures set forth in DOB's *TPPN #10/88*.

Both the Reduced Density Alternative and the proposed project could result in significant adverse construction traffic and noise impacts.

CONCLUSION

With the Reduced Density Alternative, development on the project site would achieve 4.7 FAR on the waterfront parcel and 2.42 FAR on the upland parcel, compared to 5.6 FAR on the waterfront parcel and 6.0 FAR on the upland parcel with the proposed project. Overall, the Reduced Density Alternative would have shorter building heights—up to 300 feet along the waterfront (the heights of the tallest buildings along the waterfront in the proposed project is 400 feet)—resulting in 549 fewer residential units overall, 350 fewer affordable units, and a slight reduction in the amount of commercial office space. Otherwise, this alternative would have the same site plan as the proposed project, including the same amount of retail, community facilities, and publicly accessible open space.

The Reduced Density Alternative would result in similar significant adverse impacts as the proposed project. Like the proposed project, this alternative would result in significant adverse impacts to: public elementary schools; shadows on Grand Ferry Park (even though this alternative has shorter buildings); historic resources; pedestrians; and construction. Of these—and similar to the proposed project—the impacts from shadows and on historic resources are unavoidable. The proposed project has identified mitigation measures that would fully or partially mitigate the significant adverse impacts in other affected analysis areas, and these mitigation measures would apply with the Reduced Density Alternative as well. In all other analysis areas, as with the proposed project, the Reduced Density Alternative would not result in significant adverse impacts. Unlike the proposed project, the Reduced Density Alternative would not result in significant adverse impacts to public intermediate schools and publicly funded child care facilities.

This alternative would satisfy three of the four goals of the proposed project, including access to the waterfront and the creation of a substantial amount of publicly accessible open space, redevelopment of this former waterfront industrial site into an active mix of uses, and adaptive reuse of the Refinery. However, this Reduced Density Alternative would substantially fail to meet the proposed project's principal goal of providing a substantial amount of affordable housing.

D. HOTEL ALTERNATIVE

DESCRIPTION OF THE HOTEL ALTERNATIVE

The proposed C6-2 zoning on the site of the Refinery would permit a range of commercial uses, including a hotel. However, although hotel use is allowed under the C6-2 rezoning, it would be a precluded use under the Restrictive Declaration. To provide flexibility for possible future program adjustments in response to changing market demands and conditions, this section analyzes a Hotel Alternative in which a hotel use occupies several floors of the Refinery (see Figure 24-3). The Restrictive Declaration would need to be modified, which would be a significant change that would trigger the need for future ULURP and CEQR reviews and

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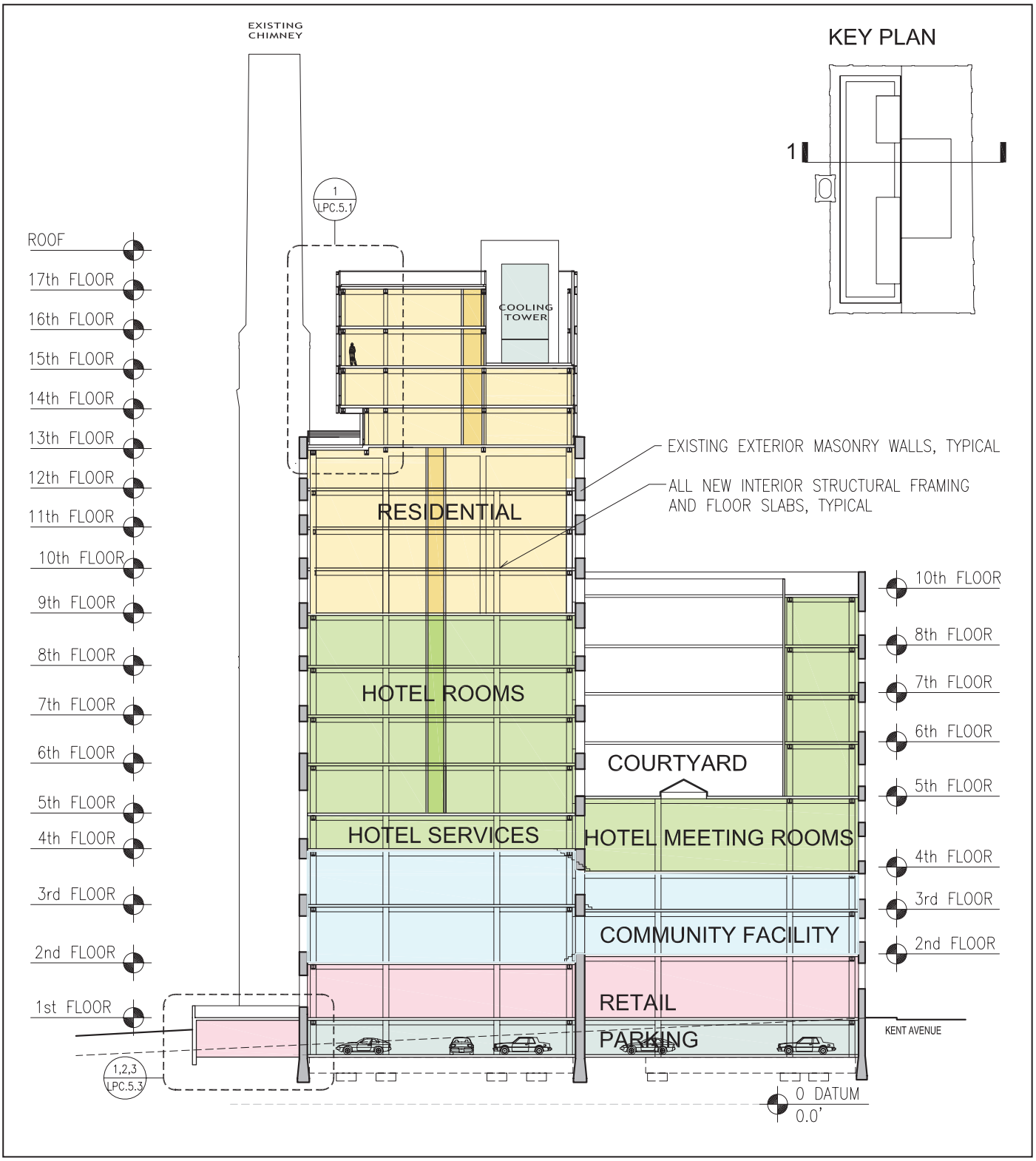


- Hotel Core and Corridors
- Hotel
- Residential Core and Corridors
- Residential
- Retail
- Community Facility
- Community Facility Core
- Garage

Hotel Alternative
Figure 24-3

approvals. This section assesses and compares the potential impacts of a program with a hotel use to the proposed project.

As conceptually laid out, the Hotel Alternative would include a 112,000-square-foot hotel with approximately 150 rooms on approximately half of the third floor and on floors four through six of the Refinery. Community facility uses would occupy the second and third floors of the Refinery building, separate from the retail uses on the ground floor and the residential and hotel uses above. This hotel would replace approximately 49,000 sf of community facility space and 63,000 sf of residential space, resulting in the development of 57 fewer residential units. In this alternative, the project site would have the same site plan as the proposed project, with the same amount of open space, commercial office, and retail space and fewer accessory parking spaces. Although the Hotel Alternative would provide fewer residential units overall, like the proposed project, it is anticipated that an equivalent number of units would be part of an affordable housing program. Table 24-7 summarizes the components of the Hotel Alternative. This alternative could occur only if SCA decides not to locate a school at the Refinery.

Table 24-7
Comparison of Proposed Project and Hotel Alternative

Use	Proposed Project	Hotel Alternative
Residential Units[1,2]		
Market Rate	1,680	1,623
Affordable	720	720
Total	2,400	2,343
Proposed Uses (Gross Square Feet)		
Residential	2,442,305	2,379,305
Retail	127,537	127,537
Community Facility	146,451	97,451
Commercial Office	98,738	98,738
Hotel	0	112,000
Publicly Accessible Open Space	Approx. 4 acres	Approx. 4 acres
Accessory Parking Spaces	1,694 spaces	Approx. 1,647 spaces

Notes:
[1] Assumes average residential unit size of 1,000 gsf.
[2] For conservative analysis, assumes that the proposed project could include up to 2,400 residential units, 30 percent of which would be affordable to low- and moderate-income households.

HOTEL ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Like the proposed project, the Hotel Alternative would create a new mixed-use development with public waterfront access and open space on a site that is currently vacant. Both the Hotel Alternative and the proposed project would make possible the adaptive reuse of the landmarked Refinery. Although the Hotel Alternative would introduce 57 fewer market-rate residential units and approximately 49,000 gsf less community facility space, like the proposed project, the new housing, retail, public open space, and community facility uses would serve both residents of the development and the larger community.

Overall, the new uses introduced by both the Hotel Alternative and the proposed project would be compatible with the existing and anticipated future mix of residential, retail, and light industrial uses in the surrounding area. In addition to the zoning actions required for the proposed project—which would facilitate the creation of housing, open space, and public access

to the waterfront, the Hotel Alternative would require modification of the Restrictive Declaration to allow a hotel use. This would be a significant modification that would trigger the need for future review and approvals, including discretionary actions subject to review under ULURP and CEQR. In sum, these zoning changes—for both the Hotel Alternative and the proposed project—would be compatible with zoning in the study area, particularly the residential districts mapped on waterfront sites to the north of the project site from North 3rd to the Newtown Creek as part of the Greenpoint-Williamsburg rezoning. Both the Hotel Alternative and the proposed project would support City initiatives for the creation of housing and waterfront revitalization and would also be consistent with PlaNYC's recommendation that former industrial sites be remediated and redeveloped.

The Hotel Alternative, like the proposed project, would not result in any significant adverse impacts to land use, zoning, and public policy. Although this alternative would introduce 57 fewer market-rate residential units, the Hotel Alternative would satisfy all of the principal goals of the proposed project.

SOCIOECONOMIC CONDITIONS

Like the proposed project, the Hotel Alternative would result in new development on the currently vacant project site. Therefore, neither the Hotel Alternative nor the proposed project would result in direct displacement of existing residences or businesses.

The Hotel Alternative would result in fewer residential units than the proposed project and would house approximately 159 fewer residents. Nonetheless, like the proposed project, the population introduced by this alternative could be large enough to affect socioeconomic trends significantly. The affordable housing components of both the Hotel Alternative and the proposed project would ensure that a substantial portion of the new population would have incomes that more closely resemble and may be lower than existing household incomes in the study area.

Therefore, the Hotel Alternative, like the proposed project, would not be expected to result in significant adverse indirect residential displacement. Given that the anticipated 32 development projects in the study area would introduce a substantial new population with high incomes relative to the existing population, it is expected that at-risk residents in the study area are likely to be indirectly displaced by 2020 irrespective of development on the project site. However, both the Hotel Alternative and the proposed project would include 720 affordable units that would ensure that a substantial number of affordable units would be available to the at-risk population, and that a substantial portion of the new population would have incomes that more closely reflect, and may be lower than, existing household incomes in the study area.

The Hotel Alternative would introduce a hotel use to the project site, increasing the amount of overall commercial development on the project site to 338,275 gsf as compared with 226,275 gsf with the proposed project. The other types of uses introduced by the Hotel Alternative—housing, retail/commercial, commercial office, community facilities, and open space—would be the same uses included in the proposed project and which already exist in the study area. Neither the Hotel Alternative nor the proposed project would be likely to alter or accelerate existing economic patterns. The Hotel Alternative, like the proposed project, would not result in significant adverse indirect business displacement.

Because the Hotel Alternative, like the proposed project, would not directly or indirectly displace businesses, it would not adversely affect business conditions in any industry or any category of business within or outside of the study area. This alternative would also not indirectly reduce employment or impact the economic viability in an industry or category of

business. Therefore, like the proposed project, this alternative would not have significant adverse impacts on a specific industry.

COMMUNITY FACILITIES AND SERVICES

As discussed above, the Hotel Alternative would introduce 57 fewer residential units and would therefore result in nominally less demand for community facilities and services as compared with the proposed project. Like the proposed project, this alternative would not result in any significant adverse impacts to libraries, outpatient health care facilities, and police and fire protection services.

The Hotel Alternative would introduce approximately 680 elementary, 281 intermediate, and 328 high school students by 2020. In comparison, the proposed project would introduce approximately 696 elementary, 288 intermediate, and 336 high school students by 2020. Although the Hotel would result in slightly lower levels of school utilization as compared with the proposed project (see Table 24-8), both the Hotel Alternative and the proposed project would result in significant adverse impacts to elementary and intermediate public schools. As discussed in Chapter 23, "Mitigation," the DEIS listed a number of measures that could be undertaken to mitigate the significant adverse impact on schools; of these, for large residential projects, provision of new school capacity, construction of a new school or an addition to an existing school may be the most appropriate mitigation. Unlike the proposed project, the Hotel Alternative could only occur if SCA decides not to locate a school in the Refinery.

Table 24-8
Comparison of Elementary, Intermediate, and High School Utilizations for the Hotel Alternative and the Proposed Project

	Hotel Alternative				Proposed Project			
School Study Area	**Capacity**	**Enrollment**	**Utilization**	**Available Seats**	**Capacity**	**Enrollment**	**Utilization**	**Available Seats**
Elementary Schools								
½-Mile Study Area	1,431	3,146	220%	-1,715	1,431	3,162	221%	-1,731
Sub-district 3, CSD 14	3,214	6,023	187%	-2,809	3,214	6,039	188%	-2,825
CSD 14	12,625	11,544	91%	1,081	12,625	11,560	92%	1,065
Intermediate Schools								
Sub-district 3, CSD 14	1,926	1,954	101%	-28	1,926	2,755	143%	-829
CSD 14	5,744	4,961	86%	783	5,744	4,968	86%	776
High Schools								
Brooklyn Total	92,965	72,977	78%	19,998	92,965	72,985	79%	19,980

Sources: DOE *Enrollment Projections 2008-2017 by Grier Partnership*; DOE, *Utilization Profiles: Enrollment/Capacity/ Utilization,* 2008-2009.

Similar to public schools, the Hotel Alternative and the proposed project would result in significant adverse impacts to child care facilities in the study area. For child care facilities, potential mitigation measures investigated as part of the proposed project include the possibility of adding capacity to existing facilities if it were determined feasible following consultation with ACS or providing a new child care facility within or near the project site.

OPEN SPACE

As noted above, it is assumed that the Hotel Alternative would include the same open space acreage, layout, size of open space areas, and open space amenities as those currently contemplated for the proposed project. However, fewer residents and workers would be

introduced to the project site and, therefore, the demands on those open spaces and other open spaces in the surrounding area would be smaller.

Neither the Hotel Alternative nor the proposed project would result in significant adverse open space impacts. Both the proposed project and the Hotel Alternative would improve open space conditions in the area by adding a substantial new waterfront esplanade and public open space.

As shown in Table 24-9, with the Hotel Alternative, the commercial open space study area (defined as the area approximately within ¼ mile of the project site) would continue to provide ample passive recreation space for the workers of the area, as it also would with the proposed project. Within the residential open space study area (defined as the area approximately within ½ mile of the project site), the Hotel Alternative would result in slightly higher ratios when compared to the proposed project. In all cases, the total open space ratio would remain below the City's guideline ratio of 2.5 acres per 1,000 residents and below the citywide median ratio of 1.5 acres per 1,000 residents. In either the proposed project or the Hotel Alternative, the study area would fall short of City guidelines for active open space. Although these ratios are below City guidelines, the *CEQR Technical Manual* acknowledges that City guidelines are not feasible in many parts of the city and therefore are not considered impact thresholds (see Chapter 6, "Open Space").

Table 24-9
Open Space Ratios Summary: Comparison of Hotel Alternative and Proposed Project

Ratio (Acres per 1,000 Population)	City Guideline	No Action Condition	Hotel Alternative	Percent Change, No Action to Hotel Alternative	Proposed Project	Percent Change, No Action to Proposed Project
Commercial (¼-Mile Study Area)						
Passive/Workers	0.15	2.461	2.426	-1.4%	2.384	-3.1%
Passive/Total Population	Weighted 0.388 / 0.437 / 0.440*	0.443	0.415	-6.4%	0.411	-7.1%
Residential (½-Mile Study Area)						
Total/Residents	2.5	0.668	0.661	-1.1%	0.659	-1.4%
Passive/Residents	0.5	0.366	0.366	0.2%	0.365	-0.2%
Passive/Total Population	Weighted: 0.426 / 0.447 / 0.447*	0.310	0.311	0.4%	0.310	-0.1%
Active/Residents	2.0	0.302	0.295	-2.6%	0.294	-2.9%

Notes: Ratios in acres per 1,000 people.
* Weighted average combining 0.15 acres per 1,000 non-residents and 0.50 acres per 1,000 residents. Because this guideline depends on the proportion of non-residents and residents in the study area's population, it is different for existing, No Action, and future with the proposed project conditions. Each of these ratios is listed in this table.

SHADOWS

Because the Hotel Alternative would result in the same building massing arrangements as the proposed project, the new shadows resulting from this alternative would be the same as those of the proposed project. Neither the Hotel Alternative nor the proposed project would result in significant adverse shadow impacts to the East River or the PS 84 William Sheridan Playground.

Like the proposed project, the incremental midday shadow as a result of the proposed building on Site A—which is adjacent to Grand Ferry Park—would cause a significant adverse impact to this open space during the fall, winter, and early spring. However, as with the proposed project, this alternative would create approximately four acres of new public open space that would provide sunlit areas during times when Grand Ferry Park would experience areas of incremental shadow. Moreover, as detailed in Chapter 23, "Mitigation," the applicant has reached agreement

with DPR on mitigation measures that will partially mitigate the significant adverse shadows impact on Grand Ferry Park.

HISTORIC RESOURCES

Like the proposed project, the Hotel Alternative would have a significant adverse impact on historic resources. Both the proposed project and the Hotel Alternative would result in the demolition of all structures on the project site except for the Refinery, which would be retained and adaptively reused. Furthermore, as with the proposed project, under the Hotel Alternative, a Certificate of Appropriateness would need to be issued, subject to review and approval by LPC. Prior to construction of either the proposed project or the Hotel Alternative, construction protection measures would be developed and implemented in consultation with SHPO and LPC. This alternative would require the same construction protection plans as required by the proposed project to avoid inadvertent construction-related impacts on the Refinery, the Williamsburg Bridge, the former American Sugar Refinery Buildings, and the former Matchett Candy Factory.

Both the proposed project and the Hotel Alternative would not result in any significant adverse contextual impacts to any of the other architectural resources in the study area.

URBAN DESIGN AND VISUAL RESOURCES

The Hotel Alternative would be the same as the proposed project in terms of layout, setbacks, landscaping, open spaces, and overall urban design. Therefore, effects on the urban design and visual resources of the study area would be the same with the Hotel Alternative as with the proposed project and, similarly, there would not be significant adverse impacts. Both the proposed project and the Hotel Alternative would positively affect the urban design of the project site by transforming a vacant former waterfront industrial site into a mixed-use development with a unified design. Both the proposed project and the Hotel Alternative would reactivate the waterfront, including increasing pedestrian activity; creating much-needed public open space; and providing visual and physical access to the waterfront. In addition, the proposed project and the Hotel Alternative would result in the renovation and re-use of the Refinery, including exterior restoration, would reactivate a significant formerly industrial resource and improve its appearance.

The Hotel Alternative, like the proposed project, would block some views of visual resources in the study area, including the Williamsburg Bridge and the Manhattan skyline, but it would also create new and expansive views of these resources. In both the proposed project and the Hotel Alternative, the waterfront esplanade would create new viewing opportunities for these two resources which are currently not available. In addition, the Hotel Alternative would also provide the "Domino Sugar" sign on top of the renovated Refinery.

NEIGHBORHOOD CHARACTER

The Hotel Alternative and the proposed project would have essentially the same effect on neighborhood character. Both would create a vibrant new mixed-use development with public waterfront access and open space on a site that is currently vacant. Each would continue the pattern emerging throughout Greenpoint and Williamsburg of mid- to high-rise waterfront developments transitioning to lower-scale, mixed-use upland neighborhoods. By adding a large new development, both the Hotel Alternative and the proposed project would increase the pedestrian activity, vehicular traffic, and general activity levels in the nearby study area. The

Hotel Alternative would introduce a hotel component in place of 57 market-rate residential units and approximately 49,000 gsf of community facility space, a relatively small portion of the 2.8 million gsf of overall development on the project site. Both the Hotel Alternative and the proposed project would not result in significant adverse impacts to neighborhood character.

NATURAL RESOURCES

Neither the proposed project nor the Hotel Alternative would result in significant adverse impacts on terrestrial plant communities or wildlife or on floodplains, wetlands, water quality, or aquatic biota in the East River. There would be no difference in potential effects to natural resources between this alternative and the proposed project. Both the proposed project and the Hotel Alternative would result in in-water activities and include the same potential benefits to natural resources, namely the creation of a waterfront park providing public access to the East River—one of the project's principal goals.

HAZARDOUS MATERIALS

The effects of the Hotel Alternative and the proposed project with respect to hazardous materials would be the same. Both the Hotel Alternative and the proposed project would result in the demolition of the existing structures and excavation, disturbance, and removal for off-site disposal of some of the existing fill and soil. Under this alternative and the proposed project, preventative measures would be taken during construction on the project site so that no significant adverse hazardous materials impacts would result.

WATERFRONT REVITALIZATION PROGRAM

Both the Hotel Alternative and the proposed project would be consistent with the City's applicable WRP policies, particularly those that aim to encourage public access to waterfront resources. Both would be consistent with citywide goals for supporting and facilitating residential and commercial development in appropriate areas, protecting and restoring ecological systems; protecting and improving water quality; providing public access in the coastal zone; and protecting scenic resources.

INFRASTRUCTURE

In the Hotel Alternative, the addition of the hotel use and the reduction in the residential and community facility uses would result in an overall reduction in the demand for water. The Hotel Alternative would generate demand for approximately 1,243,398 gpd of water, as compared with 1,277,376 gpd under the proposed project. The Hotel Alternative would also result in 26,138 gpd less sanitary sewage than the proposed project. Neither the Hotel Alternative nor the proposed project would result in significant adverse impacts on the city's water supply or the processing capacity of the Newtown Creek WPCP. Both the Hotel Alternative and the proposed project would create a waterfront park, which would result in less impervious surface when compared to existing conditions on the project site.

SOLID WASTE AND SANITATION SERVICES

Similar to the proposed project, implementation of the Hotel Alternative would be expected to increase solid waste generation and collection on the project sites. Development of the Hotel Alternative would generate approximately 131,410 pounds (65.7 tons) of solid waste per week, of which 48 tons would be handled by DSNY and 17.7 tons would be handled by private carters.

Compared with the proposed project, the Hotel Alternative would result in less solid waste handled by DSNY (1.2 tons per week) and more handled by private carters (1.6 tons per week). Overall, the Hotel Alternative would result in 0.4 tons more solid waste per week than the proposed project. Neither the Hotel Alternative nor the proposed project would result in significant adverse impacts on solid waste disposal or sanitation services.

ENERGY

Like the proposed project, implementation of the Hotel Alternative would result in new demands for energy on the project site, generating a demand of 392,068 million BTUs per year. In comparison, the proposed project would generate demand for 388,139 million BTUs per year. Although this alternative would result in a slightly higher level of energy demand than with the proposed project, the increase in energy demand would be negligible and neither the proposed project nor the Hotel Alternative would result in a significant adverse energy impact. Further, it is expected that the buildings constructed under this alternative, like those under the proposed project, would incorporate a variety of sustainable design features to optimize the performance of the proposed buildings and their relationship to the environment.

TRAFFIC AND PARKING

Tables 24-10a and 24-10b compare the trip volumes generated by the Hotel Alternative with those of the proposed project. Overall, the total number of person and vehicle trips generated by this alternative would be substantially similar to the proposed project. In terms of person trips, the Hotel Alternative would generate 31 fewer trips in the weekday AM peak hour, and 65, 21, and 164 more trips in weekday midday, weekday PM, and Saturday midday peak hours, respectively. In terms of vehicle trips (converted to PCEs), the Hotel Alternative would result in 2 less vehicle trips in the weekday AM peak hour, but this alternative would result in 100, 47, and 102 more vehicle trips in the weekday midday, weekday PM, and Saturday midday peak hours, respectively.

Because the Hotel Alternative would generate a similar number of vehicle trips as compared to the proposed project during the weekday AM and PM peak hours, it is expected that the Hotel Alternative would result in traffic impacts at many of the same 24 and 31 intersections which were impacted under the proposed project during the weekday AM and PM peak hours, respectively. However, the Hotel Alternative would result in approximately 100 and 102 more vehicle trips during the weekday midday and Saturday midday peak hours, respectively. With these increased traffic levels, it is possible that this alternative could result in greater impacts during the weekday and Saturday midday peak hours. There is a possibility that due to the increased traffic levels, some of the intersections impacted under the Hotel Alternative during the weekday and Saturday midday peak hours would require additional measures to mitigate the significant adverse traffic impacts as compared to the proposed project. Like the proposed project, it is expected that all of the impacts under this alternative could be fully mitigated.

Table 24-10a
Comparison of Person Trips Generated by the Proposed Project and the Hotel Alternative

Peak Hour	Project Alternatives	Mode					
		Auto	Bus	Subway	Walk/Other	Taxi	Total
Weekday AM	Hotel Alternative (HA)	696	281	1,079	875	100	**3,031**
	Proposed Project	691	270	1,123	890	88	**3,062**
	Net Difference (HA-Proposed Project)	**5**	**11**	**-44**	**-15**	**12**	**-31**
Weekday Midday	Hotel Alternative (HA)	635	292	643	1,903	167	**3,640**
	Proposed Project	529	261	653	1,994	138	**3,575**
	Net Difference (HA-Proposed Project)	**106**	**31**	**-10**	**-91**	**29**	**65**
Weekday PM	Hotel Alternative (HA)	1,098	375	1,304	1,709	164	**4,650**
	Proposed Project	1,061	352	1,352	1,726	138	**4,629**
	Net Difference (HA-Proposed Project)	**37**	**23**	**-48**	**-17**	**26**	**21**
Saturday Midday	Hotel Alternative (HA)	995	304	544	1,804	150	**3,797**
	Proposed Project	891	265	546	1,809	122	**3,633**
	Net Difference (HA-Proposed Project)	**104**	**39**	**-2**	**-5**	**28**	**164**

Table 24-10b
Comparison of Vehicle Trips Generated by the Proposed Project and the Hotel Alternative

Peak Hour	Project Alternatives	Mode				
		Auto	Taxi	Truck	Total Trips	Total PCEs
Weekday AM	Hotel Alternative (HA)	546	122	46	714	760
	Proposed Project	556	106	50	712	762
	Net Difference (HA-Proposed Project)	**-10**	**16**	**-4**	**2**	**-2**
Weekday Midday	Hotel Alternative (HA)	408	184	40	632	672
	Proposed Project	344	144	42	530	572
	Net Difference (HA-Proposed Project)	**64**	**40**	**-2**	**102**	**100**
Weekday PM	Hotel Alternative (HA)	778	180	23	981	1,004
	Proposed Project	769	142	23	934	957
	Net Difference (HA-Proposed Project)	**9**	**38**	**0**	**47**	**47**
Saturday Midday	Hotel Alternative (HA)	643	158	7	808	815
	Proposed Project	579	120	7	706	713
	Net Difference (HA-Proposed Project)	**64**	**38**	**0**	**102**	**102**

The Hotel Alternative would provide approximately 1,647 accessory parking spaces, including the same proportion of parking spaces to residential units as under the proposed project. The accessory parking provided would be adequate to meet demand under this alternative, and therefore no significant adverse impacts to parking conditions would result from the implementation of either the proposed project or the Hotel Alternative.

TRANSIT AND PEDESTRIANS

The Hotel Alternative would generate a similar number of subway, bus, and pedestrian trips as the proposed project and is likely to result in the same significant adverse impacts to transit and pedestrian facilities as the proposed project.

The Hotel Alternative would generate 44, 10, 48, and 2 fewer subway trips than the proposed project during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively. Similar to the proposed project, the Hotel Alternative is expected to result in a significant adverse impact to the Marcy Avenue subway station's Manhattan-bound control area during the weekday AM peak hour and the Queens-bound control area during the weekday PM peak hour. Like the proposed project, these significant adverse impacts could be mitigated by a number of potential measures, including replacing the HEETs with regular turnstiles within the station control areas and alternative commuting options such as express bus and/or water taxi service to Manhattan (see Chapter 23, "Mitigation").

The Hotel Alternative would generate 11, 31, 23, and 39 more bus riders during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively. Therefore, the Hotel Alternative would also result in a significant adverse impact on bus line haul capacities (B62 and Q59) in the study area. Like the proposed project, potential mitigation measures for bus operations as a result of this alternative could include increasing bus line haul capacities for affected routes during affected peak hours.

The Hotel Alternative would generate 136, 138, 160, and 39 fewer pedestrian trips than the proposed project during the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, respectively. Similar to the proposed project, the Hotel Alternative would likely result in a significant adverse impact to the south crosswalk at Bedford Avenue and North 7th Street during the weekday AM, weekday midday, and Saturday midday peak hours. Like the proposed project, potential mitigation measures for congested pedestrian conditions as a result of this alternative could include the widening of the affected crosswalks.

AIR QUALITY

Neither the Hotel Alternative nor the proposed project would result in significant adverse air quality impacts from mobile or stationary sources of pollution. The overall emissions profile of the Hotel Alternative would be less than that of the proposed project. This alternative would be subject to the same limitations in terms of exhaust stack heights and locations as that of the proposed project.

NOISE

Neither the proposed project nor the Hotel Alternative would result in any significant adverse noise impacts. This alternative would include the same levels of building attenuation as the proposed project.

Overall, noise levels with the proposed project and the Hotel Alternative would be typical of urban areas.

CONSTRUCTION

It is expected that construction activities associated with the Hotel Alternative would result in similar construction effects as the proposed project since both would construct similar types of buildings and the same amount of total square footage. Both this alternative and the proposed project would avoid damage to the Refinery by complying with the procedures set forth in DOB's *TPPN #10/88*.

Both the Hotel Alternative and the proposed project could result in significant adverse construction traffic and noise impacts.

CONCLUSION

In the Hotel Alternative, a hotel use would occupy several floors of the Refinery in place of a portion of the proposed project's residential and community facility space (see Figure 24-3). As described above, this alternative would introduce 57 fewer market-rate residential units and approximately 49,000 gsf less community facility space, but would otherwise provide the same site plan as the proposed project, including the same amount of open space, commercial office, and retail space, and would also provide the same number of affordable units as the proposed project.

The Hotel Alternative would result in significant adverse impacts similar to the proposed project. Like the proposed project, the Hotel Alternative would result in significant adverse impacts to public schools and publicly funded child care facilities. In addition, the development of Site A under both the Hotel Alternative and the proposed project would result in significant adverse shadow impacts to the users of Grand Ferry Park. Both this alternative and the proposed project would result in the demolition of all structures on the project site except for the Refinery, and would therefore result in the same significant adverse impact to historic resources. The Hotel Alternative would generate a similar number of person and vehicle trips as compared with the proposed project, and would result in similar traffic and pedestrian impacts as the proposed project. The Hotel Alternative would also result in the same significant construction noise and traffic impacts as the proposed project. Where the proposed project has identified mitigation measures to fully or partially mitigate its significant adverse impacts, the same mitigation measures would apply with the Hotel Alternative as well. In all other analysis areas, as with the proposed project, the Hotel Alternative would not result in significant adverse impacts.

Compared to the proposed project, the Hotel Alternative would introduce a greater number of vehicle trips during the weekday midday and Saturday midday peak hours. Therefore, it is possible that this alternative could result in greater traffic impacts during the weekday midday and Saturday midday peak hours.

The Hotel Alternative would satisfy the principal goals of the proposed project. This alternative would redevelop the project site with a mix of residential, retail/commercial, and community facility uses, and would adaptively reuse the Refinery. In addition, this alternative would have the same site plan and the same open space as the proposed project, and would therefore meet the proposed project's goals to create physical and visual access to the East River waterfront including the creation of a substantial amount of publicly accessible open space. Finally, the Hotel Alternative would meet the proposed project's affordable housing goals, although in this

alternative the hotel use would—in addition to the market-rate units—cross-subsidize the affordable units.

E. REDUCED PARKING ALTERNATIVE[1]

DESCRIPTION OF THE REDUCED PARKING ALTERNATIVE

This alternative is proposed for the purposes of examining a reduced parking program. This Reduced Parking Alternative is identical to the proposed project with the exception that it would not include the parking special permit for the north parking facility [ULURP No. 100189ZSK]. While seeking to achieve the same overall goals and objectives of the proposed project, this alternative responds to concerns expressed by Brooklyn Community Board 1, elected officials, and members of the public requesting that the total number of accessory parking spaces be reduced. Although only 939 parking spaces would be required under the proposed zoning (based on 2,200 dwelling units), the proposed project includes additional accessory parking spaces to meet the anticipated demand on-site, for a total of 1,694 accessory parking spaces. A maximum of 1,539 accessory spaces are permitted under the Zoning Resolution.

This section assesses and compares the potential impacts of the Reduced Parking Alternative to the proposed project. The Reduced Parking Alternative assumes redevelopment of the project site with the same mix of uses anticipated with the proposed project, but with less parking. Under this alternative, there would be 266 fewer accessory parking spaces than the proposed project, thereby reducing the on-site parking capacity from 1,694 spaces to 1,428 spaces. Under the Reduced Parking Alternative, the north parking facility would occupy the same footprint and contain one below-grade level with stackers rather than two below-grade levels with the proposed project (ground-floor parking would remain for both). The access/egress for the north parking facility and all other on-site parking facilities under this alternative would be the same as those for the proposed project.

REDUCED PARKING ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

As noted above, the Reduced Parking Alternative assumes redevelopment of the project site with the same development program and mix of uses as with the proposed project, but with less parking. All above-grade uses under this alternative, including building envelopes and design, building materials, access/egress points, and open space, would be same as those for the proposed project. As such, with the exception of potential effects to traffic and parking, air quality (parking garage emissions), and construction, this alternative would result in the same significant adverse impacts as the proposed project and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation.

TRAFFIC

Although the Reduced Parking Alternative would result in the elimination of 266 spaces in the northern parking facility, all other components would be the same as the proposed project. The access/egress (driveway) for the north parking facility and all other on-site parking facilities under this alternative would be the same as those for the proposed project. Given that the other

[1] Sections E and F are new to the FEIS and therefore double underlining was not used.

uses on the project site would not change, there would be no changes to the project's travel demand characteristics (including trip generation estimates and origin and destination patterns) and the number of person and vehicle trips generated would be the same as with the proposed project for the weekday and Saturday peak hour conditions. Under the Reduced Parking Alternative, the majority of the project-generated parking demand (approximately 82 percent) would still be accommodated by the 1,428 on-site parking spaces, while the remaining 18 percent would seek off-site parking. With the elimination of 266 spaces in the northern parking facility, the traffic levels at the intersections of Kent and Wythe Avenues in the vicinity of the northern parking facility driveway (e.g., Grand, South 1st, and South 2nd Streets) would experience a decrease in the number of project-generated vehicles and would operate at better levels of service than under the proposed project. The improvement in service levels at these intersections are attributable to the project-generated vehicles seeking off-site parking at other locations which would be more dispersed in the study area instead of concentrating at intersections adjacent to the project site. Furthermore, the reduction in vehicle trips would reduce potential vehicle/pedestrian conflicts. While the reduction in the number of on-site parking spaces could result in changes in the circulation pattern on the adjacent street network and less auto trips to the project site, this alternative could result in the same significant adverse traffic impacts as the proposed project (although the magnitude of such impacts could be less due to the redistribution of trips in the study area) and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation.

PARKING

Under this alternative there would be a total of 1,428 on-site accessory parking spaces, resulting in a 266-space shortfall in the residential overnight demand and up to 311 and 283 space shortfalls during the weekday morning (9 AM to 10 AM) and Saturday late-evening (9 PM to 11 PM), respectively. This parking demand would need to be accommodated off-site in the ¼-mile study area and beyond. This anticipated shortfall would not be considered a significant adverse impact for the following reasons:

- The parking demand analysis for the proposed project conservatively assumes that all of the market-rate units in the proposed project would be for-sale units, which have a much higher car ownership rate (83 percent) than rental units (30 percent) according to 2000 U.S. Census data. Using these rates as a guide, each rental unit built in lieu of a for-sale unit would reduce the parking demand for the residential component of the proposed project by more than half. A number of recent condominium developments in Williamsburg have converted to rental developments as a result of the current economic climate. The actual proportion of for-sale/rental units for the proposed project would be determined by market conditions at the time of their construction; however, it is possible that a portion of the market-rate units would be rental units, thereby resulting in some reduction in parking demand.
- As shown in the New York City Department of City Planning (DCP) *Residential Parking Study* (March 2009), one- and two-family buildings show the greatest auto generation with an average of 1.33 cars per household, while the typical multi-family (five or more units) building generates a third as many cars with an average of 0.44 cars per household, suggesting that auto ownership in the proposed project is likely to be lower than the estimate used in the analysis of the proposed project.
- There has been an increase in commuter cycling in the City. The New York City Department of Transportation (DOT) bicycle counts show a 35 percent increase in commuter cycling from 2007 to 2008, a number that has more than doubled since 2000 (a 116 percent

increase). In addition, legislation was approved by the City Council in July 2009 requiring office buildings to provide indoor access for bicycle commuters and a City Planning zoning change that requires new buildings to create bicycle storage capacity. Therefore, it is reasonable to assume that residents and workers at the project site would consider a shift to commuter cycling, as the site is adjacent to the Kent Avenue Greenway that provides continuous linkages along the waterfront and is located within close proximity to the Williamsburg Bridge's new bicycle and pedestrian path. The proposed project would include on-site storage for 1,294 bicycles, which complies with these new zoning regulations.[1] Given public policy initiatives, site location (ease of access to Manhattan), on-site amenities to be provided, and general commuting trends, it is reasonable to anticipate that an increase in commuter cycling would result in a modest decrease in the on-site vehicle parking demand.

- Additionally, as noted in Chapter 1, "Project Description," some parking spaces may be reserved for vehicles belonging to a car-sharing service, which could result in a reduced car-ownership and parking demand. As shown by data presented in DCP's Car Sharing Zoning Text Amendment proposal (April 2010), in medium- to high-density residential areas, 6 car-share vehicles would eliminate the demand for an estimated 14 to 77 privately owned vehicles. Car-sharing options are now operational in major U.S. cities, including New York, Atlanta, Boston, Chicago, Seattle, and San Francisco. Although no credit has been taken for a car-sharing option in the parking accumulation analysis for the proposed project, it is expected that should a car-sharing option be implemented, the overall residential parking demand generated by the proposed project would be further decreased.
- The parking demand for the proposed project was based on vehicle ownership data from the 2000 U.S. Census, which estimated the auto ownership rate in the study area as 83.3 percent for homeowners and 30.4 percent for renters, resulting in a blended rate of 70.6 percent in 2000. More recent information from the American Community Survey (2006-2008) estimates the auto ownership rate in the study area as 76.6 percent for homeowners and 28.0 percent for renters, resulting in a blended rate of 64.9 percent. Had the American Community Survey data been used as a factor in calculating parking demand for the proposed project, the overnight parking demand would decrease by 136 vehicles to 1,558 vehicles.
- Lastly, the development could be served by a shuttle bus service from the site to the transit locations and accommodate a water taxi stop at the project site. The introduction of these services would be explored by the applicant as the project is developed over time.

Therefore, as with the proposed project, there is no significant adverse parking impact with this alternative.

AIR QUALITY

Under the Reduced Parking Alternative, the north parking facility would contain one below-grade level with stackers rather than two below-grade levels with the proposed project (ground-floor parking would remain for both); the access/egress and the overall footprint for the north parking facility would be the same. As carbon monoxide emissions are calculated based on garage area and in/out trips (which would decrease as a result of less capacity at this parking garage), the total emissions from the north parking garage under this alternative are expected to

[1] Assuming 2,400 dwelling units.

be similar to or less than those of the proposed project. Therefore, like the proposed project, no significant adverse air quality impacts from the parking garages are expected under the Reduced Parking Alternative.

CONSTRUCTION

Although the Reduced Parking Alternative would result in a slightly different design for the below-grade north parking facility, it is expected that construction activities associated with the this alternative would result in similar construction effects as the proposed project since the remaining development on the project site would be the same. Therefore, both the Reduced Parking Alternative and the proposed project could result in the same significant adverse construction traffic and noise impacts and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation.

CONCLUSION

The Reduced Parking Alternative would result in the same significant adverse impacts identified for the proposed project and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation.

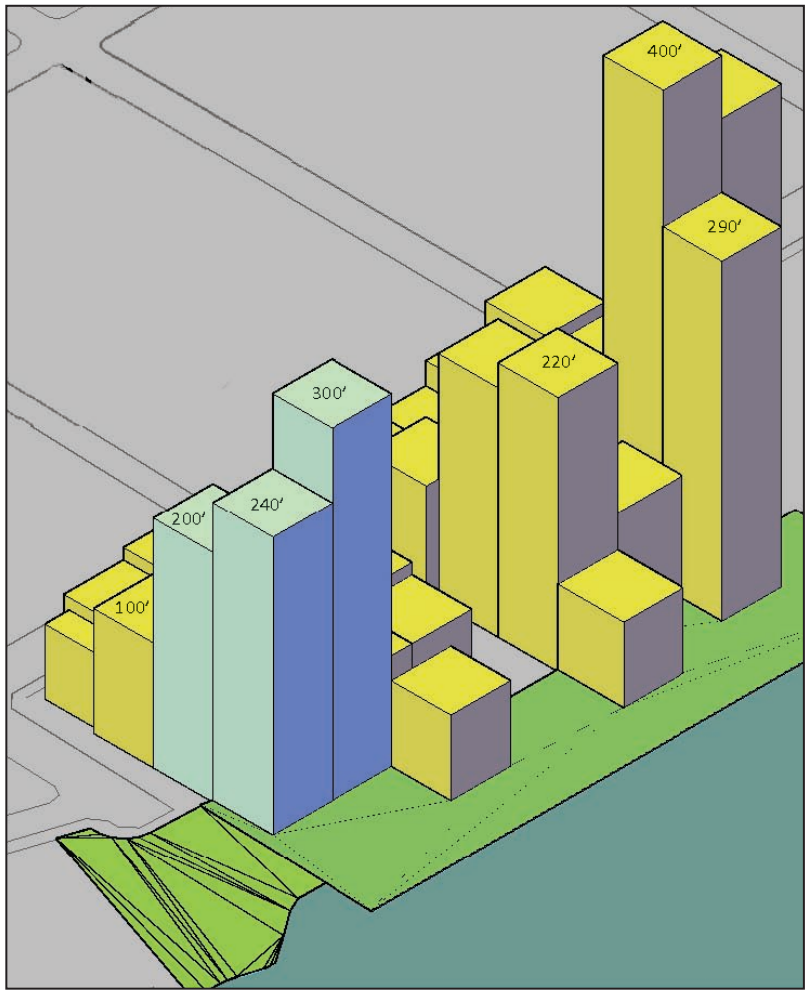
F. REDUCED SITE A ALTERNATIVE

DESCRIPTION OF THE REDUCED SITE A ALTERNATIVE

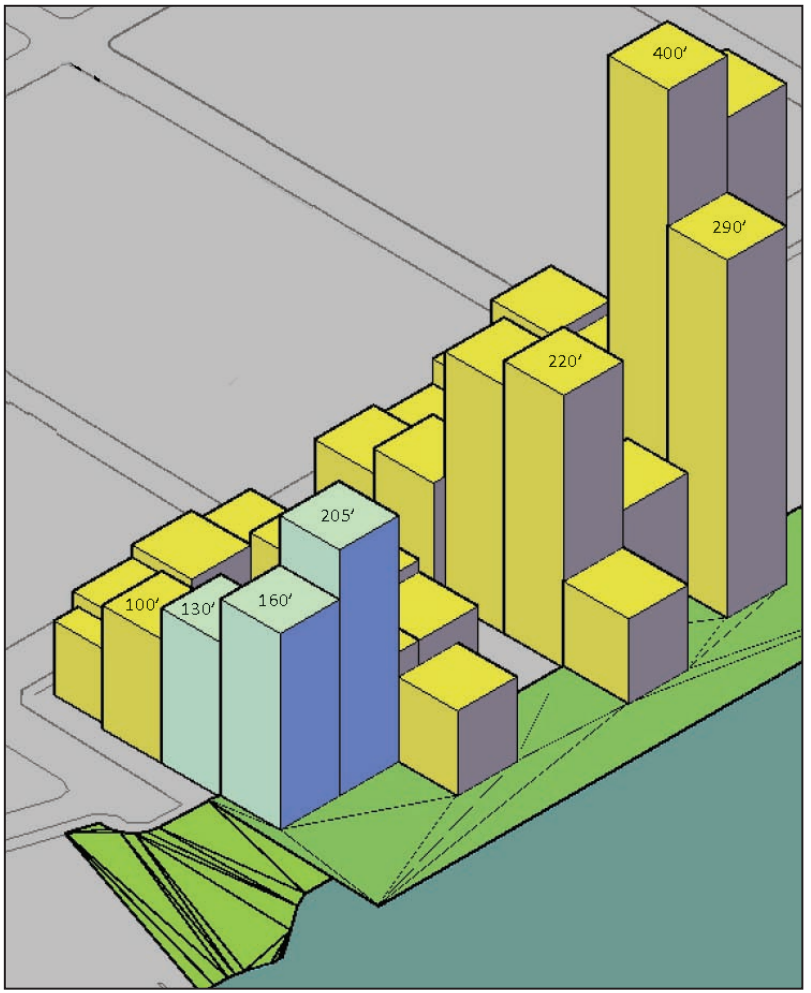
Under this alternative, the height of the tower portion of Site A would be reduced and there would be no special permit for parking. This alternative includes the same changes as the Reduced Parking Alternative as well as a reduction in height on Site A. Compared to the proposed project, this Reduced Site A Alternative would have the same uses and total square footage, public open space, and upland connections.

With this alternative, the three commercial modules on Site A would be reduced to 130 feet, 160 feet, and 205 feet, from 200 feet, 240 feet, and 300 feet, respectively (see Figure 24-4). These reductions in height would be achieved by a combination of adjustments to the floor-to-floor height of the Site A buildings and a reallocation of approximately 20,000 square feet of community facility space from Site A to elsewhere on the waterfront parcels (Sites B, C, and D). There is space available within the zoning envelopes of Sites B, C or D to accommodate 20,000 square feet of additional area, and this allocation of community facility space would not result in any additional parking at these sites (B, C, and D). With the exception of the building heights on Site A, all above-grade uses under this alternative, including building envelopes and design, building materials, and access/egress points, would be same as those for the proposed project.

Identical to the Reduced Parking Alternative, the Reduced Site A Alternative would not include the parking special permit for the north parking facility [ULURP No. 100189ZSK]. Under this alternative, there would be 266 fewer accessory parking spaces than the proposed project, thereby reducing the on-site parking capacity from 1,694 spaces to 1,428 spaces. Although 939 parking spaces would be required under the proposed zoning (based on 2,200 dwelling units), the proposed project includes additional accessory parking spaces to meet the anticipated demand on-site, for a total of 1,694 accessory parking spaces. A maximum of 1,539 accessory spaces are permitted under the Zoning Resolution. Under the Reduced Site A Alternative, the north parking facility would occupy the same footprint and contain one below-grade level with



Proposed Project



Reduced Site A Alternative

NOTE: This figure has been revised for the FEIS

Comparison of Proposed Project and Reduced Site A Alternative

stackers rather than two below-grade levels with the proposed project (ground-floor parking would remain for both). The access/egress for the north parking facility and all other on-site parking facilities under this alternative would be the same as those for the proposed project.

This section assesses and compares the potential impacts of the Reduced Site A Alternative to the proposed project.

REDUCED SITE A ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

As noted above, the Reduced Site A Alternative assumes redevelopment of the project site with the same development program and mix of uses as with the proposed project, but with a shorter buildings on Site A, a reallocation of approximately 20,000 square feet of community facility space from Site A to elsewhere on the waterfront parcels (Sites B, C, and D), and 266 fewer parking spaces. There is space available within the zoning envelopes of Sites B, C or D to accommodate 20,000 square feet of additional area; thus, with the exception of the building heights on Site A, all above-grade uses under this alternative, including building envelopes, building materials, access/egress points, and open space, would be the same as those for the proposed project.

As this alternative would affect only the height of Site A and the project's parking component, the analysis below focuses only on the technical areas affected by height and parking, specifically shadows, urban design and visual resources, traffic and parking, air quality, and construction.

SHADOWS

With the exception of a reduction in heights of the three commercial modules on Site A, the Reduced Site A Alternative would result in the same building massing arrangements as the proposed project, and the shadows resulting from this alternative would be similar to those of the proposed project. Neither the Reduced Site A Alternative nor the proposed project would result in significant adverse shadow impacts to the East River or the PS 84 William Sheridan Playground.

The heights of the buildings on Site A would be shorter under this alternative compared to the proposed project and would cast shorter shadows. As noted in Chapter 23, "Mitigation," and in the No Unmitigated Significant Adverse Impacts Alternative, the height of the proposed building on Site A would need to be reduced to 70 feet or less to eliminate the significant adverse shadow impact on Grand Ferry Park. It is expected that the reduction in height of the tower portion of Site A (from 300 feet, 240 feet, and 200 feet to 205 feet, 160 feet, and 130 feet, respectively) would result in more sunlight in Grand Ferry Park, particularly on the northern section of the park, during the spring, summer and fall analysis days. However, the significant adverse impact would not be eliminated as there would still be a substantial increase in the duration and extent of the shadows on Grand Ferry Park. During the winter months, this alternative would result in the same shadows as the proposed project. Therefore, this alternative would result in the same significant adverse impact to Grand Ferry Park during the fall, winter, and early spring and would require the same mitigation measures as discussed in Chapter 23, "Mitigation."

URBAN DESIGN AND VISUAL RESOURCES

With the exception of the heights of the buildings on Site A—which would be shorter under this alternative when compared to the proposed project—the Reduced Site A Alternative would be

the same as the proposed project in terms of layout, setbacks, landscaping, open spaces, and overall urban design. The Reduced Site A Alternative would be consistent with the design principles of stepping up building heights from Kent Avenue to the waterfront and staggering the heights of the buildings and would positively affect the urban design of the project site because it would break up the massing of each block. Therefore, the potential for significant adverse impacts on urban design and visual resources would be the same as with the proposed project. Neither would cause any significant adverse urban design and visual resource impacts.

TRAFFIC AND PARKING

While the Reduced Site A Alternative may result in the reallocation of approximately 20,000 square feet of community facility space from Site A to elsewhere on the waterfront parcels (Sites B, C, and D), this would represent a minimal shift in activity for this 2.8-million-square-foot development program. This reallocation of floor area could result in a shift of up to 0, 17, 27, and 26 vehicle trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively, from Site A to elsewhere on the waterfront parcels. Given the total number of vehicle trips generated by the proposed project, this shift would have minimal effects on traffic conditions in the study area. Therefore, this alternative would result in the same significant adverse traffic impacts as the proposed project and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation."

Under this alternative there would be a total of 1,428 on-site accessory parking spaces, resulting in a 266-space shortfall in the residential overnight demand and up to 311 and 283 space shortfalls during the weekday morning (9 AM to 10 AM) and Saturday late-evening (9 PM to 11 PM), respectively. This parking demand would need to be accommodated off-site in the ¼-mile study area and beyond. This anticipated shortfall would not be considered a significant adverse impact for the following reasons:

- The parking demand analysis for the proposed project conservatively assumes that all of the market-rate units in the proposed project would be for-sale units, which have a much higher car ownership rate (83 percent) than rental units (30 percent) according to 2000 U.S. Census data. Using these rates as a guide, each rental unit built in lieu of a for-sale unit would reduce the parking demand for the residential component of the proposed project by more than half. A number of recent condominium developments in Williamsburg have converted to rental developments as a result of the current economic climate. The actual proportion of for-sale/rental units for the proposed project would be determined by market conditions at the time of their construction; however, it is possible that a portion of the market-rate units would be rental units, thereby resulting in some reduction in parking demand.
- As shown in the New York City Department of City Planning (DCP) *Residential Parking Study* (March 2009), one- and two-family buildings show the greatest auto generation with an average of 1.33 cars per household, while the typical multi-family (five or more units) building generates a third as many cars with an average of 0.44 cars per household, suggesting that auto ownership in the proposed project is likely to be lower than the estimate used in the analysis of the proposed project.
- There has been an increase in commuter cycling in the City. The New York City Department of Transportation (DOT) bicycle counts show a 35 percent increase in commuter cycling from 2007 to 2008, a number that has more than doubled since 2000 (a 116 percent increase). In addition, legislation was approved by the City Council in July 2009 requiring office buildings to provide indoor access for bicycle commuters and a City Planning zoning change that requires new buildings to create bicycle storage capacity. Therefore, it is

reasonable to assume that residents and workers at the project site would consider a shift to commuter cycling, as the site is adjacent to the Kent Avenue Greenway that provides continuous linkages along the waterfront and is located within close proximity to the Williamsburg Bridge's new bicycle and pedestrian path. The proposed project would include on-site storage for 1,294 bicycles, which complies with these new zoning regulations.[1] Given public policy initiatives, site location (ease of access to Manhattan), on-site amenities to be provided, and general commuting trends, it is reasonable to anticipate that an increase in commuter cycling would result in a modest decrease in the on-site vehicle parking demand.

- Additionally, as noted in Chapter 1, "Project Description," some parking spaces may be reserved for vehicles belonging to a car-sharing service, which could result in a reduced car-ownership and parking demand. As shown by data presented in DCP's Car Sharing Zoning Text Amendment proposal (April 2010), in medium- to high-density residential areas, 6 car-share vehicles would eliminate the demand for an estimated 14 to 77 privately owned vehicles. Car-sharing options are now operational in major U.S. cities, including New York, Atlanta, Boston, Chicago, Seattle, and San Francisco. Although no credit has been taken for a car-sharing option in the parking accumulation analysis for the proposed project, it is expected that should a car-sharing option be implemented, the overall residential parking demand generated by the proposed project would be further decreased.
- The parking demand for the proposed project was based on vehicle ownership data from the 2000 U.S. Census, which estimated the auto ownership rate in the study area as 83.3 percent for homeowners and 30.4 percent for renters, resulting in a blended rate of 70.6 percent in 2000. More recent information from the American Community Survey (2006-2008) estimates the auto ownership rate in the study area as 76.6 percent for homeowners and 28.0 percent for renters, resulting in a blended rate of 64.9 percent. Had the American Community Survey data been used as a factor in calculating parking demand for the proposed project, the overnight parking demand would decrease by 136 vehicles to 1,558 vehicles.
- Lastly, the development could be served by a shuttle bus service from the site to the transit locations and accommodate a water taxi stop at the project site. The introduction of these services would be explored by the applicant as the project is developed over time.

Therefore, as with the proposed project, there is no significant adverse parking impact with this alternative.

AIR QUALITY

As noted above, with the Reduced Site A Alternative, the three buildings comprising the tower portion of Site A would be reduced to 130 feet, 160 feet, and 205 feet, from 200 feet, 240 feet, and 300 feet, respectively. An analysis of the HVAC system for this alternative found that the stack location restriction on Site A would not change; however, boiler exhaust stacks on Site A under this alternative must have a minimum exhaust height of 230 feet above Brooklyn Datum (compared with 309 feet for Site A under the proposed project), and must be located no greater than 66 feet from the lot line facing Grand Street to avoid any potential significant air quality impacts. The restriction on the use of natural gas as fuel and restrictions on other buildings

[1] Assuming 2,400 dwelling units.

would remain the same. Therefore, like the proposed project, the Reduced Site A Alternative would not result in significant adverse air quality impacts associated with HVAC systems.

Under the Reduced Site A Alternative, the north parking facility would contain one below-grade level with stackers rather than two below-grade levels with the proposed project (ground-floor parking would remain for both); the access/egress and the overall footprint for the north parking facility would be the same. As carbon monoxide emissions are calculated based on garage area and in/out trips (which would decrease as a result of less capacity at this parking garage), the total emissions from the north parking garage under this alternative are expected to be similar or less than those of the proposed project. Therefore, like the proposed project, no significant adverse air quality impacts from the parking garages are expected under the Reduced Site A Alternative.

CONSTRUCTION

Although the Reduced Site A Alternative would result in shorter building heights on Site A and a slightly different design for the below-grade north parking facility when compared to the proposed project, it is expected that construction activities associated with this alternative would result in similar construction effects as the proposed project since both the proposed project and the Reduced Site A Alternative would construct similar types of buildings. In addition, as discussed in Chapter 21, "Construction Impacts," the development of Site A would occur near the end of the overall construction period and any changes as a result of the program differences on this site with have a minimal effect on the overall site development. Therefore, both the Reduced Site A Alternative and the proposed project could result in the same significant adverse construction traffic and noise impacts and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation.

CONCLUSION

The Reduced Site A Alternative would result in similar significant adverse impacts as the proposed project and would require the same potential mitigation measures as discussed in Chapter 23, "Mitigation."

G. COGENERATION ENERGY SUPPLY ALTERNATIVE

INTRODUCTION

The construction of on-site facilities to generate electricity, heat, and cooling as part of the proposed project was considered under the Cogeneration Energy Supply Alternative, described in this section. The proposed development for the Cogeneration Energy Supply Alternative would be identical to the proposed project, with the only difference being that the Cogeneration Alternative would include additional on-site energy infrastructure.

Cogeneration systems simultaneously produce electricity and usable thermal energy that could be used for heat, hot water, or air conditioning (cooling) on-site. With traditional electricity generation from fossil fuels, heat is generated as a by-product, but is not captured for use. For the same amount of fuel, a cogeneration system therefore produces a greater amount of useable energy (in the form of electricity and heat), than a typical electric generating facility. Cogeneration is therefore more energy efficient. A number of policies recognize the benefits of combined heat and power (CHP), including cogeneration. The American Recovery and Reinvestment Act of 2009 (the stimulus package) includes financial incentives for CHP and

micro-turbines. The New York State Energy Research Authority (NYSERDA) has also been providing financial incentives to eligible CHP projects. In addition, one of the PlaNYC energy initiatives is aimed at expanding clean distributed energy generation (which includes co-generation) to 800 megawatts (MW). PlaNYC discusses the intent to require new large developments throughout New York City to complete an analysis of the technical and economic feasibility of installing CHP systems in order to help building owners understand the benefits of CHP and help accelerate transformation of the CHP market. Energy Initiative #9 in PlaNYC calls for expanding clean distributed generation and combined heat and power (CHP), including the goal to require an analysis of the technical and economic feasibility of installing CHP for all projects larger than 350,000 sf.

FEASIBILITY ANALYSIS SUMMARY

A feasibility study for the Cogeneration Energy Supply Alternative was conducted by Cosentini Associates, consistent with the goals of PlaNYC. The feasibility report is included in Appendix G. The feasibility analysis of this Alternative consisted of the evaluation of preliminary design and operational concepts as well as financial projections for integrating cogeneration with the proposed project. The feasibility analysis was performed consistent with the guidance provided by the United States Environmental Protection Agency (EPA) for a Level 1 Analysis for CHP projects.[1] In order to maximize the economic feasibility of cogeneration, the system size was based on the estimated continuous 24-hour (base) load of the proposed project buildings. The remaining (above base load) electricity demand would be supplied through purchases from Con Edison.

Two cogeneration options were evaluated: cogeneration systems that would each serve a single building, and a central cogeneration facility for all of the proposed project's developments. Three cogeneration system technologies, using natural gas as the fuel source, were evaluated for the single building and central system options, including:

- Gas turbine with hot water boiler, hot water absorption chillers, and fan coil units;
- Gas reciprocating engine with hot water boiler, Roof Top Units (RTU), and (Packaged Terminal Air Conditioners (PTACs); and
- Gas reciprocating engine with hot water boiler, hot water absorption chiller, and fan coils.

The option and cogeneration system technology with the shortest return on investment was the single building system using the reciprocating engine for electricity generation, cogenerated heat for heating, and conventional PTACs for air conditioning. However, even with the most favorable option, the payback period of 10 to 12 years for Sites B, C, D, and the Refinery, and 12 to 15 years for Site A makes this alternative economically infeasible. The cogeneration analysis assumed the development sites would be owned and operated by the same entity. However, each of the proposed sites would likely be developed with both condominiums and affordable rental housing units. The mechanism by which heating and cooling would be provided to each unit would likely differ, and separate metering arrangements would need to be established. As the potential complications and costs associated with system maintenance and building management under different ownership of building components were not accounted for, the actual payback periods could potentially be even longer than estimated in the feasibility study.

[1] EPA, Combined Heat and Power Partnership, http://www.epa.gov/CHP/ project-development/stage2.html.

The economics of constructing and operating the central (district) facility were even less favorable, with the payback period likely longer than 30 years. Therefore, none of the cogeneration options evaluated are feasible.

H. NO UNMITIGATED SIGNIFICANT IMPACTS ALTERNATIVE

DESCRIPTION OF THE NO UNMITIGATED SIGNIFICANT IMPACTS ALTERNATIVE

As discussed in Chapter 23, "Mitigation," the proposed project could result in unmitigated significant adverse impacts on shadows and historic resources. Therefore, alternatives were developed to explore modifications to the proposed project that would allow for the mitigation of these impacts.

SHADOWS

The proposed project would result in new midday shadows on portions of Grand Ferry Park throughout the year, which would cause a significant adverse impact to the users of this open space during the fall, winter, and early spring, and would also likely cause a significant adverse impact to the park's vegetation in the early spring. To avoid all of the proposed project's significant adverse shadow impacts to Grand Ferry Park, this alternative would limit the northernmost building on the project site (Site A) to a maximum height of 70 feet, ten feet higher than the building that would be developed at that location in the future without the proposed project.

A reduction in the height of this building to 70 feet would either result in a reduction of approximately 115,000 sf in the proposed density on the project site, or result in the reduction in the total amount of proposed open space on the project site. Reducing the density on the project site would reduce the cross-subsidization opportunities that would maximize the development of affordable housing units and would therefore fail to meet the proposed project's principal goal of providing a substantial amount of affordable housing. In order to maintain the proposed density on the site, the building design would need to be modified and relocated elsewhere, including portions of the project site currently envisioned as open space; in this case, this alternative would fail to meet the proposed project's goal of providing physical and visual access to the East River waterfront through the creation of a substantial amount of publicly accessible open space.

HISTORIC RESOURCES

The proposed project would demolish all structures—with the exception of the Refinery—on the project site. The demolition of the S/NR-eligible buildings would constitute a significant adverse impact on architectural resources. Although archival mitigation measures would be undertaken in consultation with SHPO, the demolition of these structures would be considered an impact that cannot be fully mitigated.

As discussed in Chapter 8, "Historic Resources," the buildings on the project site were built as specialty industrial structures to store, process, and package sugar. As such, they do not provide footprints, configuration or layouts feasible for residential use. Significant alterations—which would adversely impact their industrial character—would be required to convert the structures. Furthermore, without revenues from the development of the market-rate residential units on the site, the Refinery would remain vacant due to the high cost of adaptive reuse.

Therefore, the No Unmitigated Significant Impacts Alternative would retain all structures on the project site and develop only the upland parcel. The waterfront parcel would remain in its current state to preserve the S/NR-eligible structures. No waterfront esplanade or public open space would be created with this alternative. Overall, this alternative would greatly reduce the number of units that could be provided, which would prevent the project from fulfilling a number of significant project objectives: the provision of a substantial amount of affordable housing; the development of a vacant parcel into an active, mixed-used development; and the provision of public open space and waterfront access. ✷