A. INTRODUCTION

As discussed in Attachment A, "Project Description and Screenings," the proposed installation would involve the placement of a skeletal stainless steel sculpture entirely within the location of the former Pier 52 footprint. This attachment summarizes the construction program for the proposed installation and assesses the potential for adverse impacts during construction activities. The anticipated construction schedule for the proposed installation is described, followed by a description of the types of activities likely to occur during the construction of the sculpture. The types of construction equipment are also discussed, along with the expected number of workers and truck deliveries. Based on this information, an assessment of potential impacts from construction is conducted.

As discussed below, the assessment concludes that, although there would be localized, temporary disruptions due to construction activities, as is the case with any construction activity, the proposed installation would not result in any significant adverse impacts due to construction activities.

B. OVERVIEW OF CONSTRUCTION ACTIVITIES

This section provides an overview of the proposed installation and general construction practices, including those associated with deliveries, access, and hours of work.

GENERAL CONSTRUCTION PRACTICES AND SCHEDULE

The sections below provide summaries of the general construction practices that are anticipated to be implemented for the proposed installation, including anticipated staging and delivery area operations, work hours, and access restrictions. Pile driving, pile cap, and concrete column installation are anticipated to occur over a 4-month period between May and August 2019. Post-pile installation survey, structural frame construction, and proposed closeout are anticipated to occur over an 8-month period between September 2019 and May 2020.

STAGING AREAS, DELIVERIES, AND CONSTRUCTION ACTIVITIES

Although construction of the proposed installation, including the staging and laydown of materials for pile installation, would be done primarily from barges, it would require the use of an approximately 20- to 30-foot wide area along the southern side of the Gansevoort Peninsula area for upland support. As discussed in Attachment B, "Land Use, Zoning, and Public Policy," the New York City Department of Design and Construction (NYC DDC) is currently placing a mix of clean fill and gravel at the site; New York City Department of Sanitation (DSNY) facilities on the site were recently demolished. This work is expected to be complete by summer 2018.

Plans for the majority of the Gansevoort Peninsula call for it to be reconstructed as public open space and incorporated into Hudson River Park; DSNY may also build a marine transfer station on the western edge in the future. NYC Fire Department's Marine Company 1 would remain on the north side of the Gansevoort Peninsula. While the construction schedules for the park

improvements and possible marine transfer station are not known at this time, no construction is expected in 2019 when construction of the sculpture is proposed. If necessary, the proposed installation's use of a portion of Gansevoort Peninsula for construction staging would be coordinated with any adjacent projects, should the construction periods overlap.

Access to the construction site will be controlled. The work areas would be fenced off, and limited access points for workers and trucks would be provided and coordinated. Construction vehicles are anticipated to enter the site from West Street sporadically for delivery and removals of supplies and materials. Recreational use of the immediately adjacent portion of the Hudson River south of the Gansevoort Peninsula will be temporarily restricted at the project site for the full 12-month duration of construction to ensure public safety. The proposed installation is anticipated to be constructed primarily from the water using barges. An area approximately 20-30 feet wide extending the length of the pier on the peninsula will be used for staging. In-water piles and pile caps would be installed using barge-mounted equipment, while land-based piles may be installed from either land-based or barge-mounted equipment. Once all piles are installed, the sculpture's frame would be installed, likely using a combination of barge and land-based equipment. Construction of the foundation (i.e., pile installation, including pile driving and installation of the pile caps and concrete columns), would take approximately 4 months. Barge-based equipment would remain in use for the subsequent 8 months during which the sculpture's frame would be installed.

Prior to pile installation, an indicator pile program would be performed over the course of approximately 2 weeks (12 noncontiguous days), where 12-inch diameter steel pipe test piles would be driven at each pile location to determine whether subsurface obstructions exist in the proposed pile locations. If any obstruction is encountered, a double pile foundation would be used in that location instead of a single pile; the double pile system would allow the piles to be driven to shallower depths and then capped together to provide the required structural stability. It is anticipated that all 12 test piles, both upland and in the river, would be driven to the required tip elevation using a vibratory hammer. If the vibratory hammer does not achieve the tip elevation, an impact hammer would be used. Any impact hammering would be conducted in conjunction with a soft start and cushion block to minimize the effects of increased noise.

Installation of the 6 piles located on the Gansevoort Peninsula, including the one at the edge of the water on the southwestern corner of the Peninsula, would require temporary removal of a small amount of riprap. The riprap would be removed using the appropriate land-based or barge-mounted equipment, placed on the Peninsula above SHW for temporary storage, and put back in place upon completion of the installation. Disturbance of the riprap would not exceed an area of 225 square feet per pile location, and the elevation of the shoreline below SHW would remain unchanged following construction.

The construction activities for the project would be coordinated with Texas Eastern Transmission, LP (Texas Eastern), which has a natural gas pipeline located on the Peninsula. Areas of coordination for construction would include: survey and mark-out of existing Texas Eastern assets, required construction activity clearances, means and methods, third party inspection, and monitoring by Texas Eastern personnel.

HOURS OF WORK

Construction activities for the proposed installation would be carried out in accordance with New York City laws and regulations, which allow construction activities to take place between 7:00 AM and 6:00 PM. Construction work would typically begin at 7:00 AM on weekdays, with most

workers arriving between 6:00 AM and 7:00 AM. Normally, work would end at 3:30 PM. Necessary permits would be obtained from the appropriate agencies if work is required outside of normal construction hours (i.e., weekend and after-hour work). No work outside of normal construction hours could be performed until such permits are obtained.

PEDESTRIAN ACCESS AND PARK CLOSURES

Aside from the water area between Pier 51 and the Gansevoort Peninsula where construction would occur, no other areas of Hudson River Park that are currently accessible to the public are anticipated to be closed as part of the construction of the proposed installation. If any temporary closures are required for pedestrian safety, they would be coordinated with and approved by HRPT.

RODENT CONTROL

During construction, the contractor would carry out a rodent (mouse and rat) control program, as necessary. Signage would be posted, and coordination would be conducted with appropriate public agencies. Only EPA- and NYSDEC-registered rodenticides would be utilized, and the contractor would be required to perform rodent control program in a manner that is not hazardous to the general public.

GENERAL CONSTRUCTION TASKS

This section describes the anticipated construction stages for the proposed installation and the methods that are anticipated to be used for each stage. The first construction task would be site mobilization. Field office trailers for construction engineers and managers would be delivered to the site, and two moveable barges (one with a crane and one with materials) would be brought to the installation site to serve as equipment and material staging areas. These activities would also involve the installation of public safety measures such as construction safety signs.

Construction of the proposed installation would then commence and would involve two main stages, described below. As noted above, work during all construction stages would be done primarily from barges with some support from the up-land portion of the site.

PILE INSTALLATION

Following the approximately 12 noncontiguous days required for the indicator pile program described above, in-water work for the proposed installation, including pile driving, would be completed over 4 months (May-August 2019). It is anticipated that all piles located on the Peninsula and within the Hudson River would be installed using a vibratory hammer. If the vibratory hammer alone does not advance the pile to the required elevation, an impact hammer would be used. Any impact hammering would be conducted in conjunction with a soft start and cushion block to minimize the effects of increased underwater noise. In-water piles would be would be installed using a barge-mounted crane. Upland piles would be installed concurrently using either barge or land-based equipment. Riprap would be temporarily removed from each upland pile location via barge or land-based equipment and stored onsite above SHW while the pile is installed. Riprap would be returned to the shoreline in each pile location such that the existing topography is maintained and the elevation does not change.

STRUCTURE CONSTRUCTION

Once piles, pile caps and concrete columns are installed, the sculpture would be erected. Prefabricated 8-inch diameter stainless steel columns and beams would be produced offsite and delivered to the construction area by truck. The prefabricated pieces would be installed on the pile

foundations using either land-based or barge-mounted equipment. The stainless steel pipe columns would be installed first, followed by cross beams, bent roof beams at the top of the structure, and transverse ridge beams. All of the pieces would have "coupler" attachments to allow them to be mechanically connected in the field, and no welding of the pieces would be required. The frame assembly and project closeout is expected to be completed in 8 months.

NUMBER OF CONSTRUCTION WORKERS AND MATERIAL DELIVERIES

Limited construction workers and deliveries would be required for the construction of the proposed installation. An estimated 10 daily construction workers would be on site during peak construction activities. There would also be limited truck deliveries (approximately 2 per day during peak construction), as most material deliveries and mobilization activities would be conducted via water.

C. THE FUTURE WITHOUT THE PROPOSED INSTALLATION

Absent the proposed installation (the "No Action condition") there would be no changes or alterations to the installation site.

D. PROBABLE IMPACTS OF THE PROPOSED INSTALLATION

Construction of the proposed installation, as is the case with any construction activities, may be temporarily disruptive to the surrounding area. Sensitive receptors nearest to the installation site are adjacent portions of Hudson River Park including the waterfront esplanade and the Pier 51 playground located just south of the installation site, and the New York State Route 9A bikeway. The installation site is located across multiple lanes of Route 9A from other sensitive receptor locations. Not including the park and the bikeway, the nearest sensitive receptor is the residential building at 521 West Street located at a distance of approximately 250 feet east of the installation site.

The following analysis describes the overall temporary effects of the proposed installation's construction activities on transportation, air quality, noise, land use and public policy, socioeconomic conditions, community facilities, open space, historic and cultural resources, natural resources and hazardous materials.

TRANSPORTATION

As described in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, construction activities may affect several elements of the transportation system, including traffic, transit, pedestrians, and parking. A transportation analysis of construction activities is predicated upon the duration, intensity, complexity, and/or location of construction activity.

Construction of the proposed installation would generate vehicle trips associated with the delivery of materials as well as workers traveling to and from the installation site. However, as discussed above, materials would be delivered to the site primarily by barges. The construction barges themselves would be constructed off-site and floated into place. It is estimated that approximately 2 daily truck deliveries would be made during peak construction activities. In addition, it is estimated that up to approximately 10 workers would commute to/from the installation site during peak construction activities. Therefore, the incremental construction-related trips generated by the proposed installation would be well below the *CEQR Technical Manual* 50 peak hour vehicle trips, 200 peak hour transit trips, or 200 peak hour pedestrian trips analysis thresholds requiring detailed analysis, and, as a result, no further quantified analysis is warranted. In addition, it can be anticipated that construction workers who travel by vehicles would park at nearby parking

resources (i.e. within ¼-mile of the installation site), either on-street or within off-street parking facilities.

Based on the relatively modest increase in vehicular trips due to construction activities, the proposed installation would not result in significant adverse transportation impacts during construction.

AIR QUALITY

Emissions from on-site construction equipment and on-road construction construction-related vehicles, as well as dust generating construction activities, have the potential to affect air quality. The *CEQR Technical Manual* states that the significance of a predicted consequence of a project (i.e., whether it is material, substantial, large, or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected. This guidance was followed to assess the potential for construction air quality impacts from the proposed installation.

Construction of the proposed installation is anticipated to be approximately 12 months and would be considered short-term in accordance with the *CEQR Technical Manual*. Heavy equipment-dependent activities, including pile driving, installation of pile caps and concrete columns would be completed over four months. During this period, pile driving would occur over approximately 30 noncontiguous days. Associated air emissions from such equipment would be limited to this duration. Active pile driving would only occur intermittently during normal work hours (8 hours per day, 5 days per week) and only for 20 to 30 minutes at a time for each of the 10 to 17 piles (depending on whether single or double pile foundations would be required).

Overall, considering that the construction activities at the installation site would be of limited duration and intensity, and that emission reduction measures would be implemented, the construction of the proposed installation would not have the potential for significant adverse impacts on local air quality and no further analysis is required.

NOISE

Potential impacts on community noise levels during construction could result from the operation of construction equipment and from construction and delivery vehicles traveling to and from the installation site. Noise levels at a given location are dependent on the type and quantity of construction equipment being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time the equipment is operating), the distance from the construction site, and any shielding effects (from structures such as walls or barriers). Noise levels caused by construction activities would vary widely and the location of the construction activities relative to noise-sensitive receptors would also vary.

For impact determination purposes, the *CEQR Technical Manual* breaks construction durations into “short-term” and “long-term,” and states that construction noise is not likely to result in an impact unless it “affects a sensitive receptor over a long period of time.” Construction activities for the proposed installation would be considered short-term, as the overall construction period is anticipated to be approximately 12 months. The most intense noise-generating construction stage—pile installation—would occur intermittently during normal work hours during approximately 30 noncontiguous days. Active pile driving would occur over a period of 20 to 30 minutes per pile. These activities would result in increased noise levels at sensitive receptors near the installation site, including Hudson River Park. Park users, such as children using the playground on Pier 51 (located to the south of the installation site), users of the bikeway, and

nearby residents may experience intermittent increased noise during pile installation. However, because of the temporary and short-term nature of noise from pile installation, as well as the lower level of noise from other construction activities, these impacts would not be considered significant.

Noise from construction activities and some construction equipment is regulated by the *New York City Noise Control Code* (also known as Chapter 24 of the Administrative Code of the City of New York, or Local Law 113) and by EPA's noise emission standards. These local and federal requirements mandate that specific construction equipment and motor vehicles meet specified noise emission standards; that construction activities be limited to weekdays between the hours of 7:00 AM and 6:00 PM (for weekend and after hour work, permits would be required to be obtained before these activities could occur); and that construction materials be handled and transported in such a manner as not to create unnecessary noise. During construction of the proposed installation, all necessary measures would be implemented to ensure adherence to the *New York City Noise Control Code* regulating construction noise. The *New York City Noise Control Code* regulations would minimize noise disruption to the nearby community during the construction of the proposed installation. Finally, as discussed above in Transportation, the construction of the proposed installation is anticipated to generate a relatively minor increase in vehicular trips and is not anticipated to result in noise impacts from mobile sources. Therefore, in consideration of the limited duration and intensity of construction activities and the measures implemented to minimize noise, construction of the proposed installation would not have the potential to result in any significant adverse noise impacts, and no further analysis is required.

OTHER TECHNICAL AREAS

LAND USE, ZONING, AND PUBLIC POLICY

As is typical with construction projects, during periods of peak construction activity there would be some disruption, predominantly noise, to the nearby area. These disruptions would be temporary and would have limited effects on land uses within the study area, particularly as most construction activities would take place within the installation site. As noted above, although there are plans to improve the Gansevoort Peninsula as parkland, the construction schedule for the parkland improvements is not known at this time, and this area along the southern side of the peninsula is not expected to be completed prior to construction of the proposed installation. Therefore, the proposed installation would not affect any area completed as open space as part of this independent work. During construction, appropriate measures would be implemented to reduce air pollutant emissions and noise. Overall, while construction activities at the installation site would be evident to the local community, the limited duration of construction would not result in any significant or long-term adverse impacts on local land use patterns or the character of the nearby area.

SOCIOECONOMIC CONDITIONS

Construction activities associated with the proposed installation would not result in any significant adverse impacts on socioeconomic conditions. Construction of the proposed installation would not block or restrict access to any facilities in the area, affect the operations of any nearby businesses, or obstruct major thoroughfares used by customers or businesses. Construction would create direct benefits resulting from expenditures on labor, materials, and services, and indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the construction activity. Construction also would contribute to increased tax revenues for the City and State, including those from personal income taxes.

COMMUNITY FACILITIES

As described above under "Transportation," while construction of the proposed installation would result in temporary increases in traffic during the construction period, these increases would be minor. Construction of the proposed installation would not block or restrict access to and from any community facilities in the area. Construction workers would not place any burden on public schools and would have minimal, if any, demand on libraries, child care facilities, and health care facilities. Construction activities would not materially affect the New York Police Department (NYPD), FDNY, or other emergency services or response times.

OPEN SPACE

The installation is located within Hudson River Park between Gansevoort and Horatio Streets, on land and in the water. This portion of Hudson River Park contains a waterfront esplanade. A portion of the Route 9A bikeway is adjacent to Hudson River Park. In addition, the Pier 51 playground is located to the south of the installation site, and the in-water area between Pier 51 and the Gansevoort Peninsula is currently accessible for small recreational boating. During construction, this portion of the river would not be available for recreational boating to ensure public safety. In addition, at limited times, activities such as pile installation may generate noise that could impair the enjoyment of nearby open space users, but such noise effects would be temporary and of short duration. Closure of any part of Hudson River Park necessary for pedestrian safety would be coordinated with and approved by HRPT; however, any necessary closures are expected to be temporary and would only affect a small portion of Hudson River Park's approximately 4-mile extent. Overall, disruption of the adjacent open space area would be temporary and would not affect the overall use of the park. Therefore, construction of the proposed installation would not result in significant adverse impacts on open space.

HISTORIC AND CULTURAL RESOURCES

A detailed assessment of potential impacts on historic and cultural resources is described in Attachment D, "Historic and Cultural Resources." The section below summarizes the potential for the proposed installation to result in adverse construction-period impacts on historic and cultural resources.

One historic resource is located adjacent to the installation site, the Hudson River Bulkhead (S/NR-Eligible). No construction would occur immediately at or adjacent to this resource. To avoid inadvertent construction-related impacts on the S/NR-Eligible Hudson River Bulkhead during the construction of the proposed installation, a Construction Protection Plan (CPP) would be prepared and implemented and would include measures to ensure that the bulkhead is not affected by ground-borne construction vibration or other potential construction-related activities. The CPP would follow the guidelines established in section 522 of the *CEQR Technical Manual*, including conformance with the New York City Landmarks Preservation Commission's (LPC's) *New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark* and *Protection Programs for Landmark Buildings*. The CPP would also comply with the procedures set forth in the New York City Department of Building's *Technical Policy and Procedure Notice (TPPN) #10/88*, regarding procedures for the avoidance of damage to historic structures resulting from adjacent construction. Therefore, the proposed installation is not anticipated to have any significant adverse impacts on the Hudson River Bulkhead. No other architectural resources in the study area are within 90 feet of the installation site that would have the potential for direct, physical impacts from construction of the proposed installation. Therefore,

construction of the proposed installation would not result in significant adverse impacts on historic resources.

NATURAL RESOURCES

The construction activities associated with the proposed installation would not cause any significant adverse environmental impacts on terrestrial or aquatic resources, as discussed in Attachment C, "Natural Resources." Increases in suspended sediment resulting from in-water construction activities would be temporary and localized and would dissipate quickly. Elevated underwater noise from pile driving would be intermittent, localized, and short in duration. The prohibition of pile driving from November through April in Hudson River Park would minimize potential impacts to striped bass and other overwintering fish, and to winter flounder spawning in the vicinity of the project site. Subadult and adult shortnose sturgeon and Atlantic sturgeon (federally-listed endangered species) may use the lower Hudson River in the vicinity of the proposed installation as a migration corridor to or from foraging, overwintering, and/or spawning grounds. In this portion of the Hudson River, these species would be more likely to occur in the deeper water habitat of the navigation channel, and would only occur in the shallow waters where the proposed installation would be located as occasional transient individuals. Because the proposed installation would use measures to minimize exposure of sturgeon to potentially disturbing levels of underwater noise, increased underwater noise levels would not affect the deeper water habitats, nor would it obstruct movement of migrating sturgeon past the installation. Therefore, the construction of the proposed installation may affect but would not result in significant adverse impacts to shortnose and Atlantic sturgeon.

HAZARDOUS MATERIALS

As the proposed installation would be limited to the construction of a sculpture within Hudson River Park with only minor disturbance on the upland areas (temporary removal of riprap) and no excavation, it would have a very limited potential to result in significant exposure of people or the environment to hazardous materials. Nonetheless, all construction activities for the proposed installation would be conducted consistent with applicable regulatory requirements regarding hazardous materials. Furthermore, as part of the Environmental Impact Statement (EIS) prepared for the area, all construction within Hudson River Park remains subject to strict protocols for the management of hazardous materials encountered during construction, including managing soil and groundwater in accordance with applicable federal, state, and local regulations, and guidelines for temporary stockpiling and off-site transportation and disposal of soil. Contractors conducting soil disturbance are required to submit materials and waste management plans and site-specific health and safety plans to HRPT for approval. As part of the construction protocols for the Park, contingency plans are also in place for spills and buried tanks should such conditions be encountered. Therefore, with the protocols already in place, construction of the proposed installation would not be expected to result in significant adverse impacts due to hazardous materials. ✷