

6.0 INTRODUCTION

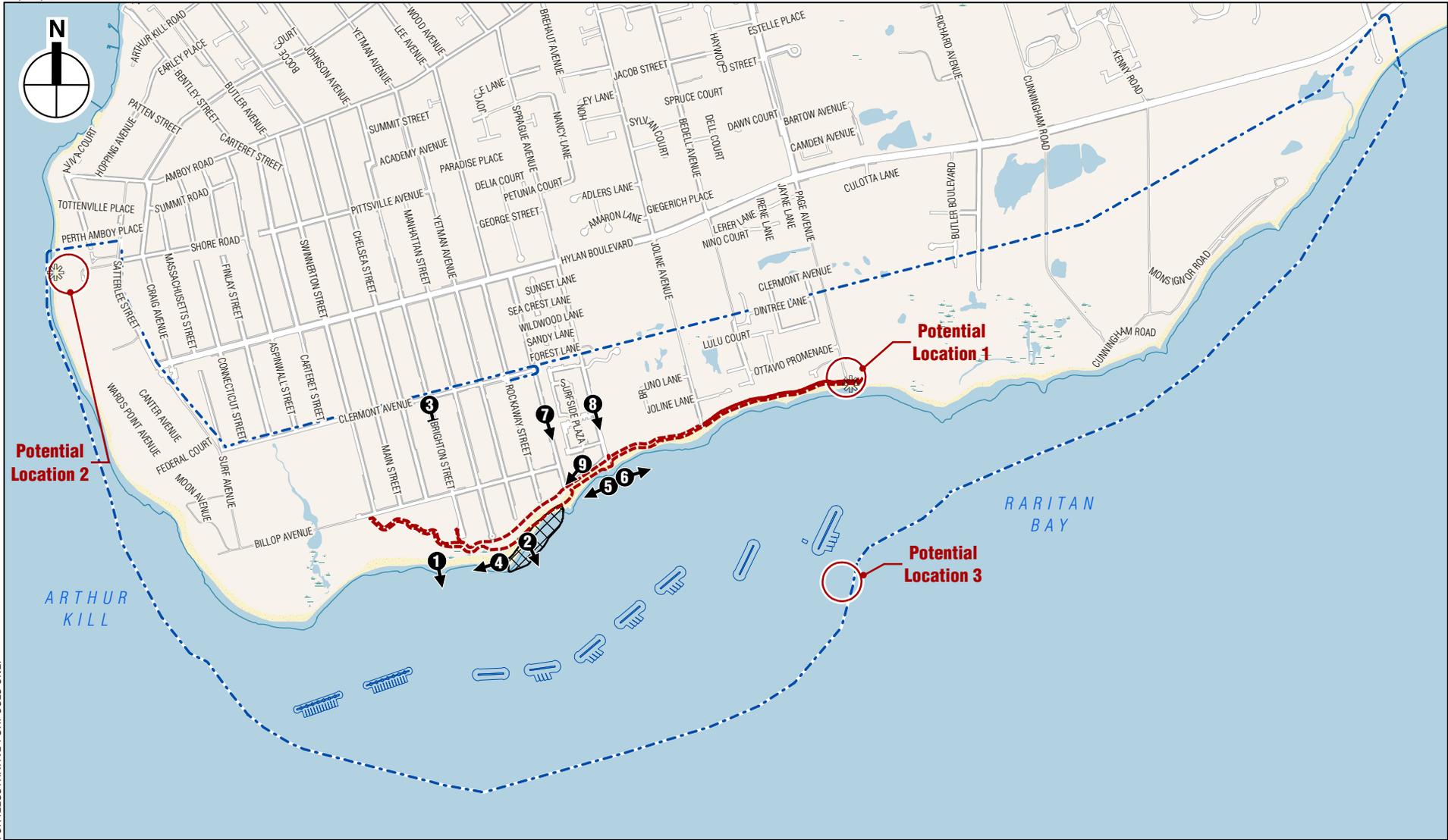
This chapter considers the potential of the Proposed Actions—the implementation of one or more proposed initiatives intended to enhance coastal and social resiliency along the Tottenville shoreline of the South Shore of Staten Island—to affect urban design and visual resources. These initiatives include the Living Breakwaters Project (Breakwaters Project) and the Tottenville Shoreline Protection Project (Shoreline Project) (see **Figure 6-1**). This analysis has been prepared in accordance with 2014 *City Environmental Quality Review (CEQR) Technical Manual* methodologies that define urban design as the totality of components that may affect a pedestrian’s experience of public space, and visual resources as the connection from the public realm to significant natural or built features, including views of the waterfront, public parks, landmark structures or districts, or otherwise distinct buildings, and natural resources. This chapter has also been prepared in compliance with the New York State Department of Environmental Conservation (NYSDEC) *Assessing and Mitigating Visual Impacts* policy memorandum (DEP-00-2, issued 7/31/00) on assessing and mitigating impacts on visual and aesthetic resources.

6.1 PRINCIPAL CONCLUSIONS

6.1.1 BREAKWATERS PROJECT AREA

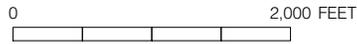
The proposed in-water system in the Breakwaters Project Area as part of Alternatives 2 and 3 would not result in any adverse impacts to urban design components in the Project Areas or in the larger study area.

Two on-shore potential locations are under consideration for the Water Hub (as part of the Breakwaters Project in Alternatives 2 and 3). Potential Location 1 would be in the vicinity of the southern terminus of Page Avenue and would involve the construction of a new, small-scale structure. The new building would be consistent with prior uses on this site and its scale and siting would not adversely affect the urban design of the nearby study area. Further, the redevelopment of the site west of Page Avenue would enhance the context of this part of the study area with a new facility and improvements to waterfront access. Potential Location 2 would locate the Water Hub programming in an existing building in Conference House Park, and therefore, would not adversely affect the urban design of the study area but would enliven this area of the park with new active uses. Both on-shore potential Water Hub locations would provide access to the water. Neither potential Water Hub location would adversely affect views to or from the waterfront. Further, the urban design character of the area near Potential Location 2 in Conference House Park would not change as the programming for the Water Hub would be located within an existing building. Therefore, the proposed Water Hub at either Potential Location 1 or 2 would not result in any significant adverse impacts to urban design characteristics of the Breakwaters Project Area or nearby study area. Should Water Hub



FOR ILLUSTRATIVE PURPOSES ONLY

-  Proposed Breakwater Features
-  Proposed Shoreline Project Elements
-  Potential Location of Proposed Water Hub (exact location to be determined)
-  Potential Water Access
-  Proposed Shoreline Restoration Area
-  Study Area
-  Photograph Reference Number and View Direction
-  Proposed Floating Dock (associated with Water Hub Potential Locations 1 and 2 only)



Coastal and Social Resiliency Initiatives for Tottenville Shoreline

Urban Design and Visual Resources
Project Location and Study Area
Figure 6-1

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programming be located at Potential Location 2, a small structure would be constructed near the terminus of Page Avenue at Potential Location 1. This small facility would be much smaller than the Water Hub that would be developed at Potential Location 1 and, therefore, also would not result in any adverse urban design impacts. Potential Location 3 would involve a “floating” Water Hub—a vessel that would visit the Breakwater Project Area approximately once per week from April to November for student-based teaching events, and host community events approximately twice per month. The vessel would be docked elsewhere at existing facilities in the City (outside of the project area). This option would not involve a permanent Water Hub facility on shore, and its operations would be consistent with existing maritime operations in the area. With this option, a small structure would be constructed near the terminus of Page Avenue, and a series of wayfinding, interpretive, and monitoring elements would be located along the shoreline. As with Potential Locations 1 and 2, Potential Location 3 also would not result in any adverse urban design impacts.

Views in the Breakwaters Project Area would not be adversely affected as the in-water breakwaters project components would be located in Raritan Bay at a distance from the shoreline and are being designed to be low in scale. Because of distance and the low, linear scale of the breakwaters, and the common color and reflectance (lack of contrast) of the breakwaters to land forms in the distance, the visibility of the breakwaters would be similar to existing views of land masses that can be seen from many on-shore vantage points toward Raritan Bay. While the breakwaters would present a new visual element in these views, changes to these views would be minimal and would not impair the character or quality of locations from which visibility is possible. Nor would the visibility of the breakwaters clearly interfere with or reduce the public’s enjoyment and/or appreciation of Raritan Bay. Therefore, the breakwaters would not result in an adverse visual or aesthetic impact in views toward the waterfront and Raritan Bay, or views to any other aesthetic and visual resources, including historic architectural resources which would not be adversely affected by the breakwaters due to distance.

Views near Potential Location 1 on Page Avenue would change for viewers closest to the Water Hub; however, the Water Hub is being designed to be contextual to the surrounding area in terms of scale, siting, and material. Views toward the waterfront from nearby vantage points would include the Water Hub at Potential Location 1; however, the building would be consistent with other nearby buildings in terms of scale and siting. Therefore, the Water Hub at Potential Location 1 would not adversely affect views toward the waterfront. Views near Potential Location 2 in Conference House Park, including views to the waterfront, would not change for viewers near the Water Hub as the programming for the Water Hub would be located within an existing building in Conference House Park. Views near Potential Location 3 would include the “floating” Water Hub vessel. The vessel would not adversely affect views toward the waterfront as the vessel would only be intermittently located within the Breakwaters Project Area, and would be similar to other vessels in Raritan Bay. Views toward the waterfront from Potential Location 3 would also be intermittent and would be limited to viewers on the Water Hub vessel toward the waterfront. While close-up views of the breakwaters would be available, the vessel itself would provide educational and monitoring facilities for visitors to the facility. Should Water Hub programming be located at Potential Location 2 or 3, a small facility would be constructed near the terminus of Page Avenue at Potential Location 1. Because this facility would be much smaller than the Water Hub at this location, this small facility also would not adversely impact any existing views or views to any aesthetic or visual resources. In addition to this small structure, a series of wayfinding, interpretive, and monitoring elements would be located along the shoreline. Further, the Water Hub at either Potential Location 1, 2, or 3 would

not adversely impact any existing views toward the waterfront and Raritan Bay, or views to any other aesthetic and visual resources, including historic architectural resources.

6.1.2 SHORELINE PROJECT AREA

The four primary components of the Shoreline Project (as part of Alternatives 2 and 4) would result in enhancements to shoreline access through new waterfront access points, overlooks, and walkways that would be consistent with similar existing elements. The continuous walkway that would be created along the waterfront would contribute to the pedestrian experience of the waterfront. The changes to urban design in the Shoreline Project Area would contribute new urban design elements that would create visual interest in areas near the shoreline and would enhance the pedestrian experience of the Shoreline Project Area. Therefore, Alternative 2 would not result in any significant adverse urban design impacts to the Shoreline Project Area or study area.

Views in the Shoreline Project Area would include the proposed changes to the waterfront landscape. The changes to these views would be minimal, and therefore would not result in any significant adverse impacts. The eco-revetments and raised pathways would not result in any adverse impacts to any existing views. Views from the Project Areas and study area would continue to include wide open views of Raritan Bay though some views from vantage points closest to the Project Areas would change, with some views including the distant in-water breakwaters. Other visual resources in the study area would not be affected by the components of Alternative 2 because of distance and intervening building and natural features. The views of residents, pedestrians, motorists, bicyclists, boaters, and users of Conference House Park and study area historic resources would be minimally affected by the components of Alternative 2.

6.2 REGULATORY CONTEXT

The National Environmental Policy Act (NEPA) requires the consideration of visual resources when analyzing the potential effects of a Proposed Project. In response to NEPA, several Federal agencies have created guidelines for assessing visual resources specific to their projects. However, the U.S. Department of Housing and Urban Development (HUD) has not created specific visual assessment guidelines. Therefore, the NYSDEC guidelines, as detailed below, are being followed for this analysis of visual and aesthetic resources. In addition, the CEQR Technical Manual methodology for urban design and visual resources was followed. Therefore, this analysis has been prepared in accordance with NEPA and the State Environmental Quality Review Act (SEQRA), and in consideration of CEQR guidance.

6.2.1 CEQR TECHNICAL MANUAL GUIDELINES

As defined in the *CEQR Technical Manual*, urban design is the totality of components that may affect a pedestrian's experience of public space. These components include the following:

- Streets—the arrangement and orientation of streets define location, flow of activity, street views, and create blocks on which buildings and open spaces are arranged. Other elements, including sidewalks, plantings, street lights, curb cuts, and street furniture, also contribute to an area's streetscape.
- Buildings—a building's size, shape, setbacks, pedestrian and vehicular entrances, lot coverage, and orientation to the street are important urban design components that define the appearance of the built environment.

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- Visual Resources—visual resources include significant natural or built features, including important views corridors, public parks, landmarks structures or districts, or otherwise distinct buildings.
- Open Space—open space includes public and private areas that do not include structures, including parks and other landscaped areas, cemeteries, and parking lots.
- Natural Features—natural features include vegetation, and geologic and aquatic features that are natural to the area.

Sunlight and wind conditions also affect the pedestrian experience of a given area. According to the *CEQR Technical Manual*, the construction of large buildings at locations that experience high wind conditions, such as along the waterfront, may result in an exacerbation of wind conditions due to “channelization” or “downwash” effects that may affect pedestrian safety. Although the Proposed Actions involve construction along Staten Island’s South Shore waterfront, the project does not involve the construction of tall buildings, and therefore, an analysis of pedestrian wind conditions is not warranted. Regarding sunlight, the presence and openness of the Raritan Bay, the undeveloped character of the project area’s waterfront, in addition to the few streets and low heights of study area houses allow sunlight to reach much of the study area throughout the day. This condition would not be substantially altered with the Proposed Actions, and no further assessment of sunlight is warranted.

The *CEQR Technical Manual* suggests that a preliminary assessment of urban design is needed when a project may have an effect on one or more of the elements that contribute to the pedestrian experience, as described above.

6.2.2 NYSDEC GUIDELINES

NYSDEC has developed a methodology for assessing and mitigating visual effects (DEP-00-2).¹ This policy was developed for NYSDEC review of actions and defines visual impacts and aesthetic impacts, describes when a visual assessment is necessary and how to review a visual impact assessment, differentiates state and local concerns, and defines avoidance, mitigation, and offset measures that eliminate, reduce, or compensate for negative visual impacts or aesthetic impacts. The methodology and impact assessment criteria established by the policy are comprehensive and can be used by other State and local agencies to assess potential impacts.

According to DEP-00-2, certain variables can affect a viewer’s perception of an object or project and the visibility of that object or project in the overall viewshed; these variables include the character of the landscape (existing vegetation, buildings, and topography), size perspective (reduction of apparent size of objects as distance increases), and atmospheric perspective.² Consequently, according to the NYSDEC guidance, a “visual impact” would occur “when the mitigating³ effects of perspective [such as vegetation, distance, and atmospheric perspective or

¹ DEP-00-2, “Assessing and Mitigating Visual Impacts,” July 31, 2000. Accessible at www.dec.ny.gov/docs/permits_ej_operations_pdf/visual2000.pdf.

² DEP-00-2 describes atmospheric perspective as the “reduction in the intensity of colors and the contrast between light and dark as the distance of objects from the observer increases.” This phenomenon is a product of the natural particles within the atmosphere that scatter light and minimize the significance of the project in the overall viewshed as one moves further away from the project.

³ DEP-00-2 uses the term “mitigating” or “mitigation” to refer to design parameters that avoid or reduce potential visibility of a project. This should not be confused with the use of the term “mitigation” with

other designed mitigation] do not reduce the visibility of a project to insignificant levels. Beauty plays no role in this concept” (DEP-00-2, p. 10). Further, “[a] visual impact may also be considered in the context of contrast.” Thus, objects that may be visible but are of a similar color or reflectance to background forms, would not constitute a visual impact. NYSDEC provides further definition of an “aesthetic impact,” which occurs when “there is a detrimental effect on the perceived beauty of a place or structure. Mere visibility, even startling visibility of a project proposal, should not be the threshold for decision making. Instead a project, by virtue of its visibility, must clearly interfere with or reduce the public’s enjoyment and/or appreciation in the appearance of an inventoried resource” (DEP-00-2, p. 9).

Therefore, while the construction of components of the Breakwaters Project and the Shoreline Project may be visible from certain vantage points, visibility alone is not a threshold of significance. A determination of significance depends on several factors: presence of designated historic or scenic resources within the viewshed of the project; distance between the viewer and the project; general characteristics of the surrounding landscape; and the extent to which the visibility of the project interferes with the public’s enjoyment or appreciation of the resource. A “significant aesthetic impact” would only occur when the visibility causes a diminishment of the public’s enjoyment and appreciation of an inventoried resource (e.g., a cooling tower plume blocks a view from a State Park overlook thereby blocking the view of the panorama).⁴

AESTHETIC AND VISUAL RESOURCE INVENTORY

The NYSDEC guidance provides a list of 15 categories of state aesthetic and visual resources that should be evaluated. In addition, the guidance discusses evaluation of local resources. Following the NYSDEC guidance, an inventory of sensitive aesthetic and visual resources was prepared, and the following aesthetic and visual resources have been identified and analyzed to determine the potential effects of the Proposed Actions:

State/National Registers of Historic Places

Two properties that are listed on the State and/or National Registers of Historic Places (S/NR) and five properties that have been determined eligible for such listing were identified in the study area.⁵ In addition, as noted below, one S/NR-eligible resource is located just outside the study area. Conference House/Christopher Billopp House is also a National Historic Landmark (NHL). Chapter 5, “Historic and Cultural Resources,” provides a description of these resources; photos are provided in Figures 5-4 through 5-7:

- Conference House/Christopher Billopp House, 7455 Hylan Boulevard (NHL, S/NR)
- Henry Hogg Biddle House, 70 Satterlee Street (S/NR-eligible)⁶

respect to mitigation of significant adverse environmental impacts as required by NEPA, SEQRA, and CEQR.

⁴ DEP-00-2, “Assessing and Mitigating Visual Impacts,” July 31, 2000, page 9. Accessible at http://www.dec.ny.gov/docs/permits_ej_operations_pdf/visual2000.pdf.

⁵ (S/NR) (16 USC § 470a et seq., Parks, Recreation, and Historic Preservation Law § 14.07).

⁶ In a comment letter dated November 9, 2016, the New York City Landmarks Preservation Commission (LPC) determined that the Henry Hogg Biddle House appears S/NR-eligible. Since the issuance of the DEIS, in a comment letter dated March 27, 2017, SHPO determined that the Henry Hogg Biddle House is S/NR-eligible. See Chapter 5, “Historic and Cultural Resources.”

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- Rutan-Beckett House, southwest of the Henry Hogg Biddle House (S/NR-eligible)⁷
- Sam and Hannah Wood House,⁸ 96-98 Satterlee Street (S/NR-eligible)⁹
- James M. Rutan House, 97 Satterlee Street (S/NR-eligible)¹⁰
- Prince’s Bay Lighthouse, 6204 Hyland Boulevard (S/NR-eligible)
- Ward’s Point Archaeological Conservation Area (NHL, S/NR)

Of these resources, the Proposed Actions would not have the potential to affect the viewsheds of the Sam and Hannah Wood House or the James M. Rutan House due to their up-land locations. The Conference House/Christopher Billopp House, the Henry Hogg Biddle House, and the Rutan-Beckett House are visual and aesthetic resources that are located in the northwest portion of Conference House Park. The Conference House/Christopher Billopp House and the Henry Hogg Biddle House are located in wooded areas of the park and are set back from the waterfront. Neither building is located within the viewshed of the Shoreline Project Area. The Rutan-Beckett House is located closer to the waterfront within Conference House Park, however, it is not located within the viewshed of the Shoreline Project Area. Although these three resources may have limited visibility from within the viewshed of the in-water portion of the Breakwaters Project Area, views would be limited by distance and an extremely limited viewer group.

Should Potential Location 2 of the proposed Water Hub be selected, programming for the Water Hub would be located within either the Henry Hogg Biddle House or within the Rutan-Beckett House, both of which are historic architectural resources (see Chapter 5, “Historic and Cultural Resources,” and Figure 5-4). With Potential Location 2, one of these two buildings would be rehabilitated and adaptively used with programming for the Water Hub. Although not yet designed, it is anticipated that alterations would be limited to rehabilitation and adaptive use alterations. In addition, existing intervening landscaping elements and plantings limit views and viewsheds to and from these two historic architectural resources. Therefore, locating the Water Hub in either building would not affect an existing view or viewshed to or from either resource.

The Prince’s Bay Lighthouse is located in the eastern portion of the study area on a bluff approximately 85 feet above Raritan Bay at the edge of a recessed section of the shoreline. The lighthouse is not within the viewshed of the Shoreline Project Area and would have limited visibility from the in-water Breakwaters Project Area due to distance and intervening landmass. However, the lighthouse could have visibility in viewsheds from the in-water Breakwaters area. Ward’s Point Archaeological Conservation Area is an archaeologically significant site and would therefore not be considered an aesthetic and visual resource.

⁷ Since the issuance of the DEIS, in a March 27, 2017, comment letter, SHPO determined that the Rutan-Beckett House is S/NR-eligible.

⁸ The Sam and Hannah Wood House appears in CRIS and on a 1986 Building-Structure Inventory Form in CRIS as the “Sam and Hannah Woods House.” However, the Conference House Park web site and brochure identifies the building as the Sam and Hannah Wood House (without the “s”).

⁹ In a comment letter dated November 9, 2016, LPC determined that the Sam and Hannah Wood House appears S/NR-eligible. Subsequently and since the issuance of the DEIS, in comments dated March 27, 2017, SHPO determined that this property is S/NR-eligible.

¹⁰ The James M. Rutan House is located on the east side of Satterlee Street, just outside the study area and across from Conference House Park.

New York State Parks

As defined by New York State Parks, Recreation, and Historic Preservation Law § 3.09, there are no State Parks within the study area; however, the Mount Loretto Unique Area is under the jurisdiction of NYSDEC. This is a nature preserve totaling approximately 241 acres and includes Butler Manor Woods, a wooded area east of Page Avenue.

Heritage Areas

As defined by Article 35, New York State Parks, Recreation, and Historic Preservation Law, no heritage areas are located in the project area.

New York State Forest Preserve

All lands within the State Forest Preserve (New York State Constitution Article XIV) are located within the boundaries of the Adirondack and Catskill Parks. Thus, there are no State Forest Preserve lands within the study area.

National Wildlife Refuges

National Wildlife Refuges are defined by the National Wildlife Refuge System Administration Act 16 USC 668dd-668ee and amended by P.L. 105-57. There are no National Wildlife Refuges located within the study area.

State Game Refuges and State Wildlife Management Areas

State Game Refuges and State Wildlife Management Areas are defined by Environmental Conservation Law (ECL) § 11-2105. There are no State Game Refuges or Wildlife Management Areas within the study area.

National Natural Landmarks

There are no National Natural Landmarks (defined by 36 CFR Part 62) located within the study area.

National Park System Recreation Areas, Seashores, and Forests

No National Parks (as defined by 16 USC § 1c) are located within the study area.

Rivers Designated as National or State Wild, Scenic, or Recreational

There are no National Wild, Scenic, or Recreational (16 USC Chapter 28) rivers within the study area. Rivers designated by New York State as Wild, Scenic, or Recreational are listed in ECL §§ 15-2713 through 15-2715. There are no State-designated Wild, Scenic, or Recreational rivers within the study area.

Sites, Areas, Lakes, Reservoirs, or Highways Designated or Eligible for Designation as Scenic

Resources identified in Article 49 of the ECL include Scenic Byways (under the purview of New York State Department of Transportation), parkways (designated by the New York Office of Parks, Recreation, and Historic Preservation), and other areas designated by NYSDEC. No designated scenic roads are located within the study area.

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Scenic Areas of Statewide Significance

In July 1993, the New York State Department of State designated six Scenic Areas of Statewide Significance in the Hudson River Valley as part of its implementation of the State's Coastal Management Program. There are no Scenic Areas of Statewide Significance in the study area.

State or Federally Designated Trails

There are no state or federally designated trails (as defined by 16 USC Chapter 27) located within the study area.

State Nature and Historic Preservation Areas

There are no State Nature or Historic Preservation Areas (as designated by Section 4 of Article XIV of the New York State Constitution) located within the study area.

Palisades Park

Palisades Park in New Jersey is not located within the study area.

Bond Act Properties Purchased under Exceptional Scenic Beauty or Open Space Category

No Bond Act properties purchased under the exceptional scenic beauty or open space category were identified in the study area.

Locally Significant Resources

The following resources within the study area have been identified as locally significant:

New York City Landmarks and New York City Landmark-Eligible Properties

- Conference House/Christopher Billopp House, 7455 Hylan Boulevard (NYCL)
- Henry Hogg Biddle House, 70 Satterlee Street (NYCL)
- Prince's Bay Lighthouse, 6204 Hyland Boulevard (NYCL)

Public Parks

- Conference House Park

These historic architectural resources are described in Chapter 5, "Historic and Cultural Resources"; photos are provided in Figures 5-4 through 5-7. Conference House Park is an approximately 265-acre park located at the southern tip of Staten Island. It extends from Shore Road and Satterlee Street to the north, wrapping around Staten Island's southern shoreline, and ending at Richard Avenue east of Page Avenue. The long, narrow portion of the park that extends along Staten Island's southern and eastern shoreline includes large tracts of maritime forest, creeks and ponds, coastal wetlands, and beaches along the shore. The western portion of the park, west of Brighton Street, widens substantially and includes wooded and grassy areas, walking and biking paths, hiking trails, a visitor center, the Lenape Playground, and historic architectural resources—the Conference House/Christopher Billopp House, the Sam and Hannah Wood House, the Henry Hogg Biddle House, and the Rutan-Beckett House, described in Chapter 5, "Historic and Cultural Resources."

Of these resources, the Proposed Actions would not have the potential to affect the viewsheds of the Conference House/Christopher Billopp House or the Henry Hogg Biddle House. Both historic resources are also visual and aesthetic resources. They are located in the northwest portion of the study area in wooded areas of Conference House Park and are set back from the waterfront. Neither building is located within the viewshed of the Shoreline Project Area.

Although these two resources may have limited visibility from within the viewshed of the in-water portion of the Breakwaters Project Area, views would be extremely limited by distance and a limited viewer group. Should Potential Location 2 be selected, programming for the Water Hub would be located in the Henry Hogg Biddle House or the Rutan Beckett House. With Potential Location 2, one of these two buildings would be rehabilitated and adaptively used with programming for the Water Hub. Although not yet designed, it is anticipated that alterations would be limited to the interior of the building. Therefore, locating the Water Hub in either building would not affect any existing viewsheds to or from these resources. The Prince's Bay Lighthouse is not within the viewshed of the Shoreline Project Area and would have limited visibility from the in-water Breakwaters Project Area due to distance and intervening landmass. However, the lighthouse could be visible within viewsheds from the in-water Breakwaters Project Area. The Proposed Actions would not affect the viewsheds of Conference House Park.

The affected viewsheds of the Conference House/Christopher Billopp House, the Henry Hogg Biddle House, the Prince's Bay Lighthouse, and Conference House Park are analyzed below.

6.3 METHODOLOGY

Based on *CEQR Technical Manual* guidance, the following analysis considers a study area around the Breakwaters and Shoreline Project Areas where the Proposed Actions would be most likely to be visible and affect the pedestrian experience and the viewsheds of aesthetic and visual resources (see **Figure 6-1**). In addition, the study area is consistent with the Historic and Cultural Resources study area. The upland portion of the study area extends from approximately Perth Amboy Place to the north-west, along Satterlee Street and Clermont Avenue to the north, to the area east of Sharrott Avenue and Hylan Boulevard to the east. The study area also includes the in-water areas between the western and eastern extents of the inland study area between Perth Amboy Place and Sharrott Avenue, extending south into Raritan Bay beyond the location of the proposed breakwaters. As such, the study area comprises the segments of the shoreline east and west to the Project Areas, all of Conference House Park, and nearby streets and residences. Because a large portion of Conference House Park extends through the study area, and there are several publicly accessible look out points at the end of certain study area streets, including Manhattan Street and Sprague Avenue, there are several locations where pedestrians can view the Shoreline and the Breakwaters Project Areas. The analysis considers pedestrian views along study area streets near the project areas and how the project components would affect views within Conference House Park and views along the shoreline and from the nearby streets. This analysis addresses the urban design and visual resources of the study area for existing conditions, the future without the Proposed Actions, and the future with the Proposed Actions for the 2020 analysis year, when the Proposed Actions are expected to be completed. To prepare this analysis, information was collected through field visits, visually sensitive locations and viewer groups were identified, and duration of views assessed to determine any potential effects.

In compliance with NYSDEC guidelines as described above, aesthetic resources were identified and a visual assessment conducted. Utilizing visual modeling techniques, the conditions that would be present under the Proposed Actions were assessed as to their relative visual impacts from specific viewpoints and distances. This modeling was conducted to provide some indication as to whether any specific viewpoint might be associated with obvious positive or negative visual impacts.

6.3.1 VIEWER GROUPS

Viewer groups are defined as viewers from the project area (e.g., users of Conference House Park or the Lenape Playground) or viewers of the study area (e.g., residents, pedestrians on local streets and near the waterfront, bicyclists, motorists on local streets, and boaters on Raritan Bay). Viewers are considered in terms of their sensitivity and view duration, with residents considered among the most sensitive viewers, because they may view the proposed visual change from a stationary viewpoint for the most prolonged periods of time. Motorists along Billop Avenue, Surf Avenue, and other local streets, on the other hand, could be less sensitive because they may only experience the proposed visual change for a short duration. Also considered in the analysis is the distance of the observer from the visual change; as the distance increases, the ability of the viewer to see the details of an object decreases. This analysis provides the following:

- A description of the visual character of the Breakwaters and Shoreline Project Area and study area;
- Identification of key views for the visual assessment;
- Identification of aesthetic/visual resources and viewer groups;
- Evaluation of the visibility of the Breakwaters and Shoreline Project Area in the study area;
- A description of visible components of the Proposed Actions; and
- Assessment of the visual impacts and aesthetic impacts of the Proposed Actions.

Following the methodology of the *CEQR Technical Manual*, urban design impacts are determined “by considering the degree to which a project would result in a change to a built environment’s arrangement, appearance, or functionality such that the change would negatively affect a pedestrian’s experience of the area.” In assessing the significance of a visual resource impact, key considerations include “whether the project obstructs important visual resources and whether such obstruction would be permanent, seasonal, or temporary; how many viewers would be affected; whether the view is unique or do similar views exist; or whether it can be seen from many other locations.”

6.4 AFFECTED ENVIRONMENT/EXISTING SETTING

6.4.1 URBAN DESIGN

The urban design of the project area and study area is described in detail below.

PROJECT AREA

Breakwaters Project Area

The Breakwaters Project Area includes an in-water area breakwaters system that would include approximately nine breakwater segments—approximately 3,200-linear-feet of breakwaters in total—offshore from Staten Island’s South Shore, within the waters of the Raritan Bay. The in-water area is an open expanse of water, allowing for unobstructed views of land masses in the distance (see **Figure 6-2**; views 1 and 2). The Breakwaters Project Area also includes on-land sites. Three potential locations are under consideration for siting the Water Hub. Potential Location 1 would be in the vicinity of the southern terminus of Page Avenue and would involve the construction of a new structure. The Page East Option is an existing Conference House Park parking lot and surrounding wooded area immediately east of Page Avenue. The Page West



View from shoreline at the end of Chelsea Street 1



View from shoreline at the end of Yetman Avenue 2

Option would use a grassy site west of Page Avenue that contains a few trees and a narrow paved path. The site is adjacent to the shoreline at a slightly raised elevation. Prior to Superstorm Sandy, this site contained a two-story house that was owned by NYC Parks. Due to severe structural damage, the house was demolished and the site has remained undeveloped since the building's demolition. Potential Location 2 is in the north-west portion of Conference House Park and would involve the rehabilitation and adaptive use of an existing NYC Parks building, either the Biddle House or the Rutan-Beckett House, both of which are historic architectural resources. Potential Location 3 would involve a “floating” Water Hub that would visit the Breakwater Project Area periodically—approximately once per week from April to November—and host community events approximately twice per month. This option would not involve a permanent Water Hub facility on shore, and its operations would be consistent with existing maritime operations in the area. Should Water Hub programming be located at Potential Location 2_or_3, a small facility that would provide seating, wayfinding and interpretive elements, and potential storage for kayaks and beach cleaning equipment would be constructed near the terminus of Page Avenue at Potential Location 1. In addition to this small structure, a series of wayfinding, interpretive, and monitoring components would be located along the shoreline.

Shoreline Project Area

The Shoreline Project Area is primarily located within the narrow east-west portion of Conference House Park that extends along Staten Island's South Shore. The western portion of the Shoreline Project Area includes a wooded area within Conference House Park that has walkways that connect nearby study area streets to the waterfront. From the western wooded area, the Shoreline Project Area extends eastward along a narrow expanse that includes sandy beach areas, narrow grassy areas, look out points from the terminus of certain study area streets, including Manhattan Street and Sprague Avenue, and a temporary dune system.

STUDY AREA

In general, the study area is defined by Raritan Bay, a natural feature that forms the study area's southern boundary, Clermont Avenue to the north, Conference House Park to the west, and the Mount Loretto Unique Area to the east, which includes Butler Manor Woods. The western portion of Conference House Park, as described above, includes grassy and densely wooded areas, historic architectural resources, a visitor center, the Lenape Playground at Swinnerton Street and Billop Avenue, and pathways. This large park creates a visual separation between the waterfront and the primarily residential areas to the north and east. The study area includes two additional large wooded areas. A portion of Hybrid Oak Woods Park, located between Bedell and Sprague Avenues, is an approximately 10-acre park that contains woodlands and does not include any built structures. The study area east of Page Avenue contains a wooded area that includes the Butler Manor Woods, a component of the Mount Loretto Unique Area, which encompasses approximately 18 acres of wetlands. These two densely wooded areas also create visual barriers between residential neighborhoods and limit longer visual connections to the waterfront. The visibility of Raritan Bay is largely limited to the houses and streets closest to the waterfront, therefore, visual connections to Raritan Bay are also limited.

Inland from the Conference House Park, the study area is residential in nature, characterized by single-family detached and attached houses on narrow residential streets. West of Brighton Street, these residential areas are set back from the shoreline beyond the wooded areas of Conference House Park. The study area east of Brighton Street is also developed with primarily

single-family free-standing houses located much closer to the waterfront, with only the beach and a narrow strip of vegetated upland between the residential neighborhood and Raritan Bay. The blocks between Loretto Street and Sprague Avenue contain several single- and two-family houses on narrow private streets. East of Sprague Avenue, large undeveloped and wooded areas are interspersed with tracts of single-family houses including several houses on large lots.

Due to the large wooded areas, many east-west study area streets do not extend through the study area. Further, the north-south streets terminate before reaching Raritan Bay to the south. The topography of the study area is relatively flat, although there is a slight change in elevation between the shoreline and the immediately adjacent upland areas. A more substantial elevation change is in the eastern portion of the study area in the Mount Loretto Unique Area, with a dramatic elevation change of approximately 85 feet between the elevation at the shoreline and the elevation in the vicinity of the Prince's Bay Lighthouse.

6.4.2 VIEWS, AESTHETIC AND VISUAL RESOURCES, AND VIEWER GROUPS

The section below first describes views to the waterfront and project area from within the study area and then discusses the study area's aesthetic and visual resources and viewer groups.

VIEWS TO THE WATERFRONT

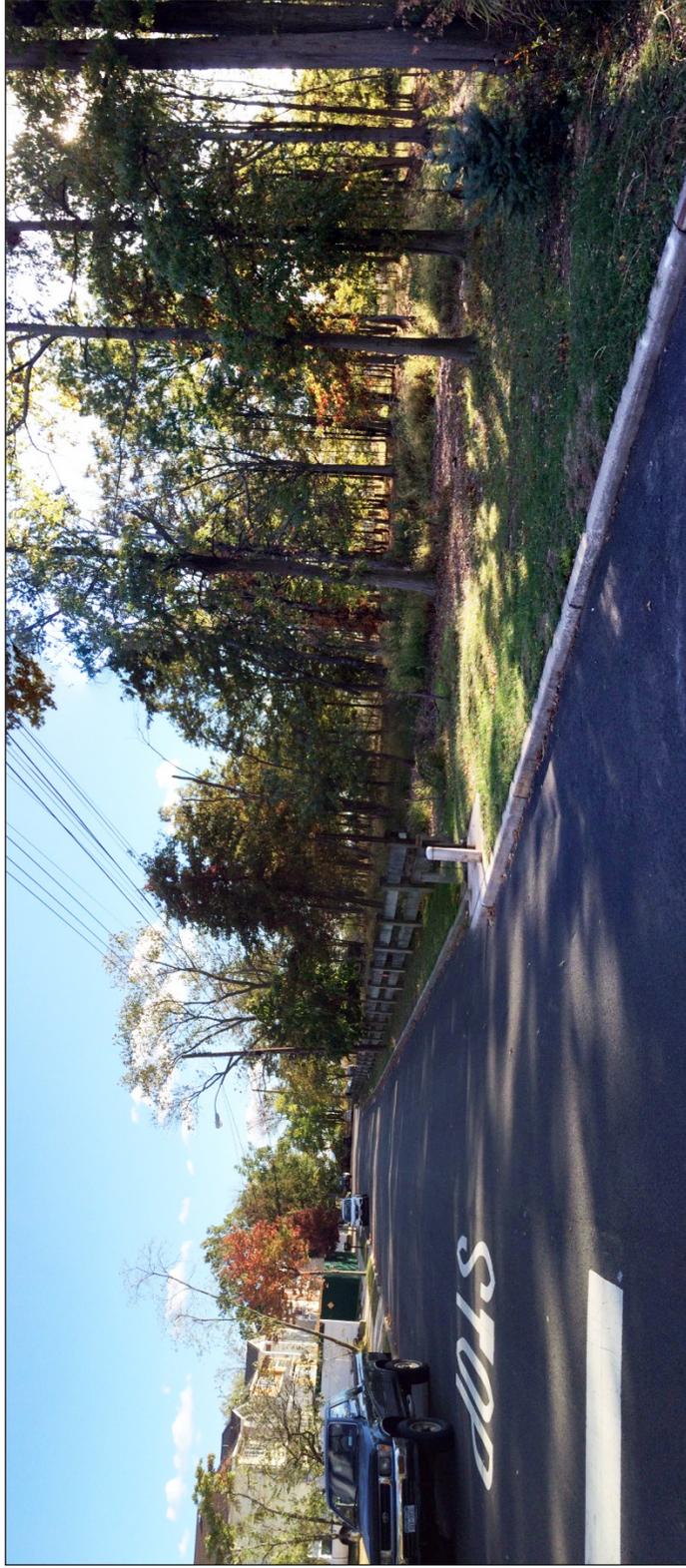
In the study area, views to the waterfront and Raritan Bay are variable due to distance, changes in topography, and intervening buildings and wooded areas. Unobstructed views of the waterfront and Raritan Bay are available from waterfront beach locations throughout the extent of the study area. Views toward the waterfront and Raritan Bay from the expansive western portion of Conference House Park at the western end of the study area are limited to vantage points within the park closest to the waterfront. Other views from more inland locations in Conference House Park are screened by the park's densely wooded areas, including the area bounded by Brighton Street and Billop Avenue (see **Figure 6-3**, view 3).

Views toward the waterfront and Raritan Bay from most streets in the study area are extremely limited. Views from Loretto and Rockaway Streets and Yetman Avenue are obstructed by the existing temporary dune system that extends between approximately Swinnerton Street and Sprague Avenue (see views 4 and 5 of **Figure 6-4**). The most notable existing views toward the waterfront and Raritan Bay are from vantage points at the waterfront and views from the southern ends of Manhattan Street, Yetman Avenue, Rockaway Street, Sprague Avenue, Joline Avenue and Page Avenue. An existing lookout point at the end of Sprague Avenue also provides views of Raritan Bay from the waterfront (see view 6 of **Figure 6-5**). Study area views toward the in-water Breakwaters location are limited by distance and the narrowness of north-south study area streets and intervening natural features, including wooded areas, street trees, and landscaping elements on residential properties (see views 7 and 8 of **Figure 6-6**).

View corridors within the Project Area include long views along the shoreline from vantage points along the shoreline and views toward Raritan Bay from lookout points on Page and Sprague Avenues and Manhattan Street. Other views are generally limited to the houses, trees, and wooded areas along study area streets.

AESTHETIC AND VISUAL RESOURCES

The primary aesthetic and visual resource in the study area is the Raritan Bay vista as seen from within the Project Area. As described above, views of the waterfront and Raritan Bay are limited



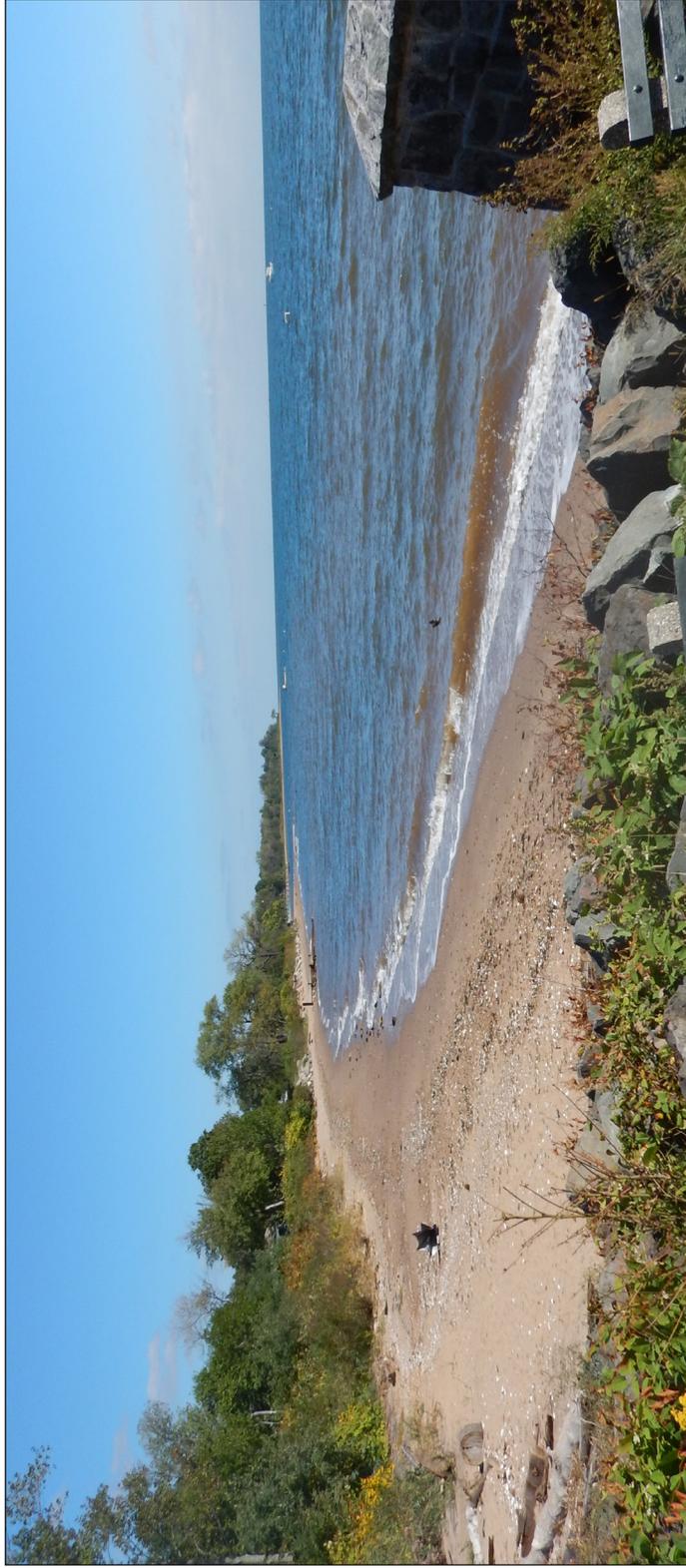
View south on Brighton Street from Billop Avenue; Conference House Park is to the west.



Shoreline at Manhattan Street looking west 4



Sprague Avenue lookout looking west onto shoreline 5



Sprague Avenue lookout looking east 6



Loretto Street looking south toward waterfront 7



Sprague Avenue looking south toward waterfront 8

from within the study area due to distance and intervening built structures and densely wooded areas. From waterfront areas in the western portion of Conference House Park, and from within the Mount Loretto Unique Area, including from Butler Manor Woods, views west, south, and east and across the Raritan Bay are expansive. From waterfront locations within Conference House Park, views include the open waters of Raritan Bay and distant land masses in New Jersey (see views 1 and 2 of **Figure 6-2**). As with views from Conference House Park, views from the Mount Loretto Unique Area, including views from Butler Manor Woods, also provide expansive views of Raritan Bay. In addition, the Prince's Bay Lighthouse, which is located in the Mount Loretto Unique Area, provides elevated expansive views of Raritan Bay. However, because of the curve in the shoreline, views to other sections of the study area are limited.

In addition to Raritan Bay, the following architectural resources are considered aesthetic and visual resources, in accordance with DEP-00-2: Conference House/Christopher Billopp House, Henry Hogg Biddle House, Rutan-Beckett House, Sam and Hannah Wood House, James M. Rutan House, Prince's Bay Lighthouse, and Conference House Park.¹¹ Conference House/Christopher Billopp House, Henry Hogg Biddle House, Rutan-Beckett House, Sam and Hannah Wood House, and James M. Rutan House are visible from within nearby sections of Conference House Park, but many of these views are screened by distance and trees within the park. The Prince's Bay Lighthouse is an architectural resource in the study area where views from nearby locations in the Mount Loretto Unique Area are available. Conference House Park is also considered an aesthetic and visual resource. Views to this resource, which is described above, are generally limited to nearby locations in the study area but are variable due to intervening buildings, trees landscaping elements, and distance.

VIEWER GROUPS

Viewers from the Project Area

Within the Project Area, viewer groups include boaters on Raritan Bay and users of the shoreline area, Conference House Park, the Mount Loretto Unique Area (including Butler Manor Woods), and the Prince's Bay Lighthouse.

Boaters on Raritan Bay have views of the shoreline, Conference House Park, the Mount Loretto Unique Area (including Butler Manor Woods), and the Prince's Bay Lighthouse. Views of these aesthetic and visual resources are passing and of short duration.

Users of the shoreline area, Conference House Park, the Mount Loretto Unique Area (including Butler Manor Woods), and the Prince's Bay Lighthouse include beachcombers, pedestrians, bicyclists, fishermen, visitors, and people engaged in passive recreation like sitting, sunbathing, and picnicking. These viewer groups have expansive views of Raritan Bay.

Viewers of the Project Area

Viewers of the project area include residents, pedestrians, motorists, bicyclists, and boaters.

In general, residents within view of the Breakwaters and Shoreline Project Areas have stationary, prolonged views of the Project Areas, though views only include portions of the Project Areas closest to these residences. Residents along Surf Avenue also have stationary

¹¹ Since the issuance of the DEIS, in a March 27, 2017, comment letter, SHPO determined that the Rutan-Beckett House is S/NR-eligible. See Chapter 5, "Historic and Cultural Resources."

views of certain portions of the Breakwaters and Shoreline Project Areas as their properties are located across Surf Avenue from the waterfront (see **Figure 6-7**, view 9). Residents closest to the Water Hub Potential Location 1 on Page Avenue, including residents on the private Ottavio Promenade, also have stationary views of the Raritan Bay and certain nearby waterfront elements such as grassy and sandy areas and trees. At Potential Location 2, viewers include visitors to Conference House Park and its historic resources, including the Henry Hogg Biddle House, the Rutan-Beckett House, and other nearby historic buildings within this area of the park. Since Potential Location 3 is in Raritan Bay, views are limited by distance. Within the study area, viewer groups include residents, pedestrians, motorists, bicyclists, boaters, and users of Conference House Park and historic resources. Residents generally have stationary, prolonged views of the closest portion of the Project Area. Pedestrians, motorists, and bicyclists generally have passing views of short duration. Boaters in Raritan Bay have clear views of waterfront portions of the Project Area, but these views can be from a distance, depending on the location of the viewer in the Raritan Bay. In addition, like motorists, boaters have passing views of short duration. Users of Conference House Park and historic resources, have views of these resources that vary in duration.

6.5 EFFECTS ASSESSMENT

Figure 6-8 contains a location key for **Figures 6-9 through 6-26**, which depict views of the project area with and without the Proposed Actions.

6.5.1 ALTERNATIVE 1—NO ACTION ALTERNATIVE

URBAN DESIGN

Breakwaters Project Area

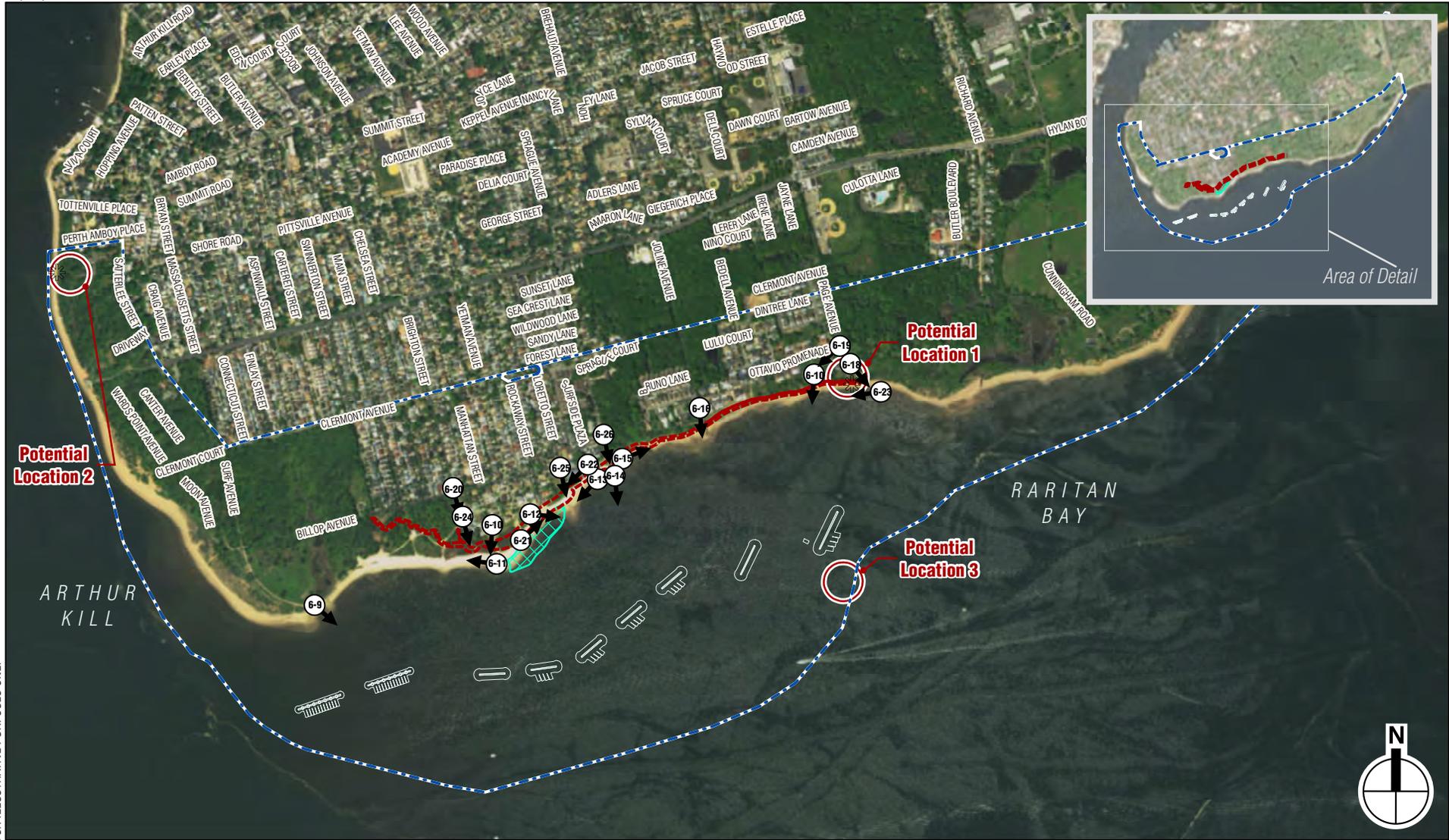
With the No Action Alternative, no new structural risk reduction projects or marine habitat restoration projects will be implemented in the Breakwaters and Shoreline Project Areas and current trends of erosion, wave action, ecosystems, and water quality will continue in Tottenville. It is assumed that the temporary dune system, constructed by NYC Parks as interim protective measures post-Sandy, would remain in the No Action Alternative. Further, no development projects are planned in the study area for the 2020 analysis year.

VIEWS, AESTHETIC AND VISUAL RESOURCES, AND VIEWER GROUPS

With the No Action Alternative, views to the waterfront, Raritan Bay, and other aesthetic and visual resources are expected to remain similar to existing conditions. No changes to views or view corridors are expected to occur with the No Action Alternative.



View west from Surf Avenue 9



FOR ILLUSTRATIVE PURPOSES ONLY

-  Proposed Breakwater Features
-  Proposed Shoreline Project Elements
-  Potential Location of Proposed Water Hub (exact location to be determined)
-  Proposed Floating Dock (associated with Water Hub Potential Locations 1 and 2 only)
-  Proposed Shoreline Restoration Area
-  Photograph View Direction and Figure Number Reference
-  Potential Water Access
-  Study Area

Urban Design and Visual Resources
Aerial Reference Map
Figure 6-8

Coastal and Social Resiliency Initiatives for Tottenville Shoreline



No Action



With Action

View Southeast from Shoreline Project Area
toward Breakwaters Project Area and Raritan Bay
(at approximately Finlay Street)



No Action



With Action

View South from Manhattan Street
toward Breakwaters Project Area and Raritan Bay



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action



No Action



With Action

View Southeast from Yetman Avenue toward Breakwaters Project Area and Raritan Bay



No Action



With Action

View toward Eco-Revetment Location
West from Sprague Avenue

Figure 6-13



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

View South from end of
Sprague Avenue Lookout Point
toward Breakwaters Project Area and Raritan Bay



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

Sprague Avenue Lookout View East toward Raised Edge Location

Figure 6-15



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

View Southwest
from Approximately Joline Avenue
toward Breakwaters Project Area and Raritan Bay



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

Page Avenue View Southeast toward Potential Location 1, Page East Option



No Action



With Action



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

View South on Brighton Street from Billop Avenue;
Conference House Park to the West



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

View East from Yetman Avenue along
Shoreline Hybrid Dune/Revetment System Location



No Action



With Action

View West from Surf Avenue toward the
Eco-Revetment Location



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

Shoreline at Page Avenue View West
toward Raised Edge Location

Figure 6-23



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

Brighton Avenue View South
toward the Waterfront
Figure 6-24



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action



No Action



FOR ILLUSTRATIVE PURPOSES ONLY

With Action

Sprague Avenue View South toward the Breakwaters Project Area and Raritan Bay

6.5.2 ALTERNATIVE 2 (PREFERRED ALTERNATIVE)—THE LAYERED TOTTEVILLE SHORELINE RESILIENCY STRATEGY: LIVING BREAKWATERS AND TOTTEVILLE SHORELINE PROTECTION PROJECT (LAYERED STRATEGY)

URBAN DESIGN

As described in Chapter 1, “Purpose and Need and Alternatives,” Alternative 2 comprises two project components—the Living Breakwaters Project (Breakwaters Project) and the Tottenville Shoreline Protection Project (Shoreline Project).

Breakwaters Project Area

Under Alternative 2, one component of the Breakwaters Project would be an ecologically enhanced breakwater system that would reduce wave energy at the shoreline and prevent or reverse shoreline erosion. The breakwater system would be an in-water system that would span an approximately 3,200-linear-foot stretch off the Tottenville shoreline, in the Raritan Bay.

The proposed in-water system would be low-lying groupings of non-contiguous horizontal mound structures that would be visible above the water line and distant from the shore line (see **Figures 6-8 through 6-17**). As such, there are no urban design components that could be affected by this in-water system. Therefore, the proposed in-water system in the Breakwaters Project Area would not result in any adverse impacts to urban design components in the in-water Breakwaters Project Area or in the larger study area.

Alternative 2 would also include a Water Hub. Two potential on-shore locations are under consideration. Potential Location 1 would be in the vicinity of the southern terminus of Page Avenue and would involve the construction of a new Water Hub structure (see **Figures 6-18 and 6-19**). The Page East Option would locate the Water Hub in an existing Conference House Park parking lot and surrounding wooded area immediately east of Page Avenue and the Page West Option would use a grassy site west of Page Avenue that previously contained a two-story NYC Parks building (which was demolished in 2016 due to substantial damage caused by Superstorm Sandy). Although the design is still being developed, the Water Hub structure is anticipated to be small in scale, ranging from approximately 48-feet (potential location east of Page Avenue) to approximately 38-feet (potential location west of Page Avenue) in height, clad in materials to enhance visual connections to the nearby waterfront areas (see **Figures 6-18 and 6-19**). It would have a rooftop observation deck and solar panels. The proposed Water Hub facility would include landscaping, parking, and utility spaces and, given its low scale, the Water Hub would be contextual to the surrounding park and waterfront area. **Figure 6-18** depicts the Water Hub in the potential location east of Page Avenue, and **Figure 6-19** depicts the Water Hub in the potential location west of Page Avenue. The new facility will host restoration and educational programs including field science monitoring activities for local community and school groups, as well as expand on the existing stewardship, educational and other community activities which currently take place in Conference House Park. At Potential Location 1, access to the water from the shore would be provided by a seasonal temporary floating boat launch that would be anchored approximately one-foot above mean high water (MHW).

Locating the Water Hub on the site east of Page Avenue would replace an existing parking lot and portion of the densely wooded area near the waterfront with a new small building, landscaping elements, and surface parking (see **Figure 6-18**). These changes to the site would not significantly adversely impact the urban design of the site or the nearby study area as this

Coastal and Social Resiliency Initiatives for Tottenville Shoreline FEIS

location is away from much of the study area and would continue to be located within a wooded area. The potential Water Hub location west of Page Avenue would re-introduce a small building to this site, replacing a NYC Parks building that has recently been demolished due to damage from Superstorm Sandy (see **Figure 6-19**). The new building would be consistent with prior uses on this site (with additional programming related to the social resiliency goals of the Proposed Actions) and its scale and siting would not adversely affect the urban design of the nearby study area. Further, the redevelopment of the site west of Page Avenue would enhance the context of this part of the study area with a new facility and improvements to waterfront access.

The two options for Potential Location 2 are existing buildings in the north-west portion of Conference House Park (see Chapter 5, “Historic and Cultural Resources,” Figure 5-4). The Biddle House Option would locate the programming for the Water Hub within the existing Henry Hogg Biddle House and the Rutan-Beckett House Option would locate the programming for the Water Hub within the existing Rutan-Beckett House, which is located southwest of the Biddle House. Because programming for the Water Hub would be located within an existing building in Conference House Park, Potential Location 2 would not adversely affect the urban design of the study area but would enliven this area of the park with new active uses. Similar to Potential Location 1, Potential Location 2 would also provide access to the water, either in the area near the house being adaptively reused for Water Hub activities, or at the existing Conference House Park pavilion which is undergoing renovations as a result of damage from Superstorm Sandy.

As described above, subsequent to the issuance of the Draft Environmental Impact Statement (DEIS), an additional Water Hub location has been included for consideration. Potential Location 3 would involve a “floating” Water Hub—a vessel that would visit the Breakwater Project Area periodically, approximately once per week from April through November. The “floating” Water Hub would contain educational and monitoring facilities and would be docked elsewhere at existing facilities in the City (outside of the project area). This option would not involve a permanent Water Hub facility on shore, and its operations would be consistent with existing maritime operations in the area.

Should Water Hub programming be located at Potential Location 2 or 3, a small approximately 400-square-foot structure would be constructed near the terminus of Page Avenue at Potential Location 1. This small facility would provide seating, wayfinding and storage for kayaks. Because this facility would be much smaller than the Water Hub that would be developed at Potential Location 1, as detailed in the discussion of Potential Location 1, this small facility also would not result in any adverse urban design impacts. In addition to this small facility, a series of wayfinding, interpretive, and monitoring elements would be located along the shoreline. One element would be a monitoring point, which may be located at the terminus of Sprague Avenue. It would include a combination of signage and working surface, and potentially a small canopy component. The monitoring point would have a small, approximately 8’ by 8’ footprint and would not be enclosed or obstruct views of the waterfront or Raritan Bay from nearby vantage points (see **Figures 6-13 and 6-26**). Other elements of the shoreline wayfinding and interpretive signage would be modest in scale and would not result in any adverse urban design impacts.

Therefore, the proposed Water Hub at either Potential Location 1, 2, or 3 would not result in any significant adverse impacts to urban design characteristics of the Breakwaters Project Area or nearby study area.

Shoreline Project Area

Under Alternative 2, the Shoreline Project would include a series of shoreline protection measures, including an earthen berm, a hybrid dune/revetment system, eco-revetments, a raised edge (revetment with trail), along with wetland enhancement, and native coastal plant species. Americans with Disabilities Act (ADA) accessible pathways, access points and overlooks would be constructed along the shoreline system. The Shoreline Project components would be developed along the shoreline in the area between approximately Carteret Street and Page Avenue. The primary project components are described below.

Earthen Berm—From approximately Carteret Street to Brighton Street through a wooded portion of Conference House Park, the system would include an earthen berm that would serve as a tie-in to a section of eco-revetment followed by a reinforced, planted hybrid dune/revetment system proposed from approximately Brighton Street to Loretto Street. The proposed earthen berm would be approximately 25 feet (ft) wide ranging in height between approximately 1 and 7.5 feet above grade, and extending approximately 948 linear feet. It would extend through the portion of Conference House Park west of Brighton Street which is characterized by a dense successional hardwood forest. The earthen berm is being designed to blend in with the existing landscape. Therefore, it is not expected to adversely impact the urban design character of the project area or the surrounding study area (see **Figure 6-20**).

Hybrid Dune/Revetment System—The proposed reinforced, planted hybrid dune/revetment system would extend along the shoreline between Manhattan and Loretto Streets, for approximately 937 linear feet. The hybrid dune/revetment system would be at an elevation of approximately 14 feet (approximately 1 foot higher than the existing temporary dune system, and with a 70- to 90-ft width). The crest of the hybrid dune/revetment would be approximately 10 feet wide. The proposed hybrid dune/revetment system would provide a more gradual transition from upland elements to the shoreline (see **Figures 6-11 and 6-21**). The proposed reinforced dune/revetment system would not result in an adverse impact to the urban design character of the Shoreline Project Area because it would replace the existing temporary dune system that was implemented after Superstorm Sandy.

Eco-Revetments

Between Brighton Street and Manhattan Street:

The proposed eco-revetment in this area would extend approximately 338 linear feet between Brighton Street (at the eastern terminus of the earthen berm) to Manhattan Street. This project element would bring the risk reduction system upland of the western portion of the hybrid dune/revetment system described above, along the northern edge of a 0.8-acre delineated wetland. The eco-revetment would comprise a pathway and rip rap with joint plantings, providing continuous access along this stretch of the project area. It is being designed to enhance usage and access of the shoreline. Therefore, the eco-revetment would not result in an adverse impact to the urban design character of this portion of the Shoreline Project Area.

Between Loretto Street and Sprague Avenue:

The proposed eco-revetment in this area would extend approximately 396 linear feet between Loretto Street and Sprague Avenue. It would begin at a transition point from the eastern end of the hardened dune/revetment system. The eco-revetment would comprise a bioswale (a landscape feature designed to remove pollution from surface runoff water), sloped plantings, a pathway (approximately 3.5 feet above the sidewalk), and concrete steps, depending on the

location along the shoreline (see **Figure 6-13**). A paved sidewalk along Surf Avenue would be developed that would border a five-foot-wide bioswale, separated by a six-inch curb (see **Figure 6-22**). The top of the eco-revetment would include an eight-foot-wide paved pathway connecting the two access points on either end of the eco-revetment. The eco-revetment would not result in an adverse impact to the urban design character of the Shoreline Project Area. The proposed eco-revetment is being designed to enhance usage and access of the shoreline and would enhance an existing revetment currently along Surf Avenue between Loretto Street and Sprague Avenue.

Raised Edge (revetment with trail)—A proposed waterfront side stone revetment would border an approximately five-foot-wide bioswale and eight foot wide raised trail that would begin at Sprague Avenue and extend approximately 2,536 linear feet to approximately 600 feet east of Page Avenue. The proposed trail would be either concrete or asphalt, designed to enhance accessibility to the shoreline (see **Figures 6-15 and 6-23**).

Transition nodes would connect certain project elements and would consist of concrete pavers connected to sidewalks or trails and stairways to allow shoreline access. In the area between Loretto Street and Sprague Avenue, an overlook would be constructed at Loretto Street for the transition of the hybrid dune/revetment system to the eco-revetment and an enhanced overlook would be constructed at Sprague Avenue for the transition of the eco-revetment to the raised edge. Wayfinding, interpretive signage, and monitoring points associated with the Breakwaters Project would be integrated along the length of the shoreline, including, for example, at the Shoreline Project transition nodes; they would be small in scale to maintain views while providing educational information to viewers (see **Figures 6-13 and 6-26** for examples of scale). These elements would enhance the pedestrian experience of the waterfront's urban design components.

These primary components of the Shoreline Project would result in enhancements to shoreline access through new waterfront access points, overlooks, and walkways that would be consistent with similar existing elements. Further the proposed Shoreline Project components would create a continuous walkway along the waterfront that would create and contribute to the pedestrian experience of the waterfront. The changes to urban design in the Shoreline Project Area would create new urban design elements that would create visual interest in areas near the shoreline. The pedestrian experience of the Shoreline Project Area and study area would be enhanced with Alternative 2. Therefore, Alternative 2 would not result in any significant adverse urban design impacts to the Shoreline Project Area or study area.

VIEWS, AESTHETIC AND VISUAL RESOURCES, AND VIEWER GROUPS

With Alternative 2, views in the Breakwaters Project Area would not be adversely affected as the in-water breakwaters project components would be located in Raritan Bay at a distance from the shoreline and are being designed to be low in scale (see **Figures 6-9 through 6-17**). The visibility of the breakwaters would be, in part, dependent on mean high water (MHW) levels, viewer vantage point, and proximity. Further, because of both the distance and the low, linear scale of the breakwaters, and the common color and reflectance (lack of contrast) of the breakwaters to land forms in the distance, the visibility of the breakwaters would be similar to existing views of land masses that can be seen from many on-shore vantage points toward Raritan Bay. While the breakwaters would present a new visual element in these views, changes to these views would be minimal and would not impair the character or quality of locations from which visibility is possible, nor would the visibility of the breakwaters clearly interfere with or

reduce the public's enjoyment and/or appreciation of Raritan Bay. Therefore, the breakwaters would not result in an adverse visual or aesthetic impact in views toward the waterfront and Raritan Bay, or views to any other aesthetic and visual resources, including historic architectural resources which would not be adversely affected by the breakwaters due to distance.

Views near Potential Location 1 on Page Avenue would change for viewers closest to the Water Hub; however, the Water Hub is being designed to be contextual to the surrounding area in terms of scale, siting, and material (see Figures 6-18 and 6-19). Views toward the waterfront from nearby vantage points would include the Water Hub at Potential Location 1; however, the building would be consistent with other nearby buildings in terms of scale and siting. Therefore, the Water Hub at Potential Location 1 would not adversely affect views toward the waterfront. Views near Potential Location 2 in Conference House Park would not change for viewers near the Water Hub as the programming for the Water Hub would be located within an existing building in Conference House Park (see Chapter 5, "Historic and Cultural Resources," Figure 5-4). Views toward the waterfront from vantage points near Potential Location 2 would not change with the Water Hub at Potential Location 2. Views near Potential Location 3 would involve a floating vessel that would visit the Breakwaters Project Area periodically in the area of the breakwater segments. Therefore, the vessel would not adversely affect views toward the shoreline as the vessel would only be intermittently located within the Breakwaters Project Area, near the breakwater segments, and would be similar to other vessels in Raritan Bay. Views toward the shoreline from Potential Location 3 would be dependent on the presence of the Water Hub vessel and would be limited to viewers from the Water Hub vessel toward the shoreline. These viewers would have close-up views of the breakwaters from the Water Hub, which would provide educational and monitoring facilities for visitors to the facility. As described above, should Water Hub programming be located at Potential Location 2 or 3, a small facility would be constructed near the terminus of Page Avenue at Potential Location 1. Because this facility would be much smaller than the Water Hub at this location, this small facility also would not adversely impact any existing views or views to any aesthetic or visual resources. Further, the Water Hub at either Potential Location 1 or Potential Location 2, or at the "floating" Water Hub Potential Location 3, would not adversely impact any existing views toward the waterfront and Raritan Bay, or views to any other aesthetic and visual resources, including historic architectural resources. With Alternative 2 views in the Shoreline Project Area would include the proposed changes to the waterfront landscape. Some views on Billop Avenue near the proposed earthen berm would change, however the earthen berm would be located in a densely wooded area that already limits views (see Figures 6-20). Although the proposed dune/revetment system would be slightly taller than the existing temporary dune system, views from nearby lookout points from Manhattan, Yetman, and Rockaway Streets are already slightly obscured (see Figures 6-10 through 6-12 and 6-21). However, the changes to these views would be minimal, and therefore would not result in any significant adverse impacts. The eco-revetments and raised pathways would not result in any adverse impacts to any existing views (see Figures 6-13, 6-15, 6-22, and 6-23).

Views from the Project Areas and study area would continue to include wide open views of Raritan Bay though some views from vantage points closest to the Project Areas would change (see Figures 6-9 through 6-17). Other visual resources in the study area would not be affected by the components of Alternative 2 because of distance and intervening building and natural features.

The views of residents, pedestrians, motorists, bicyclists, boaters, and users of Conference House Park and study area historic resources would be minimally affected by the components of

Alternative 2. Residents along Surf Avenue would continue to have stationary views of Raritan Bay and certain portions of the Breakwaters and Shoreline Project Area components, including the breakwaters in the distance, as their properties are located across Surf Avenue from the waterfront (see **Figure 6-22**). Views towards of the waterfront from more inland locations on local streets in the study area are limited to residents, pedestrians, motorists and bicyclists, due to distance, the narrowness of the streets, and intervening natural features, including wooded areas, street trees, and landscaping elements on residential properties (see Figures 6-24 through 6-26). Residents closest to the proposed Water Hub at Potential Location 1, including residents on Ottavio Promenade, would continue to have stationary views of Raritan Bay and certain nearby waterfront elements. With Alternative 2, views could also include the Water Hub at Potential Location 1, in the foreground, and views to the nearby Shoreline Project components and more distant views to some of the breakwaters (see Figures 6-17 through 6-19). It should be noted that the Water Hub at Potential Location 1, Page Avenue West Option was previously occupied by a NYC Parks building that was recently demolished due to structure damage sustained by Superstorm Sandy. At Potential Location 2, it is anticipated that the rehabilitation and adaptive use alterations to either the Henry Hogg Biddle House or the Rutan-Beckett House would be limited to the interiors of the buildings and would, therefore, not affect views of nearby residents, pedestrians, motorists, bicyclists, boaters. The views of users of Conference House Park and study area historic resources would not be adversely affected by locating the Water Hub at Potential Location 2 as the Water Hub's programming would be located in an existing building within the park (see Chapter 5, "Historic and Cultural Resources," Figure 5-4). Should Water Hub programming be located at Potential Location 2 or 3, a small facility would be constructed near the terminus of Page Avenue at Potential Location 1. It would be smaller than the Water Hub that would be developed at Potential Location 1. This small facility, like the Water Hub at Potential Location 1, also would not adversely impact any existing views or viewer groups, as described above. In addition to this small facility, a series of wayfinding, interpretive, and monitoring elements would be located along the shoreline. One element in this series is a monitoring point, which may be located at the terminus of Sprague Avenue. It would be small in scale and would not obstruct views of the waterfront or Raritan Bay from nearby vantage points (see Figures 6-13 and 6-26). Therefore, Alternative 2 would not result in any adverse visual impacts or aesthetic impacts to inventoried resources in the Breakwaters Project Area, Shoreline Project Area, or in the study area.

6.5.3 ALTERNATIVE 3—BREAKWATERS WITHOUT SHORELINE PROTECTION SYSTEM

URBAN DESIGN

Alternative 3 would develop the Breakwaters Project components as described in Alternative 2, including the in-water breakwaters and the Water Hub. None of the Shoreline Protection Project components would be developed under Alternative 3. Therefore, Alternative 3 would result in the same changes to urban design and visual resources in the Breakwaters Project Area and study area as described in Alternative 2. The development of the in-water breakwaters and the Water Hub would not result in any significant adverse impacts to urban design components of the Project Areas or surrounding study area. No new development would occur along the shoreline, which would remain similar to existing conditions with limited physical and visual accessibility from the study area. Therefore, no improvements to waterfront access or storm resiliency measures associated with the Shoreline Project components would be developed.

VIEWS, AESTHETIC AND VISUAL RESOURCES, AND VIEWER GROUPS

With Alternative 3, no new development would occur along the shoreline, apart from the potential upland development of the Water Hub at either Potential Location 1 near Page Avenue, or at Potential Location 2 in the north-western portion of Conference House Park, as is described above in Alternative 2, and the modest signage and interpretive components that would be part of Water Hub Potential Locations 2 and 3. Therefore, Alternative 3 would result in the same changes to views, aesthetic and visual resources, and viewer groups in the Breakwaters Project Area and study area as described in Alternative 2.

The development of the in-water breakwaters and the Water Hub at Potential Location 1 would not result in any significant adverse impacts. As with Alternative 2, with Alternative 3, the proposed Water Hub at Potential Location 1 would change certain views for viewers closest to the Water Hub site at Potential Location 1, however, the Water Hub at Potential Location 1 is being designed to be contextual to the surrounding area in terms of scale, siting, and material. As described in Alternative 2, the Water Hub at Potential Location 1, which would be sited to maintain views to Raritan Bay, would not adversely impact any existing views toward the waterfront and Raritan Bay, or views to any aesthetic and visual resources, including historic architectural resources. No other visual resources would be affected by the Water Hub at Potential Location 1. Further, no viewer groups would be adversely affected by the development of the proposed Water Hub at Potential Location 1. Residents closest to the proposed Water Hub at Potential Location 1, including residents on Ottavio Promenade, would have views including the Water Hub and would continue to have stationary views of the Raritan Bay and certain nearby waterfront elements, including the Water Hub.

At Potential Location 2, it is anticipated that the rehabilitation and adaptive use alterations to either the Henry Hogg Biddle House or the Rutan-Beckett House would be limited to the interiors of the buildings and would, therefore, not affect views of nearby residents, pedestrians, motorists, bicyclists, boaters. The views of users of Conference House Park and study area historic resources would not be adversely affected by locating the Water Hub at Potential Location 2 as the Water Hub's programming would be located in an existing building within the park. Views near Potential Location 2 in Conference House Park would not change for viewers near the Water Hub as the programming for the Water Hub would be located within an existing building in Conference House Park. Views toward the waterfront from vantage points near Potential Location 2 would not change with the Water Hub at Potential Location 2. Further, the Water Hub would not adversely impact any existing views toward the waterfront and Raritan Bay, or views to any aesthetic and visual resources, including historic architectural resources.

As with Alternative 2, with Alternative 3, views near Water Hub Potential Location 3 would include the floating vessel that would visit the Breakwaters Project Area periodically. Therefore, the floating vessel would not adversely affect views toward the shoreline and Raritan Bay as the vessel would only be intermittently located within the Breakwaters Project Area and would be similar to other vessels in Raritan Bay. Further, views toward the shoreline from Potential Location 3 would be dependent on the presence of the Water Hub vessel and would be limited to viewers from the Water Hub vessel toward the shoreline. These viewers would have close up views of the breakwaters from the Water Hub, which would provide educational and monitoring facilities for visitors to the facility. None of the Potential Water Hub Locations would result in any adverse visual or aesthetic impacts or any impacts to views or viewer groups.

Should Water Hub programming be located at Potential Location 2 or 3, a small facility would be constructed near the terminus of Page Avenue at Potential Location 1. It would be smaller

than the Water Hub that would be developed at Potential Location 1. This small facility, like the Water Hub at Potential Location 1, also would not adversely impact any existing views or viewer groups, nor would it impact any visual or aesthetic resources, as described above. In addition to this small facility, a series of wayfinding, interpretive, and monitoring components would be located along the shoreline. One element would be a monitoring point, which may be located at the terminus of Sprague Avenue. It would be small in scale and would not obstruct views of the waterfront or Raritan Bay from nearby vantage points and would not adversely impact any existing views or viewer groups.

6.5.4 ALTERNATIVE 4—SHORELINE PROTECTION SYSTEM WITHOUT BREAKWATERS

With Alternative 4, the Shoreline Project components would be developed. No in-water breakwaters would be developed, the Water Hub (or small kayak storage facility) at Potential Location 1 would not be constructed, no Water Hub programming would be located in an existing building in Conference House Park at the Potential Location 2, and no floating in-water Water Hub vessel would be periodically located near the breakwater segments at Potential Location 3. Therefore, Alternative 4 would result in the same changes to urban design and visual resources associated with the Shoreline Project in the Shoreline Project Area and study area as described in Alternative 2. Because neither the Water Hub at Potential Location 1 nor the small waterfront facility at Potential Location 1 would be constructed, the site along Page Avenue would remain similar to existing conditions. The interior alterations to either the Henry Hogg Biddle House or the Rutan-Beckett House in Conference House Park would not occur and the interiors of these buildings would not be altered.

URBAN DESIGN

With Alternative 4, the Shoreline Project components would be developed, as described in Alternative 2, and would consist of a series of shoreline protection measures, including an earthen berm, a hardened dune/revetment system, eco-revetments, a raised edge, wetland enhancement, and native coastal plantings. ADA accessible pathways, access points and overlooks would be constructed along the shoreline protection system. The Shoreline Project components would be developed along the shoreline in the area between approximately Carteret Street and Page Avenue. The changes to urban design in the Shoreline Project Area would create new urban design elements that would enliven the study area and create visual interest in areas near the shoreline. As with Alternative 2, the pedestrian experience of the Shoreline Project Area and study area would be enhanced with the shoreline components.

VIEWS, AESTHETIC AND VISUAL RESOURCES, AND VIEWER GROUPS

As with Alternative 2, with Alternative 4, views in the Shoreline Project Area would include the proposed changes to the waterfront landscape, including the primary components of the Shoreline Protection Project—the earthen berm, a hardened dune/revetment system, eco-revetments, and a raised pathway with revetment, which are described in Alternative 2. Views from the Project Areas and study area would continue to include wide open views of Raritan Bay though some views from vantage points closest to the Project Areas would change. Other visual and aesthetic resources in the study area would not be affected by the components of Alternative 2 because of distance and intervening building and natural features. As with Alternative 2, with Alternative 4 the views of residents, pedestrians, motorists, bicyclists, boaters, and users of Conference House Park and study area historic resources would be

minimally affected by the components of the Shoreline Project. The Water Hub would not be constructed at either Potential Location 1 or 2 so no new structures would be built on either site. No rehabilitation or adaptive use of either the Henry Hogg Biddle House or the Rutan-Beckett House in Conference House Park would occur. The in-water Water Hub Potential Location 3 would not be periodically located within Raritan Bay in the Breakwaters Project Area. Therefore, no changes to views, aesthetic and visual resources, and viewer groups would occur in the areas closest to these sites. Residents along Surf Avenue would continue to have stationary views of certain portions of the Breakwaters and Shoreline Project Areas as their properties are located across Surf Avenue from the waterfront.

6.6 MINIMIZATION AND MITIGATION OF IMPACTS

None of the project alternatives would result in an adverse impact to urban design or in visual impacts or aesthetic impacts to inventoried resources in the Breakwaters Project Area, Shoreline Project Area, or in the study area. Therefore, no urban design and visual or aesthetic resources mitigation measures are necessary. *